

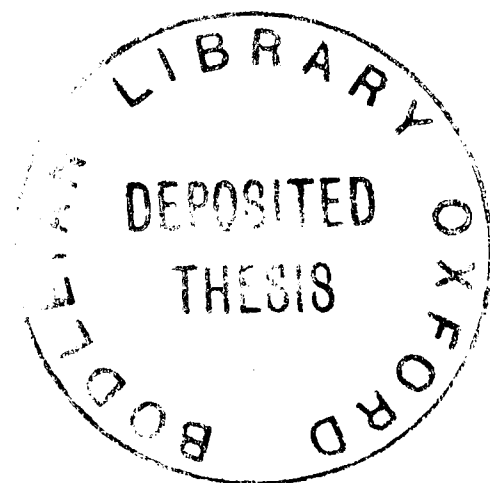
Ὀβελοί and Iron in Archaic Greece

Volume One:

Text

Thesis submitted for the degree of
Doctor of Philosophy in Ancient History

Peter Haarer
Balliol College, Oxford



Hilary 2000

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Abstract

This thesis studies spits and iron in Archaic Greece and Cyprus. Chapter One surveys previous research on spits and iron. Chapters Two to Six consider the evidence for spits in detail with the following agenda: who used them, when, where, for what, how, and what were their associations? Chapters Two, Three and Four focus on archaeological finds from funerary, settlement and sanctuary contexts respectively. Chapter Five looks at the iconographic evidence, and Chapter Six deals with written references to spits in inscriptions and literary texts.

Throughout these chapters, the ancient tradition that spits were used as a favoured form of pre-coinage money is considered carefully. It is concluded that the material evidence fails to support this interpretation, and that the tradition was invented in the fourth century. Nevertheless, denominations of coins were named after spits, and it is hypothesised that this resulted from the appropriation of spits and bundles of spits as visual analogies with which to describe the relationship between obols and drachmas.

Chapter Seven observes that in Aegean Greece and Cyprus, metal spits were manufactured exclusively from iron from the tenth /ninth century onwards. Moreover, they were one of the largest of a range of new iron types to be introduced during the Early Iron Age, were manufactured from high quality metal, and were a long-lived type. As such, they offer an "index" of the value of iron.

Chapter Eight uses this index to argue that, contrary to established views, the high Late Bronze Age value of iron persisted into the tenth century, and though it declined thereafter, it did so gradually. Moreover, iron did not become a cheap alternative to bronze. These conclusions have important ramifications for the interpretation of the transition from bronze to iron. Chapter Nine provides a brief summary of the thesis.

'OBEΛOI AND IRON IN ARCHAIC GREECE

CONTENTS

VOLUME ONE: TEXT

<u>ACKNOWLEDGEMENTS</u>	xviii
 <u>CHAPTER ONE: INTRODUCTION</u>	 1
1.1 Aims	1
1.2 Previous Research	1
1.2.1 Obelography	1
1.2.2 Iron	6
 1.3 Plan of the Thesis	 8
 1.4 Notes for the Reader	 10
1.4.1 Cross-References	10
1.4.2 Spelling	10
1.4.3 Dates	10
 <u>CHAPTER TWO: FUNERARY CONTEXTS</u>	 11
2.1 Introduction	11
2.1.1 Spits Before the Iron Age	11
 2.2 Regional Survey	 11
2.2.1 Cyprus	11
2.2.1a Cypro-Geometric Bronze Spits	12
2.2.1b Cypro-Geometric Iron Spits	16
2.2.1c Cypro-Archaic Spits	19
2.2.2 Krete	24
2.2.2a Knossos North Cemetery	24
2.2.2b Knossos Fortetsa	28
2.2.2c Eleftherna	29
2.2.2d Kavousi	29

2.2.3 Lefkandi	30
2.2.4a Argos	31
2.2.4a (i) The Tombs	31
2.2.4a (ii) Assemblages	34
2.2.4a (iii) Associations	36
2.2.4b Nauplia & Katarraktis	37
2.2.5 Macedonia	38
 2.3 Discussion	 43
2.3.1 Cyprus, Krete and the Aegean	43
2.3.1a Contextual Similarities	43
2.3.1b Presences and Absences	43
2.3.1c Typology and Transmission	44
2.3.2 Metallurgical Context	47
2.3.3 Spits, Warriors and Women	48
2.3.4 Function	49
2.3.4a Spits as Roasting Implements	49
2.3.4b Spits and "Firedogs"	50
2.3.4c Spits as "Pre-Coinage Money"	52
 <u>CHAPTER THREE: SETTLEMENT CONTEXTS</u>	 57
3.1 Pylos	57
 3.2 Sardis	 58
3.2.1 The Finds	58
3.2.2 Form	60
3.2.3 Function	61
3.2.4 What do Lydian Spits have to do with Greek Spits?	62
 3.3 Ephemeral Spits: Greek <i>Escharai</i>	 64
 3.4 Conclusions	 66

<u>CHAPTER FOUR: SANCTUARY CONTEXTS</u>	67
<u>4.1 Introduction</u>	67
<u>4.2 Distribution</u>	68
4.2.1 Presences and Absences	68
4.2.2 Chronological Distribution	69
4.2.3 Typological Distribution	72
4.2.4 Divine Distribution	77
4.2.5 Interim Conclusions	78
<u>4.3 Interpretation I: Spits as Pre-Coinage Money</u>	79
4.3.1 The Conundrum	79
4.3.2 Spits as Pre-Coinage Money	82
4.3.2a Pheidon and the Bundle of Spits at the Argive Heraion	82
4.3.2b Length	83
4.3.2c Weight	86
4.3.2d Value	90
4.3.3 Dedications of Drachmai at Perachora	92
4.3.4 Phanaristos' Dedication	94
4.3.5 Obeloi at Khorsiai and Torricella	96
4.3.6 Rhodopis' Spit Dedication	97
<u>4.4 Interpretation II: Spits as Votives</u>	104
4.4.1 Nemea: the Pentathlete's Dedication	104
4.4.2 Poseidonia: the Hypogaeum	105
4.4.3 The Samian Heraion: Southern Area of the Temenos	106
4.4.4 Kalapodi	106
4.4.5 Dedications of Unused Obeloi	107
4.4.6 The Wider Picture	108
4.4.7 Olympia	108
4.4.8 Artemis Orthia	113
4.4.9 Other Votive Spits	115
<u>4.5 Other Considerations</u>	115
4.5.1 Form	115
4.5.2 Modes of Use	116
4.5.3 Spits and the Individual	116

4.5.4 Value Again	117
4.5.5 Spits and Ironworking at Sanctuaries	118
<u>4.6 Conclusions</u>	119
<u>CHAPTER FIVE: THE ICONOGRAPHIC EVIDENCE</u>	122
<u>5.1 The Corpus</u>	122
5.1.1 Compilation	122
5.1.2 The Scenes	123
5.1.3 Exclusion: the Blinding of Polyphemos	124
<u>5.2 Analyses</u>	126
5.2.1 Date	126
5.2.2 Shape	128
5.2.3 Provenance	128
5.2.4 Artist	129
<u>5.3 Discussion</u>	129
5.3.1 Typology	129
5.3.2 Culinary Role	130
5.3.3 Filled Spits	134
5.3.4 Offensive Spits	135
5.3.5 Handling the Roasting Spit	135
5.3.6 Gender	136
5.3.7 Drachmai of Obeloi	137
5.3.8 Krateutai	137
<u>5.4 Conclusions</u>	138
5.4.1 The Quality of the Evidence	138
5.4.2 Positive Observations	138
5.4.3 The Improbable Muscular Matron	138
5.4.4 Spits on Parade	139

<u>CHAPTER SIX: THE WRITTEN EVIDENCE</u>	141
<u>6.1 Obeloi, Oboloi, & Obeliskoi</u>	141
6.1.1 Corpora of References (Appendices F & G)	141
6.1.2 The Evolution of ὀβολός and ὀβελίσκος from ὀβελός	143
6.1.2a The Attic Sequence	144
6.1.2b The Doric Sequence	145
6.1.2c The Rest of the Greek World	146
6.1.2d Comparison with the Literary Evidence	147
6.1.2e Discussion	149
6.1.3 Ὀβελός & Ὀβελίσκος (Appendix F §5)	151
6.1.4 The Idea of the ὀβελός /ὀβελίσκος (Appendix F §5)	152
 <u>6.2 Writings About Roasting Spits</u>	154
6.2.1 Modes of Use	154
6.2.2 Spits of All Sorts	154
6.2.3 Value	157
6.2.4 Social Dissemination	159
6.2.5 The Ptoön Enigma	160
6.2.6 Conclusions	161
 <u>6.3 The Historiography of Pre-coinage Spit Money</u>	161
6.3.1 Sparta	161
6.3.1a The Tradition and the Sources	161
6.3.1b Commentary	165
6.3.1c Invention of the Tradition	170
6.3.2 Argos	171
6.3.3 Byzantion	176
 <u>6.4 The Missing Link</u>	178
6.4.1 The Problem	178
6.4.2 The Drachma Theory of Carradice and Price	179
6.4.3 Morphological Link	180
6.4.4 Spits and Bundles of Spits as a Visual Analogy	181

CHAPTER SEVEN: SPITS BEYOND THE PRE-COINAGE MONEY QUESTION

	187
<u>7.1 Liberating the Spit</u>	187
7.1.1 Interim Conclusions	187
7.1.2 Towards a New Agenda	188
 <u>7.2 Spits and Archaic Greek Iron</u>	 191
7.2.1 The Iron Character of Greek Spits	191
7.2.1a East of the Aegean and Cyprus	191
7.2.1b Italy	192
7.2.1c Elsewhere	196
7.2.1d Iron vs Bronze in Spits	196
7.2.2 Greek Spits as "Elite Ironwork"	197

CHAPTER EIGHT: SPITS AND IRON IN THE "IRON AGE"

<u>8.1 Spits and the Value of Iron</u>	201
 <u>8.2 The Relationship between Iron and Bronze</u>	 204
8.2.1 Relative Value	204
8.2.2 Aesthetic Appeal	206
8.2.3 Mystery	209
8.2.4 The Special Relationship	210
 <u>8.3 Why did Spits Begin to be Made of Iron?</u>	 212
8.3.1 A Short History of Iron to the Beginning of the Iron Age	212
8.3.2 Hypothesis of Bronze Shortage	216
8.3.3 Hypothesis of Wood Shortage	217
8.3.4 Marketing	217
8.3.5 Advances in Carburisation, Quenching and Tempering	218
8.3.6 The Desire for Iron	222
8.3.7 Why were Spits not Made of Iron Earlier?	222
 <u>8.4 Spits and the Transition from Bronze to Iron</u>	 224
8.4.1 A Question of Significance	224
8.4.2 Cyprus and Aegean Greece: Pioneers or Followers?	226

<u>8.5 Conclusions</u>	229
 <u>CHAPTER NINE: CONCLUSION</u>	 231
 <u>BIBLIOGRAPHY</u>	 234
Abbreviations	234
Works	238

VOLUME TWO: APPENDICES AND ILLUSTRATIONS

<u>APPENDIX A: TABLES FOR CHAPTER TWO</u>	1
Table 1a: Palaepaphos- <i>Skales</i>	1
Numbers of bronze, iron, gold /silver and imported pottery items from tombs contemporary with the spits	
Table 1b: Palaepaphos- <i>Skales</i>	2
Table showing changes in the use of iron and bronze	
Table 2a: Knossos North Cemetery	5
Finds of Spits	
Table 2b: Knossos North Cemetery	6
Appearance of Iron Types	
Table 3: Argos	7
Tomb Rankings	
 <u>APPENDIX B1: CATALOGUE OF SPITS FROM SANCTUARY CONTEXTS</u>	9
Archaeological Finds	9
Epigraphic Attestations to Archaic Dedications of Spits	38
Literary Attestation of an Archaic Dedication	40
Tables	42
Table 1: Summary of Finds of Spits from Sanctuary Contexts	42
Table 2: Chronological Analysis of Sanctuary Contexts	44
Table 3: Distribution of Main Types	45
 <u>APPENDIX B2: IRON /BRONZE AND POTTERY FROM THE WELLS AT OLYMPIA TO THE NORTH AND SOUTH-WEST OF THE STADIUM</u>	47
Tables	47
Table 1	47
Table 2	48
Table 3a	48
Table 3b	48
 Graphs	50
Graph 1a	50
Graph 1b	50
Graph 1c	51

Graph 2a	52
Graph 2b	53

<u>APPENDIX C: EXCLUSIONS</u>	54
1. Funerary Contexts	54
2. Sanctuary Contexts	54

<u>APPENDIX D: LENGTHS OF SPITS</u>	55
1. Funerary Contexts	55
2. Sanctuary Contexts	57
3. Settlement Contexts	57
4. Unknown Cypriot Provenance	58

<u>APPENDIX E: PAINTED VASE SCENES WITH SPITS</u>	59
Table E1: Corpus	59
Table E2: Analysis by Date	78
Table E3: Analysis by Shape	81
Table E4: Analysis by Provenance	84
Table E5: Analysis by Artist	87

<u>APPENDIX F: LITERARY REFERENCES TO SPITS AND OBOLS</u>	90
<u>1 Introduction: How to Use the Appendix</u>	90
<u>2 Search Terms & Words Found in the <i>TLG</i> Word Index</u>	91
<u>3 Table of Frequencies of Occurrences of Words Containing the Search Terms</u>	92
<u>4 ὀβελός, ὀβολός and Related Words</u>	96
4 i References	96
a Authors Born Before ca. 300BC	96
Archaic	96
Classical to ca. 300BC	97
b Selected Authors Born Post ca. 300BC	109

c Selected Individual References from Authors Born Post ca. 300BC	112
4 ii Tables of Analysis	113
a Authors to ca. 300BC	113
b Selected Authors Post ca. 300BC	114
c Summary	114
d "Obelish" Bread	115
e -οδελ- & -ωδελ-	115
f λαγωβόλον	115
<u>5 Spits</u>	116
5 i References	116
a Authors to ca. 300BC	116
Archaic	116
Classical to ca. 300BC	117
b Selected Authors born ca. 300BC - AD400	121
<u>5 ii Tables of Analysis</u>	128
a Authors to ca. 300BC	128
b Authors post ca. 300BC	129
c Summary	130
 <u>APPENDIX G: EPIGRAPHIC REFERENCES TO SPITS AND OBOLS</u>	131
<u>Introduction</u>	131
Compilation of the Corpus (Tables 1 & 2)	131
The Appendix	132
Abbreviations	132
 1. Attica	133
2. Central Greece	138
3. Delphi	139
4. Peloponnese	144
5. Krete	147
6. Islands	148
7. Delos	149
8. Ionia	152

9. Karia	155
10. Asia Minor	156

<u>APPENDIX H: SOURCES FOR SPARTAN SPIT MONEY</u>	157
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<u>APPENDIX I: AN ENDNOTE ON TRADE IRON FROM KHORSABAD</u>	160
1. The Khorsabad Hoard	160
2. <i>Les Pics</i>	161
3. Interpretation of the Tools from the Khorsabad Hoard	164

ILLUSTRATIONS

Maps

Map 1a: Aegean Greece, showing finds and attestations of metal spits, LBA to Archaic period.

Map 1b: Cyprus, showing all sites of all periods.

Map 1c: Italy, showing finds or attestations of Greek spits and selected other sites.

Map 2: Aegean Greece, showing Archaic Funerary and Settlement Contexts.

Map 3: Aegean Greece, showing Sanctuary Contexts.

Map 4a: Aegean Greece, distribution of lanceolate type.

Map 4b: Aegean Greece, distribution of round type.

Map 4c: Aegean Greece, distribution of oval type.

Map 4a-c: Aegean Greece, summary of distribution of lanceolate, round and oval types.

Map 4d: Aegean Greece, distribution of spatula type.

Map 4e: Aegean Greece, distribution of flange-hilted type.

Map 4f: Aegean Greece, distribution of crescent type.

Map 4g: Aegean Greece, distribution of rolled type.

Map 4h: Cyprus, showing the distribution of iron and bronze spits, and of the western Mediterranean bronze type found at Amathous.

Map 5: Olympia in the fifth century (with selected later features marked), showing the areas of wells excavated in the north wall of the Stadium and to the south west of the Stadium.

Map 6: Ancient Near East, showing location of selected sites.

Figures (and sources)

Figure 2.1.1a: Bronze Age bronze spit from a Mycenaean Tomb at Vapheio (Karageorghis 1974 plate 18 no. 1).

Figure 2.1.1b: Bronze Age bronze spit from the shipwreck at Cape Gelidonya (Bass 1967 105 fig. 116 no. 187).

Figure 2.3.1c (i): Cypriot spit of Karageorghis Type A from Lapithos Tomb 417 (Karageorghis 1974 plate 17 no. 1).

Figure 2.3.1c (ii): Cypriot spit of Karageorghis Type C from Lapithos Tomb 411 (Karageorghis 1974 plate 17 no. 4).

Figure 2.3.1c (iii): Cypriot spit of Karageorghis Type D from Salamis Tomb 79 (Karageorghis 1973 plate 237).

Figure 2.3.1c (iv): Cypriot spit of Karageorghis Type E from Tamassos Tomb 12 (Karageorghis 1974 plate 18 no.5).

Figure 2.3.1c (v): Kretan spits of Karageorghis Type C from Fortetsa (Karageorghis 1974 plate 18 no. 2).

Figure 2.3.1c (vi): Kretan spits from the Knossos North Cemetery (KNC figure 179).

Figure 2.3.4b.1a: "firedogs" from the Panoply Tomb at Argos (Courbin 1957 369 fig. 54).

Figure 2.3.4b.1b: spit (F.14) from the Panoply Tomb at Argos (Courbin 1957 369 fig. 52).

Figure 2.3.4b.1c: handles from spits from the Panoply Tomb at Argos (Courbin 1957 369 fig. 53).

Figure 2.3.4b.2a: Attic Geometric krater, Louvre A 522 (Basch 1987 175 no. 362).

Figure 2.3.4b.2b: Thapsos Group krater, Toronto 919.5.18 (Morrison & Williams 1968 pl. 7d).

Figure 2.3.4b.2c:

Left: Attic Geometric krater, Louvre A 517. A (Basch 1987 172 no. 353).

Right: Attic Geometric krater, Louvre A 532 (Basch 1987 172 no. 354 B).

Figure 3: *escharai* (Sparkes & Talcott 1970 figure 19 no. 2030 (ca. 1:10), & plate 98 nos. 2028, 2030 and 2034).

Figure 4.2.3a.1: lanceolate type from Argos South Cemetery Area Tomb 1 (Courbin 1957 plate 20 F 1-6).

Figure 4.2.3a.2: giant spit of lanceolate type from the Argive Heraion (Svoronos 1906 plate X).

Figure 4.2.3a.3: lanceolate type from the Harbour Sanctuary at Emborio, Chios (Boardman 1967 231 fig. 152 no. 480).

Figure 4.2.3a.4: lanceolate type from Pherai (Kilian 1975 plate 93 no. 15).

Figure 4.2.3a.5: lanceolate type from the Samian Heraion
(Furtwängler & Kienast 1989 150 fig. 33 no. 37).

Figure 4.2.3a.6: lanceolate type from Artemis Orthia
(author).

Figure 4.2.3b.1: round type from the Panoply Tomb, Argos
(Courbin 1957 369 fig. 53).

Figure 4.2.3b.2: round type from Philia
(Kilian 1983 136 fig. 5 no. 6).

Figure 4.2.3b.3: round type from the Poseidonian Hypogaeum
(Bertarelli-Sestieri 1985 686).

Figure 4.2.3c: oval type from the Samian Heraion
(A.E. Furtwängler 1980 88 fig. 5).

Figure 4.2.3d: spatula type from the Harbour Sanctuary at Emborio, Chios
(Boardman 1967 231 fig. 152 no. 475).

Figure 4.2.3e: flange-hilted type from Olympia
(Adolf Furtwängler 1890 179 no. 1098).

Figure 4.2.3f.1: crescent type from Dodona
(Carapanos 1878 plate 53 no. 14).

Figure 4.2.3f.2: crescent type from Nemea
(S.G. Miller 1984 plate 7d nos. 470 & 471).

Figure 4.2.3f.3: crescent type from Olympia
(Kunze & Schleif 1944 Plate 71 d).

Figure 4.2.3g.1: rolled type from Sardis
(Waldbaum 1983 plate 16 no. 216).

Figure 4.2.3g.2: rolled type from Philia
(Kilian 1983 135 fig. 4 no. 15).

Figure 4.3.2b (i): the bundle of spits from the Argive Heraion soon after discovery
(Waldstein 1902 63 figure 31 = Svoronos 1906 Plate XII).

Figure 4.3.2b (ii): the bundle of spits and giant spit from the Argive Heraion after transport
to Athens as found by Svoronos (Svoronos 1906 plate XI).

Figure 4.3.3 (i): inscribed bases for a drachma dedications from Perachora
(Jeffery 1990 Corinth nos. 7 (plate 18), 12 (plate 19) and 17 (plate 20)).

Figure 4.3.3 (ii): inscribed base for the drachma dedication of Phanaristos
(Roehl 1882 67 = Ulichs annal.).

Figure 5.A1 (Ricci 1946-1948 plate IV).

Figure 5.A2 (CVA Adolphseck Schloss Fasanerie 120).

Figure 5.B2 (van Straten 1988 64 fig. 18a).

Figure 5.B8 (K. Schefold & F. Jung, *Die Urkönige, Perseus, Bellerophon, Herakles und Theseus in der klassischen und hellenistischen Kunst*, Munich 1988, 77 fig. 88).

Figure 5.B18 (J.-L. Durand in Etienne & Le Dinahet (ed.s) *L'espace sacrificiel*, 1991,
fig. 8).

Figure 5.B19 (*Archäologische Zeitung* 3 (1894) plate 36.2).

Figure 5.B20 (*Klearchos* 89-92 (1981) fig.6).

Figure 5.C1 (Detienne & Vernant 1989 fig. 11).

Figure 5.C2 (van Straten 1995 fig. 153).

Figure 5.C6 (van Straten 1995 fig. 148).

Figure 5.D3 (J. Boardman, *Athenian Red Figure Vases, The Archaic Period*, Thames & Hudson Ltd., London, 1975, fig. 340).

Figure 5.E1 (*BCH* 89 (1965) 780 fig. 4).

Figure 5.E7 (van Straten 1995 fig. 135).

Figure 5.F6 (van Straten 1995 fig. 164).

Figure 5.G1 (van Straten 1995 fig. 154).

Figure 5.G2 (*CVA* Heidelberg 1 Plate 39.3).

Figure 5.G3 (*JHS* 85 (1965) plate 30 no. 5a & 5b).

Figure 5.G4 (Berthiaume 1982 plate 18).

Figure 5.H1 (Crosby 1955 plate 36a).

Figure 5.H2 (Crosby 1955 plate 36c).

Figure 5.i1 (van Hoorn 1951 fig. 256).

Figure 5.J6 (author).

Figure 5.J9 (*CVA* Bologna 4 plate 71.5).

Figure 5.K1 (Durand 1986 fig. 70b).

Figure 5.K5 (Durand 1986 fig. 83).

Figure 5.M5 (C. Isler Kerényi, *Stamnoi*, Cornèr Bank Ltd., Lugano, Switzerland, 1977, 61).

Figure 5.M9 (*LIMC* VII Orpheus 39).

Figure 5.M16 (B.V. Bothmer & J.L. Keith, *Brief Guide to the Department of Ancient Art*,

Brooklyn Museum, Brooklyn, Philipp von Zabern, Mainz, 1970, plate 74).

Figure 5.N3 (J. Boardman, *Athenian Red Figure Vases: the Classical Period*, Thames & Hudson Ltd., London, 1989 fig. 291).

Figure 5.o3 (*Antike Welt* 1976.3 39).

Figure 8.2.2: Archaic and Classical Greek painted vase scenes depicting people wearing pins (Jacobsthal 1956 figures 331, 332, 332a, 333 and 335).

Figure I: *pics* (left) and other iron objects from the hoard at Khorsabad and other sites (Pleiner & Bjorkman 1974 295 figure 8 & 297 figure 10).

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CHAPTER ONE

INTRODUCTION

1.1 Aims

The ancient tradition that the Greeks used iron ὀβελοί / ὀβελίσκοι, spits, as money is well known. It has been much debated and has an important bearing on the origins of coinage, as well as implications for the development of iron in the Iron Age, though the latter is seldom acknowledged. Previous studies have been fragmented between different disciplines within Ancient History, including archaeology, iconography, epigraphy, historiography and numismatics, and have not used the full range of evidence available. This thesis attempts to offer new insights on this question through the systematic examination of all the available sources and their synthesis. However, the thesis also moves beyond the agenda dictated by the ancient tradition, by surveying the development of spits through their distribution, typology, and non-monetary roles. From this, spits emerge as one of the most substantial of an array of iron types to be introduced during the Early Iron Age, supersede bronze types, and enjoy longevity. Moreover, as their form is relatively simple their value would have depended more on that of the metal from which they were fashioned than on elaborate craftsmanship. Further, the ancient tradition that spits were used as pre-coinage money has ensured that they have received far more attention from archaeologists than most other iron types in terms of recognition, recording and publication. For these reasons, spits offer a particularly firm foundation for the analysis of the development of iron during the Iron Age, and especially its value, its relationship to bronze, and how and why iron began to be exploited in greater quantities after the end of the Late Bronze Age.

1.2 Previous Research

1.2.1 Obelography

An early interest in spits was fostered by the ancient tradition that they were used as pre-coinage money. This was accepted almost uncritically until the early nineteenth century, when scholars began to be more questioning¹. During the late nineteenth century, the discovery in Africa of anthropological parallels for the use of a wide variety of iron tools as money bolstered the tradition. However, this evidence lost prominence after Waldstein, directing the American School's first ever major excavation project in Greece, unearthed a massive bundle of spits at the Argive Heraion in 1894². The bundle, which remains the

¹See Gansiniec 1956 410 for a summary of scholarship on roasting spits to the end of the nineteenth century AD.

²Waldstein 1902 77. See also **Appendix B1 S2a**.

largest single hoard ever found, belonged to the Archaic period, and could be linked to a story preserved in an ancient etymology, that Pheidon of Argos had been the first to issue a silver coinage, and that he had recalled the units of the old spit currency and dedicated them to Hera at the Heraion³. Accordingly, Waldstein had no doubt that the iron spits in the bundle he found had been used as money, and drew an analogy with the use of giant arrowheads as money in Zanzibar by "savages"⁴.

During the twentieth century, research has been led by further discoveries, either of spits or of inscriptions relating to ὀβελοί. The general consensus which has emerged is that spits were implements for roasting meat first and foremost, but that they may have had other functions. The secondary role most commonly considered has continued to be that spits were used as pre-coinage "money"⁵. This interpretation has been applied with most enthusiasm to the bundle from the Argive Heraion, especially by Svoronos, Seltman and Courbin, each of whom examined the find in detail and tried to determine the rate at which one spit's worth of iron would have been exchanged for one obol's worth of silver⁶. Attempts to relate finds from other sites to the bundle from the Argive Heraion and the tradition attached to Pheidon include Woodward on spits from Artemis Orthia, Payne /Wade Gery on spits and inscribed bases for dedications of spits from Perachora, Platon & Feyel commenting on an inventory from Khorsiai which mentions spits, and Raubitschek commenting on an inscription recording the dedication of one Phanaristos⁷. More recently, Bound has suggested that spits from the wreck of ca. 600 off Giglio may have functioned as units of pre-coinage money⁸. The interpretation has also been favoured by some general surveys⁹.

Some archaeologists have rejected the notion that spits were used in this way, especially D'Agostino, commenting on the function of spits from two native Italian "princely" tombs at Pontecagnano in Italy and their archetypes in Greece¹⁰, and A.E. Furtwängler discussing

³*Etymologicum Magnum* s.v. "ὀβελίσκος"; Waldstein 1902 61; Svoronos 1906.

⁴Waldstein 1902 61 & n2.

⁵The definition of "money" (sometimes "currency") is crucial to the interpretation, as stressed by Murray in Courbin 1983 156. The sense in which it is understood in this thesis is discussed in §2.3.4c.

⁶Svoronos 1906, Seltman 1924 117-122, Courbin 1959 & 1983.

⁷Woodward in Dawkins 1929 391-392, Payne 1940 187-189 & Wade-Gery in Payne 1940 256-261, Platon & Feyel 1938 162-163, Raubitschek 1950 296.

⁸Bound 1991 26.

⁹See, for example, Caramessini-Oeconomides 1969 443-445, Coldstream 1977 155 (though he notes that the ancient tradition is problematic).

¹⁰D' Agostino 1977a 18-20 & 1977b 9-13.

finds from the Samian Heraion¹¹. More commonly, it has been discounted only in the case of specific finds: for example, by Courbin on the finds from Argive tombs¹², Tomlinson on the spits listed in the inventory at Khorsiai¹³, Popham on the fragments of spits from Lefkandi¹⁴, Karageorghis & Demas on a bronze spit from the pre-Phoenician levels of the temple at Kition¹⁵, and Strøm on the finds from Argive tombs and Perachora¹⁶. Other archaeologists have remained uncommitted to either view when interpreting particular finds or groups of finds, such as Jeffery on the drachma dedications from Perachora¹⁷, Karageorghis on Cypriot spits¹⁸, Stampolidis on those from Eleftherna¹⁹, and Snodgrass on those from the Knossos North Cemetery²⁰.

Other interpretative possibilities have been discussed, but less often and far less universally. Karageorghis, studying spits from Palaepaphos-*Skales* has suggested that spits may have had a role as symbols of prestige²¹. Other scholars, such as Bammer & Muss on the examples from the Ephesian Artemision²², have commented that aside from their function as roasting implements, spits from sanctuary contexts may be regarded as a class of votive dedication. A.E. Furtwängler has suggested that the reason for such dedications may have been that spits were the fabric on which offerings of meat were placed²³, or alternatively, that they were a medium in which gifts of iron could be made, the spit being a form in which the metal could be stored and traded²⁴.

¹¹A.E. Furtwängler 1980.

¹²Courbin 1957 369, 1974 136.

¹³Tomlinson 1980 223.

¹⁴Popham et al. 1982 240.

¹⁵Karageorghis & Demas 1985 246.

¹⁶Strøm 1992 44.

¹⁷Jeffery 1990 124.

¹⁸Karageorghis 1972 171.

¹⁹Stampolidis 1994 107 .

²⁰*KNC* 590-591.

²¹Karageorghis 1983 75 & 372.

²²Bammer & Muss 1996 90.

²³Furtwängler 1980 esp. 95f on the spits from the Samian Heraion, followed by Kilian 1983 133 when discussing the finds from Philia, cf. Bertarelli-Sestieri 1985 651-652, 661, 682 on the spits from the Poseidonian Hypogaeum.

²⁴Forbes 1967 32, Bakhuizen 1976 57, A.E. Furtwängler 1980 94, Buchholz 1991 78, and Strøm 1992 45.

Studies based on the archaeological evidence as a whole have tended to privilege one particular group of finds, testing all hypotheses against them. This group includes the spits from tombs at Argos, Knossos, Pontecagnano and various sites in Cyprus, and from sanctuaries at the Argive Heraion, Artemis Orthia, Khorsiai, Perachora, Philia, the Poseidonian Hypogaeum, the Samian Heraion, and the inscribed base of Phanaristos' dedication recorded at Krisa. Material from Gortyn and Dreros has occasionally been included in this list, though the objects in question do not appear to be spits²⁵. This eclectic selection, which ranges from eleventh-century Cypro-Geometric graves to a late sixth-century hypogaeum at Poseidonia and a temple inventory from fourth-century Khorsiai²⁶, is not representative. The use of such chronologically and culturally disparate material for the interpretation of new finds has inhibited the appreciation of local developments and diachronic variations. Its dominance has meant that the full range of material evidence has not been maximised, with many discoveries playing little or no part in most discussions, including those from Delphi, Dodona, Eleftherna, Emborio, Ephesos, Epidauros, Gelidonya, Halieis, Kalapodi, Katarraktis, Kition, the sanctuary of Demeter at Knossos, Kommos, Mount Hymettos, Nauplia, Nemea, Olympia, Pherai, Poseidi, Pylos, Sardis, Sindos, Torricella, Tyros, Vergina and Zagora. The material from some of these sites has come to light only recently, but the majority has been known for some time.

Not all studies have concentrated on the archaeological evidence. In those which examine the iconographic evidence, the main focus of interest in the types of scene in which spits are represented has been their relationship to a lost work of the sculptor Styppax²⁷ or, more commonly, what may be learned of the rite of sacrifice²⁸. Almost no attention has been paid in these studies to the question of whether spits were used as pre-coinage money, and little attempt has been made to mine this source for information about the nature and history of spits as an artefact type²⁹.

Studies centring on the written evidence have concentrated almost entirely on the texts which preserve the ancient tradition that spits were used as pre-coinage money. Most attention has

²⁵See **Appendix C**.

²⁶Some discussions have appealed to material from native Italy, which is of questionable significance in the study of a Greek phenomenon: see, for example, Bruns 1970.

²⁷See Mayer 1893, Metzger 1965 and Rizza 1959-1960.

²⁸See esp. Ricci 1946-1948, Kron 1971 139-144, Durand & Lissarrague 1983, Durand 1986, Durand & Schnapp 1989, the essays by Detienne, Vernant, Durand, Hartog collected in the volume edited by Detienne & Vernant 1989, and the studies by van Straten 1988 & 1995 118, 130-136, 144-153.

²⁹The main exception is Kron 1971 139-144 who attempts to use iconographic evidence to identify the *pempobolon*, a type of artefact which was probably closely related to the iron spit.

been paid to Sparta, where analyses have concentrated on the origin of the sources for the tradition and their biases³⁰, and on whether there is evidence for the circulation of wealth at Sparta in a form other than spits during the Archaic and Classical periods³¹. Some scholars have been able to accommodate the tradition³² while others have regarded it with scepticism or rejected it altogether³³. On the sources for the use of spits as pre-coinage money at Argos, the most thorough and influential examination has been offered by W. Brown in 1950, who concluded that they were thoroughly unreliable. Kagan responded in 1960 with an attempt to defend the tradition, though this proves unconvincing. Little attention has been paid to the sources associated with Byzantium. Beyond the analysis of the ancient tradition, few attempts have been made to use incidental references in literature or epigraphy to study spits. Three thorough articles by Tod concerned with the words ὀβολός and δραχμή provide notable exceptions³⁴, though these are concerned more with epigraphic documents than literary texts, are written with a numismatic perspective and are weighted towards the study of obol and drachma coins rather than spits and bundles of spits.

This survey reveals that there has been little attempt to follow more than one branch of evidence at any one time with equal diligence. Instead, a "pick and mix" approach has been adopted, which has tried to put together a homogenised picture of the spit by completing only selective parts of a large and complicated jig-saw³⁵. The results lack coherence, showing little or no sensitivity to the long, complex, and fluid cross-cultural history of this artefact type.

This thesis aspires to examine the whole range of evidence. The archaeological material from funerary, sanctuary and settlement sites has been catalogued systematically and reassessed. Particular attention has been paid to context, many recent finds incorporated, resulting in a more complete distribution pattern than has previously been presented, and some finds reinterpreted. Similarly, an attempt has been made to obtain a complete corpus of the relevant iconographic material and to gather together, as far as possible, all extant literary and epigraphic references to spits up to ca. AD 400. Where possible, use has been made of new databases, and recent advances in the development of electronic books and the hardware

³⁰Cartledge 1975 273, Hodkinson 1994 196-197.

³¹Michell 1952 298, Cartledge 1988 88-89, Cawkwell 1983 395-396, Neothlichs 1987, Hodkinson 1994 198.

³²For example, Cartledge and Michell.

³³For example, Neothlichs 1987 and Hodkinson 1994 & 1999.

³⁴Tod 1947, 1955 and 1960.

³⁵For example, Strøm 1992 offers the most complete distribution and analysis of spits in archaeological contexts, but accepts on trust the ancient traditions relating to pre-coinage money.

and software with which to interrogate them. This thesis also draws on two new analogies. Firstly, ratios recorded in ancient near eastern texts for the exchange of iron for silver are used as a guide from which to estimate the relationship in value between a Greek spit and obol coin. Secondly, recent research by Crew and Salter into the production of "currency bars" in Iron Age Britain is employed as a means with which to understand the nature of the metal from which spits were manufactured.

1.2.2 Iron

Early research on iron is discussed and summarised by two general surveys, one by Forbes (1964), the other by Pleiner (1969). These works are based on a small proportion of the archaeological evidence now available and follow obsolete theories, such as hyperdiffusionism³⁶. Much recent research has been oriented around the study of the "transition" between an age in which the predominant metal used was bronze, and the succeeding one in which it was iron. In particular, Snodgrass has argued that Greece and Cyprus pioneered the adoption of iron, and the model he has developed to explain this process is considered to have general applicability³⁷.

The views of Snodgrass may be summarised as follows³⁸. The period ca. 1150 to ca. 1050 is the decisive moment during which iron was adopted³⁹. A shortage of bronze, brought about by the collapse of Late Bronze age trading systems⁴⁰ led the peoples of Cyprus and the Aegean to search for an alternative metal for their implements for cutting and piercing, and this culminated in the discovery that iron could be used in such applications⁴¹. Subsequently, iron was transformed from a metal which was expensive and used little in only ornamental applications, to one which was cheap and used widely in tools⁴². Iron superseded bronze in the latter role, and came to be perceived as its antithesis in terms of its value, and aesthetic and exotic appeal⁴³. The new availability of iron and uses to which it was put had important

³⁶See, for example, the criticisms of McNutt 1990 138-139 of Forbes 1964, or the discussion given by Pleiner 1969 13 of the rival theories for "the route by which iron reached Greece".

³⁷See esp. Snodgrass 1980a.

³⁸These are defined and discussed in more detail throughout **Chapter Eight**.

³⁹"Stage 2" of his three stage scheme, for which see Snodgrass 1980a 335-338 & 368 and 1982 285, 291-292, and fig. 2.

⁴⁰Snodgrass 1971 237-239, 1980a 348, 1980b 50, 1982 293, 1989 29.

⁴¹Snodgrass 1971 213, 1980a 336, 1989 23.

⁴²Snodgrass 1980a 368.

⁴³See esp. Snodgrass 1989 27-28.

social consequences, in that "*cheap iron*" made metal economically accessible to the masses, allowing industry and warfare to become "*democratised*"⁴⁴. This did not, as Childe had envisaged, enable revolutionaries to arm themselves and bring down the great civilisations of the Bronze Age⁴⁵, but had two important restorative roles. Firstly, it was a fundamental material means for survival during the Dark Ages⁴⁶, and secondly, it was part of the material foundation for the reconstruction of Greece during the "Age of Experiment"⁴⁷.

Various aspects of the model proposed by Snodgrass have been challenged. The change in the value of iron over the course of the Early Iron Age, in absolute terms, and relative to bronze, and the rate at which this occurred, is crucial to many of the arguments presented by him. The rapid fall which he implies has been questioned by I. Morris, who asserts that iron retained considerable value up to the eighth century. If true, this would revive a scheme proposed by Pleiner, whereby the development of iron during the Iron Age was more gradual than Snodgrass suggests⁴⁸.

Recent evidence from shipwrecks, combined with the results of lead isotope analysis, and the analysis of the tin content of bronzes from around the Mediterranean, has cast doubt on the hypothesis of bronze shortage⁴⁹. As a result, the motivation for the increased use of iron has been debated, and alternative theories proposed. These include a hypothesis entailing fuel shortage put forward by Wertime (1982 & 1983), and one concerning commercial strategies in Cyprus advanced by E.S. Sherratt (1994). Further possibilities which have been discussed focus on the methods used to smelt iron, and important recent contributions in this field have been made by Kassianidou (1994) and Shell (1997). The matter of whether Iron Age Iron was better than Bronze Age iron is closely related to the motive behind the changes which

⁴⁴Childe 1942 183 quoted by Snodgrass 1971 239, 1987 176, 1989 30.

⁴⁵Childe 1942 183 hypothesised that iron had been a secret discovered and then jealously guarded by the ruling elites, first of the Mitanni, then of the Hittites. The employment of mercenaries in the Hittite army had allowed the secret to become known to the commoner at home and the barbarian abroad, and this betrayal allowed uncivilised peoples to arm themselves and destroy the civilisations of the Late Bronze Age. This theory and its derivatives have been refuted because the distribution of iron artefacts in the Late Bronze Age argues that no people had a monopoly on ferrous technology, or could produce iron in sufficient quantities to equip whole armies: see Drewes 1993 73-76 for a general discussion of the theory; Waldbaum 1978 & 1980 80-82 for the distribution of iron artefacts in the second millennium in Egypt and Greece, and Collis 1984 32 for their distribution in Europe (esp. the former Czechoslovakia, Holland and Sweden).

⁴⁶Snodgrass 1971 368 & 393.

⁴⁷Snodgrass 1989 27, 29.

⁴⁸Morris 1989, Pleiner 1969, who in turn revives a scheme offered previously by Przeworski and D. Gray: see Snodgrass 1971 228 & n20.

⁴⁹See §8.3.2.

took place around the beginning of the first millennium, and here the number of scientific analyses of iron artefacts has steadily increased, including those by Åström et al. (1986) and Stech et al. (1985)⁵⁰.

The history of iron spits in Greece and Cyprus offers an important contribution to the above questions. However, with a view to understanding the metallurgical context which made the production of these artefacts possible, the thesis makes use of studies of the development of iron elsewhere. Of particular interest are those concerned with the Ancient Near East, especially Hittite Anatolia and Assyria, where documentary sources supply a number of insights into the production and circulation of iron which are not available in Greece until the Classical period⁵¹. Further afield, research into the production of iron in Iron Age Britain and Ireland at present provides an unrivalled means with which to understand the processes which were involved in ironworking in Greece and Cyprus⁵².

1.3 Plan of the Thesis

Chapter Two opens with a regional survey of finds of spits from funerary contexts, and includes particulars of the relevant assemblages, their character, and broader setting. A discussion of more general issues follows, in which the origin of the Greek metal spit is considered, as are inter-regional connections, and the metallurgical context in which it first appears. The possible association of spits with warriors is also assessed. The remainder of the chapter addresses the interpretation of the spits, examining their role as culinary implements, and the manner in which spits and firedogs were used in conjunction. The final section tests the archaeological evidence from the funerary contexts against the tradition that, given certain definitions, spits were used as a favoured form of pre-coinage "money".

Chapter Three notes the few uninformative putative fragments of spits which have been found at a settlement site in Greece. It then analyses in detail the contrasting wealth of information offered by recent finds from a domestic complex at Lydian Sardis, though with due consideration of their non-Greek cultural context. The chapter concludes with a brief survey of *escharai* which present important evidence on the popularity of the spit-roast, and the existence of wooden spits.

⁵⁰The analyses by Stech-Wheeler et al. 1981 and Muhly et al. 1985, Muhly et al. 1990 of material from the ancient Near East are also of relevance: see below.

⁵¹Esp. Siegelová 1984 and Košak 1986 on Hittite Anatolia, Pleiner & Bjorkman 1974 and Curtis et al. 1979 on Assyria, but also McNutt 1990 on the Levant, and Moorey 1994, 1995 on the development of iron in Mesopotamia.

⁵²Esp. Salter 1989 and Crew 1991, 1994 & 1995 on British ironworking, B.G. Scott 1990 on Irish Ironworking.

Chapter Four discusses spits from sanctuaries. The evidence on which it is based includes epigraphic and literary references to spits deposited during the Archaic period, as well as the many archaeological examples. The chapter begins by analysing the distribution of the material according to geography, chronology, typology, and the patron deity of the sanctuaries at which they were deposited. The interpretation of the finds is then considered. Having outlined the difficulties of accounting for them all as equipment for roasting meat during animal sacrifice, the notion that they were used as a favoured form of pre-coinage money is tested. Extensive discussion is devoted to the large bundle and giant spit from the Argive Heraion, the drachma dedications at Perachora, the stone recording the dedication of Phanaristos, and the story told by Herodotos of the dedication of ὀβελοί at Delphi by Rhodopis. A range of explanations is advanced to account for the deposition of spits at sanctuaries. The penultimate section picks up a number of general questions raised in previous chapters, including who used spits, in what manner, and how they were regarded. The chapter concludes by comparing the evidence from the sanctuary contexts with that from the funerary contexts. Chapter Four completes the survey of the archaeological evidence and, therefore, includes the main discussion of typology.

Chapter Five examines the iconographic evidence. The corpus of one hundred and twenty-three scenes painted on vases is analysed by date, shape, provenance and artist. It is then used to provide information about typology, how spits were used, by whom, and in what context.

Chapter Six looks at the written evidence, and begins by examining the relationship between the words for "spit" and for "obol". Epigraphic and literary texts are analysed with regard to the idea of the spit, its value, popularity, the ways in which it was used, and the variety of sizes, multiples and materials in which it was produced. The historiographical analysis of the literary sources for the use of spits as pre-coinage money follows. The chapter concludes by considering various hypotheses with which to explain why obol and drachma coins came to be named after spits and bundles of spits.

Chapter Seven concludes the discussion of whether spits were used as a favoured form of pre-coinage money. It also compares the strengths and weaknesses of the various types of source consulted during the study of the spit, and the success with which they may be synthesised. Two questions are then considered which are fundamental to the use of the data assembled in the preceding chapters for the study of the wider issues relating to the development of iron. One of the defining characteristics of the Greek metal spit is that it was made exclusively from iron from the tenth century onwards until the beginning of the Classical period. Was the use of this metal dictated by functional parameters, or was it a free choice? To help to determine this matter, a selective survey of roasting equipment from

contexts east and west of Greece is conducted. What sort of investment in iron did a spit represent? When answering this question, use is made of recent research by Crew and Salter into the production in Late Iron Age Britain of artefacts similar in size and shape to Greek spits.

Chapter Eight considers ways in which spits, as a long-lived major type, can be used as an "index" of iron and, in particular, what insights they offer into the value of iron relative to silver, and the relationship between iron and bronze in terms of value and aesthetic appeal during the first half of the first millennium. A discussion follows concerning why spits began to be made of iron in the eleventh century, during which much use is made of material from the wider context of the eastern Mediterranean world. The chapter concludes by assessing whether the concept of a "transition" from bronze to iron is helpful, or fosters misleading preconceptions in the understanding of how and why iron developed during antiquity.

Chapter Nine presents a brief summary of the thesis, which draws the various lines of enquiry together.

1.4 Notes for the Reader

1.4.1 Cross-References

The thesis is divided into Chapters, sections and sub-sections. In cross-references, the numbers of these are given in bold in long-hand for whole chapters (for example, **Chapter One** refers to the whole of the first chapter), or in abbreviated form in sub-sections (for example, §**2.1.3** refers to Chapter Two, section one, sub-section three).

1.4.2 Spelling

As a general principle, I have transliterated the spelling of Greek names as closely as possible (hence "Krete" rather than Crete). However, I follow the well established "Inconsistent School" in the use of English or Latinised forms where these are too familiar to abandon (hence "Thucydides" rather than "Thoukudides"), and the occasional hybrid of the two (hence "Korinth" rather than "Korinthos" or "Corinth").

1.4.3 Dates

All dates are years Before Christ unless otherwise specified.

CHAPTER TWO

FUNERARY CONTEXTS

2.1 INTRODUCTION

2.1.1 Spits before the Iron Age

The use of spits for roasting meat is attested throughout the eastern Mediterranean world from prehistoric times. Initially, the evidence comprises not the skewers themselves, but the stone or clay supports on which they were rested over fires or embers when laden with morsels of meat. The supports are too numerous and diffuse to catalogue in detail here¹, and it will suffice to note that they are well represented in the Aegean area². They are supplemented during the mid to late Bronze Age with discoveries of bronze spits. One example has been recovered from the fifteenth century Mycenaean tholos tomb at Vapheio³, and another from the thirteenth century shipwreck off Cape Gelidonya⁴. However, these two finds offer no precedent for the frequency with which metal spits occur in the archaeology of Cyprus and the Aegean during the first half of the first millennium, and it is this distinctive horizon which forms the subject of the thesis.

2.2 REGIONAL SURVEY⁵

2.2.1 CYPRUS

It will be helpful to begin the regional survey of the Iron Age finds by defining in brief the Greek spit. In its basic form it is a long, narrow, straight bar of metal, square in cross-section, pointed at one end, and blunt at the other. The finds from Cyprus which meet these criteria are as

¹For spit rests in general in the eastern Mediterranean region see, for example, the finds from prehistoric Tarsus and their parallels listed in Goldman 1956 323-325 & fig.s 441-443 under "Loom-weights" (a misidentification), "Pyramidal Spit Supports", "Cylindrical Stands or Spit Supports" and "Horned Hearth Guards". These finds span the period EB I to LB II (third and second millennia). I am grateful to M-H Gates for drawing my attention to this type.

²For the Bronze Age, Bruns 1970 20-21 cites examples from Thermi ("Fifth Town" = ca. 2000) and the Palace at Mallia (MM IIIb /LM Ia = ca. 1600), while Karageorghis 1974 171 & n17 cites examples from Ayios Kosmos, Thera and Aphrodisias. Examples have also been found very recently at Miletos.

³For the spit see Karageorghis 1974 171 & n19 and **Figure 2.1.1a**; for the excavation of the tomb see Tsountas 1889.

⁴Bass 1967 109, 117, cat. no. B187 and **Figure 2.1.1b**.

⁵For a map showing the distribution of the funerary contexts referred to in this chapter, see **Maps 1a & 1b** and **Map 2**.

follows⁶:

Site	Context	Date	qty	Material
Kition	Myres Tomb	LC IIIB /CG IA (ca. 1050)	3	bronze
Lapithos	Tomb 417	CG IA (ca. 1050-1000)	1	iron
Palaepaphos	Sk. Tomb 49	CG I (ca. 1050-950)	3	bronze
Palaepaphos	Sk. Tomb 67	CG IA or CG IB /CG II (ca. 1050-1000 or ca. 950)	1	iron
Kaloriziki	Tomb 6b	CG I - CG II (ca. 950)	1	iron
Lapithos	Tomb 411	CG IIB (ca. after 950 up to 850)	2	iron
Lapithos	Tomb 422 _{II}	CG III (ca. 850-750)	1	iron
Salamis	Tomb 79 _I	CG III /CA I (ca. 750)	*12	iron
Kouklia	Tomb _I	CA I (ca. 750-600)	*?18	iron
Tamassos	Tomb 12	CA I/II (ca. 600)	2	iron
Patriki	Tomb 1	CA II (ca. 600-475)	*18	iron
Idalion	Tomb 2 _I	End CA II (before ca. 475)	??1	iron

Sk. Skales; * ship-shaped Firedog; ? no. spits uncertain; ?? identification uncertain; subscript denotes a burial number /layer.

2.2.1a Cypro-Geometric Bronze Spits

The horizon in which spits become archaeologically visible begins at **Kition** in the "**Myres**" or "**Turabi Tekke**" **Tomb**, lying chronologically at the interface between Late Cypriot IIIB and Cypro-Geometric IA (ca. 1050)⁷. The three spits from this burial are made of bronze. Therefore, unless they were antique at the time of their burial⁸, the spits show that at the start of the Iron Age they continued to be manufactured from the same metal as they had been during the previous era.

⁶Exclusions: Lapithos Tomb 409 no. 7: see **Appendix C**.

⁷For a description of this tomb see Myres 1910 and below.

⁸H. Catling 1994 137-138 suggests that at least some of the bronze riches from tombs of the Cypro-Geometric IA had been looted from Bronze Age sacred places by piratical raiders from the Aegean, who had arrived sporadically during Late Cypriot IIIB and had occasionally settled and been buried in their new homeland with their stolen goods.

The only other bronze spits of known context from an Early Iron Age Cypriot (or Aegean) burial are reported to have been found in **Tomb 49 at the *Skales* cemetery near Palaepaphos**. This tomb contained at least three individuals, one of whom was represented by only a few indeterminate bones, but the other two of whom could be sexed osteologically as males⁹. The spits were found together, but it does not follow necessarily that they were deposited as a set. At the *Skales* cemetery, where more than one individual is found in a tomb, burials were usually sequential rather than contemporary, and earlier interments were normally swept aside to accommodate those placed in the same chamber at a later date. As a result, the grave goods from different funerals became mixed up. This confusion was exacerbated in Tomb 49, as in many others, because the contents were removed in modern times before Karageorghis was able to reach the site with a proper excavation team¹⁰. What can be said is that the spits do not match in length: one measures 76.5cm, the others 86.5cm and 87.2cm¹¹. Nevertheless, they all share in common the highly distinctive feature that they are inscribed in the same place with symbols. One spit bears a simple "X", another, two different signs, and the third, five syllabic characters. The latter have been read as "o-pe-le-ta-u", the genitive of the name "'Οφέλτας". Was Opheltas the man who owned the spit¹²?

Tomb 49 has been assigned to Cypro-Geometric I, but some reservations have been expressed over the attribution of the spits to this period. These stem from the fact that the inscriptions comprise the only examples of writing in Cyprus between the end of the Bronze Age and the eighth century. Moreover, I. Nikolaou of the Cyprus Museum has claimed that material of Archaic date was observed in the vicinity of Tomb 49 during its somewhat amateur excavation. This evidence is sufficient to convince B.B. Powell that the spits belong to this later period, and he supports his case with the observation of E.L. Bennet Jr., that one or two of the symbols belong to a signary which was specific to Paphos but is not otherwise attested until after the Cypro-Geometric¹³. The modern political sensitivity of the find must not be forgotten. However, the absence of bronze spits from any securely dated Cypriot or Aegean context after

⁹For a description of the tomb see Karageorghis 1983 59f. For the spits see *ibid.* 61 Nos. 16-18. For the osteological analysis of the human remains see *ibid.* Appendix XII (by Schulte-Campbell) 439-440.

¹⁰Karageorghis 1983 1, 7, 57 (who is keen to stress that he was in residence at Merton College at the time).

¹¹Karageorghis 1970 38.

¹²For a description of these symbols see Karageorghis 1983 61; for a discussion see *ibid.* Appendix IV 411f (by Masson & Masson).

¹³B.B. Powell 1991 90 n42.

the eleventh century¹⁴ indicates that the type ceased to be manufactured from this metal at this point and therefore it seems likely that Karageorghis' dating of the spits from Tomb 49 to Cypro-Geometric I is correct.

The material value of spits is central to the questions addressed in this thesis. To this end, the presence of the personal name on one of the finds provides a possible indication that the individual with which it was associated was stylised at his burial as a man of high status¹⁵. Moreover, according to the analyses of Coldstream 1989 and of Rupp 1989, the assemblage from Tomb 49 comprises one of the most ostentatious displays of material wealth known to have been lavished on a burial anywhere on Cyprus during Cypro-Geometric I. This is apparent if the remainder of the gifts placed in the tomb are listed: nine bowls, two strainers, one rod tripod, one spearhead and one fibula, all of bronze; one fibula of silver; one knife of iron; and one hundred and seventy-nine items of pottery, amongst which were fourteen imported vessels¹⁶. The high quality of many of these articles leads Coldstream to place Tomb 49 in his "*Outstandingly Rich*" or top category of eleventh-century funerary assemblages¹⁷. Likewise, the burial meets many of the criteria for high status defined by Rupp, such as the diversity of artefact and material classes represented, the number of metals present, the quantities of articles for serving food and drink, and the physical construction of the tomb chamber itself¹⁸.

The **Myres Tomb at Kition** offers a similar picture. The burial was excavated at some time before 1895¹⁹, and the remains of the deceased were either not detected, or subsequently lost. It is therefore impossible to establish whether the tomb contained a single or multiple occupant(s),

¹⁴This rubric therefore excludes the bronze spits of unknown provenance mentioned by Karageorghis 1970 38, and also that from the Phoenician levels of the temple at Kition, which I argue in Chapter Four had survived above ground from CG I to CG III before being buried, ditto the unpublished find from a dump of Archaic date from Olympia for which see Karageorghis 1974 171.

¹⁵Coldstream 1989 331; Rupp 1989 335.

¹⁶For the description of the tomb and its contents see Karageorghis 1983 59f. For a comparison of its assemblage with that from other tombs at Palaepaphos-*Skales* see **Appendix A Table 1a**.

¹⁷Coldstream 1989 333 table 37.3.

¹⁸Rupp 1989 353-355.

¹⁹Myres 1910: description of spit 107; illustration Plate XXIX nos 1-3; dating 116-117. Myres assigns this tomb to his "Early Iron Age", and suggests an absolute date of ca. 1000.

and of what gender(s)²⁰. Nevertheless, those details which are preserved show that the remainder of the assemblage included a bronze spearhead, a small amount of drinking equipment of pottery and bronze, three pieces of bronze jewellery, a stone spindle whorl, and two whetstones²¹. The Myres Tomb clearly is not in the same league as Tomb 49 at Palaepaphos-*Skales*, but even so qualifies for Coldstream's second category, "*Richer than Average*".

These two groups of finds of Early Iron Age bronze spits therefore suggest that such goods were placed only in the burials of those who enjoyed high status. Their limitation to this social class suggests that these objects were themselves prized possessions of prestige and value. This conclusion need not necessarily follow, because such conditions might be explained in other ways, for example if burial with spits was restricted to individuals who had fulfilled a particular office or role open only to a few members within the elite. That by no means every grave in the top two tiers of Coldstream's Cypro-Geometric ranking of tomb assemblages included one of these objects might be taken as proof of the role of such factors. However, it seems almost certain that, as in earlier times, spits continued to be made from wood as well as from metal²². No trace of such artefacts has been detected in the funerary archaeology of Cyprus, but they would not have survived except under exceptional environmental conditions which are absent from the cemeteries with which we are concerned. It therefore seems possible that burial with spits was far more common than the finds of metal spits imply, and that it is only the "deluxe" types, here in bronze, which are encountered during excavations. Moreover, there seems to be no dispute that bronze was used to create a wide range of other articles which were used in the marking of high status burials, and that these almost certainly did have considerable material worth. These include vessels, tripods, thymiateria, lamp-stands, and sceptres²³. It seems reasonable to conclude, therefore, that at the start of the Iron Age, and of the archaeological horizon under investigation, the bronze spits were prestige goods of high value.

²⁰Anthropology is replete with cautionary tales about attempts to extrapolate gender from grave goods alone (see for example Metcalf & Huntington 1991). The spearhead from the Kition tomb may imply that it had a male occupant, but the jewellery and spindle whorl encourage the opposite conclusion: see Karageorghis 1983 7 for the association at Palaepaphos-*Skales* of weapons with male individuals, and jewellery with female, and 341 & 343 no. 23 for the association of a spindle whorl with female skeletal remains.

²¹Myres 1910 107-116. The drinking equipment includes in bronze two bowls, and in pottery: six drinking cups; one amphora; one oinochoe; one flask; one fantastic vase with annular body; and one support for a large vessel (such as a cauldron). The jewellery includes bracelets (Myres 1910 108 Nos. 4 & 4a) and one fibula (ibid. No. 5).

²²Evidence for the continued existence of wooden spits will be presented in Chapters **Three to Six**.

²³Coldstream 1989 328; Rupp 1989 353-355.

2.2.1b Cypro-Geometric Iron Spits

The earliest find of an iron spit which may be dated within reasonable limits comes from Tomb 417 at the Kastros cemetery near Lapithos. This tomb belongs to the Cypro-Geometric IA and therefore the iron spits, like their bronze counterparts, appear at the beginning of the Iron Age. What was the relationship between the spits of different metals? As detailed elsewhere in this chapter, there is no difference in morphology. It is tempting to assume therefore that the difference lies in economic factors, and that the one is a cheaper version of the other. Received wisdom states that the value of iron, in contrast to that of bronze, was low by the eleventh century: most archaeologists follow Snodgrass, who believes that by this time in Cyprus ferrous technology had advanced to the stage where iron was used widely for "*practical*" purposes and therefore had a "*low material valuation*"²⁴. According to this model, the iron spit should comprise a low cost copy of its bronze inspiration. How does the reality compare?

Rupp's essay on the material manifestations of high status in societies offers some possible instruction here. Summarising the anthropological work of D. Miller and the archaeological work of S.M. Pollock, Rupp notes that symbols of prestige or status experience constant change. This change is often driven by the conflicting demands of the elite versus those who aspire to the elite. The control of prestige goods is of paramount importance. The aspiring elite must acquire these in order to achieve status and prestige against the wishes of the existing elite, who must thwart this process if they are to protect their position. One of the strategies employed by both sides involves "moving the goal posts", the former through the production of goods which imitate though do not copy exactly the elite archetype, the latter through its modification²⁵. Either of these scenarios might lead to the introduction of a new material for the manufacture of spits. In the first, the use of iron would result from the emulation of the bronze archetype in a form accessible to the aspiring elite. In the second, it would result from the redefinition of the archetype in a form which would remain out of their reach. Let us now turn to the examination of the Cypro-Geometric funerary contexts in which iron spits are found.

The chamber of **Tomb 417 at the Kastros cemetery near Lapithos** contained the remains of two individuals who had been interred on separate occasions during Cypro-Geometric IA. It also held a large and diverse assemblage, not all of which could be attributed to one burial or the other. Nevertheless, the excavation report states clearly that the spit was discovered near the feet

²⁴Snodgrass 1982, quotations from 285.

²⁵Rupp 1989 338-339.

of the skeleton of the first burial, and towards the back right hand corner of the tomb where many of the gifts belonging to this interment had been piled up²⁶. The corpse had been laid to rest richly adorned with jewellery, including pieces made of gold, and this is one of the attributes which persuades Coldstream to assign the burial to his "*Outstandingly Rich*" category²⁷. If, for the reasons outlined above, the remainder of the assemblage is taken together with that of the second burial, then it is possible to note that the tomb incorporates other markers of high status. The number of metal goods recovered not only exceeds that from any other tomb from the Kastros cemetery²⁸, but also includes objects made from a total of three metals (iron, bronze, and gold). Further, the pottery is diverse and exotic, comprising one hundred and fifteen vessels amongst which are three imports. Tomb 417 is also distinctive in that a third individual was buried at the door of the tomb and is thought to have been a slave sacrificed and positioned there to guard or serve the deceased. This latter feature is rare at Lapithos, occurring in only four of a total of thirty nine burial groups excavated at the Kastros necropolis, and surely indicates that those interred in the chamber proper had been persons of some distinction.

A further iron spit was discovered in **Palaepaphos-Skales Tomb 67**. Unfortunately, the ceiling of the chamber had collapsed, and as a result the assemblage had been smashed, scattered, and confused. The number of individuals buried in this tomb was also obscured by the total decomposition of all but a very few uninformative skeletal remains, and Karageorghis is therefore limited to an inference from the pottery that the tomb had been used for at least two burials, one during Cypro-Geometric IA (ca. 1050-1000), and the other at the Cypro-Geometric IB /Cypro-Geometric II interface (ca. 950). Under these circumstances it is impossible to determine in which of these periods, with whom, or with what the spit was buried²⁹. Nevertheless, what may be said is that two hundred and five items were catalogued from the tomb group as a whole, and that this total is matched by only one other tomb in the

²⁶The excavation of this tomb is reported in Gjerstad et al. 1934 (*SCE I*) 226f, but see Åström et al. 1986 38 & n34 for a summary and further references taken from the *Swedish Cyprus Expedition* volumes and more recent publications. It should be noted that Gjerstad et al. attribute the spit to the second burial. However, it seems that they do so to satisfy a number of preconceptions. For tomb 417 as elsewhere, they sex the remains of each of the deceased on the basis of grave goods found in their immediate vicinity, and from this conclude that the first burial was that of a female individual, and the second that of a male. They also identify the spit as a type of spear. They then follow the circular argument that goods from other parts of the chamber must be assigned to each according to the activities which they imply, and the inferred gender of the actors. By this means, a spit mistaken for a spear is thought to belong to the "male" skeleton, in spite of its topographical context.

²⁷Coldstream 1989 329, 333 table 37.3.

²⁸For this observation see Åström 1986 38-39.

²⁹For a description of the tomb and its date see Karageorghis 1983 158f. For the spit see *ibid.* 162 No. 56 + 76.

cemetery. The majority of this vast array of goods comprised pottery, including three imports. Amongst the metals, other than the spit there were: three bowls, one ladle, one fibula, one pin, one weighing balance, and one piece of wire, all of bronze. Of gold there were two pins, one ring, four ear-rings, one spiral, five plaques, seven discs, and fifteen rosettes, adding up to thirty five separate items, the most from any one context at the site. On the basis of the number of status symbols identified by Coldstream he places the tomb in his "*Richer than Average*" category³⁰.

Another single iron spit was discovered in **Kaloriziki Tomb 6b**. This burial, excavated in 1933, also seems to span the interface between Cypro-Geometric I and II (ca. 950), but detailed contextual information remains unavailable in the absence of its publication³¹.

The latest finds of iron spits from Cypro-Geometric funerary contexts return us to the **Kastros cemetery at Lapithos**. Two examples were unearthed in **Tomb 411** dating to Cypro-Geometric IIB (after ca. 950 up to ca. 850). The rest of assemblage to which they belong included: three other iron artefacts (one knife, one pin, and one object interpreted by Karageorghis as a further spit, though it has a round cross-section and therefore probably was not used as such for reasons which will be stated below); seven bronze artefacts (one bowl, four fibulae, one pin, and one ring); one ivory pin; and twenty five pottery vessels³². One other example was discovered in the upper burial layer of **Tomb 422**. No other objects were found with the single male individual who was placed in the chamber during Cypro-Geometric IIIB (ca. 850-750)³³.

These tombs were evidently not so richly furnished as those from the earlier period, and therefore seem to reflect a local decline in the custom of burying large quantities of grave gifts with the dead. Whether this represents a general "*stagnation and pauperisation*" in the culture of Lapithos at the end of the Cypro-Geometric³⁴, or merely a change in ritual funerary customs is of

³⁰For the description of the tomb and its contents see Karageorghis 1983 158f. For a comparison of its assemblage with that of other tombs in the Skales cemetery see **Appendix A Table 1a**. For Coldstream's ranking of the tomb see Coldstream 1989 333 Table 37.3.

³¹Karageorghis 1974 169.

³²Initial report in Gjerstad et al. 1934 (SCE I) 213f, but see Åström et al. 1986 38 for a summary and n37 for further references.

³³Gjerstad et al. 1934 241-246.

³⁴Gjerstad et al. 1934 264.

less concern here. What matters is that in relative terms the collection of metal goods interred with the single occupant of Tomb 411 outshone those from contemporary graves at the cemetery³⁵. Similarly, the interment of the person who was added last to the chamber of Tomb 422 is exceptional in that the occasion was marked by the apparent sacrifice of three slaves who were buried in the dromos.

From the above it may be observed that the quantities in which iron spits occur in Cypro-Geometric I, II, and III, are no greater per period than those in which the bronze types are found in Cypro-Geometric I, and per grave are less. Furthermore, spits remain restricted to the richest assemblages, and do not start to appear in tombs lower down the social scale. According to the theories outlined above, the combination of these facts suggests that the archetypal bronze spit has been translated into iron to thwart its acquisition and appropriation by the aspiring elite. However, the absence of bronze spits from the picture raises some concern over the interpretation proposed. These should provide the corollary of the ferrous pattern as the type is appropriated by the aspiring elite, decreases in prestige and thereby features in ever larger quantities in tombs lower down the social scale during Cypro-Geometric II and III. The fact that they do not do so, combined with the overall similarities between the types and distribution of the spits of each metal demands that the transition from the one to the other be seen less in terms of innovation and change and more in terms of continuity. A possible solution to this problem is that Early Iron Age smiths regarded the difference between bronze and iron more in terms of physical characteristics than of value³⁶: iron spits are not cheap imitations of bronze spits.

2.2.1c Cypro-Achaic Spits

The distribution of spits in Archaic graves on Cyprus shows much continuity with that of the preceding period. Spits continue to be found only in burials of high status, as a description of the relevant tombs and their contexts shows.

At **Salamis**, a bundle of twelve iron spits was found in **Tomb 79**, which lies within the "Royal Cemetery" and has been described as the richest ever found on Cyprus³⁷. It contained two burials, the first of which included the spits and may be dated to the end of Cypro-Geometric III

³⁵See the table in Åström et al. 1986 39.

³⁶Cf. Zaccagnini 1990 502.

³⁷Karageorghis 1973 76.

or the beginning of Cypro-Archaic I (= ca. 750)³⁸. The tomb had been robbed, and was almost wholly bereft of gold or silver for this reason³⁹, but in spite of the depletion, Karageorghis and his team recovered more than one thousand catalogued items⁴⁰. Rupp suggests that the purpose of this vast assemblage was to express and legitimate the power and rule of a royal family over the Salaminian aristocracy⁴¹, and to that end, no visible expense was spared.

Ornate furniture decorated with silver and imported ivory had been buried with the deceased, in addition to grandiose wheeled vehicles complete with draft animals⁴². There were vast quantities of pottery, including one hundred and forty simple Cypriot vessels, and a further sixty-four which had been covered with tin, presumably to give them the appearance of solid silver. The latter constitutes the only clear example of an "economy" amongst the grave goods, and would not have been obvious to the naked eye during the funeral⁴³. As would be expected, there is little indication as to what fine textiles or other goods made from organic materials may have been placed in the grave, but the faunal remains tell an engaging story. The deceased had been buried with a lavish banquet comprising different types of bird⁴⁴, the eggs of geese or swan⁴⁵, edible crab, shell-fish⁴⁶, and the delicacy of *clarias*, a "rich and palatable" species of fresh-water catfish from Northern Africa or the Levant, which can only have been imported live and bred in captivity on Cyprus⁴⁷. A quantity of the shells of *murex trunculus* was also found, a species

³⁸For the relative dating see Karageorghis 1973 121. The absolute dating was originally given by Karageorghis as ca. 700, but a consensus of opinion has subsequently raised the lower limit for CG III by a half century: see Coldstream 1985 47, and Rupp 1988 116-117.

³⁹Karageorghis 1973 4.

⁴⁰A summary of the assemblage included with the first burial may be found in Rupp 1988 120, and a full description of each item in the appropriate section of Karageorghis 1973 4-122.

⁴¹Rupp 1988 esp. 129-134.

⁴²Karageorghis 1973 12.

⁴³Karageorghis 1973 115; Rupp 1988 127. The possibility that tin was more valuable than silver seems highly unlikely if exchange ratios from the Neo-Babylonian period are considered. These vary from 1 : 10 to 1 : 40 for silver : tin: see M.A. Powell 1990 85-86.

⁴⁴Karageorghis 1973 268 = Appendix VIIIA: the species represented are as follows: Chukar or Rock Partridge, Francolin, Shoveler, Song Thrush, Duck.

⁴⁵Karageorghis 1973 256f = Appendix VII.

⁴⁶Karageorghis 1973 270f = Appendix IX: the species identified included: *eriphia spinifrons* and *pachugrapsus marmoratus* (crab) and *charonia variagata*.

⁴⁷Karageorghis 1973 259 Appendix VIII.

which, though edible, was principally exploited by the Phoenicians for the manufacture of dyes⁴⁸.

The assemblage of metal goods proved no less exotic, and included: bronze trappings for horses; a bronze spear and shield; a large bronze cauldron complete with protomes, lid, and iron tripod stand; an iron knife; and a silver shield boss. The tomb may also have contained an iron sword, as indicated by the presence of two ivory toggles⁴⁹. However, as will become apparent, the most important find so far as the interpretation of the spits is concerned was a pair of iron warship-shaped firedogs. It is regrettable that it was not possible to determine by osteological means the sex of the individual who was buried here, but the presence of the metal weapons and armour indicate a male individual, or someone who was stylized as a male warrior in death.

The excavation of a single tomb at **Palaepaphos /Kouklia** produced twenty fragments of what Karageorghis estimates to have been eighteen spits⁵⁰. The tomb had been in use in three separate periods, and the spits belonged to the earliest layer, dating to Cypro-Archaic I⁵¹. Part of the original assemblage of grave goods seems to have been removed and lost when the tomb was re-used in the Cypro-Archaic II and Roman periods⁵². However, there are plenty of signs amongst those articles which were left behind that it had comprised a prestigious array of riches. These include various imported articles⁵³, such as a scarab of faience from Egypt, horse-gear of bronze from Lindos and the Near East, a bronze fibula of Boiotian type⁵⁴, and pottery from Ionia and the Cyclades⁵⁵. The remainder of the finds comprised a pair of iron warship-shaped firedogs, an iron dagger, an iron horse-bit, two other bronze fibulae, a bronze bracelet, a bronze buckle, a bronze sieve, gold leaf, and other items of pottery, much of which was made up of miniature

⁴⁸For the Phoenicians' use of *murex trunculus* see Karageorghis 1973 120 and his footnote 2 for further references.

⁴⁹For the toggles see Karageorghis 1973 118-119.

⁵⁰Karageorghis 1972 172.

⁵¹Karageorghis 1963 266.

⁵²Ibid.

⁵³Karageorghis 1963 294f.

⁵⁴Karageorghis 1963 290.

⁵⁵Karageorghis 1963 268.

vessels⁵⁶. Further marks of distinction included the fact that when the tomb was created for its first occupant, it was situated on its own, away from the cemeteries of lesser mortals⁵⁷. The deceased was also honoured with the sacrifice and burial of horses⁵⁸.

A pair of iron spits was found in **Tomb 12 at Tamassos**. Unfortunately, this tomb was robbed in Antiquity, and details of its excavation by Ohnefalsch-Richter in 1889 were not published until 1964, by which time much information had been forgotten or lost. There are signs, nevertheless, that the burial had been rich and prestigious. The tomb lies in the "Royal Cemetery", and much fine monumental architecture had been incorporated in its construction. Moreover, even though virtually all gold and silver had been despoiled by looters in antiquity, it was not wholly devoid of opulent grave goods. Ohnefalsch-Richter discovered a sword decorated with ivory and silver studs, and evidence for a second similar such weapon in the form of a lone sword nail with gold head. The grave goods had also included a bronze helmet, and bronze sceptre⁵⁹. The sword and tomb architecture suggest that the burial dates to the end of Cypro-Archaic I, or beginning of Cypro-Archaic II (ca. 600)⁶⁰.

Eighteen spits were found during the excavation of one of two tombs at **Patriki**. These were not in fact discovered inside the tomb, but immediately outside, with a number of other articles including a pair of iron warship-shaped firedogs, an iron knife, some clay lamps and whorls, and a selection of native pottery. This assemblage is presumed to comprise the remains of goods which had been thrown out of the tomb by looters when it was ransacked. Clearly it is impossible to say what other items it may once have incorporated, and so remark upon any other aspect of the burial, such as the status of the deceased. The typology of the finds inspires the guess that the burial to which they belonged took place during Cypro-Archaic II⁶¹.

The remains of one probable spit were found in the earliest burial layer of **Tomb 2 at Idalion**, dating to near the end of Cypro-Archaic II (ca. 500). The goods with which the spit was

⁵⁶Karageorghis 1963: iron 277f; bronze 270f; pottery 268f; miscellanea 281f.

⁵⁷Karageorghis 1963 265.

⁵⁸Karageorghis 1963 281f.

⁵⁹The tomb and its contents are discussed by Myres 1910 108 and Masson 1964 225-230. For its architecture see Westholm 1941 36-39.

⁶⁰Dating: sword: Karageorghis 1967 43 & 53; architecture: Westholm 1941 36-39, Masson 1964 225.

⁶¹Karageorghis 1972: finds 166f; dating 170.

associated included: two iron tools; an iron knife; sixteen bronze items amongst which were some jewellery, mountings, a lamp, a weight and some fragments; nine gold and nine silver items; seven pieces of ivory; nine pottery vessels, amongst which was an Attic black figure lekythos; and a miscellany of bone, paste and alabaster objects⁶². Karageorghis comments that the quantity of pottery found was disproportionately small compared to the quantities of other materials and concludes from this observation that some of the original grave goods were lost when the burial was disturbed during the later re-uses of the tomb⁶³. Nevertheless, the surviving finds, and especially those of the precious metal objects and perhaps the imported Attic Black Figure vase, indicate that this burial had been richly furnished⁶⁴. Two other tombs were excavated in the vicinity, but the only one which contained contemporary levels had been robbed⁶⁵.

One further indication that the role of iron spits in the Cypro-Archaic period was similar to that which they performed during the Cypro-Geometric comprises the number of tombs in which they were placed. In the Cypro-Geometric spits feature in a total of seven contexts and in the Cypro-Archaic five contexts, suggesting that their distribution remained limited. There is, however, at least one important change. The maximum number of spits represented in any one assemblage rises from two iron spits (three bronze), to twelve and then eighteen. In Salamis Tomb 79 the fact that the number deposited is greater than that found in any single assemblage of the preceding period may be explained at least in part by an overall increment in the number of goods being used in acts of conspicuous consumption at the grave⁶⁶. Nevertheless, given that the number of spits in the relatively "poorer" burials at Kouklia and Patriki is actually greater, it seems more likely that some other factor is at work, namely inflation. This explanation would fit well with the idea that these artefacts were prestige goods, for as Rupp suggests, one of the other ways in which the processes of emulation and innovation are reflected is in an increase in the number of goods required to manifest high status⁶⁷. Likewise, the form of the archetype may be

⁶²Karageorghis 1964: dating 53; finds 65.

⁶³Karageorghis 1964 71.

⁶⁴Karageorghis 1964 53. The value of the imported vase is subject to the arguments of Gill and Vickers 1990 & 1994 vs. Boardman 1996.

⁶⁵Karageorghis 1964 48 and 82f.

⁶⁶Rupp 1989 351.

⁶⁷Rupp 1989 339.

modified in size⁶⁸, and those spits for which a measurement of length is available indicate that this is what happens. Early Cypro-Geometric bronze and iron spits measure 75cm to 90cm and 30cm in length respectively, whereas the late Cypro-Geometric /early Archaic spits from Salamis Tomb 79 average 150cm⁶⁹.

The reduction of the number of spits per burial to just two at Tamassos and one putative example at Idalion may in turn reflect the continuation of this process to the point at which their prestige value is lost, and they are included in funerary assemblages for purely symbolic reasons. However here, as before, it is impossible to evaluate the likelihood of this scenario because the frequency with which the dead were buried with spits made from perishable materials remains unknown.

2.2.2 *KRETE*⁷⁰

The characteristics of the distribution of spits observed in Cypriot graves are largely repeated in Aegean Greece, as is apparent if the finds from each region are described starting with Krete.

Site	Area	Date	Qty
Knossos	North Cem.	EPG-O (ca. 970-630)	60
Knossos	Fortetsa	EPG-O (ca. 970-630)	n
Eleftherna	K	G (ca. 820-710)	n
? Kavousi	-	? LG /EO (ca. 710)	?

2.2.2a *Knossos North Cemetery*

It is best to begin the survey of spits from funerary contexts in Krete with the Knossos North Cemetery, because a large collection of about sixty spits was found here, and a considerable amount of information may be discerned about the circumstances of their burial. The site, which is made up of about eighty multiple-use chamber tombs, does not comprise a discrete burial ground in its own right, but forms part of a much wider area in which the Knossians disposed of

⁶⁸Ibid.

⁶⁹See **Appendix D**.

⁷⁰Exclusions: Gortyn: see **Appendix C**.

their dead between the sub-Minoan and Orientalising periods (mid-eleventh century to ca. 630)⁷¹. Nevertheless, its early use and central position, suggest that it was the kernel around which the necropolis later developed⁷². Cavanagh estimates that the number of individuals interred here over a period of about 350 years lies between 422 and 671⁷³, which equates to just over two burials per tomb per generation⁷⁴. This latter sum allows for the fact that not all of the tombs were in use for all of the time, and that while some were employed for up to eight generations, the majority received their last occupants after only three or four⁷⁵. Men, women, and children were placed in the tombs⁷⁶, and Cavanagh concludes from this evidence that they were most likely used by families⁷⁷.

The implications of the above are that burial in this locale was reserved for a small number of narrowly defined family groups who enjoyed this privilege for only a relatively short time. These families seem to have possessed considerable disposable wealth, for not only were the deceased cremated and their bones collected with exemplary efficiency⁷⁸, but they were interred with a substantial array of grave goods. These were buried for a variety of reasons. Some articles fulfilled various functions in the funeral ritual, while others provided for the deceased in the afterlife, but an equally important motive behind their inclusion seems to have been the deliberate destruction of wealth at the grave-side as a means of conspicuous consumption⁷⁹. One of the most distinctive characteristics of the latter is the "killing" of objects to render them unusable, and the fact that several spits had been bent in two suggests that they belong to this

⁷¹*KNC* 712: there is no evidence of significant human activity on the site before the sub-Minoan, but the cemetery was re-used in Hellenistic and Roman times.

⁷²*KNC* 714.

⁷³*KNC* 659-660.

⁷⁴*KNC* 664.

⁷⁵*KNC* 659. Cavanagh suggests (*KNC* 666) that this pattern of short duration would be consistent with the handing down of each tomb according to rules of strict patrilineal succession.

⁷⁶*KNC* 680.

⁷⁷*KNC* 664.

⁷⁸*KNC* 685f: Musgrave observes that Knossian cremation compares favourably with a modern British crematorium in these terms, and that those pieces of bone which were left were very small, yet the average weight collected for burial was greater at this cemetery than at any other pre-Classical Greek site.

⁷⁹*KNC* 668-674.

category⁸⁰.

The spits were found in nine tombs ranging in date from the Kretan Early Protogeometric to the Orientalising period (ca. 970-630)⁸¹. They were not deposited in every tomb, but neither does their distribution seem random. If the tombs are ranked according to the quantities of iron and bronze which they contain, evidence emerges that they belonged to the wealthier members of an already privileged group. Catling's analysis of the weight, number, and number of types of bronzes deposited in each tomb places six of the tombs with spits, Tombs 75, 100, 107, 219, 283, and 285 (in numerical order), in the richest group, followed closely by Tomb 218⁸². Snodgrass's analysis of the iron finds produces similar results, though by different means. He compares the prevalence of five major classes of artefact (tools, weapons, spits, firedogs and funerary accoutrements in descending order of frequency) and suggests that the cumulative inclusion of each successive type denotes higher and higher rank: tombs with tools or weapons alone lie at the bottom of his league, whereas those with all five types lie top. He cross-checks this result against the comparison of the numbers of iron tools and weapons, and the range of types in each tomb. The tombs with spits invariably fall within the top strata: Tombs 219, 285, 283, 75, 100, 107 and 218 in the principle analysis; Tombs 219, 285, 283, and 218 by the second; and Tombs 75, 218, 219, 283 and 285 by the third⁸³.

Catling and Snodgrass are reticent about the reliability of their rankings, because the assemblages from the Knossos North Cemetery have been depleted by a number of processes, including the repeated rearrangement of grave goods during the reuse of the tombs, looting and disturbance by activities on the site during Hellenistic, Roman and early Christian times. The deleterious effects of these factors are manifest in the large numbers of artefacts of which substantial portions were never found, in spite of the high quality of the excavation. Some tombs, including Tombs 24 and 247, the only ones with spits not to be included in the top rank in terms of wealth, also showed clear signs that they had been robbed or cleared out in antiquity⁸⁴. Catling and Snodgrass are also concerned by tombs where there was evidence for the burial of

⁸⁰E.g. spits: *KNC* 223 = Tomb 219.f131; firedogs: 224 = Tomb 219.f138.

⁸¹A summary of these finds and their contexts is presented in **Appendix A Table 2a**.

⁸²*KNC* 547-550.

⁸³*KNC* 575-577.

⁸⁴*KNC* 73: Tomb 24 was robbed in antiquity; *KNC* 229: Tomb 247 was cut through by Hellenistic and Roman tombs.

horses, amounting in some cases to no more than the bit. Moreover, tombs from which equine skeletal remains were recovered failed to correlate with tombs identified as rich, in spite of the fact that such animals were regarded as a highly prized commodity during the Dark Age and were used at other cemeteries to draw the hearse of a rich master to the grave, after which they were themselves slaughtered and interred⁸⁵.

There can be no doubt that much material has been lost from the North Cemetery, and that some tombs have suffered more than others. However, Catling and Snodgrass seem overly pessimistic. In particular, their concern over the evidence for horses seems overstated. The discovery of a bit in a grave need not necessarily imply that a horse was buried there, or sacrificed during the funeral, in addition to which no trace of any wheeled vehicle was found at the Knossos North Cemetery, thereby jeopardising the theory that the horses were used to draw the dead to the grave on a hearse. Finally, those tombs which did contain equine skeletal remains lie consistently towards the bottom of their rankings, and it seems fair to conjecture that such sacrifices were reserved for a specific class of Knossian, or that the destruction of such a pedigree beast was perceived as the equivalent of the consumption of a substantial array of other grave goods. It seems reasonable to conclude, therefore, that the spits are associated with the richest burials at this site.

It is difficult to garner further contextual information from the Knossos North Cemetery. All the assemblages in which the spits were found included weapons, but this class of artefact was so prolific and widespread that the significance of this correlation is weak. It is also impossible to detect any close association between spits and any particular demographic group or set of grave goods, because post-depositional processes have obscured the original assemblages, and there was no segregation between adults and children, or male and female at the cemetery⁸⁶.

It is important to stress, however, that the number of individuals interred with spits was much smaller than it might seem. This is because these artefacts tended to be buried not singly, but in sets. In particular, a collection of at least six spits seems to have been found in an LG level in Tomb 219, and three separate EO /MO contexts from Tomb 285 yielded finds of at least four, eight and ten spits⁸⁷. Therefore, although the total number of examples recovered from the

⁸⁵*KNC* 543-544 & 576-577.

⁸⁶See *KNC* 680f (=Ch. 19 by Musgrave) for an analysis and discussion of the human remains from each tomb; *KNC* 651f (=Ch. 18 by Cavanagh) for a discussion of the burial customs.

⁸⁷*KNC* 590-591. See also my Appendix A Table 2a.

Knossos North Cemetery amounts to more than sixty, and therefore exceeds that of any other graveyard, the number of sets totals just twenty-one, and suggests a far more limited distribution than is otherwise implied.

2.2.2b Knossos Fortetsa

The Fortetsa cemetery occupies an area adjacent to the North Cemetery and, as mentioned above, forms part of the same overall burial ground⁸⁸. The contexts of the Fortetsa finds are therefore effectively identical in character to those from the North Cemetery, and need only be summarised. The cemetery was made up of chamber tombs in which a number of individuals had been buried on several separate occasions. Rearrangement of the contents of the tombs in the course of their history of use had left the original assemblages indistinguishable, though it does seem clear that the dead had been accompanied by a rich and often exotic assortment of grave goods, and that they were members of a wealthier class of Knossian.

Spits were not a common form of grave gift, but were found in just three of the twenty-two tombs excavated at the site. Tomb VI of the Early Protogeometric period contained two finds of single spits⁸⁹, and the slightly later Tomb XI contained two finds of indeterminate numbers of spits. The latter were contained within corroded masses of iron, and analogy with similar concretions from the North Cemetery suggests that a maximum of about ten spits would have been represented in each case⁹⁰. The third tomb to contain spits was the heavily used Tomb P of the Orientalising period, which held one find of a single spit, and three separate finds of "large collections"⁹¹. As at the North Cemetery, little more may be said because the burial groups had been thoroughly disturbed before excavation. Nevertheless, it is possible to make one important observation. Tomb VI was devoid of weapons and any other item which could be readily identified as part of a warrior's definitive accoutrements, and this fact indicates that burial with spits was not exclusive to this social group.

⁸⁸KNC 714.

⁸⁹Brock 1957 15 nos 108 & 114.

⁹⁰Brock 1957 22 nos. 192 "long strips of rectangular section", 203. Compare with e.g. KNC 251 Tomb 285.F43-5, Tomb 285.F53, 56, 41, and KNC 252 Tomb 285.F61. Karageorghis 1974 171 postulates that there were twelve spits in each bundle, but the North Cemetery finds show that this need not have been so.

⁹¹Brock 1957: single spit 137 no. 1613; bundles 138 nos. 1621, 1622, 1630.

2.2.2c Eleftherna

Fragments of iron spits have recently come to light at Eleftherna⁹². The delicate stratigraphy of this site was disturbed by agricultural activity, and so once again information about the precise context of the spits, including the assemblage with which they were originally associated, is limited⁹³. Nevertheless, useful general observations may be made about the sort of person who received burial here. The cemetery was used for the disposal of adults during the Geometric period⁹⁴. Cremation was thorough, the temperature reaching 900°C or more⁹⁵, and the deceased were buried in style with rich and often exotic grave goods⁹⁶. Many of the graves contained "warrior equipment"⁹⁷ but, as both males and females were buried at this site⁹⁸, it is not possible to associate the spits with any certainty with fighting men. Nevertheless, a link between spits and the upper classes in terms of wealth seems clear.

2.2.2d Kavousi

The evidence for spits at Kavousi is largely circumstantial. In 1895 one Theodosios Mitsakis, a Kretan peasant, discovered a tholos tomb. Four years later, the contents were emptied and sent to the Heraklion Museum for study and publication by Sir Arthur Evans. The promised excavation report never appeared⁹⁹, but photographs of some of the material were sent to Evans at the Ashmolean Museum, Oxford, and in 1971 Boardman used these to bring to light "*some of the more important and interesting pieces*". Boardman suggests that one of the fragments in one of the photographs belongs to a spit¹⁰⁰, an identification which is supported by the discovery in the same tomb of two warship-shaped firedogs. These do not otherwise occur without spits in Iron Age Greece¹⁰¹. The tomb is difficult to date, but although it appears to include material

⁹²Stampolidis 1994 107 no. 58 & pl. 23.

⁹³Stampolidis 1990 393.

⁹⁴Stampolidis 1990 381; 1994 107.

⁹⁵Stampolidis 1990 385.

⁹⁶Stampolidis 1990 383f.

⁹⁷Stampolidis 1994 107.

⁹⁸Stampolidis 1990 388.

⁹⁹See Boyd 1901 esp. 127 for the discovery of the tomb.

¹⁰⁰Boardman 1971 7 & plate Γ bottom LH corner.

¹⁰¹Boardman 1971 7.

from Late Minoan III, there seems little doubt that most of the Iron Age pottery and metalwork belongs to the Late Geometric /Early Orientalising Periods¹⁰².

2.2.3 LEFKANDI

The earliest find of spits in Greece beyond Cyprus and Krete comes from the Toumba cemetery at Lefkandi in Euboia. Fragments of up to thirteen spits¹⁰³ were discovered here in Tomb Pyre 13, which is dated to Sub Protogeometric II (ca. 875-850)¹⁰⁴. They were accompanied by a small selection of other grave goods including: an iron knife, an iron spearhead, three iron axes, a bronze dirk, a bronze shield boss, a bronze vessel, a whetstone, and an array of pottery fragments from at least two kraters, a skyphos, a jug /amphora, a jug /oinochoe, and a pyxis. Most of these objects had been burned on the funeral pyre with the body. A small quantity of cremated human bone was also found¹⁰⁵.

The modest assemblage from Toumba Pyre 13 is typical of those from other pyres both in this and in the other four cemeteries discovered in the environs of Lefkandi. However, there was a second mode of burial at this site, which entailed the interment of human remains and grave goods in tombs. The assemblages from these contexts form a sharp contrast to those from the pyres: they are richer in terms of both the quantities of articles present, and in the selection of materials from which they were made, which typically include gold and faience. Nevertheless, it does not follow that these two types of burial represent the graves of two different social classes in terms of relative wealth. In the most completely excavated parts of the site, pyres and tombs occurred in a one to one ratio, and the quantities of human bone recovered were enough to fill all the graves of only one type. The excavators therefore conclude that the dead were initially burned on the pyres with a small selection of goods, and that their cremated remains were subsequently collected and transferred to the tombs where they were finally laid to rest with a much more substantial array of grave gifts¹⁰⁶.

Therefore it seems likely that the articles found with the spits in Toumba Pyre 13 form only a

¹⁰²Boardman 1971 6, 7.

¹⁰³Popham et al. 1982 229 nos. 6 & 7. Eighteen fragments were found, but some join reducing the total to thirteen.

¹⁰⁴Popham et al. 1982 246.

¹⁰⁵Popham et al. 1982 227-229.

¹⁰⁶Popham et al. 1980 210f. Not all of the evidence conforms to this pattern.

small part of a much larger and richer assemblage, most of which was not buried at the site of the pyre, but interred in a tomb. Burial on such a lavish scale, in which so many fine goods were conspicuously consumed, must surely have been the preserve of the elite, and it is pertinent to add that the Toumba cemetery was by far the richest of the five discovered in the environs of the settlement at Lefkandi. The spits therefore once again seem to be associated with a member of the upper social stratum in terms of wealth.

2.2.4a ARGOS

Just under thirty spits have been recovered from various graves at Argos dating from the Middle Geometric II to Late Geometric II (ca. 800-690):

Site	Context	Date ¹⁰⁷	Qty
Makris Plot	Grave II	MG II (ca. 800-765)	1
Theodoropoulou Plot	-	LG I (ca. 765-730)	6
South Cemetery Area	Tomb 14/3	LG I (ca. 765-730)	?1
South Cemetery Area	Tomb 1	LG II a-b (ca. 730 - before ca. 690)	6
Panoply Tomb	Tomb 45 ¹⁰⁸	LG II a-c (ca. 730-690)	12
Museum Area	Tomb 176/2	LG II c (ca. after 730 - ca. 690)	?1
Kympouropoulos Plot	Grave VI	LG (ca. 765-690)	2

2.2.4a (i) The Tombs

The tombs in which the spits were found do not come from any true cemetery, or even from a discrete burial area, but from a number of family plots scattered across the ancient city¹⁰⁹. Therefore, unlike the other sites which have been encountered so far, there do not seem to have been any particular plots or locations set aside for specific social groups. There does, however, seem to have been an important distinction in burial rite. During the eighth century, the Argive dead were buried in one of three types of inhumation: in the first, the body was placed in a plain pit; in the second, a pithos /pot; and in the third, a stone cist¹¹⁰.

¹⁰⁷I copy Foley 1988 53 n4 here in following the absolute dates suggested by Courbin 1966 and Coldstream 1968 up to and including MG II, after which the modifications of Bommelaer 1980 are preferred.

¹⁰⁸This tomb is also known as "Odeion Area Tomb 45".

¹⁰⁹Foley 1988 39-40.

¹¹⁰For a summary and discussion of eighth century Argive burial practices see Foley 1988 35-40 (pit burials: 38; pithos /pot burials: 37-38; cist burials: 36-37).

It is not clear what rules governed the way in which each individual was buried. The three types of grave almost certainly relate to different social groups, but whether these were defined by factors such as ethnicity, or religion, is at present obscure. It seems likely, nevertheless, that the relative wealth of the deceased and those responsible for his /her funeral was a factor.

Inhumation in a plain pit was clearly the least expensive way of disposing of the dead, since it entailed the digging of a plain hole in the ground and seldom the inclusion of any grave goods. Burial in a pithos /pot entailed more cost and effort, because it was necessary to procure a ceramic container, which could, on occasion, be highly ornate, and because a small number of objects was frequently placed in the grave with the deceased. Burial in a cist seems to have been the most expensive method of all, with considerable resources being consumed both in the construction of the stone cist itself, and in the provision of fine artefacts to accompany the dead which, unlike those in the pithos /pot burials, frequently included quantities of metal items.

It must be remembered that the placing of the body in its final place of rest constitutes only one part of the funeral ritual¹¹¹, and it is therefore possible that the level of expenditure visible in the different types of grave at Argos provides a misleading picture of that invested overall in the disposal of the dead. Nevertheless, there are further indications that the cist burial was associated with the elite not just of this city, but of the whole region. At the local level, although there are no real cemeteries as such at Argos, it transpires that cist burials tend to be concentrated towards the centre of the city, and pit and pithos /pot burials towards its fringes. Foley is surely right to interpret this information as indicative of the political landscape, and so those who were buried in the cists are placed at its heart. At the regional level, if the Argolid was "*quite homogenous in its burial customs*" during the eighth century, and tombs at Argos in general may be ranked above those of its neighbours¹¹², then it follows that the cist graves of Argos must constitute the richest burials from the whole of this part of Greece¹¹³. It is to this group that the tombs which contain spits belong.

The correlation at Argos between burial with the greatest riches and burial with spits becomes

¹¹¹See e.g. Metcalf & Huntington 1991; I. Morris 1987 29 summarised by Rupp 1989 342.

¹¹²Foley 1988 40 & 45.

¹¹³Foley 1995 81 adds the caveat that archaeology in the Argolid has been sporadic and uneven. It is therefore possible that rich Early Iron Age burials lie as yet undiscovered in the environs of centres other than Argos.

even more apparent if the assemblages from the cist tombs are placed in a crude ranking¹¹⁴. To produce this it is first necessary to eliminate potentially confusing data. This includes those burials which could not be assigned to a meaningful chronological period, those from which part of the assemblage had been lost due to post-depositional factors, and those which had been re-used but which could not be separated into individual burial groups¹¹⁵. The remaining tombs may then be placed into the various relevant chronological periods (MG II, LG I, LG II, "LGx") to mitigate the effects of the fact that there is a gradual increase over time in the number of articles deposited¹¹⁶. The raw numbers of items of pottery, bronze, and iron, as well as the total number of artefacts per tomb are then compared and ranked accordingly within each group, and the final ranking is produced by adding up the individual scores for each grave to produce a "rank of ranks".

The results are given in **Appendix A Table 3**, but before these are considered it is necessary to note that the effectiveness of this method is open to criticism. It takes no account of the size of any of the objects deposited in the tombs, and so, for example, a bronze pin is treated with equal weight to a bronze panoply. It also fails to account for parts of the original assemblages which have decayed completely, such as textiles or the contents of vases for unguents or perfumes. A further problem lies in those tombs which were re-used, because the cost of providing the cist would have fallen to the initial burial, but not to a subsequent burial¹¹⁷. Finally, no allowance has been made for the probable difference in the value of native and imported pottery vessels, or indeed the relative values of any of the analytical components: how does a grave containing seven items of pottery, but none of metal (Parasekevopoulos Grave 1), compare in terms of investment to one which contained only one item of pottery, but two of iron (Bonoris Plot Tomb 179)? There are, therefore, some grounds for scepticism about the reliability of the ranking, but the fact that there is a fair degree of consistency in the position of each tomb according to each category suggests that it does have some validity.

What the table seems to show is that those tombs which contained spits tended to be the richest. In particular, the assemblages from the single Middle Geometric II tomb and the three Late

¹¹⁴It would, of course, be more desirable to follow the methodological approaches adopted by Coldstream 1989 or Rupp 1989 in the analysis of Cypro-Geometric tombs, but there is insufficient space or scope to do so in this thesis.

¹¹⁵The few exceptions to these rules are justified in the footnotes to **Appendix A Table 3**.

¹¹⁶Foley 1988 36-37.

¹¹⁷E.g. Bonoris Plot Tomb 173/1 and Tomb 173/2.

Geometric II tombs which contain spits far outstrip those of their contemporaries. Indeed, the overall preeminence of the Panoply Tomb and Museum Area Tomb 176/2 seems beyond question in the realms of bronze and iron. The evidence from Argos therefore seems to point to the conclusion that iron spits tended to be buried only in the most wealthy tombs of this city during the eighth century.

2.2.4a (ii) Assemblages

Unlike the funerary contexts encountered so far in Cyprus, Krete, and Euboia, most of the cist graves at Argos were used only once. Moreover, in the case of those which did receive subsequent burials, the excavators were usually able to segregate the human remains and accompanying grave goods from each successive interment¹¹⁸. Of the seven tombs which included spits, only in the case of **Kympouropoulos Plot Grave 6**¹¹⁹ was it not possible to be certain of the individual or complete set of objects with which they had been interred. The remaining six therefore provide a useful opportunity to identify those persons and classes of artefact with which the spits were associated.

The earliest, **Makris Plot Grave 1**¹²⁰, dating to the Middle Geometric II period, contained just one iron spit¹²¹ which was accompanied by: three iron swords¹²²; a bronze fibula; two bronze rings; and nineteen vessels, most of which were associated with the activity of drinking¹²³. From the following period, Late Geometric I, **South Cemetery Area Tomb 14/3**¹²⁴ contained a fragment of just seven centimetres of square-section iron rod, which has been interpreted as the

¹¹⁸Foley 1988 34 & 39: of forty-five possible eighth-century cist graves, sixteen had been re-used.

¹¹⁹Papachristodoulou 1969 159-162 summarised by Foley 1988 204 with additional minor references. This grave contained two inhumation burials. A skyphos and iron dagger were associated with the first burial, and six small pots with the second, but it was impossible to establish to which inhumation the two fragments of iron spits (26cm and 10cm), a further iron dagger, and an unidentified iron object belonged.

¹²⁰Verdelis & Alexandri 1963 57-58, summarised by Foley 1988 207, with additional minor references.

¹²¹Verdelis & Alexandri 1963 58: "σιδηροῦν ἀντικείμενον δυσδιάκριτον", subsequently identified as a spit, presumably by Foley.

¹²²Foley 1988 207 says that this tomb contained three iron pins, but no such objects are mentioned in the original report by Verdelis & Alexandri 1963 58. The latter does, however, include three iron swords, and it seems that a mistranslation has crept into Foley.

¹²³Verdelis & Alexandri 1963 58: amphora x 6; skyphos x 5; oinochoe x 3; pyxis x 3; aryballos; plate. Foley mistakenly gives the number of pots as fifteen.

¹²⁴Courbin 1974 27-32, summarised by Foley 1988 211, with additional minor references.

remains of a spit. It was found with nine items of pottery¹²⁵, including a Protokorinthian skyphos¹²⁶. The human remains to which this assemblage belonged were identified by osteological analysis as those of a woman aged thirty to thirty-five¹²⁷. The **Theodoropoulou Plot Grave**¹²⁸, also from Late Geometric I, contained six iron spits, two iron spearheads¹²⁹, and one of only three bronze helmets to be recovered from Geometric Argos¹³⁰. However, in contrast to this comparatively large collection of metal items the pottery was limited to a single krater. Foley reports that the human remains found in this grave were those of a man, but it is unclear whether this conclusion has been reached by osteological analysis, or by inference from the grave goods.

From Late Geometric II, **South Cemetery Area Tomb 1**¹³¹ produced a set of six spits, a bronze bowl, and eleven pottery vessels, all of which were associated with the activity of drinking¹³². **Museum Area Tomb 176/2**¹³³ produced a fragment of iron bar 34cm long, which may be identified tentatively as a spit¹³⁴. It had been buried with a substantial collection of other goods which included: three iron spearheads; one iron dagger; one iron pin; one iron ring; one iron needle; one iron disc; two bronze bowls; one bronze belt loop; six bronze rings; three bronze pins; and fourteen pottery vessels composed mainly of containers for oils or perfumes and

¹²⁵Courbin 1974 29-31: skyphos, *tasse* x 5, cup x 2, oinochoe.

¹²⁶Courbin 1974 27, 31, 127, catalogue no. C92.

¹²⁷Courbin 1974 27.

¹²⁸Deilaki 1973 99 summarised by Courbin 1983 155 and by Foley 1988 213.

¹²⁹Foley 1988 213 states that a total of three spears were found in this tomb, but she has surely misunderstood Deilaki 1973 99, who states that only two spearheads were found in this tomb, one of which seems to have lain in the hand of the deceased. See also Courbin 1983 155.

¹³⁰Foley 1988 36: the other graves include the Panoply Tomb (for which see below), and an LG /MG grave from the Stavropoulou Plot.

¹³¹Courbin 1974 11f, summarised by Foley 1988 212 with additional minor references.

¹³²Courbin 1974 12: skyphos x 7, cup, krater, amphora, oinochoe (Foley incorrectly states that there were 13 skyphoi).

¹³³Courbin 1974 75f, summarised by Foley 1988 207-208 with additional minor references.

¹³⁴Foley 1988 208 does not identify this find as a spit.

drinking equipment¹³⁵, amongst which was an imported Protokorinthian skyphos¹³⁶. The human remains from this tomb were sexed osteologically as those of a man aged about thirty¹³⁷.

The Panoply Tomb¹³⁸ contained the largest single find of spits from any Argive grave, comprising twelve iron examples weighing a total of 21kg. Other iron finds from this tomb included a pair of ship-shaped firedogs, the longest of which was 130cm, and two identical iron axes weighing 4.7kg each. The famous bronze panoply, to which this tomb owes its nickname, was also discovered here, along with sixteen other fragmentary bronze objects. Besides these goods the tomb held a quantity of gold in the form of three rings and some fragments of gold leaf, and as such was one of only four tombs over a two hundred year period from ca. 800 to ca. 600 to contain articles made from this metal¹³⁹. The quantity of pottery was small, but the grave was cut through by the construction of a wall in Roman times, which may have removed part of the assemblage¹⁴⁰. The skeletal remains from this tomb were identified by osteological analysis as those of a man aged twenty-five to thirty¹⁴¹.

2.2.4a (iii) Associations

Analysis of these assemblages offers further confirmation of the way in which the spits are largely restricted to exceptional tombs. Most of the burials described above show signs of distinction, be they the inclusion of choice pieces of imported pottery, the rarity of bronze armour, or the luxury of gold jewellery. However, there is little apparent correlation between relative wealth and the number of spits deposited. Of the sets of six or more spits, one was found in the Panoply Tomb, and another in South Cemetery Area Tomb 1. Both of these tombs were among the richest in their chronological groups, but the third set of six spits was found in the Theodoropoulou Plot Grave which had a relatively mediocre assemblage, though it did include one of the three bronze helmets. Likewise, of the finds of spits singly or in pairs one occurred in South Cemetery Area Tomb 14/3, which ranks more or less equally to the Theodoropoulou Plot

¹³⁵Courbin 1974 78-80: cup x 3, skyphos, amphora, flask, pyxis x 2, aryballos x 2, grenade x 3, base.

¹³⁶Courbin 1974 80, 127, catalogue no. C2448.

¹³⁷Courbin 1974 76.

¹³⁸Courbin 1957 322-386, summarised by Courbin 1974 40f, and by Foley 1988 208 with additional minor references.

¹³⁹Foley 1988 95.

¹⁴⁰Courbin 1957 324.

¹⁴¹Courbin 1957 236.

Grave, but the remainder appeared in burials which are placed highly, including Museum Area Tomb 176/2. Moreover, with the possible exception of Makris Plot Grave 1, the distribution of spits in ones, twos, or in sets cannot be explained as a chronological development.

Most of the burials contained weapons¹⁴² and this indicates that spits may have been regarded as a part of a warrior's gear. However, in South Cemetery Area Tomb 14/3, one of the three or perhaps four tombs where the sex of the deceased could be determined, they had been buried with a woman whose grave gifts did not incorporate such accoutrements.

2.2.4b NAUPLIA & KATARRAKTIS

Spits have been found at two sites in the environs of Argos:

Region	Site	Context	Date	Qty
Argolid	Nauplia	tomb	LG II (ca. 730-690)	n
Achaia	Katarraktis	Tomb A	LG II (ca. 730-690)	n

The spits from Nauplia have not been fully published and may only be noted here¹⁴³, but it is possible to infer from Foley that they constitute the only such find outside Argos from a total of twenty eight graves known from the Argolid¹⁴⁴. The spits from Katarraktis come from further afield, in Achaia, and were found in "Tomb A". In 1952, this was one of only two Geometric tombs to be discovered at this site, though about half a dozen broadly contemporary burials are known from the vicinity¹⁴⁵. Zapheiropoulos reports that the spits consisted of "many fragments", perhaps the remains of a bundle. Other grave goods were few, comprising one bronze ring, six

¹⁴²The double axes from the Panoply Tomb are interpreted as weapons here. There has been some debate about their function: Courbin 1957 368 suggests that they were used for breaking the hulls of enemy ships, Deonna 1959 248-250 that they were religious or funerary symbols, and Boardman 1971 8 that they served as tools for chopping wood for the spit roast. However, there seems to be no reason to doubt the view of Snodgrass 1964 83 & 166-167 that *"in the somewhat irregular style of warfare of the Dark Age, the battle-axe was among the weapons known to the Greek warrior"*, and to his catalogue of possible archaeological examples may be added finds from "warrior" tombs at Knossos (Brock 1957 202, KNC 587), and Lefkandi (Popham et al. 1980 256, Popham et al. 1982 227). Those who remain sceptical must insist that other weapons were lost from the Panoply Tomb during construction of the Roman wall, or propose a convincing explanation as to why the inclusion of weapons was deemed inappropriate for this Argive warrior tomb, but not for others.

¹⁴³Karageorghis 1982 522 mentions this tomb in a brief gloss.

¹⁴⁴Foley 1988 43.

¹⁴⁵Leekley & Noyes 1976 35-6.

pottery skyphoi and one oinochoe¹⁴⁶, and from these it seems that the tomb was not particularly rich compared to those of Late Geometric II Argos.

These finds from Nauplia and Katarraktis show that Argos was not the only place in which spits were deposited with the dead during the eighth century. The find from Katarraktis also seems to corroborate the suggestion made for Argos, that burial with spits was not necessarily the preserve of those who were honoured in death with the richest grave goods. However, this latter inference is weak in the absence of comparative material from other graves in the immediate environs.

2.2.5 MACEDONIA

In Macedonia, the only funerary context from which spits have been reported comprises Tomb Λ2 at Vergina¹⁴⁷. As yet, few details are available other than that the tomb dates to the Archaic Period, and that it contained several gold strips indicating that the individual buried there was accompanied by a rich assemblage of grave goods. The spits were made of iron¹⁴⁸.

Model Spits from Sindos

Of considerably greater interest are finds of miniature spits from Vergina and Sindos. The former are recent discoveries, and have not yet been published in detail¹⁴⁹. The latter come from an extensive Archaic cemetery. One hundred and twenty one tombs from the sixth and fifth centuries were uncovered at Sindos, each of which had been used for a single inhumation¹⁵⁰. The contents of thirty six of these graves have been published to date¹⁵¹, and the large quantities of gold jewellery of exceptional quality, and numbers of fine imported pottery vessels from around the Aegean which they contained¹⁵² suggest that a wealthy elite had been buried here. The miniature spits were found in six of these tombs as follows:

¹⁴⁶Zapheiroopoulos 1952 400-403.

¹⁴⁷But see Vulić 1931 36 & fig. 59 for some possible though highly dubious iron fragments from a rich Archaic grave at Trebenishte.

¹⁴⁸Andronikos 1988 105. The tomb also contained a number of bronze items, and a model iron cart.

¹⁴⁹Preliminary notifications are given in *PAE* 1988 105 and *AEMTh* 2 (1988) 1-4. The grave in question dates to the late-sixth century, is that of a female, was richly furnished, and in many respects resembles those from Sindos.

¹⁵⁰For a description and summary of the site see Despini 1982 and *Sindos* 1985 esp. 11-13. See also *Ergon* 1981 (1982) 18-20; and *AR* for 1980/81 29, 1981/82 35-36, 1982/83 37, and 1983/84 44.

¹⁵¹No attempt has been made here to rank the burials because the site has not yet been published fully.

¹⁵²The imported pottery includes vessels from Attica, Korinth, Rhodes and elsewhere. These vessels may indicate wealth, subject to the arguments of Gill and Vickers 1990 & 1994 vs. Boardman 1996.

Context	Date	Sex	Qty
Tomb 28	560	f	10
Tomb 25	540	m	7
Tomb 65	530-520	m	?6
Tomb 59	530-520	?	6
Tomb 115	520	m	3
Tomb 67	510	f	?6

Tomb 28¹⁵³, the earliest of these graves, had been used for the burial of a woman¹⁵⁴ in whose tomb a small but highly select assemblage had been placed. This included: an amber necklace; seven pins, two of which were iron, and the other five iron /ivory; two iron knives; eight small identical but unidentified iron objects; and a substantial quantity of gold in the form of a necklace, a finger-ring, two pins, two ear-rings, eighteen rosettes, and a plaque engraved with a line drawing of a warship. The pottery incorporated an Attic kylix, Attic amphoriskos, four Korinthian aryballoi, five alabastra, six animal vases, and two terracotta figurines of seated women. The remainder of the assemblage comprised a number of miniature objects, all of which had been fashioned in iron, and these included the bundle of spits, a pair of firedogs with π -shaped supports, a round table, a chair, and a four wheeled wagon.

Tomb 25¹⁵⁵ had been used for the burial of a male individual, whose gender was reflected by a different selection of grave goods. He had been buried with two iron swords of different types, two iron spearheads, an iron cutting knife, and a bronze helmet which was decorated with gold. He was not, however, wholly without personal ornamentation, which was present in the shape of two iron double-pins, two gold rings, some gold bands, and gold leaf. A number of vessels had also been placed in his tomb, including three phialai of bronze, two small Attic bowls, two oinochoai, two omphaloi-phialai, four Korinthian aryballoi, two exaleiptra, two anthropomorphic vases, and one animal vase. There were also seven pottery statuettes of humans, gods and

¹⁵³The finds in the *Sindos* catalogue are organised by the cases in which they were displayed in the Archaeological Museum at Thessaloniki. For Tomb 28 see cases 48 and 51-54.

¹⁵⁴Differences between the burials of males and females at Sindos are discussed in *Sindos* 13, but without reference to the means by which gender was determined. However, the excellent state of preservation in which the human skeletal remains were found (AR 1981/82 35 fig.71), and the high quality of the excavation encourage the belief that osteological analysis was used.

¹⁵⁵*Sindos* cases 20, 25, 26; summarised by Kilian-Dirlmeier 1993 118.

goddesses. The assemblage was completed by an assortment of goods made from iron in miniature comparable to those from tomb 28: a bundle of spits, a pair of firedogs with curvilinear χ -shaped supports, a three-legged table, a chair, a two-wheeled vehicle, a miniature knife, and a miniature grappling iron.

Tomb 65¹⁵⁶, the grave of another male individual, produced a range of finds similar to Tomb 25. Arms and armour were present in the form of two iron swords, two iron spearheads, one iron arrowhead, and a bronze helmet, while a small quantity of decorative accoutrements was present in the shape of a gold finger-ring and gold bands. The pottery included an Ionian bowl, a Black Figure oinochoe, an Attic Black Figure lekythos, two small Attic bowls, five small Korinthian kotylai, and two Korinthian exaleiptra. There was also one small iron hook. The remainder of the finds comprised an assemblage of miniature items made from iron, including: a bundle of spits, two firedogs with rectilinear stylised χ -shaped supports, a three legged table, a chair, and a miniature grappling iron.

Tomb 59¹⁵⁷ was roughly contemporary with Tomb 65. It was not possible in this case to establish the sex of the human remains. However, comparison with other tombs in the cemetery suggests that weapons and armour were buried only with male individuals, and the grave goods found here included an iron sword, two iron spearheads and a bronze helmet. Other finds comprised a gold ring, gold bands, a silver double-pin, an iron knife, a bronze jug, a bronze oinochoe, a bronze exaleiptron, and four bronze phialai. The pottery included an Attic Black Figure bowl, a high-footed Attic plate, a Korinthian amphoriskos, and five Corinthian aryballoi. There were also a number of miniatures, namely: a bundle of spits, a three-legged table, a chair, and a two-wheeled waggon, all made of iron; and three clay draft animals made to the same scale as the waggon.

Tomb 115¹⁵⁸ was the tomb of another male individual, and contained: arms and armour in the form of two iron swords of different types, two iron spearheads, and a bronze helmet; and personal ornamentation in the form of a gold ring, various strips of gold, a silver double-pin, one iron pin, and one iron double-pin. This tomb did not contain quite so many vessels as those described above, and produced only a single bronze phiale, one small pottery Attic bowl, a

¹⁵⁶*Sindos* cases 7, 8, 12; Kilian-Dirlmeier 1993 120.

¹⁵⁷*Sindos* cases 17-19 and 21; Kilian-Dirlmeier 1993 119.

¹⁵⁸*Sindos* cases 22 and 24; Kilian Dirlmeier 1993 118.

pottery Attic Black Figure kylix, and a pottery Korinthian exaleiptron, but the assemblage was distinguished in that it incorporated a gold death-mask of exceptional quality. There were also a number of miniature items made of iron, and these included a bundle of spits, a three-legged table, a chair, and a two-wheeled waggon.

Tomb 67¹⁵⁹ was the latest of these graves. A woman had been buried here with an impressive array of exquisite jewellery comprising three gold ear-rings, two gold fibulae with iron clasps, two gold necklaces, one gold chain, a gold hair band, a gold pyramidal shaped object, three gold bands and some gold strip, two silver /crystal chains, a silver bracelet, a silver pin, and a silver ring. Other metal objects included a gold death mask, a silver phiale mesomphalos, a bronze phiale mesomphalos, a bronze cauldron, a bronze jug, and a bronze exaleiptron. The pottery comprised a Euboian hydria, two Attic kylikes, and two amphoriskoi. The assemblage was completed with miniatures made from iron, amongst which was a bundle of spits, two firedogs with A-shaped supports, a three-legged table, a chair and a four-wheeled waggon.

From the above it may be seen that miniature spits are found at Sindos from ca. 560, the date of Tomb 28. Since this is one of the earliest graves at the cemetery, the appearance of these artefacts has little significance beyond the fact that they were part of the initial repertoire of goods with which the dead were interred. The fact that no further miniature spits were deposited after ca. 510 is of more interest, but their disappearance coincides with that of the whole repertoire of miniature metal grave goods, not one of which is found after ca. 500. As such it reflects more general changes in the traditions governing the selection of articles for burial.

The miniature spits were buried with both male and female individuals, and therefore were not limited to the tombs of either gender. However, the opulence of the grave goods indicates that the miniature spits were restricted to the richer burials. This fact seems to rule out the possibility that the miniatures were substituted for life-sized spits in the interests of economy. It seems more likely that the spits and other items were represented in miniature to save space, as none of the various objects, and least of all the wheeled vehicles, would have compacted with ease into the sarcophagi, stone cists, or pits in which the dead and their tomb gifts were placed. However, even if there is some truth in this functionalist explanation, it is still necessary to ask why the inclusion of such articles by representation was deemed worthwhile.

The most obvious answer would seem to be that they must have had some symbolic value, but

¹⁵⁹*Sindos* cases 29-37 and 39.

what this was seems difficult to determine. In the six tombs with miniature spits the range of articles rendered in this way, which includes grappling irons, knives, furniture, vehicles, and animals, is so diverse that it seems unlikely that any one single factor may account for them all. In the case of the spits and firedogs, given certain assumptions about their function¹⁶⁰, it is tempting to infer that they are associated with the miniature sympotic tables and chairs, and that they represent the activity of feasting, perhaps as part of the funeral. If so, it is rather curious that they should be restricted to so few graves. It is also tempting to try to resolve this difficulty by speculating from their limited distribution that they represent not so much the activity of enjoying a feast, but of hosting a feast, a form of patronage which few perhaps could afford. However, the inclusion of spits and firedogs, and that of tables and chairs does not correlate sufficiently to warrant such a conjecture. Finds of other miniature grave goods at other sites both within the modern Greek Macedonia and in other parts of the Greek world offer no help¹⁶¹, and therefore it is necessary to conclude that the motive behind their inclusion at Sindos remains obscure.

An equally puzzling aspect is the material used in the manufacture of the Sindos miniatures. This may have been determined by whether the miniature was to represent something animate or inanimate. Figurines of humans and animals are rendered in clay, while objects including spits, firedogs, furniture and wheeled vehicles, are rendered in iron, or in one case bronze¹⁶². Clay seems well suited to the sculptural application, but metal and especially iron seems a curious choice, because a considerable amount of effort would have been required in the hammering out of the small individual components and fine details of each piece. For this a more pliable material such as wood, ivory, or perhaps clay would seem more appropriate.

What matters most here, however, is whether the material used for models of inanimate objects was determined by that from which they would have been made in real life. Regrettably, it seems impossible to answer this question. It is tempting, on the basis of the finds from the other sites discussed above, to conclude that the spits and firedogs would have been made of iron. However, this seems most unlikely for the tables, chairs, or wheeled vehicles, which would surely have been made of wood. This material, in turn, seems unlikely for items such as grappling irons or knives.

¹⁶⁰For the function of the Sindos spits see the general discussion below in this chapter.

¹⁶¹Macedonia: Vergina *q.v.*, and recent discoveries at Aiiane. Other parts of Greece: see Kurtz & Boardman 1971 esp. 214 for a general discussion of model grave goods at Athens, Tanagra, Ialysos and Cyprus.

¹⁶²Graves other than the miniature spit tombs which contained miniature articles are as follows. Clay figurines of humans or animals: Tombs 22, 38, 40, 53, 55, 68; iron furniture: Tombs 20, 56; bronze furniture: Tomb 52.

2.3 DISCUSSION

2.3.1 CYPRUS, KRETE AND THE AEGEAN

2.3.1a Contextual Similarities

As in Cyprus, spits in Aegean Greece appear in burials of high status. It may also be noted that they follow the same inflationary trend, in that the maximum number of spits per burial increases. This pattern is most apparent at Knossos and Argos, where spits are found in ones or twos up to the end of the Middle Geometric (ca. 760 at Knossos, ca. 765 at Argos), but in sets of up to six after the start of the Late Geometric (ca. 760-710 at Knossos = LG; ca. 765-730 at Argos = LG I), and of up to ten or twelve in the ensuing periods (ca. 680 = EO /MO at Knossos; ca. 730-690 = LG II at Argos). In eighth century Argos it is also possible to observe that spits no longer seem restricted exclusively to tombs of the very highest status, as indicated by the more mediocre assemblages from South Cemetery Area Tomb 14/3 and the Theodoropoulou Plot Grave.

2.3.1b Presences and Absences

The finds from funerary contexts provide only a partial view of the spread and use of spits in the land of the living. In Macedonia, there is reason to believe that spits are at present under-represented by archaeological discoveries. To date, only one find has been made in this part of Greece, though the miniatures from Sindos and Vergina imply a greater proliferation, in as far as burial with these representative forms surely superseded that with the real artefact. The case of Macedonia serves as a potent reminder of the workings of haphazard archaeological forces in the creation of the modern distribution pattern. Such factors may be used with less certainty to explain absences of evidence where activity has been more intense. Against the back-drop of the many tombs excavated in the environs of Lefkandi, the find of spits from Toumba Pyre 13 becomes a local anomaly rather than potential evidence for the wider dissemination of these artefacts throughout Euboea. Similarly, at Argos, it seems possible to conclude that the appearance and disappearance of spits resulted largely from changes in burial rites at the beginning and end of the eighth century¹⁶³. Social factors of this kind surely also account for the complete lack of spits in cemeteries in areas such as Athens, where the funerary record is especially rich and well-known from the sub-Mycenean period onwards, and other evidence, such as the literary and epigraphic corpora, attests to the presence and use above ground of "*obeloi /obeliskoi*", some of which were most certainly made of metal.

The custom of burying spits with the dead therefore seems to have been adopted selectively in

¹⁶³For Argive burial rites see Foley 1988 34 & 47.

different regions. This factor has obscured the exact sequence by which this type of artefact spread from one place to another, though some broad lines of influence may be identified. It seems clear that, as Coldstream has suggested, the metal spit spread initially during the Iron Age from Cyprus. The finds from this island not only predate those in the Aegean, but also include the only examples which were made of bronze before the type was translated into iron. These have been described as "prototypes", though this is perhaps a misnomer. The Bronze Age bronze finds mentioned at the beginning of this chapter show that Cyprus was not so much the place where the metal spit was born in the eleventh century, as the lair from which it emerged out of hibernation¹⁶⁴.

2.3.1c Typology and Transmission

Outside Cyprus Iron Age metal spits are first attested on Krete in the cemeteries around Knossos after the start of the Early Proto-Geometric (ca. 970). Their debut here does not coincide with any major changes in funerary practices, and so it seems reasonable to conclude that their earlier absence from burials may be explained by their lack of availability rather than by exclusion. Moreover, a limited examination of typology¹⁶⁵ provides evidence that they were imported.

On Cyprus, Karageorghis identifies five types¹⁶⁶. His "Type A" comprises the pure basic form, and occurs only in Lapithos-*Kastros* Tomb 417¹⁶⁷. "Type C" is distinguished from Type A by the inclusion of a "disc-guard" near the blunt end, and is represented at Kaloriziki and in Lapithos-*Kastros* Tomb 411¹⁶⁸. Karageorghis' "Type D" is more sophisticated, and has a socket

¹⁶⁴Coldstream 1977 146; Karageorghis 1974 169. Contra Karageorghis 1995 10 who has suggested that early finds outside Cyprus have been missed by their excavators because "*they were recognized as obeloi in the Aegean only in 1970*", i.e. after the publication of the Karageorghis article of that date, "*and many examples from earlier excavations may have decayed in museum storerooms or have been overlooked*". While this concern may not be dismissed altogether, Karageorghis underestimates the impact of Waldstein's discovery in 1894 of the giant bundle at the Argive Heraion. This was interpreted as the dedication of Pheidon mentioned in the *Etymologicum Magnum*, and as a result a lively interest in the use of spits as currency developed. In turn, excavators became expert spit spotters.

¹⁶⁵Typology is discussed in more detail in §4.2.3.

¹⁶⁶Karageorghis includes one type, "Type B", which does not comply with this specification and is therefore excluded here: see **Appendix C**.

¹⁶⁷See **Figure 2.3.1c (i)**.

¹⁶⁸See **Figure 2.3.1c (ii)**.

at the blunt end for a wooden handle¹⁶⁹. This is the most common type of Cypriot spit, and it is represented at Palaepaphos-*Skales* (in bronze and iron), Kition, Salamis, Palaepaphos /Kouklia, Patriki, and Idalion¹⁷⁰. "Type E" is very similar to Type D, differing solely in the addition of a ring round the shaft of the spit placed just above the socket at the place where a grip or disc guard would be located on other types¹⁷¹, and it occurs only at Tamassos¹⁷².

Turning to the Kretan types, the spits from Fortetsa have been attributed by Karageorghis to his "Type C"¹⁷³, and demonstrate that these artefacts were being imported from Cyprus. However, the finds from the North Cemetery suggest that they also became available via another route. In overall form they show a close resemblance to Karageorghis' Type A, but this is so simple and featureless that the resemblance is of questionable significance. Moreover, it seems possible to discern variations in the design of the handle, which ends in a small pyramidal or hemispherical head¹⁷⁴. There is some indication from mineralised deposits detected on a putative spit fragment¹⁷⁵ that they were hafted with wood, like Karageorghis' Type D, but there is no sign that this was attached by means of a socket. These types therefore seem to incorporate various features of their Cypriot counterparts, but the ways in which they differ suggest that the imported type was being emulated and manufactured locally on Krete. The movement of the spit between the two islands may be seen as a further manifestation of the close contacts that they are known to have enjoyed from the sub-Minoan. These are reflected in many classes of artefact including in iron a dirk, and probably also a knife found at the Knossos North Cemetery¹⁷⁶.

¹⁶⁹Traces of wood were found in the sockets of the spits from Palaepaphos Tomb 67 (Karageorghis 1983 162) and from Palaepaphos /Kouklia (Karageorghis 1963 277). An alternative interpretation is that these are the remains of a wooden former for the forging of the socket (see Crew 1991 for the use of this technique). However, the one interpretation need not exclude the other, and the sockets must have been made for a purpose.

¹⁷⁰An example from Salamis Tomb 79 is illustrated in **Figure 2.3.1c (iii)**.

¹⁷¹Karageorghis 1974 170.

¹⁷²See **Figure 2.3.1c (iv)**.

¹⁷³Karageorghis 1974 171, and see **Figure 2.3.1c (v)**.

¹⁷⁴KNC 251 Tomb 285.f43-5 and see **Figure 2.3.1c (vi)**.

¹⁷⁵KNC 121 Tomb 75.f71. It is not clear which of the six fragments (i) - (vi) listed in this catalogue entry produced the mineralised remains, but judging from the length of the relevant fragment, reported as 4.3cm, they must surely belong to (v), which measures 4.4 and so provides the closest approximation. If so, it is important to note that this fragment was not square in cross-section, but elliptical, thereby casting a degree of doubt on its identification as a spit fragment.

¹⁷⁶KNC SM iron dirk 528f, SM? knife 586; see also 647-648, 715.

The earliest find in the Aegean beyond Krete is that from Lefkandi belonging to a context dated to the sub-Protogeometric II (ca. 875-850). The spits are so badly corroded that it is impossible to discern their typology and thereby identify them as imports, imitations, or independent innovations. However, as noted above, they constitute a single occurrence of their burial with the dead rather than the foundation of a tradition. This fact indicates that they are imports which captured the imagination of one Euboian individual, but failed to instill a desire for them in his/her compatriots. The presence during the same period of significant numbers of goods from Cyprus and Krete suggests that the spits might have been brought over from either of these islands¹⁷⁷.

The transmission of the metal spit to the centre of the Aegean world is documented better at Argos, where these artefacts appear from Middle Geometric II to Late Geometric II. Typological information is available for the finds from Argos South Cemetery Area Tomb 1 and the Panoply Tomb, and affinity with the Cypriot types is suggested by the fact that they are fitted with grips as in Karageorghis' types C and E, and with handles as in Karageorghis' types D and E¹⁷⁸. However, there are important differences. The grips comprise a short cross-bar, square in cross-section, three to four centimetres in length, and of the same thickness as the spit itself. In turn, the handles comprise a flat, solid mass of metal which is "lanceolate"¹⁷⁹ in profile on the spits from South Cemetery Area Tomb 1¹⁸⁰ (and reportedly those from the grave in the Theodoropoulou Plot¹⁸¹), and nearly circular in shape on the finds from the Panoply Tomb.

These Argive spits therefore seem to emulate those from Cyprus, but it is not clear whether they were inspired by archetypes from this island, or from Krete. The links between Argos and the latter seem strong during the eighth century, and are visible not only in ceramic evidence, but also in metalwork, such as the bronze helmet from the grave in the Theodoropoulou Plot¹⁸². Nevertheless, as Coldstream has noted, there is also evidence that ideas in metal were shared

¹⁷⁷Links between SPG Lefkandi and Cyprus and Krete are reflected, amongst other categories, in the iron and bronze from the site, for which see Popham et al. 1980 262f.

¹⁷⁸Karageorghis 1974 170.

¹⁷⁹Snodgrass uses this adjective as a best fit for a type of spearhead of identical shape: Snodgrass 1964 117 & 119 = "Type B".

¹⁸⁰Courbin 1974 13 F.1-F.6, illustration Plate 20.

¹⁸¹For the latter see Courbin 1983 155.

¹⁸²Foley 1988 86-87.

between all three regions. This comprises warship-shaped firedogs which have been found in burials of broadly similar dates in Cyprus (Salamis Tomb 79 and Kouklia), Krete (Kavousi) and Argos (the Panoply Tomb)¹⁸³.

2.3.2 METALLURGICAL CONTEXT

The appearance of iron spits seems to coincide with a major change in ferrous technology, the nature of which is indicated at two of the Early Iron Age cemetery sites in which they appear. At Palaepaphos-*Skales*¹⁸⁴, the iron finds from burials which may be dated securely to the Cypro-Geometric IA¹⁸⁵ are limited to jewellery, daggers /knives¹⁸⁶, and a single spindle¹⁸⁷. A striking feature is the absence of any iron artefacts bigger than a short blade. Objects of this size, including the five spearheads from the period, occur only in bronze. This pattern is broken in Cypro-Geometric IB by the appearance of an iron sword 31cm in length, which comprises not only the first example of this type of weapon at Palaepaphos-*Skales*, but the earliest published from the whole of Cyprus¹⁸⁸. The periods from Cypro-Geometric II onwards show a different pattern of metal use. Except for one Cypro-Geometric III pin from Tomb 86, and one putative Cypro-Achaic I bracelet from Tomb 60, iron jewellery appears no more¹⁸⁹. Conversely, apart from one Cypro-Geometric III spearhead from Tomb 86, and one Cypro-Geometric III /Cypro-Achaic I arrowhead from Tomb 74l, all of the weapons and tools are made of iron. In bronze, only its use for jewellery, vessels, and a limited range of objects or components with a mechanical application continues unchanged¹⁹⁰.

¹⁸³Coldstream 1977 146; c.f. Foley 1988 134 n62.

¹⁸⁴See **Appendix A Table 1b**.

¹⁸⁵Assemblages from burials which could not be assigned to Cypro-Geometric IA or IB ("CGIx") are omitted from this analysis because the change being measured occurs over these two periods. Assemblages which contained a confused mixture of material from more than one period (e.g. Tomb 67) are also omitted.

¹⁸⁶Karageorghis 1983 320 no. 110. I include the putative hooks for these artefacts in this category.

¹⁸⁷Karageorghis 1983 236 no. 12 + 43.

¹⁸⁸Snodgrass 1982 286: it now seems possible that a sword from Idalion once claimed to be twelfth century in date originated from a much later context. There are rumours of a find of a twelfth century iron sword at Enkomi, but as yet it has not been published. See E.S. Sherratt 1994 Appendix I 86f for a recent catalogue of early iron finds from Cyprus.

¹⁸⁹For the pin see Karageorghis 1983 303 No. 6. For the "bracelet" see *ibid.* 128 No. 27.

¹⁹⁰The "Miscellanea" from Palaepaphos Table Three include: Tomb 64 attachment and loop; Tomb 72 tweezers x 2; Tomb 80 handle; Tomb 87 tweezers.

A similar pattern may be identified at the Knossos North Cemetery in Krete¹⁹¹. The assemblage of iron artefacts from the sub-Minoan period is likewise limited in range to small items such as fibulae, pins, and knives, and is devoid of larger or longer artefacts, such as swords or spearheads, which continue to be made of bronze¹⁹². The one exception to this rule is a single iron dirk. This may be described as herald to the Early Protogeometric sequel which sees the advent of a whole host of native iron types, including not only the spit, but also the dagger, spearhead, javelin-head and sword, all of which endure to the end of the sequence at the cemetery¹⁹³. New types continue to appear after this period, but never again in such profusion, or with a corresponding increase in artefact size. Moreover, with the exception of a single spearhead¹⁹⁴, bronze weapons cease to feature in tomb assemblages.

The interpretation and significance of these patterns will be assessed in **Chapter Eight**. What must be noted here is that although the change in the use of iron may be characterised as an increase in its appearance in applications for which a good edge or point is required, it may also be defined in other terms. At both sites, the iron artefacts are at first limited in size and number, but subsequently become bigger and more prolific. In either case, it seems that the spit was one of a range of products through which advances in ferrous metallurgy were displayed in Cyprus and Krete.

2.3.3 SPITS, WARRIORS, AND WOMEN

It is often stated that spits occur in the tombs of "warriors"¹⁹⁵. The description of the relevant tombs offered above shows much support for this generalisation, in that most contain weapons, and many also armour and /or horsegear¹⁹⁶. Moreover, osteological analysis is able to confirm

¹⁹¹See **Appendix A Table 2b**.

¹⁹²*KNC* 517f for the sub-Minoan iron and bronze finds.

¹⁹³*KNC* 577-585 for the iron weapons.

¹⁹⁴*KNC* 571.

¹⁹⁵See esp. Boardman 1971 8; Coldstream 1977 146; Popham et al. 1982 240; Karageorghis 1983 75.

¹⁹⁶**Cyprus**: the Myres Tomb at Kition, Palaepaphos-*Skales* Tomb 49, Salamis Tomb 79, the Cypro-Archaic tomb at Kouklia, and Tamassos Tomb I2. **Krete**: every tomb in the cemeteries at Knossos (except Fortetsa Tomb VI), and Kavousi (double axe, spearheads, daggers, shield boss). **Lefkandi**: Toumba Pyre 13. **Argos**: Makris Plot Grave II, the grave at the Theodoropoulou Plot, Museum Area Tomb I76/2, and the Panoply Tomb. **Sindos**: Tombs 25, 65, 59, and 115. **References** as above except: **Fortetsa** for which see Brock 1957 11 on Tomb VI, 18-19 for Tomb XI, 101f on Tomb P; and **Kavousi** for which see Boardman 1971 5-6.

on occasion that the individuals with whom these accoutrements were buried were male¹⁹⁷. However, there are graves with spits from which all warlike apparel is absent, and some of these held the bones of females. These include Palaepaphos-*Skales* Tomb 67, Fortetsa Tomb VI, Argos South Cemetery Area Tombs 1 and 14/3, Katarraktis Tomb A, and Sindos Tombs 28 and 67. Therefore, it seems from the archaeological evidence that the spit was not exclusively associated with the fighting man.

2.3.4 FUNCTION

2.3.4a Spits as Roasting Implements

We may now turn to the function of the spits. As we shall see in **Chapters Five and Six**, a barrage of evidence from the iconographic, literary and epigraphic corpora, over and above that from archaeology, shows that this type of object was used for roasting meat. There seems to be no reason to doubt this interpretation in the case of the finds surveyed in this chapter, especially considering the suitability of the various types of Greek *obeloi* for such a purpose, as reflected by their basic form. As in modern skewers for barbecued kebabs, a rectilinear cross-section allows the spit to grip and turn the meat rather than slip and revolve to no effect¹⁹⁸. This factor would have been all the more important given the way in which the Greek types seem to have been deployed is considered. As will be described in more detail in **Chapter Five**, numerous painted depictions on vases and textual descriptions suggest that they were not normally threaded along their whole length with morsels of meat, as in the modern *souvlakia*. Rather, a large single slice of meat was impaled on the pointed end. This would then have been held over a flame or embers until ready for consumption.

During cooking, heat would have been conducted along the length of the shaft causing discomfort to the fingers of those whose task was to turn it, and various means with which to alleviate this predicament may be detected in the design of the spits. These include the wooden handles added to the Cypriot socketed types, and the putative wooden hafting apparent on one of the finds from the Knossos North Cemetery. Evidence will be presented in the next chapter that a covering of organic material may have been wrapped around the solid metal handles of other types. Another ergonomic problem would have been presented by the effects of leverage exerted by a heavy mass at the end of a long beam, and this in turn seems to have been relieved through the addition of a grip and sometimes also a solid metal handle. The former is found on types

¹⁹⁷**Cyprus:** Palaepaphos-*Skales* Tomb 49; **Argos:** the grave at the Theodoropoulou plot, Museum Area Tomb 176/2, and the Panoply Tomb; **Sindos:** Tombs 25 and 65.

¹⁹⁸D. Smith 1989 403.

from Cyprus, Argos and Sindos, and would have provided a firm purchase for the "inside" hand, which could then act as a fulcrum. The latter is found on types from Argos and Sindos, and would have provided something substantial for the "outside" hand to hold in addition to a heavy weight with which to counterbalance that at the other end of the spit.

2.3.4b Spits and "Firedogs"

One way in which the burden of holding a hot and heavy spit may have been reduced is through the use of "firedogs". This term *in sensu stricto* refers to implements for supporting logs over a fire, but there is reason to believe that the primary function of the examples from Greece was as props on which to rest the weight of a laden spit. All the examples from Cyprus, Krete, Argos and Macedonia were found with spits, and the use together of the two types of artefact is attested in the *Iliad* and in an inscription from Khorsiai¹⁹⁹.

The precise manner in which spits were used with firedogs is not altogether clear. The *Sindos* exhibition and catalogue show the spits stretched across the various pairs of firedogs²⁰⁰, implying that, in the manner of the modern *souvlakia*, meat was threaded in beads along each spit which was then supported at both ends by the firedogs. This arrangement would be highly plausible were it not for the fact that the spits are packed tightly together into a portable bundle rather than loose and ready for use. It is therefore possible that they were not deployed in this way, and the Panoply Tomb at Argos provides tentative indications that they supported one end of a spit only. The firedogs correspond in lateral profile to warships depicted in Geometric vase paintings²⁰¹. If the self same iconographical sources are examined, it is possible to observe that there is a convincing similarity between the handles of the spits and the blades of the oars with which the ships in the vases are rowed²⁰². It seems reasonable to conjecture, therefore, that the spits and firedogs from this tomb formed an artistic unity, and that when in use, the former radiated from the "gunwale" of the latter like oars. The meat which was being cooked would therefore sit over the embers just inside the "hull" suggested by the firedogs, while the handles of the spits would

¹⁹⁹*Iliad* 9.210f; inscription: Platon & Feyel 1938 149f line 17.

²⁰⁰*Sindos* 1985 172 (Tomb 25) is the only example in the catalogue, but the spits and firedogs from Tombs 65 and 28 are also so arranged in the exhibition.

²⁰¹For descriptions of the firedogs from the Panoply Tomb, see Courbin 1957 370-385. For their warship-shaped lateral profile, see Courbin 1957 370f, Morrison & Williams 1968 12-42 & plates 1-7, Johnston 1985 35f, and Basch 1987 156-201 esp. 188-189. For illustrations of the firedogs and the spits found with them, see **Figures 2.3.4b.1a-c**.

²⁰²See **Figure 2.3.4b.2a-c** and Basch 1987 172 no. 355 (= Morrison & Williams 1968 plate 3c), 173 no. 357 (= Morrison & Williams 1968 plate 4a), and 173 no. 358.

rest on the ground.

This interpretation is not without difficulties. It is pertinent to note that it would have been almost impossible to use all twelve spits simultaneously on both firedogs, because the latter measure only 130cm end to end including the curvature of the prow and stern²⁰³, and it seems that even if only six spits were placed on each firedog, the "deck" would still be overcrowded. However, this problem would not arise if only some of the spits were placed over the heat at any one time, and the remainder were either being used to serve meat which had already been cooked, or were being made ready for the next batch of roasting. It is also true that the spits from the Panoply Tomb are the only examples of the round type associated with warship-shaped firedogs²⁰⁴. Nonetheless, the metal spit developed well before the latter, and it seems possible that the warship-shaped design was inspired by an existing though hitherto unrecognised resemblance between the profile of certain types of spit and that of oars. Such matters would be easier to unravel if the profile of the handles of the spits from Kavousi or of those from any of the Cypriot socketed examples which were found with similar firedogs had survived.

Whatever the exact configuration, it is possible to imagine that the black figure of a warship fitted out with oars and silhouetted by the glowing embers of a fire would have produced an impressive visual effect. This interpretation is surely to be preferred to the theory that the firedogs constituted symbolic vessels buried with the deceased to ferry their spirits to the world of the departed²⁰⁵. This imaginative suggestion has been dismissed by Johnston and by Boardman. The former asks why, in the case of the Panoply Tomb, the soul of just one man would need two ships for the journey. The latter raises the much more serious concern that there is a dearth of ships in Greek funerary art and literature of the Archaic or Classical periods, and that "*Charon requires no more than a punt ... not a warship*"²⁰⁶. The theory also fails to account for the fact that, according to Courbin, the firedogs from the Panoply Tomb showed signs of burning²⁰⁷. As this individual was inhumed, and no other objects from this tomb had been damaged by fire, these marks cannot have resulted from the cremation of the body or of the grave goods as part of the funeral ritual. They must therefore have been made during the actual

²⁰³Courbin 1957 372.

²⁰⁴See this chapter above and also §4.2.3 below.

²⁰⁵Deonna 1959 251-252; Karageorghis 1963 227f.

²⁰⁶Johnston 1985 38; Boardman 1971 8. See also Kurtz & Boardman 1971 208.

²⁰⁷Courbin 1974 136.

use of the artefacts.

Another idea which has been put forward in connection with firedogs concerns chiefly their presence at Salamis in Tomb 79. Here, it has been implied that their inclusion reflects the influence of Greek epic tradition, and especially of the *Iliad*, on the form of the "royal" burials outside the Archaic city. This view is already losing support, but it seems worth noting that the use of firedogs in the preparation of the spit roast does not seem to be a particularly Iliadic or indeed Homeric feature²⁰⁸. *Obeloi* are held over the source of heat in the hand in nine of the ten passages in which they feature in the *Iliad* and *Odyssey*, and are supported by *krateutai* only once²⁰⁹. Furthermore, the way in which the spit roast is conducted in this particular instance is atypical of "standard Homeric procedure" and in literary terms seems to serve as an illustration of Achilles' alienation from the company of *Achaioi*. Therefore, if the inclusion of firedogs in Tomb 79 was intended as a reference to the *Iliad*, then it would seem that the deceased was being likened to a furious and fatally intractable hero who was regarded as only part-Greek. Such an allusion hardly seems complimentary.

2.3.4c Spits as "Pre-Coinage Money"

Two other interpretations of Greek *obeloi* must be mentioned here. The first of these applies to one region only, and has long fallen out of credence. Many early archaeological finds of Cypriot spits were originally identified as a type of spear or javelin peculiar to Cyprus, known in Herodotos' history as a *sigynna*²¹⁰, but this interpretation has been discredited by Karageorghis on the morphological grounds that the specimens are too long, too thin, and too heavy to have been designed as weapons²¹¹.

The second must be entertained at greater length. It concerns stories preserved in historical sources and attached mostly to Sparta, but also to Argos and Byzantion, that spits had once functioned as the precursor to or substitute for silver drachmas and obols. The historical sources are discussed in detail in §6.3, and it will suffice here to note that for the tradition to be true spits

²⁰⁸Coldstream first mooted the general idea (see 1985 54 on the firedogs), of which Karageorghis 1995 10 comments "*I subscribed ... although aware that similar [burial] customs existed in the Near East. The fascination of the wonderful world of Homer may have prejudiced both Coldstream and myself when attempting to interpret the princely burials of Salamis*".

²⁰⁹A list of the relevant passages will be found in **Appendix F**.

²¹⁰Herodotos 5.9. E.g. Myres 1910 107 on the spits from Kition and Tamassos.

²¹¹Karageorghis 1970 38-41.

must have had a role similar to that of the first issues of silver drachmas and obols. At present, the precise origin and function of the earliest coins remains unclear²¹². However, there are a limited number of circumstances under which it is possible to imagine that a long thin rod of iron, square in cross-section, could be substituted with an object so different in shape and size as a small round flat disc of silver. Such an improbable scenario seems most likely if the two were being used as "money", not in the limited modern meaning of the word, but in the broader sense proposed by Polanyi. In this, the use of quantifiable objects for payment, as a standard, or as a means of indirect exchange defines them as money²¹³. Therefore, we might take the ancient texts to imply that as a form of "pre-coinage money" spits were employed: as a means for paying for things such as rents, taxes, or wages; as a standard in which the value of, for example, a house might be expressed; and /or as objects by which wealth might be stored or exchanged for the purpose of acquiring other objects²¹⁴.

It seems that the *obeloi* recovered from Greek burials were first and foremost manufactured and employed as implements for roasting meat. This is indicated above all by their association with firedogs at: Salamis, Kouklia and Patriki on Cyprus; a number of tombs at Knossos, and probably also in the burial at Kavousi on Krete; the Panoply Tomb at Argos, and in miniature form in the tombs at Sindos. Therefore, any possible function as pre-coinage money must have been secondary, and must have evolved and coexisted alongside this primary role²¹⁵. Therefore, the question here is not so much whether the finds represent actual examples of pre-coinage money, but whether they incorporate, or may be shown to have developed attributes which would be conducive to their adoption as such. If coined money evolved from spits, then it seems reasonable to expect the "father" to bear some resemblance to the "son". In particular, at the level of the individual πόλις²¹⁶, we might expect to see the emergence of a standard shape and size of spit, and the regularisation of the number of units required to make up a set or

²¹²See von Reden 1997 156 for a recent and succinct overview of current theories to which she adds the persuasive idea that "*coinage was the final stage of an increasing tendency to render value comparable, quantifiable and measurable*"; *ibid.* 160.

²¹³Polanyi 1957 /1968 esp. 175; cf. Cartledge 1975 272.

²¹⁴Polanyi 1957 /1968: see 181 for further explanation of the uses of money for payment; 184 as a standard of value; 183 for hoarding; 180 for exchange; 188-189 for an illustration from Hammurabi's Babylonia.

²¹⁵See esp. Courbin 1957 369, 378; 1974 136; 1983 156; A.E. Furtwängler 1980 88 & 89 n31. Strøm 1992 44 reaches the same conclusion, but on different and unconvincing grounds.

²¹⁶As envisaged by Courbin 1983 152-154, in answer to D'Agostino and A.E. Furtwängler, who use the lack of correspondence between finds from different regions as an argument against the use of spits as a pre-coinage money.

"denomination". If this was six in the case of coinage, the same should come to be true in that of *obeloi*.

In many instances, the information needed for answering this question is not available because it has been obscured by corrosion or has not been published. This restriction applies to all of the finds from Eleftherna, Kavousi, Lefkandi, Nauplion, Katarraktis and Vergina, and the only spits to which it does not, comprise those from Cyprus, the Knossian cemeteries, Argos and Sindos.

On **Cyprus**, of the various types identified, Karageorghis' socketed "Type D" is the most prominent, being attested at Palaepaphos-*Skales*, Kition, Salamis, Palaepaphos /Kouklia, Patriki, Idalion, and, with a minor variation, classified as "Type E", at Tamassos. The number of spits per set is too small during the Cypro-Geometric for the identification of convincing "denominations", but during the Cypro-Archaic, multiples of six recur at Salamis in Tomb 79 and in the tomb at Patriki, where sets of twelve and eighteen spits respectively were found. Karageorghis has suggested that a further eighteen occurred in the tomb at Kouklia, but as he himself admits, the find actually comprised twenty fragments of *obeloi*, and his inference of a multiple of six therefore seems over-ambitious²¹⁷. Regarding length, the Geometric socketed types cluster between seventy five and ninety centimetres, and the Cypro-Geometric III /Archaic examples from Salamis Tomb 79 measure about twice the lower limit of this band width (one hundred and fifty centimetres)²¹⁸.

At **Knossos**, the finds from North Cemetery and from Fortetsa include at least two types of spit. Only one bundle is reported to have been found intact and has been published, and this seems to have contained ten spits²¹⁹.

At **Argos**, at least two types are represented, comprising the lanceolate and round /oval, though these seem to be fairly closely related²²⁰. Of the seven tombs with spits, three contained single examples, and one a pair, but sets of six were found in two of the remaining tombs, and a set of twelve in the other. Details of the sizes of the individual spits have been published in only two instances. Of the examples from South Cemetery Area Tomb 1, two had their full length

²¹⁷Karageorghis 1972 172.

²¹⁸See **Appendix D**.

²¹⁹For the types see above. For the bundle see *KNC* Tomb 285 EO /MO level SF nos. 43 to 45.

²²⁰See §4.2.3.

preserved and this measured one hundred and sixty two centimetres. Of the spits from the Panoply Tomb, none had survived intact, but an estimate of their manufactured size may be reached by analogy with those from South Cemetery Area Tomb 1. On four of the six finds from this grave, the distance from the grip to the inner edge of the handle may be measured. On one of these, it amounts to twenty centimetres, or roughly one eighth of the gross original length of the whole spit, but in the other three it lies between twenty-eight and thirty-two centimetres, or about one fifth of the gross original length. In the Panoply Tomb, the same section is preserved in the largest fragment, and amounts to about twenty-four centimetres. If the Panoply Tomb spits were made to the same proportions as those from South Cemetery Area Tomb 1, then it follows that the former probably measured about five times this length, or about one hundred and twenty centimetres. Therefore, contrary to claims of standardisation made by Courbin, it seems that the spits from each of the tombs were originally of different lengths as well as of different types²²¹.

At **Sindos**, at least two types may be identified amongst the miniature spits²²². One of these occurs in Tomb 59 and corresponds to the oval type at Argos, while the other is flange hilted, and occurs in Tombs 25, 28 and 65. As mentioned above, all of the miniature *obeloi* had been arranged in bundles, with the spits neatly lined up together side by side. Corrosion has made the exact number of spits in each set difficult to discern²²³, but careful examination suggests that there were ten in the bundle from Tomb 28, seven in Tomb 25, between six and nine in Tomb 65²²⁴, six in Tomb 59, three in Tomb 115, and perhaps six in Tomb 67.

The spits from the regions and sites discussed above show that in general there is diversity in the types represented and, where applicable, in the number of spits per bundle. Nevertheless, there seems to be some evidence that one particular type and unit of length was favoured to some degree in Cyprus, and that a preference developed in Cyprus and Argos for sets of six or its multiples. To some extent, therefore, it may be argued that the preconditions for the adoption of spits as a favoured form of money did exist, but whether anyone used them in this way seems

²²¹Courbin 1983 155-156. The metrical data used in this paragraph is summarised with references in **Appendix D**.

²²²The form of the spits is described and illustrated in *Sindos* 1985 as follows: 273 Tomb 28; 172 Tomb 25; 85 Tomb 65; 119 Tomb 59; 28 Tomb 115; 185 Tomb 67.

²²³This matter could possibly be resolved with the use of x-radiography.

²²⁴Kilian-Dirlmeier 1993 120 counts six spits in this case, but first-hand examination of the find in the Thessaloniki Archaeological Museum suggests that there were up to nine.

doubtful. Attributes were not standardised in any region and the popularity of the socketed type in Cyprus may be explained by the fact that this was the archetype from which variants were derived, and it seems only natural to expect a degree of conservatism in the "home" of the Iron Age metal spit. A similar factor may account for the preference in Geometric Cyprus for a particular length. This must be in part the product of the fact that if a spit is to be held by hand then it must be of a certain minimum size to keep the person holding it a comfortable distance from the source of heat. As argued above, the length of the spit increases gradually through time due to inflationary pressures of a non-monetary nature, and this process will explain satisfactorily the fact that the Archaic finds from Salamis Tomb 79 are twice as long as the shortest Geometric examples. Indeed, future discoveries may yield Cypriot spits to fill the gap between ninety-five and one hundred and fifty centimetres. As regards the repeated occurrence of spits in multiples of six, this number seems to reflect no more than a duodecimal system of counting found throughout Early Iron Age Europe, and is therefore not significant in itself²²⁵.

Therefore, although the *obelos* appears to have been a form suitable for use as a unit of money, so far no convincing archaeological evidence to suggest that it actually was adopted or adapted for such a role has been encountered. As regards the places mentioned in the ancient historical tradition, Archaic burials with spits are lacking from Sparta and from Byzantion. At Argos, the only finds from graves for which sufficiently detailed information is available do not conform to the same type or even to the same length, and this does not inspire confidence. In the absence of the texts, would there be any reason to suggest that spits had been used as a form of pre-coinage money? It is important to stress, however, that even if the answer to this question is "no", as readily portable prestige goods spits would have been well suited to a role as gifts for honouring social obligations²²⁶, an interpretation which will be revisited in **Chapter Four** with reference to votive dedications in sanctuaries. Even so, there is no reason to suggest that they were a form of gift which was favoured to the extent that it came to be used for purposes such as the payment of codified fines, as occurred with metal vessels on Krete²²⁷.

²²⁵A.E. Furtwängler 1980 89 n31; Courbin 1983 156; von Reden 1997 160.

²²⁶Von Reden 1997 160.

²²⁷See Guarducci 1944-1945, von Reden 1997 157-158.

CHAPTER THREE

SETTLEMENT CONTEXTS

It might seem natural to follow the survey of spits in funerary contexts with a complementary survey of their occurrence in sanctuaries. However, the material from these sites is complex and difficult to understand, and for this reason is best considered last of the archaeological evidence. This chapter, therefore, concerns spits from settlement contexts. Here, however, we are presented with the problem that spits have been reported from only one Archaic Greek settlement site, and that even here their identification is far from secure. Therefore, it is necessary to look further afield for evidence with which to fill the lacuna, and the only other discovery of Archaic spits outside a funerary or sanctuary context in the environs of the Aegean region comes from Lydian Sardis. As we shall see, the finds from Sardis supply important information about the function of spits, and provide a picture of their social context of use which is much removed from that of the elite tombs discussed in **Chapter Two**. However, it is necessary to consider carefully the relevance of non-Greek material to the study of a Hellenic phenomenon. The survey of settlement evidence concludes by returning to the Aegean region to examine evidence of a more indirect nature for the use and popularity of spits in the secular world.

3.1 PYLOS

Mervyn Popham has recently suggested that four iron objects from Pylos should be interpreted as fragments of spits¹. These finds were discovered in Court 42 in a substantial Early Iron Age occupation stratum, and are described by Blegen and Rawson as "spikes"². They are square in cross-section, vary between 0.5cm and 1.2cm in thickness, and have a combined length of 60cm, which would provide enough material for one spit³. It is difficult to progress beyond these basic observations, because the fragments were too heavily corroded to preserve any diagnostic typological details, and the finds associated with them were few and uninformative⁴.

¹Popham 1991 317.

²Blegen & Rawson 1966 184 fig 287. An iron "nail" described by Blegen & Rawson 1966 301 may comprise a further spit fragment.

³The dimensions of the fragments are as follows: 16.5 x 1.0cm; 13.5 x 1.0cm; 22.0 x 0.5cm; 8.0 x 1.2cm.

⁴Associated finds from the Early Iron Age stratum included an enigmatic iron attachment and fragment of iron plate, and Geometric pottery comprising two one-handled cups, a one-handled jar and a pedestal base fragment.

3.2 SARDIS

3.2.1 The Finds

Spits have been found in three separate locations in the Archaic Lydian city of Sardis. The information which may be learned from each is of markedly different quality and quantity. The first discovery was made during excavations on the acropolis, but its precise context and date are no longer known, and it is therefore of little interest here other than the fact that it was made of iron⁵. Rather more is known about the context of the second spit to be recovered at Sardis, also of iron, which was found in a seventh century stratum in an area known as the "Lydian Bazaar". However, in spite of the meticulous care with which this find was recorded, the context itself was otherwise rather barren, the only other object with which the spit was associated being a lone glass bead⁶, and it is therefore not possible to draw any inferences from it.

By contrast the third find of spits was made in a location which revealed an astounding intricacy of detail. A total of eleven spits was discovered during the excavation of a range of domestic buildings which had lain at the foot of a substantial mudbrick fortification wall⁷, and which appeared to have been buried virtually intact. One of the spits was found lying in the yard of a compound which incorporated a kitchen and a small workshop for glass⁸. The spit was immediately associated with cooking stands, cooking pots, and other vessels⁹, while a wide range of activities was attested by the finds from the yard as a whole, which included: weaving equipment; grinding implements; barley husks; vessels for cookery; vessels for other domestic functions; unguent vessels (including one import); a pile of enigmatic unworked field-stones; and a hydria, containing small rusted lumps of iron which have been interpreted as the raw materials of a "cottage industry". The other ten spits were found together in a bundle, which lay roughly ten metres from the single spit, but on the far side of a dividing wall. Only a small part of the context in which this bundle was found has been excavated, but the large numbers of finds recovered there already include about eighty vessels for cooking, drinking, and storage, as well as a quantity of weaving equipment, and it seems that a further compound lay here, comparable in character to that in which the single

⁵According to Waldbaum 1983 59 this spit was found in "trench A" on the "Acropolis Top" site in 1960, but Hanfmann's preliminary report for that year mentions no spit (Hanfmann 1961 33-7), nor is there any reference to it in Shear's report of excavations at the same site almost forty years earlier (Shear 1922 401).

⁶Hanfmann & Waldbaum 1970 28; Hanfmann 1983 63.

⁷The fortification wall was originally designated the "Monumental Mudbrick Structure" or "Colossal Lydian Structure". For its interpretation see Greenewalt et al. 1995 13 and Greenewalt et al. 1998 473.

⁸Yard: Greenewalt et al. 1990 150f; kitchen: *ibid.* 146f. The kitchen was very well preserved: even traces of its light thatch roof and reed floor matting had survived. Workshop: *ibid.* 152f

⁹Shapes represented: dish, skyphos, oinochoe, ring askos.

spit occurred¹⁰.

The domestic complex was gutted by fire and buried under material from the upper part of the fortification wall almost certainly as a result of military operations connected with the capture of Sardis by Kyros in ca. 547-542¹¹. The drama of the episode is illustrated poignantly by the fact that some of the cooking pots in the yard had been smashed into the stands on which they had been left by the occupant(s)¹². In addition, the remains of an articulated human skeleton were discovered amidst the charred debris of the domestic complex and in the environs of the single spit. The head, right arm, left hand, and legs of the skeleton were missing, and though it is uncertain whether or not the partial dismemberment had occurred through the agency of scavenging animals, or as the result of deliberate mutilation at human hands¹³, the truncated torso cannot have been exposed for long, as there had been no opportunity for the few items of jewellery and trinkets from this area to be looted¹⁴. Moreover, many friable organic remains were preserved which would not have survived unless they had been quickly covered over. Analysis of the human bones indicates that the individual was a male aged thirty-five to forty, and that he had engaged in strenuous and repetitive bending associated with the lifting and carrying of heavy weights on his back¹⁵. A second skeleton was found not far from the first on the other side of the fortification wall. This individual, a male aged twenty-two to twenty-six, certainly had met a violent end. His arms had become fractured in a manner which suggests that he was defending himself, and he had suffered this injury shortly before meeting his death on the parapet or as a result of falling or being thrown head first to the ground still clutching a pebble in one hand. Old healed injuries to the skull and fragments of a helmet found nearby as well as the sex, age and build of the individual suggest that he may have been a soldier, though if so it is not clear

¹⁰Greenewalt et al. 1988a 26f and 1988b 64f. The pottery shapes represented include: pithos, pot stand, hydria, bowl, krater, skyphos, oinochoe, lekythos, aryballos, saucer, and lydion. Similar assemblages were recovered from other contexts nearby during subsequent seasons: see Greenewalt et al. 1996 13-21.

¹¹Greenewalt et al 1990 143f, 152; Crawford & Greenewalt 1991 19, dating by pottery. Greenewalt et al. 1988a 29 also give a calibrated radiocarbon date of 570 ±50 years, but as this date falls on a "flat" part of the radiocarbon calibration curve, its reliability is questionable. Of more significance is a dendrochronological date from another archaeological trench nearby which gives a *terminus post quem* of 585: see Greenewalt et al. 1998 492 & n38.

¹²Greenewalt et al. 1990 150. There is no comment on whether the pots were empty, or contained traces of a meal.

¹³Greenewalt et al 1990 150. A foot was found not far from the torso, but without the missing matching leg.

¹⁴Greenewalt et al. 1988a 29: this category of find includes: three silver ornaments, a bronze bridle ornament, two bronze pins, a faience hawk, a bone /ivory disk, and three glass beads.

¹⁵Greenewalt et al. 1994 24-26.

whether he had fought on the Lydian or Persian side¹⁶.

What sort of people lived in the buildings where the spits were found? There are several indications that the occupant(s) was/were not particularly wealthy. The middle-aged man who became buried there had lived a life of toil and was surely not a member of the elite. In addition, the architecture of the domestic ranges is far from glamorous or sophisticated, and a large number of varied activities including cooking, baking, weaving, and glass making had been crowded between the walls of a cramped space. It is possible that the latter was brought about by an influx of refugees fleeing with their property from the countryside to escape the hostile forces which attacked the city, but this explanation seems improbable here. Such people would be expected to bring with them their most precious personal possessions, such as their jewellery, and yet, as mentioned above, virtually no such material was found in the area, and it seems unlikely that this paucity has resulted from looting. However, even if this argument is rejected, it seems even less credible that such refugees would have been men and women of substance, because it is hard to believe that members of a wealthy rural aristocracy would have settled for rooms which not only adjoined a factory, but which were also overshadowed and overlooked by the fortification wall on top of which we may imagine troops clanking about and intermittently casting from the parapet detritus of all kinds onto those below. How far down the social scale the resident(s) of these squalid quarters was/were, however, is hard to establish. At least one individual had been a skilled glass manufacturer, someone had invested in tools and materials for the workshop, and someone had also been able to afford imported Greek pottery¹⁷. Therefore, the social group with whom the spits are associated does not seem to have been amongst the upper strata.

3.2.2 Form

The seventh-century spit from the Lydian Bazaar was badly corroded and broken at both ends, and therefore all that may be said of the morphology of this find is that it was a straight iron rod, 2cm thick, and at least 107cm in length¹⁸. The example from the acropolis site is rather better preserved, and comprises a long, thin, straight rod of iron, 66.4cm in length, 1cm in thickness, with a rolled terminal at one end¹⁹. Turning now to the finds from the mid sixth-century domestic complex, the newness of their discovery means that verbal descriptions of their form must suffice at present. These reveal that the single spit was made

¹⁶Greenewalt et al. 1994 20-21.

¹⁷Greenewalt et al. 1988b 62, 1990 152: imported pottery includes items from Attica and Eastern Greece. The value of such pieces is uncertain: see Vickers & Gill 1994, contra Boardman 1996.

¹⁸Waldbaum 1983 59 cat. no. 215.

¹⁹Waldbaum 1983 59 cat. no. 216. **Figure 4.2.3g.1.**

of iron, and is preserved to its original length of about one metre. The shape of its handle is not specified, though this may be discerned from the plan of the yard reproduced in Greenewalt's preliminary report as a rolled terminus²⁰. Of considerable interest is the fact that this handle was wound round with the remains of a wicker wrapping, a feature which is otherwise unparalleled, and which has only survived here due to the exceptional conditions of preservation afforded by the context²¹. The spits from the bundle were also all made of iron, but they had been cut through in Roman times during the construction of a wall with the result that only about 60cm of their original length remains, and half of the handles have been lost. However, a surprising diversity of shapes is attested in the remaining finds, which include a "loop" shape, "leaf" shape, "chisel" shape, and a plain "blunt" shape²². As shall become apparent in the next chapter, the sum total of all the shapes of handle attested at Sardis show typological similarities with those of Aegean Greece, and it seems likely that they are either copies of Greek originals, or, more likely, imports from this area, which would probably have arrived by the same route as the Greek pottery²³.

3.2.3 Function

As regards the function of the spits, the finds from the acropolis and Lydian Bazaar offer no clues. Of the eleven examples from the mid sixth-century domestic complex, the facts that the single spit from the "yard" was so closely associated with so many objects connected with the preparation and cooking of food, and that it was discovered directly outside a "kitchen", leave little room for doubt that it was used as a culinary implement. Moreover, the wicker wrapping wound round its handle must surely constitute a heat insulating device, placed there to protect the chef's fingers from burning, like the wooden handles which were once added to the socketed types from Cypriot funerary contexts.

Similar arguments suggest that the bundle of ten spits should also be interpreted as culinary implements, but here the matter is less straightforward. This is because according to the preliminary report, only three of these spits were square in cross section, and the remainder were round²⁴. The need for a rectilinear cross-section in the design of a metal spit, to prevent a piece of meat in the process of being cooked from slipping as it is turned, has already been made clear and it might therefore seem logical to reject the culinary interpretation in this instance. However, to do so creates more problems than it solves, not least because it is

²⁰Greenewalt et al. 1990 147.

²¹Greenewalt et al. 1988b 64.

²²Greenewalt et al 1990 151.

²³See above note 17.

²⁴Greenewalt et al. 1988b 64.

difficult to supply any convincing alternative explanation for these artefacts.

It seems unlikely that the spits were used as a form of Lydian currency. Not only do they fail to conform to a single type, but material from the Ephesian Artemision suggests that a form of electrum currency was already in existence by the mid-sixth century²⁵. Furthermore, iron seems to have had a relatively low value in the reign of Kroisos, judging by the prolific use of this metal for nails and brackets in roofing, shelving and boxes in a lack-lustre residence²⁶, so that if the spits from the area of the fortification wall were employed as a regular form of money they must have functioned as "small change", and their form is hardly conducive to frequent small-scale everyday transactions.

On the basis that the spits were found in a semi-industrial complex, it might be tempting to draw an analogy with objects of a similar shape from Late Iron Age Britain. Known as "currency bars", these seem to have functioned as units in which iron was traded in a "semi-finished" or refined form²⁷. More will be said of this interpretative possibility elsewhere in relation to other material²⁸. For the present it need not be ruled out, though it must be noted that there are no reports of metallurgical debris such as furnaces, slags, or tools for forging metal from the area, and no signs that any of the spits had begun to be processed into other objects, or that they had been cut to provide specific quantities of metal as and when required.

It is therefore preferable to cite this case as an exception to the general rule, and to interpret the seven bars with round cross-section as spits on the basis of their intimate association with the three "confirmed" spits. This conclusion does not fit well with the overall Aegean pattern, but it seems possible that this oddity may be resolved when the finds are studied and published in full: closer examination may show that a rectilinear transverse profile does in fact lurk beneath the corroded surface of the spits.

3.2.4 What do Lydian Spits have to do with Greek Spits?

How justified is the use of material from well beyond the eastern shores of the Aegean for the interpretation of the Greek spit? The answer to this question lies in part in the contrast between the types of contexts from which these artefacts have been recovered in each area.

²⁵See Howgego 1995 1-4 for a discussion of the finds of probable Lydian coins dating to 560 or earlier from the Ephesian Artemision.

²⁶Cf. other finds from the same layer, e.g. thirty nails found during the 1987 campaign: Crawford & Greenewalt 1991 9f.

²⁷See Crew 1991 for a discussion of these objects.

²⁸See §7.2.2.

In Greece, with the one exception of Geometric Pylos, all known spits appear in funerary and sanctuary sites, places, that is, where the primary deposition of the artefact was deliberate. Sardis, however, presents the negative of this picture, with spits occurring only in those places where they came to be buried by accident, and apparently not in sacred contexts. Grave goods were found in one hundred and sixty of a total of one thousand one hundred and fifty four tombs excavated in the environs of Sardis, but not one of these produced a spit²⁹. Moreover, even though many of these burials had been robbed, this factor by itself will not explain the absence, for as we have seen at the Archaic tomb from Patriki in Cyprus, cumbersome, corroded, crumbling, and heavy iron artefacts were not an attractive proposition to the thief, and therefore tended to be left behind and survive acts of illicit plundering. A corresponding absence occurs in sanctuary and other ritual contexts, even in those at which communal feasting is implied, which is rather surprising in view of the fact that, as argued above, Sardian spits were used for the roasting of meat. No such implements have been found in the remains of the highly popular ritual dog dinner, the equipment for which was buried with the remains of the animal³⁰, or even in the vast quantity of burned bone discovered in the vicinity of the altar of Cybele, where the victim offered to the deity clearly came into contact with fire at some stage³¹.

The complete dearth of spits in Sardian graves and sanctuaries in turn implies that these artefacts were not regarded in the same special way here as they were in Greece. This inference is strengthened if the humble social context of the finds from the sixth-century Sardian domestic complex is recalled and compared with that of contemporary finds from Archaic Cyprus, where the spit features amongst the prized possessions of a wealthy elite. The Sardian spits must therefore be used with extreme caution for the purposes of this study. In instances where a direct relationship may be observed in a particular aspect, the finds are of direct relevance. In the case of form, the fact that the spits are either imports or copies of Greek types suggests that the idea of placing a heat insulating covering over the handle was not necessarily a Lydian modification, but an integral part of the original Aegean design. This probability is increased by the fact that the Cypriot types from which, as argued in §2.3.1c, the Aegean version itself was derived had a comparable device in the form of a wooden handle. However, in matters which are more open to interpretation, and especially in the question of function, the evidence offered by the spits from Sardis becomes more

²⁹For the excavation of a total of 1154 Lydian graves see Hanfmann 1983 63.

³⁰The nature of ritual dinners at Sardis is discussed in detail by Greenewalt 1976. A typical assemblage from a ritual dog dinner is illustrated on the facing page of the publication, and comprises: a jug, oinochoe, skyphos, dish, iron knife, and immature dog skeleton. A summary of religion in Sardis is provided in Hanfmann 1983 90f.

³¹Hanfmann 1983 96 & n77.

circumstantial: the fact that these specimens were not used as money has little bearing, if any, on whether Greek spits were employed in this way. This conclusion may seem rather obvious, but it must be stressed here, because several previous studies of spits have followed a "cut and paste" approach, whereby material from cultures outside the immediate area of Cyprus and the Aegean, has often been used in the interpretation of the function of Greek spits³². Such material, however, is properly considered in its own right as a separate cultural phenomenon, which, even if transmitted to new peoples via the Greeks in their ships, need not have been adopted without adaptation into its own individual and parochial form.

3.3 EPHEMERAL SPITS: GREEK *ESCHARAI*

There are no further examples of Archaic Greek spits from settlements to consider. The full range of archaeological evidence for the use of such implements in such contexts has not, however, been exhausted. Hearths with firedogs have been discovered in houses of the Geometric period during recent excavations at the Macedonian settlement of Sindos, and while there are no reports of spits, as noted in the previous chapter several members of the noble dead of this community were interred with miniature spits and firedogs during the sixth century. No further comment may be made in advance of the publication in print of these important finds³³, but they suggest that, contrary to the substantive evidence from the funerary contexts, the spit may have been used in the humble dwelling by the ordinary citizen: by men such as Eumaios, the swineherd of the *Odyssey*, who, in his rude hut, entertains his master to meat roasted on *obeloi*³⁴. Certainly, the hearths of everyday Greek houses, such as those of the eighth century found at Zagora and elsewhere, might have proved most suitable for the preparation of such simple meals³⁵.

Further evidence for the widespread common use of spits is offered by a type of pottery brazier. Known as the "*eschara*", this unit is typically, though not always, circular in plan, and comprises two cones of unequal size joined to each other at the apex by a narrow neck. The lower, smaller, of these cones forms the base of the artefact, and the upper, broader and shallower cone, a receptacle for charcoal³⁶. In size, they typically measure about forty centimetres in diameter at the rim, and they were clearly designed to be portable. In Athens,

³²Esp. e.g. Bruns 1970, D'Agostino 1977a, A.E. Furtwängler 1980, Courbin 1983, Kilian 1983.

³³The discovery was made during Prof. M.A. Tiverios' campaign of 1994, and was posted on the Internet.

³⁴*Odyssey* 14.75, 77, 430.

³⁵For Zagora see Cambitoglou et al. 1981 34, Cambitoglou et al. 1992 26; for Archaic houses in general see I. Morris 1998 16.

³⁶For a description of the *eschara* see Sparkes 1962 129; Sparkes & Talcott 1970 234-235 (text) and 378 (catalogue). A selection of *escharai* is illustrated in **Figure 3**.

escharai first appear during the fifth century, where they seem to have gained rapid popularity, and are a very common shape thereafter in the archaeological record³⁷. What links these objects to spits, however, is the presence of pairs of ridges on almost all of the earliest examples, which are sited opposite each other, and which protrude above the rim of the bowl for the charcoal. These features are explained as rests for spits between which skewers laden with meat would have been suspended, and there seems to be no reason to doubt this interpretation. The distribution of *escharai* is not limited to Athens, but, according to the parallels given by Sparkes and Talcott for the finds from the Athenian Agora, also extends to Olynthos, Korinth, and Aigina³⁸, and their list is probably not exhaustive.

These portable barbecue bases therefore help to fill in some of the more worrying geographical and chronological blanks in the archaeological evidence for the spit-roast. However, the large, heavy, metal spits with which we have hitherto been concerned cannot have been intended for use in conjunction with these units, and we must infer a type of skewer which has not survived in the archaeological record, and which was probably perishable³⁹. The most likely answer seems to be that wooden spits were deployed in this case, and, as we shall see, there is ancient written evidence with which to support this suggestion⁴⁰. It is hard to imagine that these glorified wooden splints were regarded as valuable possessions, especially if, as seems to be the case judging by the high numbers of broken and discarded examples, *escharai* were not. Perhaps it is not too fanciful to envisage the ordinary citizen reclining by his camper-stove, his appetite well satisfied, whiling away the time taken for his food to settle by feeding the spent spits to the still glowing embers, and watching them (and would-be archaeological evidence) wisping away as smoke.

The advent of the *eschara* in the fifth century shows the spit-roast as a popular and widespread mode of cooking amongst the average person, and not, as the evidence from Greek funerary contexts would have us believe, a practice which was reserved for the privileged few. There is no evidence to indicate whether the situation was different before this time, but it must be borne in mind that in the absence of the *eschara*, there would be no material trace of the common spit, and that the sudden success and proliferation of the brazier is readily explained if it met an existing need. It can be no accident, however, that the types

³⁷See Rotroff & Oakley 1992 49 for the discovery of a large deposit of debris from a public dining place, where fragments of *escharai* proved the most numerous type represented in the pottery assemblage.

³⁸Sparkes & Talcott 1970 378.

³⁹Two small bronze spits are displayed atop an *eschara* in Case 39 of the Agora museum in the Stoa of Attalos in Athens, but are modern in origin. I am grateful to Mrs Jan Jordan, Secretary of the Agora Excavations, for confirmation of this fact.

⁴⁰See §6.2.2.

of spit are socially distinct, and the common wooden *eschara* spit must be seen as the cheap and plain version of its iron relative. Moreover, the difference between these two types lies not only in their substance, but also in the context of their use, for behind the *eschara* spit lies a rustic picnic, whereas behind the iron spit there lies a much more grand and opulent social occasion.

3.4 CONCLUSIONS

The main lesson to be drawn from the evidence from settlement contexts is a salutary reminder of the effects of formation processes and archaeological activity on the distribution pattern. These two factors have produced an acute dearth of spits from secular sites, which renders a number of matters more difficult to understand. In particular, it is hard to assess the extent to which the evidence from funerary and sanctuary contexts reflects true patterns of the chronology and geographical and social dissemination of the spit. Moreover, while it is true to say that there is no evidence from this source for the use of spits as money, there is no means with which to establish the significance of this fact.

Nevertheless, there is adequate material with which to demonstrate that this type of artefact was not confined to the sacred world, but was used widely in secular settings. It has been suggested above that the standard form of the spit over the hearth in the home or over the *eschara* outdoors was a simple wooden stake, though the Geometric fragments from Pylos and the mid-sixth century spits from the mid sixth-century domestic complex at Sardis show that the ownership and deployment of iron types in such everyday settings was not unknown. The fact that the latter were recovered from a relatively squalid quarter of the Lydian capital presents a marked contrast to their apparent continued use in the Aegean and on Cyprus as objects of value. It would seem, therefore, either that there was a considerable economic difference between the worlds of the Aegean and Anatolia, or that the value of the spit in Greece was artificially inflated, but discussion of this matter must be deferred to **Chapter Eight**.

The difference in the social and economic context in which spits feature in Aegean Greece and in Lydian Sardis provides a good illustration of the imprudence of using evidence from non-Hellenic cultures to interpret the function of *obeloi*. However, as imports from Greece, the spits from Sardis do have relevance to the subject of form, and the lone example from the mid sixth-century domestic complex demonstrates how the problem of the transmission of heat from the roasting end into the handle could be overcome by the simple addition of a wrapping of insulating material. This detail of design is of vital significance, as we shall see in §7.2.1d, in demonstrating that there was no practical advantage in the choice of iron or bronze for the manufacture of a metal spit.

CHAPTER FOUR

SANCTUARY CONTEXTS

4.1 INTRODUCTION

In many ways the spits from sanctuary contexts form a continuation of the story told by those from the funerary contexts, and are best understood when compared and contrasted with this material. However, the evidence from sanctuaries is very different in nature to that from graves, and as such requires different treatment. In most cases, spits from sanctuary contexts belong to assemblages formed by acts of secondary deposition, and, in particular, by the throwing away of old material during clear-outs of sacred treasuries. Therefore, unlike the majority of the tombs, it is rarely possible to associate any goods with the primary deposition, and in consequence much of the analytical framework employed in the study of the funerary contexts and applied at the level of the individual site has no use or relevance here. Likewise, it is much more difficult or even impossible to address some of the questions asked of the archaeological data in the previous chapters, such as the status and gender of persons linked to the deposition of a spit. A further general problem relating to the sanctuary evidence is that in most instances the date at which these artefacts were initially placed in the various shrines cannot be tied down with any great precision. As a result, the study of matters where a well defined chronology is of paramount importance is greatly impeded.

This chapter, therefore, adopts a different structure to **Chapter Two**. In place of a description and analysis of each individual site and context, the material is presented and considered as a whole. The distribution and typology of the spits are examined first, and in both cases the results are related to the funerary evidence. A substantial discussion of the interpretation of these artefacts follows. This begins by establishing that the vast majority of the finds cannot have been used for the everyday roasting of sacrificial meat. It then proceeds to assess whether they functioned as a form of money, and the outright rejection of this view leads to the formulation of alternative hypotheses.

Two appendices accompany this chapter. **Appendix B1** supplies a brief description of the archaeological data set. For ease of reference, the sites have been placed in alphabetical order, and labelled in bold typeface with an arabic number preceded by the letter "S", the whole of which then appears in the main text in brackets (thus (**S17d**) corresponds to Olympia, sub-context of the Altar of Artemis). In turn, **S.epig.** numbers 1 to 3 refer to the three relevant archaic epigraphic attestations, and **S.lit.1** to the single relevant archaic literary attestation. A summary of all the sites, contexts, and their reference numbers may be found in **Table 1** at the end of **Appendix B1**. **Appendix B2** is specific to a case study of the

occurrence of spits in a series of wells at Olympia (**S17b**).

4.2 DISTRIBUTION

4.2.1 Presences and Absences

Spits have been found in Greek sanctuary contexts over an extensive geographical region, stretching from the Greek colony of Poseidonia (Paestum) in Italy, to pre-Phoenician Kition in Cyprus. They are known from twenty-five sites in the Aegean area itself, bounded by Dodona in the west, Poseidi (Chalkidike) in the north, Ephesos in the east, and Knossos in the south¹. However, though their distribution is wide, their density within this area is low and, with the one notable localised exception of Sparta, the sites at which they occur form a disparate scatter rather than a focused concentration. Poor preservation in some soils, and inadequate observation and recording by some archaeologists, especially those of the pioneering generation, probably account for some curious lacunae, such as the lack of finds from the early excavations at the Samian Heraion². However, there are a number of instances where the absence of evidence really does seem to constitute good evidence of absence.

For example, at the sanctuary of the Great Gods on the island of Samothraki, the various publications of the site, combined with the efficient organisation of the excavation storage rooms and accompanying computerised database show that no spits lie unreported amongst the many small scraps of iron which were gathered up, recorded, and stored for future study³. Likewise, at the sanctuaries of Zeus at Kombothekra, and of Demeter and Kore at ancient Taucheira (Tocra), the quality of the excavations and thoroughness with which the iron finds have been published inspire trust that the total dearth of spits in the various Archaic deposits is genuine⁴. At other sites, publication has been delayed or is incomplete, but there is nevertheless sufficient evidence with which to infer the same, as, for example, at the Idaian Cave on Krete⁵. At Bassai, Yalouris has argued that Artemis Orthasia was joint patron of the site with Apollo, and has detailed the correspondences in the assemblages of votive material from this site and from Artemis Orthia at Sparta. Fragments of spits were found at the latter (**S24**), and so the presence of spits at Bassai would have proved significant, yet it seems that

¹See **Map 3**.

²A.E. Furtwängler 1980 81.

³For the deposits of Archaic material at the sanctuary of the Great Gods see esp.: Lehmann 1951 1-30; Lehmann 1952 117f; Lehmann & Spittle 1964 110; Lehmann & Spittle 1982 26-27, 267-268. I am very grateful to Professor James McCredie for his generous hospitality during my visit to the site, and for arranging access for me to the database and store-rooms.

⁴Kombothekra: Sinn 1981 65f; Taucheira: Boardman & Hayes 1966 160 & 1973 83.

⁵Sakellarakis 1988 193.

they were not among the "abundant" quantities of iron objects found there⁶. At the regional level, Voyatsis has compiled an extensive list of dedications at the many sanctuaries of Arkadia other than Bassai, and it transpires that these too have produced no spits to date⁷. Hägg's survey of sanctuaries in the Argolid provides a variation on this theme, in that of the fifteen Geometric sites included by him, spits occur only at the Argive Heraion⁸ (though we may add that they have also been found in this region at Halieis (S10)).

It seems likely that future excavations and publications will add finds to some areas of the distribution map which are otherwise blank, and in this respect recent discoveries at Poseidi in Chalkidike (S21) and Kommos on Krete (S14) offer cautionary parables. However, the sites and regions mentioned above where a negative distribution may be observed argue that many of the blanks are real⁹. When this picture is compared with that of the finds from the funerary contexts, the chequered pattern becomes much more complex¹⁰. There is a degree of overlap between the two types of context, but this is limited to Argos and Knossos: in all other regions, the distribution of spits is exclusive to the sanctuary or to the grave. Even so, large areas of Greece remain entirely devoid of finds of iron spits. In particular, the archaeology of Attica is very well known, and has been studied in such great detail that it seems unlikely that the near total absence of finds is illusory.

4.2.2 Chronological Distribution

Whereas the funerary evidence comprises a fairly homogenous body of readily compatible acts of primary deposition of short duration, that from the sanctuaries consists of a heterogeneous collection of acts of both primary and secondary deposition of both short and protracted duration. It does seem possible, nevertheless, to salvage some general indication of the overall waxing and waning of the popularity of spits in such settings, though this story must be articulated through those sites and contexts where the date at which the spits became buried may be placed within reasonable limits, rather than those at which the relevant stratum spans a period of several centuries or even epochs, or those at which datable strata were

⁶See esp. Cooper 1978 192f and Yalouris 1979 91.

⁷Voyatsis 1990. See also Morgan 1997 184-192.

⁸Hägg 1992 23.

⁹Note: thus far this chapter has been concerned only with tangible finds of spits, and not the whole gamut of evidence for their presence, which will be considered at a later juncture.

¹⁰See **Map 2**.

missed by excavators of the proto-archaeological era¹¹. The sites, contexts, and epigraphic or literary attestations which meet this criterion are summarised in **Appendix B1 Table 2**.

From this select body of data it becomes apparent that the earliest spit known from a sanctuary is contemporary with the earliest known from the funerary evidence, and comes from the eleventh century pre-Phoenician levels at Kition in Cyprus (**S12a**). However, whereas the distribution of spits in graves spreads from Cyprus to Krete and thereafter to mainland Greece, the sequel in the sanctuaries differs markedly. There are no further finds from any such context datable before ca. 800 when, after a lapse of two hundred years or so, a further lone find occurs at Kition, this time in Level III of the Phoenician temple of Astarte (**S12b**). It is at about this time at the earliest that the first possible example appears in a sanctuary in Aegean Greece, comprising the fragment of an iron bar from Perachora (**S18a**), identified here as a spit. However, it is only in the second half of the eighth century that the distribution finally begins to develop in earnest, beginning with Philia, and followed in the seventh century by a large group of sites including Artemis Orthia, the Harbour Sanctuary at Emporio, the Argive Heraion (**S2c**), the Ephesian Artemision (**S7b**), and the Samian Heraion (**S23a**). The sixth century sees the number of sites where spits are represented sustained, but their distribution remains far from constant, for, with the single exception of the Samian Heraion, spits do not continue to appear after the mid sixth century at the same sites at which they appear in the seventh century. It follows that most of those sites at which there is evidence for spits from the beginning of the sixth century represent a new generation, including Nemea (**S16a**), Olympia (**S17b**), Poseidi (**S21**), Poseidonia (**S22**), the Spartan Menelaion (**S27**), Phanaristos' dedication (**S.epig.2**), Torricella (**S.epig.3**), and Delphi (**S3a & S.lit.1**). The deposition of spits at these sites is also short-lived, having ceased at the majority by the beginning of the fifth century, and at the remainder by its end.

The most important question in the interpretation of the pattern outlined above is the relationship between the date of final deposition and that of primary deposition. In some cases the interval between these two events may have been long and drawn out. The spit from the Phoenician levels at Kition (**S12b**) was found in a context dated ca. 800, but in type belongs to Karageorghis' 1974 Type D, which, as seen in §2.3.1c, is elsewhere restricted to Cypriot tombs of the Geometric period. Moreover, as seen in §2.2.1a, the fact that it was manufactured from bronze argues that it should be dated no later than the end of Cypro-Geometric I (= ca. 1050-950), after which time spits of this material and type are

¹¹The following are therefore excluded: Angelona (**S1**); the Argive Heraion, bundle /bar and general context (**S2a & b**); Delphi, the stadium (**S3b**); Dodona (**S4**); Epidauros (**S8**); the Temple of Athena at Emborio (**S5**); Geronthrai (**S9**); Halieis (**S10**); Knossos (**S13**); Mount Hymettos (**S15**); Olympia, general context and altar of Artemis (**S17a & d**); Pherai (**S19**); Samian Heraion, Temple D (**S23c**); the Athena Chalkioikos site at Sparta (**S25**); the Megalopolis Road sanctuary (**S26**); Tyros (**S28**); and Zagora (**S29**).

otherwise unknown from datable contexts. Therefore, it seems that the spit from the Phoenician levels at Kition was already antique by the time it came to rest on Floor III of the temple of Astarte. The presence of the iron spit in the pre-Phoenician levels of the same site (**S12a**), which was itself deposited during the first half of Cypro-Geometric I (= ca. 1050-1000), indicates that the bronze example could have been brought there soon after the date of its manufacture. It is therefore possible, or even likely, that the bronze spit arrived at the sanctuary during the latter half of the eleventh century, or first half of the tenth, and remained there above ground for a period of about two hundred years before it was buried.

A comparable interval cannot be ruled out at the Argive Heraion. Here, the excavations of Caskey and Amandry (**S2c**) suggest that the deposition of the spits at the site may be limited to a period of about one hundred and fifty years, stretching from the early seventh century to the middle of the fifth. However, the funerary evidence shows that spits were present in the Argolid from the early eighth century, and if the beginnings of cult activity at the Heraion may be traced to this same time¹², then it follows that the theoretical upper limit for the primary deposition of spits at the sanctuary must be raised by a further one hundred years. Moreover, unlike the bronze spit from Kition, it is impossible to ascertain whether the spits from the Argive Heraion arrived at beginning, middle, end, or throughout this epoch.

Similar problems are witnessed elsewhere. For how long had the spit from the peripteral temple at the Ephesian Artemision (**S7b**) lain on the bench before it was overwhelmed by the catastrophic flood of the seventh century? For how long did the spits from the wells at Olympia (**S17b**) stay above ground before they were tipped into the various disused shafts with other sacred rubbish? The dates of the deposition of the finds from the environs of the Siphnian Treasury at Delphi (**S3a**), and of the various contexts at the Samian Heraion (**S23**) all lie within unusually well defined parameters, but what was their history before they were buried? Likewise, the chain and duration of events which brought spits to a bronze foundry in the environs of Pheidias' workshop at Olympia (**S17c**) and culminated in their re-use in the mid-fifth century in the manufacture of ladles for molten metal, remains a mysterious and un-knowable quantity. Finally, at Kalapodi, it seems impossible to ascertain whether the spits which formed part of the "grave goods" for the "funeral" of the Archaic temple (**S11**) should be associated in chronological terms with the latest find, a coin of ca. 457¹³, or the earliest finds, a group of bronze pins of Geometric type which were antique by the time of their interment, or somewhere in the middle.

¹²Foley 1988 136.

¹³For the dating of this coin see Felsch et al. 1980 88.

There is, however, some evidence that the interval between the arrival of a spit at a sanctuary and its burial in the archaeological record could be brief. At the Harbour Sanctuary at Emporio on Chios (**S6**), unwanted material was habitually cleared from the temenos, and dumped on a terrace¹⁴. The wall of this terrace was reconstructed at fairly regular intervals, and this process has divided the deposit into a sequence of six layers. The spits do not appear in the first of these strata, but are confined to second, third, and fourth, each of which spans almost one third of the seventh century, and this fact would seem to imply that a period of no more than thirty years elapsed between the arrival of one of these artefacts, and its disposal. There are also at least two instances, one at Poseidonia (**S22**) and the other at Nemea (**S16a**), in which the context argues that the spits were brought to the sanctuary site for the purpose of immediate or almost immediate deposition in the ground. The former comprises a select assemblage of goods which was sealed in an underground vault, the latter the remains of a small single feast which were buried in a pit. Similarly, at the Spartan Menelaion (**S27**) votive dedications including spits seem to have been brought to the site for immediate deposition in a large pit.

The above group of finds shows that the burial of a spit could take place within one generation of it being taken to a sanctuary, or even on the same day, and therefore that the overall chronological distribution outlined by the sum total of all the sites may provide a reasonably accurate general picture of the primary deposition. This supposition gains strength from the fact that the period to which the contexts within the group belong, the seventh and sixth centuries, matches that of the majority of the corpus as a whole. Further support is offered by the epigraphic and literary attestations of Archaic dedications of spits at Perachora, Krisa, Torricella, and Delphi, all of which fall within this same epoch. If this conclusion is accepted, then it would seem that as with the geographical distribution, the finds from the sanctuaries in Aegean Greece show only a small overlap with those from the cemeteries.

4.2.3 Typological Distribution

The analysis of the typological distribution of the spits from the sanctuaries adds an important dimension to the patterns outlined so far. As ever, the corpus of evidence from the sanctuaries is beset with the problem that a number of the finds have not yet been published fully¹⁵. An additional difficulty lies in the corroded state of the finds which often frustrates

¹⁴See Boardman 1967 53 and 101 for a description of the archaeological formation process.

¹⁵These include the finds from: the general contexts of the Argive Heraion (**S2b & S2c**); Epidauros (**S8**); Halieis (**S10**); Olympia (**S17**) except for the examples illustrated by Kunze & Schleif 1944, and those from the Foundry (**S17c**); Perachora (**S18**); Pherai (**S19**); Poseidi (**S21**); Samian Heraion Temple D (**S23c**); the six Lakonian sites (**S1, 9, & 24-27**); and Zagora (**S29**). It has been possible to make good two of the lacunae, one at Sparta, and the other at Olympia, with the help of Richard Catling of the British School at Athens, and of

attempts to categorise them into sub-types. This problem becomes especially acute where differences of shape are subtle and therefore potentially illusory, and for this reason A.E. Furtwängler's sub-types "b", "c", and "d" of the oval-handled spit carry little conviction¹⁶. The typology presented here is therefore partial, provisional, and at times somewhat superficial. However, it does provide an indication of the main centres for the production and dissemination of spits in Aegean Greece if the material from the funerary and settlement contexts is also taken into account.

As in §2.3.1c and §3.2.2 the shape of the handle provides the only secure diagnostic feature. The most common type appears to be the **lanceolate**¹⁷. This has been encountered already at Argos in South Cemetery Area T1, and probably at Sardis in the "leaf" shaped handle from the area of the Monumental Mudbrick Structure. In the sanctuaries it is represented at the Argive Heraion in the bundle and giant spit(**S2a**), the Harbour Sanctuary at Emborio (**S5**), Kalapodi (**S11**), Olympia (**S17a**), Pherai (**S19**), the well in the area of the North Building at the Samian Heraion (**S23b(iv)**), and the Spartan sanctuaries of Artemis Orthia (**S24**) and Athena Chalkioikos (**S25**). A variation, seen at Olympia, involves the "displacement" of the handle, meaning that it is not situated at the end of the shaft, but a small distance before its terminus.

Two closely related, and at times barely distinguishable types comprise the **round** and the **oval**. The former has also been encountered before at Argos, in the Panoply Tomb, and is represented here at Mount Hymettos (**S15**), Philia (**S20**), and Poseidonia (**S22**)¹⁸. The oval type, likewise seen in a funerary context, this time at Sindos in tomb 59, features in the sanctuaries of Artemis Orthia (**S24**) and Athena Chalkioikos (**S25**) at Sparta, and also at Olympia (**S17a**), where a variant with displaced handle may be identified¹⁹. Some of the finds from the Samian Heraion (**S23a(i,ii) & b(i,ii)**) also seem to belong to this type, but, as noted in **Appendix B1**, they are so heavily corroded that it is possible that some or all of them may originally have had round handles. A related problem affects the spit found in the environs of the Siphnian Treasury at Delphi (**S3a**), the handle of which is broken off half way

Thomas Völling of the German Institute respectively. I am extremely grateful to these two individuals, the first of whom arranged for me to study the iron finds discovered about ninety years ago during the British excavations at Sparta, and the second of whom most generously shared with me the preliminary results of his research for a forthcoming volume of *Olympische Forschungen* on the iron finds from Olympia. Any faults or omissions in the presentation of the evidence are, however, entirely my own responsibility.

¹⁶A.E. Furtwängler 1980 85f.

¹⁷See **Map 4a** and **Figures 4.2.3a.1-6**.

¹⁸See **Map 4b** and **Figures 4.2.3b.1-3**.

¹⁹See **Map 4c** and **Figure 4.2.3c**.

along its length, with the result that it could belong to any of the three types defined so far. Similarly, the spits from the Apollonion at Tyros (**S28**) could belong to the lanceolate, round or oval type.

Of the other types, the **spatula** is less easily confused. It is possibly represented in the settlement evidence at Sardis, in the "chisel" shaped handle from the area of the Monumental Mudbrick Structure, but in the sanctuaries it occurs at the Argive Heraion in the bundle (**S2a**), the Harbour Sanctuary at Emborio (**S5**), Olympia (**S17a**), and the Spartan sanctuaries of Artemis Orthia (**S24**) and Athena Chalkioikos (**S25**)²⁰. Variations concern the degree to which the terminus is splayed to form a wedge. A more distinct profile is offered by the **flange-hilted** type, similar in outline to a flange-hilted sword, which was encountered previously in miniature form at Sindos in Tombs 65, 25, and 28, and which is found here at Olympia (**S17a**)²¹. The links between the Macedonian cemetery and this sanctuary site are all the more significant, because firedogs of similar types were also found at both sites²². The **crescent** type may have been derived from the flange-hilted type, and has a discrete distribution at Dodona (**S4**), Nemea (**S16a,b**), and also at Olympia (**S17a**), where variations appear in the accentuation of the crescent, and in the tongue which projects from its concave side to form the terminus proper²³. A further departure is offered by the **rolled** handle, which is found in the Lydian city of Sardis on the acropolis and in the area of the monumental mudbrick structure, but in sanctuaries within Greece occurs at Kommos (**S14**), Olympia (**S17a**) and Philia (**S20**) alone²⁴. The **remaining types** are attested at single sites only. As noted above, the sanctuary of Astarte at Kition has produced a single native Cypriot bronze spit of Karageorghis' 1974 Type D (**S12b**). Returning to Aegean Greece, Olympia (**S17a**) has produced a number of types which are not attested elsewhere, and these comprise individual examples of spits with oblong, trapezoid, and pyramidal shaped handles. The list of types from the sanctuaries²⁵ is completed by a spit with a simple hooked end from the Temple of Athena at Emborio (**S6**).

²⁰See Map 4d and Figure 4.2.3d.

²¹See Map 4e and Figure 4.2.3e.

²²I am indebted once again to Thomas Völling for showing me the three iron objects from the museum stores which may be identified as the ends of firedogs.

²³See Map 4f and Figures 4.2.3f.1-3.

²⁴See Map 4g and Figures 4.2.3g.1 & 2.

²⁵There is no need to reiterate here the types which appear in funerary or settlement contexts, but not in sanctuary contexts.

A.E. Furtwängler introduces an additional distinction of "solid" and "hollow" spits²⁶, but, as Courbin has pointed out, it is clear that in so doing he has misinterpreted the physical evidence. The finds from the Samian Heraion on which Furtwängler bases the identification of these types (S23a(i,ii)) have in fact corroded completely under waterlogged conditions, and by complex chemical and physical processes the oxidised products have become redeposited around the void where the metal had once been, thereby producing the illusion of a hollow artefact²⁷.

At first sight, the various types show little coherence, because their distribution is either widely scattered, too sparse, restricted to sites which received dedications from all directions, or a combination of these factors. For example, the crescent type is found at only three sites, but these lie far apart, and they are all inter-state sanctuaries to which worshippers brought objects from all over the Greek world, and it therefore seems futile to consider its origin. However, a more encouraging scenario is offered by the lanceolate, round, oval, and spatula types. From the description of the distribution given above it may be observed that the common geographical denominator of this group lies in the Peloponnese. Closer analysis reveals two separate foci. The first and more distinct is found in the territory of Sparta, where the six sanctuaries from which spits have been reported (Angelona, Artemis Orthia, Athena Chalkioikos, Geronthrai, the Menelaion, and the "Megalopolis Road" sanctuary) constitute more than one quarter of the total number in the Aegean area. The lanceolate, oval and spatula types are represented here, and the possibility that examples of the round type may be added from the future study of the finds in the store of the archaeological museum at Sparta cannot be excluded.

It is tempting to assume from such a heavy concentration that Sparta was the primary home of the spit in mainland Greece, but if the evidence from the funerary contexts is also brought to bear, a second concentration becomes apparent in the city of Argos and the Argive Heraion, where the earliest finds pre-date those of any Lakonian context by about one hundred years. This latter fact may be explained as a product of an inherent bias in the evidence, because the Spartans did not bury their dead in the highly ostentatious manner of the Argives. Even so, some support for an Argive origin may be drawn from the fact that this state seems to have been enjoying a metallurgical *floruit* by the middle of the eighth century, well before the first Spartan spits appear at Artemis Orthia, and that Argive influence may be traced elsewhere in Spartan metalwork and also in pottery²⁸. However, responsibility for the

²⁶A.E. Furtwängler 1980 83, cf. Strøm 1992 46.

²⁷Courbin 1983 154.

²⁸Coldstream 1977 146 & 159-160.

dissemination of the lanceolate, round, oval and spatula types must rest with Sparta because the appropriate handle shapes tend to appear in areas with which Sparta enjoyed close ties.

Cartledge has observed that a "special relationship" with Samos may be inferred from historical sources, and that this is also reflected in the archaeology of the Samian Heraion in finds of significant numbers of prestigious Spartan artefacts²⁹. What is more, a study by Nafissi has shown that Lakonian Black Mixing bowls, which occur here in the greatest concentration ever found at one site, appear in the stratigraphy between ca. 650 and ca. 550³⁰, and they are therefore almost exactly contemporary with the spits (**S23**). It is possible to imagine that the two artefact types were imported and used together, and evidence for such an association has been recovered from the Giglio wreck, though the interpretation of the spits from this context is not clear³¹. Sardis too enjoyed relations with Sparta as attested historically for the middle years of the sixth century by Herodotos in his account of Kroisos winning an alliance to obtain military assistance against Kyros³², and as reflected in the archaeological record by the presence of Lakonian pottery³³.

At fifth-century Kalapodi, a Lakonian tile was found on the same votive bench as a lanceolate spit (**S11(i)**). Phokis was hostile to Spartan interests after the Persian Wars up until the battle of Koronea in 446, but thereafter had become her ally³⁴, and it is tempting to speculate that the spit is more likely to have been deposited between this time and ca. 430, the *terminus ante quem* of the context³⁵. Similarly, at the Apollonion at Tyros (**S28**), the spits of the lanceolate or round or oval type may have been deposited between the second half of the seventh century and first half of the sixth during a period of Spartan influence which is

²⁹Cartledge 1982 esp. 252-256.

³⁰Stibbe 1989 20, and Nafissi in Stibbe 1989 esp. 73-74.

³¹Bound 1991: pottery 16; spits 24, 26-27, and see §7.2.2.

³²Herodotos 1.69.

³³Stibbe 1989 92 No. B15, 121 No. K18, 114 (outside the catalogue (F)); Stibbe 1994 165 Nos. C17 & C18.

³⁴The Phokians had joined the Greek cause during the Persian Wars, and were therefore technically allied to Sparta at that time, but in 457 they attacked its friend Doris, prompting a military response (Thucydides 1.107.2). The Athenians gained temporary control over Phokis after Tanagra (Thucydides 1.108.2), enrolled its support against Sparta during the "First Peloponnesian War" (Thucydides 1.111.1), and restored possession of Delphi to it in 448 during the "Second Sacred War" (Thucydides 1.112.5). However, they lost the area after Koronea in 446 (Thucydides 1.113.2), and Phokis is listed as a Spartan ally in 431 at the outbreak of the "Second Peloponnesian War" (Thucydides 2.9.2), albeit Thucydides puts the idea that the allegiance was weak into the thoughts of Demosthenes, the fifth century general (Thucydides 3.95.1). For a historical commentary on these events see Hornblower 1991 comm. ad loc. cit.

³⁵*Pace* B. MacDonald 1982, who shows that goods could be exchanged regularly between hostile states, even when at war, and that state controls over ancient trade were limited.

reflected elsewhere in the material evidence by the presence of Lakonian pottery³⁶. At the Poseidonian Hypogaeum (S22), the spits are of the round type, which, as mentioned above, is not yet attested from a Spartan context, but it is interesting nevertheless to note that the five examples were buried with bronze hydriai of Lakonian provenance. At other sites, typological information is unavailable, but a link with Sparta may still be revealed. In Italy, the sanctuary at Torricella lies in the environs of Sparta's only colonial adventure of Taras, while closer to home, the city of Halieis preserves the archaeological traces of a marked Spartan presence from the mid-seventh century to the end of the sixth³⁷.

The geographical spread of other types is more difficult to interpret. The flange-hilted type is limited to Olympia and the miniatures from the graves in the cemetery at Sindos. The association between the two sites gains some significance from the fact that parts of firedogs were also found at Olympia which match the form of some of the Sindian miniatures³⁸. However, it seems impossible to determine from the evidence available whether the type was introduced to Macedonia from the south, or represents an indigenous form. Similarly, the origin of the rolled type is obscured by its distribution which lies scattered between the sanctuaries of Olympia and Philia in Aegean Greece, the city of Lydian Sardis to the east, and the graves of native Italians to the west³⁹. This elongated pattern nevertheless does serve to demonstrate the degree to which the spit was possessed of great cultural versatility, as well as geographical mobility.

4.2.4 Divine Distribution

Were there particular deities with whom spits were associated? Spits have been found, or are attested in the Archaic period, at the sanctuaries of:

Apollo at Delphi (S3, S.lit.1), Geronthrai (S9) and Halieis (S10);

Artemis at the Ephesian Artemision (S7), Olympia (S17d = Altar of Artemis), Pherai (S19), Artemis Orthia (S24), Tyros (S28) and Torricella (S.epig.3);

Artemis and Apollo at Kalapodi (S11) and probably the harbour sanctuary at Emborio, though the patron deities here may in fact be Hera and Apollo (S6);

Hera at the Argive Heraion (S2), Perachora (S18, S.epig.1) and the Samian Heraion (S23);

Zeus at Dodona (S4), Mount Hymettos (S15) and Nemea (S16);

Zeus and Hera at Olympia (S17);

³⁶Phaklares 1990 178.

³⁷Jameson 1973 366.

³⁸Once again, I am indebted to Thomas Völling for showing the unpublished firedog components to me.

³⁹The spits from native Italian graves are discussed below in §7.2.1b.

Athena at the temple of Athena at Emborio (S5), Philia (S20), Athena Chalkioikos at Sparta (S25) and Zagora (S29);

Athena and Hera by Phanaristos' dedication (S.epig.2);

Poseidon at Poseidi (S21);

Demeter at Knossos (S13);

the hero **Achilles** at the "Megalopolis Road" sanctuary (S26);

and the heroes **Helen and Menelaus** at the Menelaion (S27)⁴⁰.

The deities listed above do not fall into a single category, such as male or female, or gods, goddess or heroes with particular special attributes or cares. It is tempting to conclude that spits were especially deposited at the sanctuaries of Apollo, Artemis, Athena, Hera and Zeus⁴¹, but this pattern lacks conviction for several reasons. Firstly, the numbers of sites per deity are small, and so the differences between them are of questionable significance, and are likely to be changed by new discoveries. Secondly, analysis by patron deity fails to predict the occurrence of spits at sanctuaries: for example, as seen above, Zeus has no spits at Kombothekra, and Apollo none at Bassai. Thirdly, the more common association of spits with Apollo, Artemis, Athena, Hera and Zeus seems to reflect no more than the relative popularity of these five deities⁴².

4.2.5 Interim Conclusions

The majority of spits from sanctuary contexts in Aegean Greece were deposited between the beginning of the seventh century and the end of the sixth, and are concentrated in the Argolid, Ionia and Lakonia. Therefore, these finds fall later than those from the funerary contexts, and occur in different areas, though there is a small overlap in a few places, especially in the territory of Argos, where as spits cease to be deposited in graves, they begin to appear at the Heraion. The development of the distribution of spits therefore seems to follow that of general developments in dedicatory practices throughout Aegean Greece, in which the focus for the conspicuous consumption of fine metal goods shifts from the grave to the sanctuary⁴³. The association of spits with this process carries important implications for their interpretation.

⁴⁰At Angelona (S1), pre-Phoenician Kition (S12a), Kommos (S14) and the Poseidonian Hypogaeum (S22), the patron deity has not been identified.

⁴¹Strøm 1992 47 & 51.

⁴²Coldstream 1977 327-328.

⁴³First identified by Snodgrass: see recently Snodgrass 1990 esp. 287-289.

4.3 INTERPRETATION I: SPITS AS PRE-COINAGE MONEY

4.3.1 The Conundrum

But for the ancient historical tradition that spits were used as money, their interpretation might be regarded as a simple matter, because there is a wealth of evidence of different kinds that these implements were used for the roasting of sacrificial meat. As illustrated in **Chapter Five**, a number of vase paintings show objects of comparable shape and dimension to archaeological examples of spits being used for this purpose, and as illustrated in **Chapter Six**, this iconographical evidence⁴⁴ is underpinned by written evidence which leaves no doubt about the role of the ὀβελός / ὀβελίσκος at the altar-side.

The archaeological evidence gives flesh to this picture, in that spits frequently occur in contexts consistent with their interpretation as skewers for roasting meat⁴⁵. Animal bone was found in the same context as some or all of the spits from Nemea (**S16a**), Poseidi (**S21**), the Samian Heraion (**S23a(i)**, **S23c**), the Megalopolis Road Sanctuary at Sparta (**S26**), and Zagora (**S29**). The Limenia site at Perachora (**S18b**) offers a particularly convincing case, in that the spits were found in and around a structure which has been interpreted by Tomlinson as a Hestiatorion⁴⁶. At its centre lay a hearth lined with huge curb stones, the upper edges of which were much worn, most likely by their frequent use as supports for spits laden with meat being turned over a fire or embers⁴⁷. It is also pertinent to reiterate that Archaic Greek spits are ideal morphologically for use at what is in effect a barbecue⁴⁸.

However, all is not as simple as it seems. Animal sacrifice lay at the heart of Greek religion, the roasting of meat was usually central to this ritual, and spits were instrumental to this act⁴⁹. Given such circumstances, it would be reasonable to predict that the distribution of spits should be as ubiquitous as that of Greek sanctuaries. The fact that this premise does not hold true has already been established, but what must be added here is that there seem to be plenty of instances where the roasting of meat may be inferred from the presence of burned animal bone, but not a single spit has been found. These include the Archaic sanctuaries of: Apollo

⁴⁴I am aware that the extent to which iconographical representations on Greek vases correspond to the real life situations which they appear to represent has been questioned, but do not wish to be drawn into this debate here.

⁴⁵A.E. Furtwängler 1980 88; Strøm 1992 47, though I disagree with the latter's interpretation of the spits from Halieis (**S10**) as cult equipment: see §4.4.9.

⁴⁶Tomlinson 1980 197-198.

⁴⁷Jeffery 1990 123.

⁴⁸See §2.3.4a.

⁴⁹See esp. e.g. Burkert 1985 53 & 55-57, Osborne 1987 174-184, Detienne 1989 1, Durand 1989a 99, Vernant 1989 21, 38f, *OCD*³ s.v. "Sacrifice".

at Dreros⁵⁰, Delos⁵¹ and Neandria⁵²; Apollo /Artemis at the "Roadside Shrine" at Ano Mazaraki⁵³; Artemis /Aphrodite at temples from the Kotilion site near Bassai⁵⁴; Ares /Aphrodite at Oloos⁵⁵; Athena at Tegea⁵⁶, and perhaps Prinias⁵⁷; Hera probably at Temple "E" at Selinous⁵⁸; Poseidon at Isthmia⁵⁹; the Great Gods at Samothraki⁶⁰; Zeus at the peak sanctuary of Mount Apesas near Korinth⁶¹; Agamemnon at Mykenai⁶²; and sanctuaries at Ithaka⁶³, Kato Syme Viannou on Krete⁶⁴, Minoa (Amorgos)⁶⁵, Antissa (Lesbos), Gonnos (Thessaly), Gortyn (Krete), Kos, Lato, Longa, Taxiarchos (Aitolia), Thasos, and Vroulia (Rhodes)⁶⁶. No doubt many other sites could be added to this list.

Even at those sanctuaries where spits have been found, the deposits to which they belong frequently do not correspond well with those in which sacrificial debris is found. At Kalapodi (**S11**), evidence for animal sacrifice has been identified from Late Helladic IIIC onwards, yet spits do not appear in the archaeology of the site until the fifth century, and are

⁵⁰Sp. Marinatos 1936 226. There are claims that fragments of spits were found at this site, but the identification of the artefacts in question lacks conviction: see **Appendix C**.

⁵¹Gallet de Santerre & Tréheux 1947-8 152.

⁵²For references see Lamb 1931-1932 46-47.

⁵³Morgan 1997 190.

⁵⁴For references see Lamb 1931-1932 46-47.

⁵⁵For references see Payne 1940 111-112, Coldstream 1977 328.

⁵⁶Morgan 1997 187.

⁵⁷For references see Lehmann 1950 5-6 n18 and Coldstream 1977 280.

⁵⁸For references see Payne 1940 111-112.

⁵⁹Gebhard 1987, Morgan pers. comm.

⁶⁰See above footnote 3. For sacrificial hearths of the second century see Lehmann 1950 5-6.

⁶¹Morgan 1990 28-29.

⁶²Hägg 1987 98.

⁶³Benton 1934-35 51.

⁶⁴Bergquist 1988 25.

⁶⁵Marangou 1985 192.

⁶⁶For references to these last named sites see Lamb 1931-1932 46-47, Lehmann 1950 5-6, and Payne 1940 111-112.

then limited to a few examples from a period of no more than thirty years⁶⁷. At Zagora (S29), in spite of extensive traces of animal bone combined with traces of burning⁶⁸, the sanctuary has produced just one spit. At Artemis Orthia burned animal bone occurred in abundance throughout the sanctuary's long history, beginning with the deposit of black earth⁶⁹, but the spits are restricted mostly to a relatively brief horizon of at most eighty years (S24). Moreover, whereas the bone was concentrated in a narrow gap between the Archaic altar and temenos wall⁷⁰, the spits were discovered mostly in a heap outside the temple⁷¹. Likewise at Olympia and the Samian Heraion, the large ash altars at each of these sites proved devoid of spits.

A further problem lies in the fact that some of the spits do not seem to have been intended for regular use. At a number of sites, finds which otherwise seem to have been in good condition at the time of their burial would appear to have been deliberately bent in two, or "killed" before they were placed in the ground, including those from Nemea (S16), Olympia (S17), and Philia (S20)⁷². This seems rather surprising, because the spits were supposedly as indispensable as the sacrificial knife, and it would be reasonable to expect that they would only be disposed of once they had become thoroughly worn out, and there was no need to render them unusable in this way. At the Argive Heraion, the fact that the bundle (S2a) was securely tied together and set in lead shows that the spits of which it comprises were not meant for actual everyday use⁷³, and it seems quite likely that the same may be said of the bundles, now lost, which lay on the dedicatory bases from Perachora (S.epig.1) and the monuments of Phanaristos (S.epig.2), and of Rhodopis (S.lit.1) at Delphi. However the most convincing case must surely comprise the giant spit from the Argive Heraion (S2a), which at seventy-three kilograms in weight for the surviving section alone could not possibly have been employed by mere mortals to skewer and roast a cut of meat over a fire. The evidence for the use of spits from sanctuaries therefore presents an interpretative conundrum. It is clear that such implements were indispensable to the quintessential ritual of Greek religion, but equally clear that the overall geographical, chronological, and localised topographical

⁶⁷See Morgan 1997 176-184 for a recent summary of the Archaic phases.

⁶⁸Cambitoglou et al. 1981 83, 98 & 1988 167-168.

⁶⁹Dawkins 1929 5f.

⁷⁰Dawkins 1929 6f.

⁷¹Woodward in Dawkins 1929 391.

⁷²Nemea: Miller 1984 Plate 37d; Olympia: Völling pers. comm.; Philia: A.E. Furtwängler 1980 95, Kilian 1983 136 fig. 5 nos. 4 & 5, 147.

⁷³Contra Foley 1988 139 n49, who suggests that the bundle was used in the annual Hekatombia.

distribution of actual finds of spits does not tally with that of archaeological traces of the ritual itself. Besides these curious facts, some of the finds were not regularly or perhaps even never used in its enactment.

4.3.2 Spits as Pre-Coinage Money

4.3.2a Pheidon and the Bundle of Spits at the Argive Heraion

The idea that some of the spits found in sanctuaries comprised dedications of an early form of money⁷⁴ provides an appealing solution to this puzzle, and has enjoyed credence ever since Waldstein discovered the large bundle at the Argive Heraion (S2a). This find seemed to confirm the tradition recorded in the *Etymologicum Magnum* that Pheidon had issued the first ever coinage, that this had superseded a money of spits, and that he had collected together the redundant units of exchange and dedicated them to Hera at Argos⁷⁵. This rare and outwardly blissful marriage between texts and archaeology has dominated the interpretation of spits at both this and other sanctuaries, and its strength is such that it has always served as a last and seemingly impregnable refuge for spit-currency when its credibility has been dislodged from other sites. However, there are reasons to believe that these two different strands of evidence have bonded together to produce a compound which has the lustre of solid fact, but which on elemental analysis is revealed to be no better than a fool's gold. Such an analysis proves no easy matter, because both the story from the *Etymologicum Magnum* and the bundle from the Argive Heraion are surrounded by pernicious levels of factual elasticity, and these have helped acolytes of the spit currency tradition, such as most recently Courbin and Strøm, to fend off sceptics such as D'Agostino and A.E. Furtwängler.

First and foremost, there is the matter of the chronology of the main elements involved: the archaeological find of the bundle; the earliest Aiginetan coinage; and Pheidon. The dating of the bundle is vague, because of the imprecision of Waldstein's contextual information (S2a), and at best may be assigned by analogy with Caskey & Amandry's excavations (S2c) to the period ca. 690 to ca. 550. The mass production of Aiginetan coinage is now thought to have commenced no earlier than ca. 550, but it is the very first type of extremely limited issue which is of relevance here. This was probably struck only a short time before its popular successor, but may have been created as early as ca. 570 or even ca. 580⁷⁶. As for Pheidon, on whom the key text centres, the difficulties of placing his reign within meaningful limits are celebrated in an extensive bibliography which reaches the despairing conclusion that it

⁷⁴For the definition of "money" used here see §2.3.4c.

⁷⁵*Etymologicum Magnum* s.v. ὀβελίσκος.

⁷⁶Kroll & Waggoner 1984 336-339. For a survey of recent bibliography on the dating of the introduction of coinage in general see von Reden 1997 156 & n16.

cannot be defined more closely than between 748 and 600⁷⁷. There is therefore a clear break of about twenty years between the lower date for Pheidon, and the upper date for the first Aiginetan coinage⁷⁸, but there are chronological overlaps between the coins and the spits, and the spits and Pheidon. This shows that the story from the *Etymologicum Magnum* such as it is cannot be taken at face value, though it is necessary to add that this would prove difficult in any case. W.L. Brown asks: *"can we believe that anyone, however powerful a tyrant, could have "called in" the spits, or had enough wealth to mint enough silver coins beforehand for issue in exchange for the spits called in or to stand the loss of dedicating these spits when he had called them in? Not perhaps impossible, but in the highest degree improbable..."*⁷⁹.

Kroll & Waggoner in turn note the unexplained oddity that Pheidon supposedly uses the mint and emblem of another state for the coinage of his native city, which is otherwise unparalleled in monetary history⁸⁰. There is also the matter of the historiography of the tale, though this will be dealt with at a later juncture⁸¹. In spite of these problems, those who would salvage some kernel of truth are able to use the chronological flexibility to keep the tyrant and bundle together, and propose a compromise solution. In this, Pheidon's contribution to the birth of coinage is no longer to replace iron spits with coins, but to standardise the rate at which spits could be exchanged for a weight of silver⁸².

4.3.2b Length

The original length of the spits in the bundle from the Argive Heraion is also of vital importance but impossible to discern with meaningful accuracy. There is a cross-party consensus that had these spits functioned as money, their value would have been determined by their weight⁸³. This would have needed to be reasonably consistent for a system of spit money to retain credibility, and Courbin and Strøm conjecture that the weight would have

⁷⁷Major discussions of Pheidon and his dating may be found in Andrewes 1949 74-77 & 1956 39-42 and Tomlinson 1972 81-82. For a succinct and recent summary of these and many other articles see Foley 1988 96, 101 n105, 167, 168 n14. For the ancient sources see Fornara 1977 1 no. 1a, 2 no. 1b, 3 n1, 6 n4.

⁷⁸Carradice & Price 1988 29.

⁷⁹W.L. Brown 1950 193.

⁸⁰Kroll & Waggoner 1984 336.

⁸¹See §6.3.2.

⁸²Courbin 1959 ; Kraay 1976 314 & 1988 433.

⁸³Courbin 1983 149, 151; Strøm 1992 44; A.E. Furtwängler 1980 94; Carradice & Price 1988 92.

been guaranteed by length⁸⁴. It follows that this measurement provides an acid test of the claim that the Argive Heraion spits were used as money. If this were true, then they should correspond in length to those from other sites within the territory of Argos, or with some Argive connection, such as the spits from the Poseidonian Hypogaeum, which is linked according to Courbin via Troizenian colonists⁸⁵.

It is unfortunate that the relevant information cannot be supplied with meaningful precision⁸⁶. Waldstein's physical description of the bundle at the time of its discovery amounts to the stark statement that it was *"about five feet long and a foot in diameter"*⁸⁷. This is accompanied by a single crude photograph⁸⁸ of the find when still at the site though no longer *in situ*, as is evident from the fact that it is wedged in position along its lower edge with several small rocks, a step which can only have proved necessary because it had been freed completely from the earth in which it was buried. As A.E. Furtwängler observes, damage to the bundle is already apparent on the left hand side and upper surface⁸⁹. This may have occurred in antiquity, before its deposition in the ground, though it seems equally likely to have been caused or exacerbated by the energetic excavation of the site, or when, as noted above, the find was moved for its photograph. What cannot be doubted is that extensive and irretrievable damage was inflicted when the bundle was moved to Athens⁹⁰, the deleterious effects of which may be seen from a photograph taken by Svoronos about ten years later⁹¹. This picture shows that much of the bundle had been reduced to a heap of small flakes and crumbs, and that not one single spit had survived intact.

Courbin's examination of the physical remains in the Numismatic Museum at Athens confirms this fact. He observes that the collection of fragments includes points and handles, but that they are missing from the longest preserved sections of 117cm, and that these cannot therefore comprise complete spits⁹². Courbin then shows that the spits were fitted with grips,

⁸⁴Courbin 1959 225 n2, 228 & 1983 152, 155; Strøm 1992 44.

⁸⁵Courbin 1959 227.

⁸⁶The discussion below touches on various aspects of metallurgy and physical chemistry, and I am grateful to Chris Salter for saving me from ignorance in these matters in a number of places.

⁸⁷Waldstein 1902 77.

⁸⁸**Figure 4.3.2b(i).**

⁸⁹A.E. Furtwängler 1980 93 & n58; contra Courbin 1983 152.

⁹⁰Svoronos 1906 196; A.E. Furtwängler 1980 93 & n58; Courbin 1983 152.

⁹¹**Figure 4.3.2b(ii).**

⁹²Courbin 1959 210.

and by a process of careful study is able to discern from the fragments that the handles measured about 10cm, that the distance from the handle to the grip was 23cm, and that there was a further distance of at least 109cm beyond that⁹³. This raises the minimum length of the spits to 142cm.

There is no secure material foundation from which to proceed further, and it is therefore a surprise that Courbin should propose that the remaining section up to the point may be estimated as *supérieure ou égal à une dizaine de centimètres*⁹⁴. He does so on the basis that "*le mécanisme des cassures par amincement progressif... implique une longueur disparue au moins symétrique de l'épointement subsistant*", but this method is surely no more effective than trying to guess the original dimensions of a well-sharpened pencil from its stub. It is in any case suspicious that the sum of 12cm brings the Argive Heraion spits up to 150cm, which equates in metric to Waldstein's "five feet" rounded to the nearest five centimetres. This fact demonstrates that Courbin has been ensnared by the circular argument that the bundle may be reconstructed to the length estimated by Waldstein, and this estimate must therefore be correct⁹⁵. The fault is compounded by the fact that a degree of precision has been assumed which is not implied in the original. Waldstein professes accuracy only to the nearest foot or plus /minus six inches⁹⁶, which in metric equates to the nearest 30.5cm or ± 15.0 cm. Therefore, all that may be securely said of the length of the spits from the bundle is that they measured more than 142cm, but less than 168cm.

Courbin's professed belief that Waldstein's estimate was accurate to within perhaps two or three centimetres⁹⁷ is therefore badly misplaced, and this conclusion carries major ramifications for much of the rest of his argument in support of the use of spits as currency. First, there is the assertion that the spits from the Argive Heraion show metrical parity with those from the Poseidonian hypogaeum (**S22**)⁹⁸. If the latter measure 149cm⁹⁹ then according to the inexactitude of Waldstein's estimate, a difference of as much as 18cm¹⁰⁰, or 12% of the length of the Poseidonian specimens, cannot be ruled out. Even if the Heraion spits were 150

⁹³Courbin 1959 215.

⁹⁴Courbin 1959 215.

⁹⁵Courbin 1959 227 & 1983 151.

⁹⁶A.E. Furtwängler 1980 93 & n58.

⁹⁷Courbin 1983 151 n19.

⁹⁸A.E. Furtwängler 1980 93.

⁹⁹Bertarelli-Sestieri 1985 651.

¹⁰⁰152cm + 15cm - 149cm = 18cm.

or 152cm long, as Courbin assumes, there would still be a disparity of one to three centimetres between the two sites. This cannot be explained by the practical difficulties of producing spits to a precise length, because by their long, thin nature spits must be one of the most simple units to produce to a required measurement, and the sets from the various funerary contexts show that this operation lay within the abilities of the Late Geometric /Early Archaic Greek blacksmith.

The other assertion which cannot be maintained without knowing to the nearest centimetre the length of the spits from the bundle at the Argive Heraion is that the bundle comprised ninety-six spits, or sixteen whole drachmai of six spits each¹⁰¹. Courbin reaches this conclusion by dividing the total cumulative length of the fragments recorded by Svoronos by 150cm¹⁰², but a tolerance of just 1.5cm is required for this operation, because a deviation of this little measure either way proves sufficient to add or subtract one spit, and it is clear that this level of precision cannot be justified. Indeed, Courbin's own number-crunching gives him ninety-seven spits, which he has to round down to the nearest convenient whole drachma on the pretext of cumulative measuring errors. However, even if the precise length of the spits was known, the calculation would still be doomed to failure, because it is a necessary precondition that every fragment of every original spit had survived up to the time that Svoronos conducted his study, but as detailed above, by this time the bundle had already suffered considerable damage. There are therefore no means by which the number of spits in the bundle may be established, and the affirmation that it is made up of denominations is wishful thinking. This is a heavy blow to Courbin, who regards this feature as important evidence in favour of the currency interpretation.

4.3.2c Weight

Courbin also uses the figure of 150cm for the length of a spit from the bundle at the Argive Heraion as part of an attempt to establish the economic relationship between a spit's weight of iron and an Aeginetan obol coin's weight of silver at the time when the one was supposedly replaced by or related to the other¹⁰³. Seltman had already tried to accomplish this feat¹⁰⁴ but, as Courbin demonstrates, Seltman was doomed to failure because he used the measurements of Svoronos for the length of the spits. In this instance Courbin professes only to formulate an estimation, and so the spurious length is not so critical given that it lies within the correct order of magnitude. However, while this may not in itself invalidate his conclusions, his

¹⁰¹A.E. Furtwängler 1980 93 & n58.

¹⁰²Courbin 1959 218.

¹⁰³Courbin 1959 211-223.

¹⁰⁴Seltman 1924 117-122.

methodology may be shown to be flawed, over and above which documentary evidence indicates that even if the various errors are corrected, and a more plausible estimate is supplied, an iron spit cannot have been equated with a silver obol in the manner suggested.

Courbin begins his attempt in the knowledge that the key piece of information needed for his desired goal, namely the weight of a spit from the Argive Heraion, is not available to him by any direct means, because not one single example survives intact or can be reconstituted. Courbin may feel confident about the length of the spits, but in the matter of their thickness he observes that the fragments which were encased in the lead cake at the end of the bundle, and thereby protected against damage, show that the cross-section of most fragments has been reduced by the combined ravages of corrosion and over-zealous cleaning. Courbin elects to circumvent this obstacle by appealing to interpretative analogy, and he chooses for this purpose the spits from Argos South Cemetery Area Tomb 1 on the basis that they are almost intact, are of the same type (lanceolate), are of a very similar thickness, are of a known length and modern weight, and, so he claims, have corroded in the same way as those from the Heraion bundle.

Courbin recognises that the weight of the spits from South Cemetery Area Tomb 1 has changed substantially since antiquity. Metallographic examination of a sample from one of these spits shows that a core of metal survives, and that this is surrounded by a corrosion product called magnetite, which forms as a thin layer around the surface of an iron object during the type of decay experienced by the spits from the tomb. The magnetite in turn is covered over with a thick heterogenous conglomeration of various iron oxides mixed with dirt, and metal has been lost from this in the form of salts which have dissolved and diffused into the ground. The spits from South Cemetery Area Tomb 1 have therefore lost weight. Courbin proposes, nevertheless, that the original weight may be calculated if the percentage decrease is extrapolated from the sample. Supposedly this is achieved by working out from the magnetite layer the volume of metal contained within the sample before corrosion, multiplying this figure by the density of uncorroded iron to give a manufactured weight, and comparing this with the preserved weight to give the percentage of weight loss. From this Courbin calculates the factor which would bring the preserved weight of the sample up to its estimated manufactured weight, and he multiplies the preserved weight of a whole spit from South Cemetery Area Tomb 1 by this same factor to produce an estimate for its manufactured weight. The result is then divided by the length of a whole spit to give a value per centimetre, and this in turn is multiplied by 150cm to give an estimate for a spit from the bundle from the Argive Heraion.

Courbin's actual calculations are as follows (the steps in square brackets must be understood. The number of significant figures and rounding errors given are those of Courbin):

1. Theoretical weight of the sample from a spit from South Cemetery Area Tomb 1:

Cross section within magnetite boundary = 1.05cm x 1.05cm

[Length of sample = 0.9097cm¹⁰⁵]

[Therefore volume = 1.0029cm³]

Density of iron used by Courbin = 7.86t/m³

Therefore estimated manufactured weight of sample = 78.83g

2. Actual weight of sample: 56.50g

3. Percentage of ancient weight lost: 28%

(or preserved weight x 1.40 = manufactured weight)

4. Ancient weight of Tomb I spits:

Total modern weight of fragments = 9.388kg.

Therefore average modern weight per spit = 9.388 ÷ 6 = 1.564kg.

Therefore ancient weight per spit = 1.564 x 1.4 = 2.189[6]kg

5. Estimated ancient weight of Heraion spit:

[Ancient weight of Tomb 1 spit per cm = 2.189 ÷ 1.65 = 13.3g]

Therefore ancient weight of Heraion spit = [13.3g x 150cm = 1.995kg =] ca. 2kg.

The methodology and calculations detailed above contain a number of fundamental errors. These are of varying magnitudes but their effect is cumulative and ultimately they invalidate the results. At the very heart of the methodology lie the assumptions that the spits from South Cemetery Area Tomb 1 were consistent from end to end in metallurgical composition and in the way that this corroded. However, comparison with the analyses of Iron Age artefacts virtually anywhere will demonstrate that both of these factors typically show considerable variation. Courbin is therefore not justified in the generalisations which he draws from one sample alone, though the constraints imposed on sampling must not be overlooked. Courbin also assumes that the magnetite layer is situated exactly where the original surface had been, thereby "fossilising" its dimensions. However, the magnetite layer is in fact steadily pushed outwards as the metal behind it corrodes and increases in bulk due to the addition of molecules of oxygen. This process usually manifests itself in the form of deep cracks of exactly the same nature as those which may be seen in the photograph of the section of the sample¹⁰⁶.

¹⁰⁵Courbin 1983 152 n25 gives the value of this measurement as 0.91cm, but this would give a theoretical weight of the sample of 78.86g.

¹⁰⁶Courbin 1959 fig. 5.

Turning now to the calculation itself, Courbin over-estimates the theoretical weight of the sample by up to one sixth because he uses the value of 7.86t/m^3 for the density of pure iron in the calculation, rather than one for forged iron, which is less dense because of slag inclusions and unclosed voids. It is difficult to substitute an appropriate figure, because it will vary according to the degree and skill with which the metal has been forged, but the density of 6.6t/m^3 recorded at the centre of the better preserved fragments from the Heraion¹⁰⁷ would probably lie closer to the truth¹⁰⁸. Courbin also underestimates the weight of a spit per centimetre. This is because up until the relevant calculation Courbin bases his sums on the actual preserved state of the Tomb I spits, from which he derives an average weight of 1564g per spit, but when he comes to divide this figure by the length, he chooses a theoretical estimate of 165cm ¹⁰⁹, instead of the corresponding average value of 153cm ¹¹⁰. In addition to these faults, there are various rounding errors. The manufactured weight of the sample given by Courbin cannot be obtained unless the dimensions of the cross-section are multiplied by a length of 1.0029. It seems highly improbable that the laboratory equipment used was calibrated to thousandths of the millimetre, or if it was, that this level of precision was justified by the various potential sources of metrological error, including the accuracy with which the sample was cut and polished to a flat surface, and the erratic undulations of the magnetite layer. It seems likely, therefore, that Courbin has not supplied the exact figures for the cross-section used by him in the calculations. A further peculiarity concerns the rounding down of the estimated ancient weight of a Tomb 1 spit from 2.1896 to 2.189¹¹¹. Such mistakes are minor compared to some of those mentioned above, but they do not inspire confidence in the integrity of the whole.

It is possible to work back through Courbin's calculations with the various corrected figures to produce a theoretical weight of the sample of 6.6g, a ratio of 1:1.2 for modern weight to ancient, an original weight of 1877g or 12.3g/cm for the Tomb 1 spits, and an estimate of 1747g to 2066g for the Heraion spits according to a range of length of 142cm to 168cm. However, Courbin's methodology seems so convoluted and of such questionable accuracy and worth that it is preferable, and more simple, to procure an order of magnitude directly from the Heraion spits themselves through an estimate of their volume. Courbin states that

¹⁰⁷Courbin 1959 216.

¹⁰⁸Crew 1991 31 records densities of 6.5t/m^3 to 7.0t/m^3 in spit-like bars of iron produced during archaeological experiments, for which see further §7.2.2.

¹⁰⁹Courbin 1959 220.

¹¹⁰See **Appendix D**.

¹¹¹Courbin 1959 222, 223.

the cross-section of fragments which were shielded by the lead cake was $0.95\text{cm} \times 1.05\text{cm}$ ¹¹², and this area multiplied by 142cm and 168cm translates to a volume of 142cm^3 to 168cm^3 . If these numbers are multiplied by a working density of 6.6t/m^3 , then the estimated range of weight may be given as 935g to 1106g, which may be rounded to 0.94kg to 1.1kg.

4.3.2d Value

These figures are much lower than the 2000g proposed by Courbin, which he translates into an exchange rate for silver : iron of 1:2000 on the basis that the Aiginetan obol weighed about one gramme¹¹³. It might be tempting to put forward the amended value as a more accurate basis for the ratio sought by Courbin, but there is comparative evidence to suggest that even these numbers would be much too high. Ancient Near Eastern textual evidence of the Neo-Babylonian period (612-547) indicates that in Babylon silver was exchanged for iron at ratios of 1:831, 1:573, and even as much as 1:229. In Lebanon the rate was 1:361, and in a place almost certainly identified as Cyprus it stood at 1:240¹¹⁴.

The interpretation of these ratios must be approached with caution. M.A. Powell offers a salutary reminder that the documentary evidence for the region during this epoch is very selective and incomplete. The extent to which these five values are representative of the full spectrum of Neo-Babylonian iron prices is therefore unclear, and they may only be taken as indications of a minimum possible band width. Powell also warns that it is impossible to determine the measures in which the metals would have been exchanged¹¹⁵. There are, nevertheless, a number of ways in which the range may be explained. It is conceivable that it simply reflects fluctuations in the value of each metal, the lowest ratio being produced by high iron and low silver prices, and *vice-versa*, but Powell argues that the purity of silver, when used as money, was fairly consistent, and that its value was also relatively stable throughout the period¹¹⁶. The range of ratios might also be explained by the mechanics of procurement and supply, by which iron may have been obtained in bulk by metal stockists at the lower price, and sold on in much smaller quantities to end consumers at the higher price. Powell argues convincingly that this factor lies behind a range of prices for Old Assyrian tin,

¹¹²Courbin 1959 216.

¹¹³Courbin 1959 226 ($6.11\text{g} \div 6$).

¹¹⁴M.A. Powell 1990 78: the ratios referring to Babylon derive from three separate documents. A fourth supplies the other two.

¹¹⁵M.A. Powell 1990 77.

¹¹⁶M.A. Powell 1990 80, who bases his argument on the lack of qualifiers for the purity of silver in the texts, the fact that silver was used as the measure for the value of gold, and the relative stability of silver equivalences for a range of other objects. There is at present no scientific evidence with which to test Powell's view which he confesses to be a "*methodological postulate*".

where the silver : tin ratios all fall within 15% of two levels of prices, one of which is twice the other¹¹⁷. The Neo-Babylonian iron prices do not, however, conform to this pattern, but lie in a wide scatter of different values.

Powell proposes two further possible explanations for the variation in iron prices, comprising fluctuations in supply and demand, and what he terms "*unrecorded factors of a personal social or economic nature*", though due to the nebulous state of the evidence for such forces it is impossible to gauge their effects¹¹⁸. Powell suggests, nevertheless that the range of prices attested for iron in the Neo-Babylonian period are far too great to be accounted for entirely by any of these factors, and concludes that they relate primarily to the sale of iron of different grades and specifications¹¹⁹. This scenario seems most likely given the nature of pre-industrial ferrous metallurgy in which considerable variations of qualities and properties could result from the choice of raw materials, the processes employed, and the degree to which the metal was forged.

Returning now to Argos it seems clear that the metal from which the spits were made would of necessity have been of good quality for forging, because experimental archaeology proves that it is impossible to produce an object shaped like a spit with poor quality iron¹²⁰. However, according to the $\acute{o}\beta\epsilon\lambda\acute{o}\varsigma$ - $\acute{o}\beta\omicron\lambda\acute{o}\varsigma$ equation, even if Courbin's ratio is reduced along the lines suggested above, the price of iron implied would still fall far below that of the lowest grade iron in the Ancient Near East. The conventional understanding of the value of iron in Greece maintains that this metal was cheap and widely available by the time that the bundle of spits was dedicated at the Argive Heraion, and at least as much if not more so in Greece than in Babylonia, because the iron industry of Greece was supposedly one of the most advanced in the Mediterranean region¹²¹. This model is questioned in **Chapter Eight**, but even if it holds true, it seems unlikely that the disparity between the two regions could be

¹¹⁷M.A. Powell 1990 85.

¹¹⁸M.A. Powell 1990 78, 99.

¹¹⁹M.A. Powell 1990 78. N.B. lexical evidence for this phenomenon may have been masked by the tendency to translate with the same modern word a variety of ancient terms which probably refer to different types of metal: *ibid.* esp. 83.

¹²⁰See esp. Crew 1991 and §7.2.2.

¹²¹Snodgrass 1980a argues that Cyprus and the Aegean pioneered the widespread exploitation of iron during the Early Iron Age (esp. *ibid.* 338, 340-355). He suggests that the ferrous technologies of the Levant and perhaps parts of Asia Minor were on the whole equally advanced (*ibid.* 338, 355-357, 357-358), but has reservations (*ibid.* 357, 358). Assyria and Babylonia he does not discuss (except *ibid.* 367), because they do not border the Mediterranean Sea, but his diffusionist model for the spread of ironworking (*ibid.* 338-340) seems to preclude the idea that their understanding of this metal could be more advanced, and this much is implied (esp. *ibid.* 341, 345).

such that good quality iron in Greece would retail at as little as one fifth of the price it fetched in Babylonia¹²².

This conclusion is supported by epigraphic evidence from a mid fourth-century inscription from Delphi¹²³ which preserves minimum and maximum prices for the purchase of a mina of iron as follows:

minimum: one obol, three *chalkoi*

maximum: one drachma.

Exchange ratios may be extrapolated from this information using the Attic-Euboic "standard" of 0.72g silver per obol /4.31g silver per drachma as follows:

minimum = 431g iron : 0.99g silver¹²⁴ or 435 : 1

maximum = 431g iron : 4.31g silver or 100 : 1.

According to the information presented above, the idea that one Argive iron spit was ever exchanged for one silver obolos defies belief, and this conclusion removes a substantial part of the evidence cited for the use of spits as the immediate precursors to coins.

4.3.3 Dedications of Drachmai at Perachora

The find from the Argive Heraion must also be considered in the context of other bundles of spits from sanctuary contexts, which do not survive but are recorded in epigraphic or literary sources, and have typically featured in discussions of spit-money¹²⁵. At Perachora, evidence for perhaps three or more such bundles has been found in the shape of three of the four blocks which make up the kerb of the hearth in the Hestiatorion at the Limenia site (**S.epig.1 & Figure 4.3.3(i)**). The form of these limestone blocks shows that they had been re-used, and had originally served as bases for dedications. Furthermore, one of the inscriptions which they bear shows that each had supported a "drachma", a term used in ancient Greek both for a bundle of spits, and for a denomination of coinage¹²⁶. There can be no doubt that it denotes the former in this case, because the size and shape of the stones is far too large to have held six small silver coins, but would have been of a most appropriate length and breadth for spits. Moreover, the self same block with the word "drachma" has traces of the cutting for a clamp to hold spits flat against the stele when it had stood upright with the

¹²²1:1200 (Greece) vs. 1:229 (Babylonia).

¹²³FD III.5 document 27 col. IIA. For a commentary see FD III.5 page 142.

¹²⁴Assuming 1 *chalkos* = 1/8 weight of a silver drachma.

¹²⁵Esp. e.g. Courbin 1959 221, 224; A.E. Furtwängler 1980 91-92; Strøm 1992 45f.

¹²⁶See §6.1.2e.

unworked butt buried in the ground¹²⁷.

The inscriptions also pre-date the introduction of coinage. Payne places the construction of the hearth, and hence the *terminus ante quem* for the dedications in the seventh century on the basis of pottery found in the layer on which they rested. Jeffery argues, however, that the pit must have been cleaned out several times before it finally fell into disuse no earlier than the fourth century, and that it would have been necessary to roll back one or more of the stones to accomplish this task. It seems quite possible that the sherds used by Payne to date the deposit wandered into the topmost layer when it was exposed on such occasions, and it is therefore more prudent to date the inscriptions from the style of their letter forms alone. This process is not easy, because very few texts survive from this period, but Jeffery assigns No. 7 to ca. 650, No. 12 to ca. 625, and No. 17 to ca. 600-550¹²⁸. These dates place the third inscription on the threshold of the minting of the first silver obols on the Greek mainland¹²⁹, but the first two well within the pre-coinage era.

Payne tries to interpret the spit dedications as currency under the influence of the discussions by Waldstein and Svoronos on the Argive Heraion bundle. He seems to do so, however, with a bad conscience, concluding that at best any function as currency was secondary to that of their primary use as roasting implements¹³⁰, and it is not difficult to imagine why. The size and finish of the limestone blocks, and the fact that they are inscribed in Greek, a rare embellishment at the time when they were cut, seems rather excessive if the dedications themselves comprised merely a single silver drachma per stone¹³¹. The context in which the monuments were placed, identified by Tomlinson (1977) as a Hestiatorion, also argues strongly for a culinary interpretation¹³². There remains the problem that the spits were held in place by clamps, and therefore, like the Argive Heraion bundle, almost certainly could not be used in practice for the regular roasting of sacrificial meat, but an explanation for this oddity is proposed below¹³³.

¹²⁷Payne 1940 258; Jeffery 1990 123.

¹²⁸Jeffery 1990 122f for a description and discussion of the texts and their dating, including references to Payne's site report.

¹²⁹See §4.3.2a for the dating of the first issues of Aiginetan coinage.

¹³⁰Payne 1940 188-189, 256f.

¹³¹A.E. Furtwängler 1980 91.

¹³²Jeffery 1990 124, Strøm 1992 46-47.

¹³³For further bibliography on the Perachora drachma dedications see A.E. Furtwängler 1980 90 n42 - 91 n45.

4.3.4 Phanaristos' Dedication

One further inscription (**S.epig.2**) may be interpreted in the same way as the three from Perachora. The text in question is now lost, but nineteenth century AD records show that it was discovered at Hagios Georgios near the village of Χρυσό¹³⁴. This site was formerly identified as Archaic Krisa, but it is now clear that it was unoccupied between Mycenaean and Byzantine times¹³⁵, and it seems likely that the stone on which the inscription was cut was robbed with other material found nearby from the sanctuary of Athena Pronaia at Delphi. The text is placed by Jeffery in the first half of the sixth century. It was difficult to read, because the letters had not been incised very deeply and because the surface of the stone was rough and cracked, but it was possible to discern that it commemorated a dedication to Athena and Hera by one Phanaristos, the substance of which was specified by seven letters. These were originally read as δρᾱφεάς, but this unusual word makes little sense here, and on the basis that the sector of the stone on which the digamma and epsilon were cut seems to have been particularly badly damaged Raubitschek argues that the transcription is open to re-interpretation, and hypothesises chi followed by mu to give δρᾱχμάς.

The form of the stone is indistinct in the various drawings reproduced by Roehl¹³⁶. The best of these, executed by Ulrichs and published in 1848 (**Figure 4.3.3(ii)**), suggests an elongated D-shaped block in which the curve of the "D" is irregular, coming to a slight point. Two shallow cup-shaped depressions and a small round slot had been carved into the face found uppermost. Roehl describes these as escharai, but Raubitschek, followed by Strøm, interprets them as receptacles to hold a bundle of spits and two cauldrons. The accusative plural δρᾱχμάς implies that the dedication must have included more than one drachma, and they therefore suggest that there had once been a further slot for a second bundle, but that this had been chiselled away before the block was recorded¹³⁷. Raubitschek, wholly captivated by the Pheidonian tradition, believes accordingly that Phanaristos' dedication must relate to it in some way, and concludes speculatively that the latter had wanted to express an affiliation to the Argive tyrant. This interpretation therefore depends wholly on that of the *Etymologicum Magnum* passage, and ignores inferences which may be drawn from the stone itself. Strøm in turn is drawn more by the conjectural equation between bundles and cauldrons created by Raubitschek, and imagines the dedication to have comprised items of sanctuary equipment,

¹³⁴T.S. Hughes 1820 I.368: "*Crisso is a respectable village containing a population of about eight hundred souls, and is the residence of a bishop*".

¹³⁵Jannoray 1937 40 & n1.

¹³⁶Roehl 1882 66-67.

¹³⁷Raubitschek 1950 295-296. For the first reports of the stone see Roehl 1882 66f.

partly by analogy with an inventory from Khorsiai¹³⁸ (for which see below).

These interpretations fail to convince. The inscription mentions no kettles, and the small slot cut in the top seems far too small to have held a drachma of spits. Moreover, both Raubitschek and Strøm fail to consider the implications of the fact that, as noted above, the stone had been moved from its original setting. Furthermore, they do not seem to notice that it had been modified at least once, and probably twice. About half of the circular depression on the right hand side in Ulrichs' drawing is missing, and this indicates that a segment of the original block has been cut off. It seems possible, however, that the depressions themselves are a later addition. The left hand depression does not follow the curve of the "D", and the text below is not aligned in the zone framed by both depressions. Raubitschek and Strøm also provide no comment on the highly unusual fact that the text begins in the bottom right hand corner, runs horizontally from right to left and moves up the stone in boustrophedon to end after a total of three lines in the top left hand corner.

These features may all be accounted for if Phanaristos' drachma dedication is compared with those at Perachora. The Perachora stelai stood with their longest axis perpendicular to the ground, and Jeffery reconstructs no. 7, with the inscription beginning in the bottom left hand corner, running vertically up to the top of the stone then down and finally back up again on the next face. If Ulrichs' drawing of the stone is turned clockwise through ninety degrees to give it the same orientation, it then assumes a striking similarity, with the text likewise beginning in the bottom left hand corner and running up - down - up. The correspondence is strengthened further if the lengths are compared. The longest of the Perachora blocks, which seems to be intact, measures about 135cm in length¹³⁹. Phanaristos' base measured only one metre¹⁴⁰, but about one third of the preserved length may be added to the right hand side of Ulrichs' drawing to accommodate the whole of the depression on this side plus margin, and this brings it up to about 130-135cm.

It will be noted that the inscription has not been cut short by the truncation of the block, but this may be explained if the missing length corresponded to the rough worked butt which was left on the Perachora blocks for insertion into the ground. If so, then some confirmation is offered for the suggestion above that the two depressions were added when the stone was re-used, because the right hand cup would have served no purpose if it had been half buried. The shortening of the block would then relate to a further re-use. The only real differences

¹³⁸Raubitschek 1950 296; Strøm 1992 49.

¹³⁹Payne 1940 257 & Plate 153; Jeffery 1990 123 Corinth No. 12.

¹⁴⁰Roehl 1882 66.

with the Perachora blocks would then be that the first line of the Perachora text runs from left to right whereas that of Phanaristos' dedication would run from right to left, and that the verse couplets of the former, also written in boustrophedon, were squeezed onto the front and right hand faces of the stelai rather than the front and what would be the top of the latter in the orientation suggested. The first of these points is of no consequence. The second may be explained by the fact that the Perachora block in question (Jeffery's no. 7) had accommodated only one drachma, on its front face, around which the text formed a margin on each side, whereas Phanaristos' dedication must have accommodated at least two drachmai, and these would surely have been placed on the faces either side of that with the inscription (the top and bottom in Ulrichs' drawing). This theory gains support in the presence of the slot, which perhaps was for a clamp to hold the spits in place. The stone which records Phanaristos' drachma dedication may therefore be interpreted in the same way as the blocks from Perachora.

4.3.5 Obeloi at Khorsiai and Torricella

The inclusion of bundles of spits in an immaculately preserved epigraphic inventory from Khorsiai in Boiotia is explained in a rather different manner. This text lists ὀβελίσσκων δαρχμαῖ amongst the ἱερὰ χρέματα of the people of Thespiiai housed in sanctuaries at "the Heraion", Siphai, and Kreusis. It was thought by Platon & Feyel, who discovered and first published the text, that the term χρέματα carried the connotation of "wealth", that the inscription therefore referred to items dedicated at the three sites, and that the spits probably comprised gifts of money¹⁴¹. Tomlinson has subsequently corrected this misconception. He points out that the inventory is entirely composed of items with a practical function, such as knives, forks, cheese graters, and various forms of vessel for drinking, and the term χρέματα must therefore mean "property" in this context. The spits in turn must be regarded as sanctuary equipment for roasting meat¹⁴². This interpretation is also necessitated by the date of the inscription, placed ca. 386-380, because there would be no need for a pre-coinage currency in fourth-century Boiotia¹⁴³.

An inscription from Torricella near Taranto in Italy (**S.epig.3**) may be explained in a similar way, though it is somewhat earlier in date, belonging to ca. 550-525. This Doric text is not so well preserved: its opening lines are missing, and have been restored as befits a

¹⁴¹Platon & Feyel 1938 149, 163.

¹⁴²See Tomlinson 1980 221-222 for the full text and a translation of the Khorsiai inscription, 223 for a commentary on the spits.

¹⁴³Tomlinson 1980 223; A.E. Furtwängler 1980 91.

dedication, but there can be no doubt that it has more the character of an inventory¹⁴⁴. The items listed include a diverse range of objects, such as trumpets, boxes, hammers, pitchforks, mattocks, cauldrons, etc., which are not all connected with ritual feasting and drinking, but do have a utilitarian function, and there is certainly no mention of items of precious metal which might have a monetary function. For this reason the "κρε|οδ[ελὸς Ͳ]ἐξ", lines 10-11, are most likely implements for roasting, especially in view of the presence of the prefix "κρε-" for "κρ ἕας", "meat"¹⁴⁵.

4.3.6 Rhodopis' Spit Dedication

Turning now to literary texts, the passage usually cited in connection with the Argive Heraion bundle is Herodotos 2.134-135¹⁴⁶, concerning the dedication by a woman called Rhodopis of a large number of iron ὀβελοί at Delphi. This monument is said to have represented one tenth of the wealth she had amassed during a life-long and highly successful career as a courtesan, and the story is commonly viewed as the only other certain evidence besides the Argive Heraion bundle for the use of spits as money¹⁴⁷.

What is the veracity of this *logos*? To try to answer this question it is best to begin with the chronological framework. According to Herodotos, Rhodopis' prime was coterminous with the reign of Amasis, who ruled Egypt ca. 570-526. He also says that she was a slave with Aisop before she came to Egypt, and that one of her more notorious lovers, Charaxos, was Sappho's brother, whom the poetess "cut to shreds" in verse because of the liaison. Aisop is difficult to date, especially since the best evidence for his chronology derives from the self same passage of Herodotos, but other sources, which may or may not be dependent, put his death ca. 564¹⁴⁸. This event provides a *terminus ante quem* for Rhodopis passing into the possession of Iadmon the Elder on Samos, the owner of both slaves. Sappho lived from ca. 612 or earlier to ca. 550¹⁴⁹, and it follows that roughly the same dates may be assumed for

¹⁴⁴Strøm 1992 49 & n61.

¹⁴⁵Lo Porto 1987 39f; Jeffery 1990 463.

¹⁴⁶The text is quoted in full in **Appendix B1 S.lit.1**.

¹⁴⁷Esp. e.g. Payne 1940 188; Kraay 1976 314; Courbin 1983 151 & n17; Caramessini-Oeconomides 1969 445; Strøm 1992 45, 49.

¹⁴⁸Lloyd 1988 on 134: Diogenes Laertius I 72 places the beginning of his *floruit* in the 54th Olympiad (Olympics=572), and Eusebius places his execution in the 52nd Olympiad (Olympics=564). The complete story of Aisop may be found in Plutarch's *de Ser. Num. Vind.* ch12 = 557A.

¹⁴⁹Page 1955a 49, 223f; Saake 1972 36-50 esp.49: the ancient tradition recorded in the Souda places Sappho's birth or the beginning of her middle age in 612, while Eusebius places her prime in 600/599 or 595/4. She is also said to have been a contemporary of Alkaïos, who was a contemporary of Pittakos, who lived ca. 640-570. These dates show an early/middle sixth century consensus. Saake hypothesises a natural life span of sixty years.

Charaxos. Sappho seems to have been a mother with a grown-up daughter when the affair happened¹⁵⁰. Charaxos must have been of sufficient years to have become a merchant who was established well enough to afford the services of an accomplished and much sought-after prostitute. If brother and sister were aged thirty to forty when the scandalous relationship developed, it would therefore be placed ca. 580-570. As for Rhodopis, Herodotos implies that she was bought out of slavery by Charaxos early in her career, and it is plausible to infer that she was perhaps no more than twenty on Aisop's death. She may be assumed to have worked for about thirty to thirty-five years, and so her retirement and commemorative dedication may most plausibly be placed no earlier than the 530s¹⁵¹.

This chronology presents a seductive unity which lends credibility to the story, but there are reasons to be wary. The extant fragments of Sappho's poetry do indeed contain passages in which she chides her brother for an insalubrious union, but the *femme fatale* is called "Doriche", not "Rhodopis"¹⁵². In addition to this problem, the essence of the story which Herodotos claims to have heard and to refute, in which prostitution leads to the accumulation of fantastic wealth and its commemoration in a pyramid, is strikingly familiar from another context. Only eight sections before the appearance of Rhodopis comes a story in which a wicked Pharaoh prostitutes his own daughter (itself a *topos*) as a recourse against bankruptcy. The unfortunate girl decides to leave behind a memorial to herself, demands to this end that clients bring a block of stone in addition to the customary fee, and from this material there rises up a substantial pyramid¹⁵³. There is even a verbal correspondence between the two passages in the repetition of the phrase "μνημῆιον καταλίπέσθαι".

The presence of this feature opens the passage to interpretation according to the "Liar School of History", and in particular to the modes of analysis explored by Fehling. The repetition of the motif in the manner described above matches exactly a pattern which Fehling identifies as characteristic of the presence of free invention in Herodotos, and therefore suggests that the tale incorporates substantial fabrication¹⁵⁴. A number of other features, typical of "Lying-Literature", give strength to this suspicion. The passage is filled with protestations or assurances, actual or implied, that the author has diligently compiled the one and only true

¹⁵⁰Saake 1972 49: Sappho Fr 98 refers to the affair and also to her daughter.

¹⁵¹Contra A.E. Furtwängler 1980 92 and Strøm 1992 45, who place Rhodopis' dedication in the first half or middle of the sixth century.

¹⁵²Page 1955a 45-51 and 131 = Fr. 5 and Fr. 15b.

¹⁵³Hdt 2.126. For the *topos* see: Stephanie West 1985 296; Lloyd 1988 71 comm. ad loc.; Fehling 1989 199.

¹⁵⁴Fehling 1989 §3.8 198f.

version of events¹⁵⁵. These include the statement that Rhodopis had belonged to the same master as Aisop, a certain "Iadmon son of Hephaistopolis", which is supported by an asseveration so strong that it would be worthy of Lady Macbeth: "καὶ γὰρ οὗτος... ὥς διέδεξε τῇδε οὐκ ἤκιστα... ἄλλος μὲν οὐδεὶς... οὕτω καὶ...". In similar vein, towards the end of the digression comes the claim that "every Greek learned well the name of Rhodopis...". This notion seems incompatible with the fact that Herodotos has just had to explain in detail who she was, and what she did, because "certain Greeks" did not in fact "seem... to know and be able to narrate" this very matter. It is also incongruous with the fact that he should state that Rhodopis was even more "a subject of club-room gossip" than one "Archidike", yet offer no explanation as to the identity of the latter, presumably because he thought she would be familiar to his audience.

Another method by which Fehling might claim that the historian aims to persuade the reader of the truth of his version, and thereby signals fabrication, is by the appeal to monuments, in this case the bundle of spits at Delphi which "it is possible for anyone who wishes to see even up to this day"¹⁵⁶. There is also the inclusion of the trivial fact, typical of the sort of spurious details added by Herodotos according to Fehling, that he had ascertained the name of the merchant, one "Xanthes", who had shipped the courtesan to Samos¹⁵⁷. Therefore, according to the "Liar School", there is reason to suspect that much of the *logos* was invented¹⁵⁸.

However, the factual basis of at least some elements is supported by evidence independent of Herodotos. As mentioned above, various fragments of Sappho's poetry show that her brother had become infatuated with a partner of whom his sister disapproved, and this probably occurred ca. 580-570. The name "Rhodopis" is not found in these fragments, but it does appear in a "kale" inscription on an Athenian red-figured cup attributed to Makron dated ca. 490-480¹⁵⁹. The inscription is placed around the figured scene of the interior and reads "'POΔO[Π]ΙΣ K[A]ΛE", "Rose-face is beautiful (/good)" or, more idiomatically, "Rose is fair". "Rose-face" seems a likely name for a prostitute, the red or pink rose of ancient Greece

¹⁵⁵Fehling 1989 esp. §2.17f 120f.

¹⁵⁶Fehling 1989 §2.20 128f.

¹⁵⁷Fehling 1989 §2.17 120-121.

¹⁵⁸Fehling's work proves more useful in the analysis of the stories heard by Herodotos than of Herodotos himself. J.P.A. Gould *OCD*³ 698 s.v. "Herodotus", who has written of Fehling and the "Liar School" more generally that "*there are problems, certainly, about believing everything that Herodotus says he saw, or was told but they are not so great as the problem of recognising Fehling's Herodotus in the text that we have*". For a systematic refutation of the foundations of Fehling's work see Pritchett 1993.

¹⁵⁹ARV² 467 no. 118 from Vulci = New York 20.246. For a more detailed description and illustration see Richter 1923 273-277.

evoking the same connotations of beauty and of the female genitalia as it does in English¹⁶⁰, and therefore it is tempting to conclude that the "kale" inscription is generic rather than specific.

Nevertheless, a cursory survey of the twenty-one names which appear on Attic red-figured vases in "kale" inscriptions¹⁶¹ suggests that they are drawn from the normal appellations of ordinary women, rather than the *noms de plumes* of Attic whores:

¹⁶⁰See under ῥόδον in *LSJ*, also Jeffrey Henderson 1991 135, who cites a passage from Shakespeare's *As You Like It* for the comparable *double entendre* in English: "He that sweetest rose will find | must find love's prick, and Rosalind" (3.2.109-110 in ed. Wells & Taylor 1986).

¹⁶¹ARV² 1614-1616 + 1699 + Beazley 1971 508 + Carpenter 1989 399. This total compares with the listing of more than two hundred names from "kalos" inscriptions in ARV² 1559-1613.

Name	K	L	R	M	G
Ἀρχεδίκη	1	11		Archedikos	
Ἀφροδισία	2	37	36		Ἀφροδίτη
Ἐπιλύκη	1	1		Epilykos	
Ἐπιχαρίς	1	1		Epichares	
Ἡδίστη	1	27	3	Hedistos, Hedistion	
Ἡρᾶς	5	10	4	Heron	Ἡρα
Ἡροσάνθη	1	1		prefix Eros-	suffix -ανθη
Κλειταγόρα	1	4	1		
Κλεοφωνίς	1	1		Kleophon	
Λύδα	1	-η 8	1	Lydos	Λυδία
Μέλιττα	?1	23	9	Melittides, Melittios	
Μυία	?1	<i>nil</i>			
Μυρρινίσκη (Μυρρίνη)	1	2 (50)			
Ναύκλεια	1	1		prefix Nau-	
Νικοφίλη	1	2		Nikophilos, prefix Niko-	
Οινάνθη	1	19			
Παντοξένα	2	1			suffix-ξενη
Ῥοδον	?1	28	13		see below
Ῥοδῶπις /-η	1	1	2		
Τελίς	1	1			
Ζεφυρία	1	1			

Name: name in "kale" inscriptions
K: frequency of kale name on Attic red-figured vases
L: frequency of kale name in *LGPN* II (including references from *ARV*² + etc.)
R: frequency of kale name in Reilly 1978
M: equivalent male name
G: equivalent female name in modern Greek

The table above¹⁶² shows that nearly all of the kale names are attested with equal or greater frequency in *LGNP* II than they are on vases, and that many have ancient male equivalents and /or equivalents in modern Greek. Furthermore, with the exception of Ἀφροδισία, the names of women given in kale inscriptions are not the frequent names of slaves¹⁶³. In particular, of the two other names of prostitutes attached to the story of Rhodopis in Herodotos, Ἀρχεδίκη, a variant of Ἀρχιδίκη, does appear in one "kale" inscription, but aside from the fact that this word has no obvious *double entendre*, it is attested ten other times in *LGNP* II, has the male equivalent Ἀρχέδικος which appears seven times in *LGNP* II, and is not attested at all in Reilly's compendium of slave names. As for Ῥοδῶπις, *ARV*² lists one other vase which may bear the same word, but no more than the stem RHODO- survives, and this might easily represent Ῥόδον, "rose-bud"¹⁶⁴. This name is attested fifty-six times in *LGNP*¹⁶⁵, and has two equivalents in modern Greek, one derived from the ancient stem, and the other, Τριαντάφυλλο /Τριανταφυλλιά, from *Demotike*. Reilly records one occurrence of a slave named Ῥοδῶπις, and one of a slave named Ῥοδῶπη, but it does not seem to follow therefore that the Rhodopis cited on the red-figured cup by Makron was a prostitute in Athens rather than a well-known respectable figure.

There is also epigraphic evidence for the existence of a real Rhodopis and of a real monument at Delphi. This comprises the letters "-ΚΕΡΟΔ-" on a stone which had formed part of the bottom step of a crowning member on which a dedication had lain. The fragment was found near the altar of the Chians, where the spit monument was reported to have stood, and Jeffery reads "ἀνεθε]κε Ῥοδ[ωπις" as an "attractive restoration" of the original text¹⁶⁶. Moreover, the style of the Boiotian script in which it is written suggests to Jeffery a date of ca. 530, which matches that proposed above from Herodotos' text.

The fragments of Sappho's poetry, the kale inscription and the epigraphic fragment from Delphi combine together to indicate that the Rhodopis *logos* may have a historical basis. However, it is perhaps more useful to consider the statements implied in the story about the mid-fifth century when it was written down. It seems that by this time the existence of the long tradition of depositing bundles of spits in sacred places, which is so clearly documented in the archaeology, had been forgotten entirely (ἐπεθύμησε γὰρ Ῥοδῶπις μνημήιον

¹⁶²I am grateful to Eva Baboula for information about modern Greek names.

¹⁶³See Reilly 1969 and 1978, who compiles lists of Greek slave names from manumission documents of the fifth century BC to the third century AD.

¹⁶⁴*ARV*² 1616.

¹⁶⁵*LGNP* I = 20 examples, II = 28, IIIA = 8.

¹⁶⁶Cook & Boardman 1954; Jeffery 1990 102 No. 7 plate 12.

έωυτῆς ... καταλιπέσθαι, ποίημα ποιησαμένη τοῦτο τὸ μὴ τυγχάνει ἄλλω ἐξευρημένον καὶ ἀνακείμενον ἐν ἱρῶ, τοῦτο ἀναθεῖναι....). The drachma dedications at Perachora, that of Phanaristos, and even the great offering at the Argive Heraion had evidently disappeared, at least from memory, allowing Rhodopis' monument to become viewed as an eccentricity. Furthermore, there seems little doubt that the person from whom Herodotos received his information had no idea of the actual circumstances of the dedication, and repeated or gave out a tale concocted specially to explain it, which Herodotos received critically and adapted in his synthesis. It also seems clear that the iron spits were regarded by Herodotos as objects of no special value according to the statements that they were equivalent in value to one tenth of Rhodopis' wealth and that therefore it was not necessary to ascribe great wealth to her (τῆς γὰρ τὴν δεκάτην τῶν χρημάτων...οὐδὲν δεῖ μεγάλα οἱ χρήματα ἀναθεῖναι).

The most important conclusion here, however, is that the ὀβελοί feature nowhere in the *logos* as pre-coinage money. Strøm claims that "*as Rhodopis dedicated a tithe of her earnings, the iron spits she offered must have had a specific monetary value and I agree with Courbin that this is an example of iron spits in a monetary-value system*"¹⁶⁷, but aside from the difficulty that coinage was introduced to Aegean Greece before the dedication was made¹⁶⁸, there is no indication in the Greek that Rhodopis accumulated her savings in this form. Rather, she had the spits manufactured, ποιησαμένη, specially for the dedication, and if the veracity of this statement is questioned, then the credibility of the whole story collapses, bringing down with it those details necessary for the currency interpretation. What the Greek actually says is that the spits were "βουπόροι", "ox-piercing", which shows that so far as Herodotos was concerned, they were designed for roasting beef¹⁶⁹. There is, moreover, no indication anywhere else in his work that spits were used as pre-coinage currency, and certainly not at the point where Pheidon is discussed at length¹⁷⁰. In strict terms, this silence proves, or rather disproves nothing, but it inspires no confidence in the existence of a *logos* in fifth-century oral history in which iron spits precede silver obols. This in turn encourages the view that the tradition of Pheidon preserved in the *Etymologicum Magnum* was invented some time after Herodotos wrote his history, and this possibility is explored in more detail in §6.3.2.

In short, there is no reason to interpret Rhodopis' bundle of spits in any way other than that

¹⁶⁷Strøm 1992 45.

¹⁶⁸A.E. Furtwängler 1980 92.

¹⁶⁹A.E. Furtwängler 1980 92. See also §6.2.2.

¹⁷⁰Hdt.6.127; Kraay 1988 432.

supplied by Herodotos, that is as a votive gift which had no more monetary significance than an animal figurine, a fibula, or a tripod cauldron. Moreover, if the wider context is considered then it becomes immediately plain that it belongs to the same genre as the bundles attested at Perachora (**S.epig.1**), in the Phanaristos inscription (**S.epig.2**), and at the Argive Heraion.

4.4 INTERPRETATION II: SPITS AS VOTIVES

So far, it has been argued that the spits from sanctuaries were neither implements for everyday use at the sacrifice, nor units of pre-coinage money. How, then, are they to be interpreted? This question may be addressed with the help of the small number of finds which represent individual acts of deposition. These may be arranged in a spectrum ranging between those which appear to have been deposited after actual use for the roasting of meat on one particular occasion, and those which appear to have been more removed from this process.

4.4.1 Nemea: the Pentathlete's Dedication

At Nemea a spit was recovered from a pit a short distance east of the altar (**S16a**). Associated finds included sporting equipment appropriate to a pentathlete: a discus; weights for the long-jump; two spearheads for the javelin contest; and a strigil for cleansing the body after the exertion of these three events plus that of wrestling and running for which no equipment was required. These goods seem to have been deposited in the third quarter of the fifth century during a single act of deliberate consumption. This is indicated by the presence of a number of pottery vessels which had been turned upside down and smashed deliberately, and also by the spit itself, which had been bent double and snapped in two¹⁷¹. Finds of olive pits, animal bone, charcoal, and ash show that the occasion on which the dedication was made was marked with a feast. The last three items in this list establish that the fare included meat which had been cooked over a fire, and the absence of a cauldron, pot, or pan of any description indicates that it was roasted on the spit.

The pottery was almost certainly used for the drinking of wine with the food. It includes a substantial proportion of fine decorated Corinthian vessels, especially skyphoi, suggesting that special utensils had been procured for the event. If the spit is associated with the drinking equipment in terms of its function and fate, was it also associated in terms of its character, or in other words was it the "best china" so far as a spit was concerned? If so, then this context attests to the use of the iron spit as a special artefact for a special occasion, and support for this conclusion may be found in Italy at the colony of Sybaris at Poseidonia,

¹⁷¹Contra S.G. Miller 1983 79, who had thought that the two fragments from this deposit represented two different spits: see **Appendix B1 S16a**.

where five spits were deposited in circumstances which were not altogether dissimilar.

4.4.2 Poseidonia: the Hypogaeum

The examples in question come from a hypogaeum of the late sixth century (S22). They were discovered lying on the floor of the underground chamber, but extensive mineralised deposits encrusted on the rusting rods of iron showed that they had once stood on a wooden table, and had been covered over with a woollen cloth, both of which had entirely rotted away. Bertarelli-Sestieri appeals to iconographic evidence to interpret the spits as roasting implements laden with meat in the manner of examples depicted on the black figure hydria from the Villa Giulia mentioned above¹⁷², and the idea that they were intended for this purpose fits well with the context. The table was of a size and type suitable for offerings, and the food dedication was matched by one in liquid, the remains of which were found in the six hydriai lining the walls of the chamber. Scientific analysis has so far failed to determine much from this sticky brown substance except that it was not, as has been thought, honey or pulverised wheat, but that it did include fat of animal or vegetable origin. Bertarelli-Sestieri concludes that it was most likely a mixture for pouring libations, though it is possible to suggest that it may have been a refreshment similar in nature to the pottage of wine and grated cheese discussed by Ridgway¹⁷³, the composition of which would match the analysis.

This offering of food and drink was no ordinary fare: not only was it set out in a place which only banqueters of a supernatural kind might frequent, but the assemblage was exceptional in every detail. The mineralised remains show that the wood for the table may have come from the cypress tree, and that the woollen cloth which covered the spits had been embellished with a lattice of fabric which was incorporated into only the most ornamental textiles. Similarly, the hydriai for the liquid were not made of ceramic, but of bronze, and three had been imported from a Lakonian workshop. The only other find which has not yet been mentioned was a lone Attic Black-Figure amphora¹⁷⁴, and even if the value of such pieces in antiquity has become subject of debate, there can be no question in this instance that this particular vase was of some worth, whether pecuniary or emotive, because a break at its foot had been repaired skilfully with lead clamps before it was consigned to the hypogaeum. Here again, therefore, spits seem to feature at a feast of distinction at which like the food and drink they were "consumed" by being incarcerated in the underground chamber.

¹⁷²Figure 5.A1.

¹⁷³Ridgway 1997 esp. 326-331.

¹⁷⁴For this vase and its decoration see: P.C. Sestieri 1955 esp. 60-61 & 63 fig.s 23-24; Neutsch 1957 esp. 22-26 & pl. 15-24. The apotheosis of Herakles appears to be depicted on one side, and a scene involving Dionysos, Hermes, Mainads, and Satyrs on the other.

4.4.3 The Samian Heraion: Southern Area of the Temenos

A group of spits from the southern area of the temenos at the Samian Heraion seems to have been used in a similar way, though these seem to have remained above ground for a period of time to perform a secondary monumental role. Three spits were found in this location in a small depression beside a path leading to the sea, (S23a(i)) and another three in the fill of a nearby overflow channel from a rectangular well (S23a(ii)). Such humble contexts indicate that they were discarded with other material as rubbish¹⁷⁵, but their association with a boukranion implies that they had been used before this as skewers for the roasting of meat. However, the boukranion also suggests that the spits had been put to a second use after the meal but before they were thrown away. Boukrania were regularly set up in sanctuaries to commemorate the sacrifice of a bovid and it seems likely that this was the use to which the example from the Samian Heraion was put, and that the spits formed part of the same monument¹⁷⁶. This interpretation is supported by the absence of burned matter or other sacrificial debris in the immediate vicinity of the spits and boukranion¹⁷⁷, and by the fact that the path by which the two groups of finds were discovered led to an area where dedicatory bases of the Archaic period were found, and where the spits and boukranion may have been established.

4.4.4 Kalapodi

An extension of this idea is found at Kalapodi (S11). As mentioned above, the fifth-century contexts in which the spits from this site were discovered are not related to everyday sacrifice. Rather, they belong to the occasion on which a set of structures built as temporary replacements for those destroyed by the Persians were buried deliberately along with offerings more usually deposited in graves¹⁷⁸. Indeed, in one of the assemblages (S11(i)) there was a single silver obol coin, an object frequently put in the mouth of a deceased individual as a fee for the ferryman at the River Styx, though it seems impossible to determine whether it was meant to carry this connotation here. Other than the spits, there are no finds which could be identified as equipment for ritual feasting or drinking, in spite of the fact that a place where burned offerings were made was situated adjacent to the votive bench of the temporary cult structure (S11(i)). This context did, however, yield one miniature

¹⁷⁵For the use of the southern area of the temenos (between the Great Altar and the sea) for the dumping of general sanctuary rubbish see: Kyrieleis 1993 137; AR 1983/84 58; AR 1984/85 56; AR 1991/92 56.

¹⁷⁶A.E. Furtwängler 1980 97 & n89. See also esp. Burkert 1985 65 & 372 n93 and van Straten 1995 159 on the use of boukrania as monuments to commemorate sacrifices (and see e.g. **Figure 5.B18**), and Burkert 1985 93 on the use of spits in a similar way.

¹⁷⁷Animal bone and domestic pottery shapes did occur in the area as a whole (Kyrieleis 1993 137), but as at Olympia (for which see below), this material is mixed with votive dedications, and it is not immediately clear to which category the spits belong.

¹⁷⁸See Morgan 1997 184 for a summary in English.

kotyle, and it is tempting to infer that it constitutes a representative symbol of the drinking of wine at the sacrifice. If this view is accepted it seems reasonable to suggest tentatively that the spit itself need not, as Felsch implies, comprise merely a left-over from the final sacrifice enacted in the temporary cult structure¹⁷⁹, but a token by which it was commemorated. In that case, the deposition of this find would be explicable in terms comparable to those put forward for the examples discussed above from Nemea, Poseidonia, and the Samian Heraion.

4.4.5 Dedications of Unused Obeloi

However, this proposal is less able to account for the presence of fragments of spits on a votive bank in the forecourt of the Archaic temple at Kalapodi (**S11(ii)**). The assemblage was made up of weapons and one other (unidentified) iron object, which seem to comprise votive gifts and therefore imply that the spits were also dedications rather than placed there to celebrate or commemorate any culinary act performed in the immediate or more distant past. A number of other finds or attestations of Archaic spits seem to fall into the same category. As seen above, at Torricella in Italy an inventory of items dedicated to the goddess Artemis (**S.epig.3**) includes the entry "κρεῖοδ[εῖλδος ͵ϛ]ἔξ", "meat-spit: six", amongst a heterogeneous list of other articles, most of which, such as a bell, trumpet, and pitchforks, evidently have nothing to do with the rite of animal sacrifice. Likewise at Delphi, although as described above the spits of Rhodopis' dedication are described with the adjective "βουπόρος", "ox-piercing", there is never any intimation in Herodotos' *logos* that they were procured to perform any function other than the material substance of a monument. At Perachora and in the case of Phanaristos' dedication, the texts which accompanied the drachmai (**S.epig.1 & 2**) are less explicit, but their content supplemented by the form of the stones on which they were carved seems to point towards a static display of spits which had no direct connection to sacrifices at sanctuaries whether regular or extraordinary.

By the same token, the lead cake into which the ends of the spits from the massive bundle at the Argive Heraion (**S2a**) were stuck would preclude their frequent use¹⁸⁰. This feature also points to the conclusion that the bundle had once stood vertically. Moreover, an imprint observed by Courbin on the lead shows that it had been set in stone, and while it is possible that it derives from a mould for casting, it seems more likely, as Courbin proposes, that the bundle was graced with a monumental base¹⁸¹. If so, then except for the fact that it would have been much larger, the find would have originally had a form similar to that reconstructed by Jeffery for the Perachora drachmai (**S.epig.1**), and this suggests that it

¹⁷⁹Felsch et al. 1980 95.

¹⁸⁰Contra Foley 1988 139 & n49, who suggests that they were employed in the annual hekatombia.

¹⁸¹Courbin 1959 223.

should be interpreted in the same way. It seems self-evident that the giant spit from the Argive Heraion (**S2a**) must belong to the same category. The existence of dedications of spits which were not destined for use as culinary implements has in fact long been recognised¹⁸². However, it has seldom been considered other than as a prelude to a discussion of the possible use of spits as pre-coinage money.

4.4.6 The Wider Picture

The individual finds discussed above suggest that a spectrum of reasons accounts for the deposition of spits in sanctuaries. These range from their use for the roasting of meat on a single occasion, to the use of spits as commemorations of sacrifice, to their role as enduring votive gifts to the gods. The majority of spits seem to lie closest to the purely votive category. The only other context in which spits appear in the guise of sacrificial equipment alone is the environs of "Temple D" at the Samian Heraion (**S23c**). In a few other instances, including pre-Phoenician Kition (**S12a**), Kommos (**S14**), the Megalopolis Road Sanctuary near Sparta (**S26**), and Zagora (**S29**), spits were associated with animal bone and may have been used for the roasting of meat, but they were also associated with votive material, and therefore most likely fall into the middle category, if not the purely votive category. Similarly, even though two spits recovered from "Section J18" at Nemea (**S16b**) had been ritually killed, and therefore show affinities with the spit from the Pentathlete's dedication, there is no report of sacrificial debris, and they were found at the edge of a mounded votive dump to which they almost certainly belong. Likewise, the spit from the altar of Artemis at Olympia (**S17d**) was found in a sacrificial place but was associated with more than two hundred and fifty votive objects. With the exception of the spits from Dodona (**S4**) and Geronthrai (**S9**), where the contextual information recorded is too minimal for any instructive analysis, the finds from the remainder of the sanctuaries seem to conform to the votive mode. This fact is best illustrated by detailed case studies of their appearances at Olympia and at Artemis Orthia.

4.4.7 Olympia¹⁸³

At Olympia, the votive character of the spits may be discerned from their behaviour within the sub-assemblage of the fill from a substantial series of wells discovered on the periphery of the Altis¹⁸⁴. These wells seem to have been created for those visiting the sanctuary for the

¹⁸²A.E. Furtwängler 1980 88. See also e.g. R. Cook 1958 258 on the possibility that the giant bundle of spits from the Argive Heraion (**S2a**) "*might have been an ordinary sort of offering*".

¹⁸³Tables and graphs relevant to this section will be found in **Appendix B2**. I would like to thank Gary Lock for his comments on this section. Any errors remain my own.

¹⁸⁴For a succinct discussion of the nature and interpretation of the wells at Olympia see Mallwitz 1988 98-99. The excavation of one hundred and thirty nine wells discovered between 1959 and 1966 is described in Kunze 1967 esp. 25f, and their contents summarised in Gauer 1975. Further wells have been revealed most recently in

great quadrennial festival of the games. This is evident not only from their concentration in the area of the stadium to the east of the site, except for a blank portion where the successive running tracks were laid out, but also from the fact that they were temporary features used for no more than perhaps just one season¹⁸⁵. Furthermore, the number of wells per quarter century increases steadily up to the point when the growing demand for fresh water was met with the provision of a regular supply concluding in the open stone channels installed in Stadium III in the mid-fourth century, at which time the sequence of wells ceases¹⁸⁶.

When the festival of the games was over, and the competitors and their supporters had packed up and gone home, the watering-holes which they left behind were filled in, either because of the hazard presented by an unguarded deep, dank, muddy shaft or because of the opportunity such ready-made pits presented for the disposal of rubbish¹⁸⁷. This rubbish may be classified into three groups of material. A small but significant proportion of the fill comprises waste material arising from the building and maintenance of the fabric of the sanctuary, such as worked stone and tile. A second much larger portion consists of refuse from the campsites themselves, such as animal bone and vessels of plain local wares used for the storing and pouring of liquids or preparation of food or drink¹⁸⁸. The third and final

the area of the Prytaneion, for which see AR 1986 to 1993 and Kyrieleis 1992.

¹⁸⁵The brief life of these wells is indicated by their basic construction and vertical section. For the latter compare the profile of wells from this site (Kyrieleis 1992 pl. 3 no. 6; Kunze 1967 6 fig. 4, 7 fig. 5 (well N24), pl. 2, pl. 3), with that of wells dug for everyday secular use in the Agora at Athens (Brann 1962 107 fig.7). It will be noted that a funnel shape has developed at the top of the latter, as a result of the natural collapse of the shaft over a long period of use, but that this feature is absent from the former.

¹⁸⁶For the dating of Stadium III see Mallwitz 1981 353f. Mallwitz 1988 98 suggests that a decline in the number of wells per quarter century from the mid-fifth century onwards reflects a decline in the popularity of the games, but this phenomenon is explained more convincingly as the result of the conversion into a stand for spectators of one of the main areas in which the wells had hitherto been dug (see below), coupled with the increased provision of more permanent water supplies in the sanctuary. A decrease in the number of visitors seems in any case to be belied by the perceived need to construct stadia of ever increasing capacity and solidity.

¹⁸⁷Compare with the deliberate backfilling of wells dug for secular use in the Athenian Agora. The material used in this instance was *"very probably carted from near-by rubbish heaps or swept together from local debris"*: Brann 1962 108 (see also Brann 1961 306). It is tempting to suggest that part of the fill from the wells at Olympia was deposited in acts of primary votive deposition, especially as water seems to have been regarded as sacred, and the throwing of gifts into supplies at sanctuaries is not unknown (Cole 1988 161). However, while it might be possible to interpret material from wells at the Samian Heraion (Kyrieleis 1993 138), Isthmia (Caskey 1960), and a well next to the "Cross-roads Sanctuary" in the Athenian Agora (T.L. Shear Jr. 1973) in this way, this view seems unconvincing at Nemea (Birge et al. 1992 73-74), and untenable at Olympia. In the case of the latter, fragments of the same pot were sometimes found in different wells, and the stratigraphy tended to be thoroughly churned up, with sherds from the same vessel occurring at different levels (Gauer 1975 2, 36). Neither pattern could have resulted from the throwing of pots into the water whether intact or even broken on a single occasion.

¹⁸⁸These things are most unlikely to have been thrown into the wells by the campers themselves, as the contamination of the water supply in this way might leave the aspiring athlete in a dire predicament on the morning of his event. It seems more probable therefore that the area where the visiting competitors and their entourages had eaten, drunk, and slept, was cleared after their departure, and the sweepings tipped into the

constituent of the fill comprises votive offerings which had lost their lustre or significance in the sanctuary, and which could be disposed of discreetly down the capacious shafts. To which of these three categories of sanctuary rubbish do the spits belong? It seems obvious that they do not belong to the first, and natural to associate them with the second, but the analysis of changes in the quantities of iron /bronze and pottery in the wells suggests that they in fact belong to the third.

To perform this analysis it is necessary to begin by placing the wells in a chronological sequence. This is not possible in every case, because the date at which the fill of some of the wells was deposited cannot be determined with particular accuracy due to an absence of diagnostic material, or in a few other instances because more than one well was dug at the same location, the one cutting through the other ("double-wells") and the material from each has become mixed up and confused. However, the vast majority, totalling one-hundred-and-three, may be assigned to a fifty year period during the seventh century, or a twenty-five year period between the sixth and fourth centuries. For most purposes the number of wells per period is too uneven to produce a reliable picture of the various changes which took place, and it is therefore preferable to analyse the sequence in periods of fifty years¹⁸⁹.

A simple count of the number of objects per period produces an overall pattern in iron /bronze and pottery in which there is an increase in both categories from the first half of the seventh century, which becomes more accentuated between the second half of the seventh and first half of the sixth, climbs still further, at a marginally reduced rate, up to the first half of the fifth, and then falls away with the decline in iron /bronze being initially more marked than that of pottery, but thereafter about equal¹⁹⁰. Viewed from this perspective, however, these developments constitute little more than a shadow of the number of wells available for analysis per period¹⁹¹, rather than a reflection of fluctuations in the categories of objects deposited, and it is necessary to convert the raw counts of objects into proportions for a more meaningful result. This method of analysis shows that there was a major change in the composition of the assemblage, whereby the share of metal decreased and that of pottery increased more or less steadily in every period except one, from roughly 80% iron /bronze and 20% pottery in the first half of the seventh century, to 15% iron /bronze and 85% pottery

wells. This conjecture cannot be verified, however, in the absence of more precise stratigraphical information as to whether the bone appeared in the use fill, or the dumped fill.

¹⁸⁹For the dating of the wells see Gauer 1975 213f, summarised 243.

¹⁹⁰See **Appendix B2 Table 1 & Graph 1a**.

¹⁹¹See **Appendix B2 Table 1 & Graph 1b**.

in the first half of the fourth¹⁹².

This change seems as much connected with fluctuations in the proportions of votives and camp equipment, as it does with materials. Most of the identifiable iron /bronze finds are made up of probable classes of discarded votive items, comprising weapons, armour, tripod cauldrons /cauldrons, and other bronze vessels. By contrast, with a few minor exceptions, such as votive miniature vessels, most of the pottery consists of vessels for storing, preparing and consuming food or drink¹⁹³. Morgan has observed that it is difficult to be certain of the role of such pottery, especially drinking vessels, at a sanctuary¹⁹⁴, but the fact that they are made of unglamorous, uncollectible plain local fabrics provides a powerful argument that they were not, like the arms and armour, intended as gifts for the gods, but were made as disposable camp equipment for visitors to buy, use, and discard rather than bring and take home again. Furthermore, their non-votive character is underlined by the markedly different way in which, as outlined above, the pottery behaves when compared with the iron and bronze. The proportions of iron /bronze versus pottery therefore seem to follow by and large those of discarded votives and abandoned camp-craft respectively.

This conclusion is reinforced if the analysis is refined to study selected classes of object including: weapons, armour, tripod cauldron or cauldron fragments, fragments of other bronze vessels, pottery vessels for eating, drinking, storing or pouring liquids, and pottery shapes used for cooking. For the metal goods, the pattern is not wholly distinct during the seventh century, but thereafter there is a rise in numerical quantity in every category between the first and second halves of the sixth century, a peak in the first half of the fifth (except for weapons, which peak in the second half of the sixth), and a decline to near negligible quantities by the first half of the fourth. By contrast, pottery shows a consistent rise right up until the second half of the fifth century, after which there is only a slight decline to the end of the sequence¹⁹⁵. When analysed in terms of the proportion of all goods listed in **Appendix B2 Table 1**, the metal items show more divergence, with different classes dominating the assemblage at different times, the tripod cauldrons /cauldrons during the first half of the seventh century, other bronze vessels and weapons during the second half of the seventh century, and armour as late as the first half of the fifth. However, the classes of metal items are consistent in that they all decline during the first half of the fifth century, and though there is a very slight rise in weapons, the sum total of the classes analysed amounts to less

¹⁹²See **Appendix B2 Table 1 & Graph 1c**.

¹⁹³See **Appendix B2 Tables 1 & 2**.

¹⁹⁴Morgan 1990 29, 53 & 1993 25.

¹⁹⁵See **Appendix B2 Table 2 & Graph 2a**.

than five per cent of the overall assemblage by the first half of the fourth century. This pattern contrasts sharply with that of the two classes of pottery, which are absent from the beginning of the sequence, but then, with the exception of the first half of the sixth century, increase to a maximum at the end of the period¹⁹⁶.

It is not possible to analyse the spits in exactly the same way, because they occur in relatively small numbers. A mere twelve examples in total have been identified within the wells considered here¹⁹⁷, which can be supplemented by a further six putative fragments to raise the total to eighteen. A Kolmogorov-Smirnov one sample test reveals that this statistical population does not have a non-random distribution at the 10% level of confidence during the period in which they appear (600-550 to 450-400)¹⁹⁸. This means that any attempt to correlate period for period the distribution of spits with that of other classes of artefact would not be justified¹⁹⁹, because there is a significant probability that the observed increases and decreases in frequency are randomly constituted. However, the same test applied to the whole period of the wells (700-650 to 400-350) and to the population of spits (including putative fragments) shows that the archaeological horizon to which they belong does have a non-random distribution at the 5% level of confidence²⁰⁰. This means that it is possible to compare the spit horizon as a whole with that of other classes of artefact, and show that its distribution matches more closely that of the votives than that of the pottery. This seems especially true at the lower chronological terminus (right hand side of **Appendix B2 Graphs 2a and 2b**), where the cessation of spit deposition coincides with that of tripod cauldrons /cauldrons and the general decline in the frequency of other classes of votive as opposed to the persisting preponderance of pottery. These observations would encourage the belief that the spits should be identified as dedicatory offerings rather than as culinary implements.

One further analysis suggests the same conclusion. The wells included in Gauer's volume were all discovered in two areas, one under the north wall of the final stadium ("N-wells"), and the other to its south-west ("SW-wells")²⁰¹. The assemblages from each of these can only

¹⁹⁶See **Appendix B2 Table 2 & Graph 2b**.

¹⁹⁷The example from well N39 is therefore excluded.

¹⁹⁸D = 17 compared with 33.8 expected at the 10% level when n=12; D = 14 compared with 27.9 expected at the 10% level when n = 18. For a description and explanation of the Kolmogorov-Smirnov one sample test, see Fletcher & Lock 1991 §9.2 91-94.

¹⁹⁹The appropriate test would be "Kendall's tau-c", for which see Fletcher & Lock 1991 §11.4 122.

²⁰⁰D = 29 compared with 33.8 expected at the 10% level when n = 12; D = 32 compared with 27.9 expected at the 10% level and 30.9 expected at the 5% level when n = 18.

²⁰¹See **Map 5**.

be compared from the third quarter of the sixth century up to the first quarter of the fifth. Before this date there are insufficient numbers of wells to provide an adequate sample size, and afterwards there are, with only two exceptions, no more wells from the northern area, because an earth bank for Stadium II was built over it²⁰². The contrast between the fills of the N-wells and SW-wells during this period is unmistakable. The overall ratio of iron/bronze to pottery from both areas is 3:2, but that of the N-wells is 7:3, and that of the SW-wells is 2:3. Clearly, therefore, the N-wells contain a much higher proportion of iron/bronze to pottery than the SW-wells. Furthermore, this contrast becomes more accentuated over time, in spite of the fact that, as mentioned above, the long-term trend is the reverse²⁰³.

The interpretation of this pattern need not be of concern²⁰⁴: what matters here is the way in which the spits behave within it. Once again, the small numbers of finds necessitate that analysis at the sub-period level (here quarter centuries) is abandoned, and even for the larger period render the statistical significance of the results open to question. **Appendix B2 Table 3b** shows that just ten spits (counting putative fragments) were found in N-wells, and four in SW-wells, and that these made up roughly only two percent and one percent respectively of the average number of artefacts per well. However, an archaeological significance need not be precluded for this reason²⁰⁵, and a preponderance of spits in the N-wells would ally them with almost every other class of votive, and dissociate them from the pottery vessels connected with everyday alimentation²⁰⁶. This conclusion is consistent with that offered above from the analysis of the chronological distribution of the spits within the wells, and the one may be said to reinforce the other.

4.4.8 Artemis Orthia

At Artemis Orthia in Sparta (**S24**), the votive character of the spits may likewise be discerned

²⁰²The numbers of wells from each area per period which meet the criteria for inclusion are as follows: 700-600 N=3, SW=3; 600-575 N=1, SW=1; 575-550 SW=4; 550-525 N=6, SW=9; 525-500 N=7, SW=8; 500-475 N=11, SW=10; 475-450 N=2, SW=9; 450 onwards, no further N-wells.

²⁰³See **Appendix B2 Tables 3a and 3b**.

²⁰⁴It may be explained by the presence of the large number of different shrines within the temenos, each of which no doubt received its own peculiar repertoire of votives. It follows that when these repositories became full, they would need to be cleared out, and that it would only be natural if the old material, and especially the larger, heavier items, were taken for disposal at the nearest designated location. There was probably a concentration of trophies of various sorts, especially tripod cauldrons /cauldrons, arms, and armour, in the vicinity where the treasuries developed, from where the area of the N-wells would be less of a trudge than that of the SW-wells.

²⁰⁵Fletcher & Lock 1991 61-62.

²⁰⁶The conclusions of this analysis are not altered if iron/bronze armour fragments, which dominate the assemblage from the N-wells, are removed, and the table recalculated: see **Appendix B2 Table 3b** recalculation.

from the way in which they feature within the overall assemblage. As previously mentioned, the examples from this site do not seem to have been used for roasting meat at regular sacrifices, because their spatial distribution largely avoids that of burned animal bone, which was concentrated east of the altar²⁰⁷. Furthermore the spits are limited mostly to a brief horizon of no more than eighty years during the seventh century²⁰⁸, whereas there is evidence for animal sacrifice from the very beginnings of the sanctuary and onwards thereafter throughout most of its history²⁰⁹. The appearance and disappearance of the spits from the deposits therefore suggests no obvious association with this ritual. It does, however, seem to bear a convincing relationship with changes in the votive repertoire.

From the modest beginnings of the sanctuary during the Proto-Geometric²¹⁰ up until the end of Laconian I, the range of dedications on the whole grows steadily richer²¹¹. This is especially true of ivories, and also artefacts made from bronze, gold, or silver, the majority of which comprise jewellery. Laconian II sees a quantitative decline in the sum total of these categories, but what follows towards the end of this period and the beginning of Laconian III amounts to a new departure²¹². Bronzes do still appear, though very rarely, but gold, silver, and ivory entirely vanish. These developments are paralleled by: a tremendous flourish in lead figurines, nearly seven-tenths of which are deposited in this phase; a sudden increase in the numbers of terracotta masks; the replacement of working in ivory with working in bone; and the introduction of carvings in soft limestone²¹³. In turn, by the beginning of Laconian V, this votive assemblage has also passed the height of fashion. It is not, however, replaced by a new set of artefact types, but evidence for the deposition objects at the sanctuary seems largely to cease²¹⁴. From the above it may be seen that the spits behave exactly like a class of dedication at Artemis Orthia in terms of their tightly defined

²⁰⁷Woodward in Dawkins 1929 391.

²⁰⁸The chronology followed here, as in **Appendix B1**, follows the revised chronology of Boardman 1963, with awareness of the various minor adjustments which have been proposed.

²⁰⁹For the faunal remains see Dawkins 1929 5 (= Artemis Orthia Phase I); 6,8,15 (= Phase II); 24 (= Phase III); etc.

²¹⁰For the presence of Proto-Geometric sherds at Artemis Orthia see Benton 1950 22.

²¹¹The most notable exceptions to this rule are pyxides from the pottery assemblage, and items of amber, both of which are restricted to the Geometric: see Dawkins 1929 112 (pyxides), 386 (amber).

²¹²For a summary of the votive repertoire from the Geometric to Laconian II see Dawkins 1929 6, 8, 12, 14, 16, and individual chapters in *ibid.* for the particular classes /types.

²¹³See Dawkins 1929 27 for a summary of these changes, though note that the figure "58,000" for Lead III & IV figurines should read "68,000" as per Wace in *ibid.* 251.

²¹⁴Dawkins 1929 27.

chronological distribution and the fact that their fall in popularity coincides with that of the changeover from the first repertoire of votives to the second.

4.4.9 Other Votive Spits

The case studies of Olympia and Artemis Orthia argue that where spits are found in association with votive material and occupy a distinct chronological horizon in the stratigraphy of a sanctuary, they may be explained as offerings for the gods brought by worshippers. The finds from many more sites may be interpreted in this way on these grounds, including those from: the general context of the Argive Heraion (**S2b&c**); the Harbour Sanctuary (**S6**) and probably also the temple of Athena (**S5**) at Emporio, Chios²¹⁵; the treasury of the temple of Apollo at Halieis (**S10**); the Limenia site at Perachora (**S18b**); the sanctuary of Athena Itonia at Philia (**S20**); the votive deposit beneath "Building A" at Poseidi (**S21**); the Spartan Menelaion (**S27**); and the general context of the Ephesian Artemision (**S7a**). At the last named, one spit was found still in place on a bench used for the display of offerings inside the peripteral temple, from which it would no doubt in time have been taken and cast onto the sacred rubbish dump to join other examples had the structure not been overwhelmed by a catastrophic flood during the Seventh century (**S7b**). At a number of other sanctuaries, the quality of the contextual or archaeological information available is more problematic, though the votive interpretation remains convincing. These sites include: the spit from Angelona in Lakonia (**S1**), which seems to have come from a votive deposit; the spit from the sondage by the Siphnian Treasury at Delphi (**S3a**), which was found in the "*remblai rouge*", a layer of discarded dedicatory material; and the spits from the Subsidiary Structure at the sanctuary of Athena Chalkioikos at Sparta (**S25a**), which appear to have been found in a matrix of discarded dedications.

4.5 OTHER CONSIDERATIONS

4.5.1 Form

Concerning the subject of form, there is little to add to what has been said already during the discussion of typology. Nevertheless, it is important to stress that with the exception of one example from Kition (**S12b**), and one example from Olympia²¹⁶, the archaeological finds of

²¹⁵In strict terms, the spits from the temple of Athena could belong to a wide period of time. However, the chronological distribution of the fragments from the Harbour Sanctuary terraces lasts only from ca. 690-600, after which the trend implied by the small sample towards increasing quantities is cut short. This pattern suggests that the spits in the temple of Athena, which belong to two rather broad periods, one lasting ca. 800-550, the other ca. 550-325, are not likely to have been deposited before the start of the seventh century, while the distribution of spits as a whole (**Appendix B1 Table 2**) would predict that they passed out of fashion in the sixth century.

²¹⁶For the example from Olympia see Karageorghis 1974 171.

spits are all made of forged iron²¹⁷, as were those of Rhodopis²¹⁸. It seems equally useful, if rather obvious, to note that the epigraphic and literary attestations demonstrate that not every metal example from the Archaic period has survived. However, the fact that, as noted elsewhere in this chapter, the finds of spits hardly ever correspond with those of traces of animal sacrifice is probably best explained if the normal material for such implements was wood. This would perish when discarded if it was not burned up at the end of the ritual, and either way would not be preserved. The use of such spits has already been inferred for the portable *escharai* discussed in §3.3 and as detailed in §6.2.2 is attested in the inscribed inventories of Hellenistic Delos.

4.5.2 Modes of Use

Turning to the manner in which spits were laden with meat and held over a fire, as with the funerary contexts, more than one mode of use may be inferred. The majority were probably hand-held in the manners depicted in vase paintings²¹⁹. Others, however, may have been used in conjunction with firedogs, fragments of which were found at Olympia, as mentioned above, and are of the same type as some of those from Sindos. At Perachora, spits laden with meat may have been rested on the curb stones of the hearth at the centre of the hestiatorion, judging from patterns of wear found along their upper edges²²⁰. The importance of these differences is that they serve as a reminder of regional variation in the adoption of the spit, and in so doing emphasise the need for some degree of flexibility in their interpretation.

4.5.3 Spits and the Individual

As outlined in the introduction to this chapter, far less may be said of the individuals who dedicated spits to the gods at sanctuaries, than of those who were honoured with gifts of such artefacts in death, because discrete archaeological assemblages pertaining to one person are almost entirely lacking. Nevertheless, in two instances the donor's name is given in written sources, and the fact that in the one it is that of a man, Phanaristos, and in the other it is that of a woman, Rhodopis, indicates that such votives were not gender specific. In a few cases it is also possible to infer something of the status of the dedicant. On three occasions during the sixth century he /she had commissioned a commemorative stone base, and on at least two of these also a verse couplet. This habit is surely associated mainly with the upper social classes, and a further instance of the use of iron spits by this elite group may be added from the Pentathlete's offering at Nemea (S16a), given that the sportsmen of the fifth century

²¹⁷Strøm 1992 43 is in error in stating that they were "cast solid".

²¹⁸"σιδηρέους".

²¹⁹See §5.3.5.

²²⁰Jeffery 1990 123.

tended to be drawn from the aristocracy. Rhodopis need not necessarily disrupt this scheme, because the claim that she was a prostitute is questionable. Even so, it is important to add that it is more difficult to discern the accessibility or appropriateness of spits as dedications further down the scale. This means that it is not possible to assess the extent to which a person such as Phanaristos chose to dedicate spits to demonstrate wealth and status, or because it was a traditional form of gift.

4.5.4 *Value Again*

This last point is closely connected with the question of value. As emphasised by A.E. Furtwängler, the iron from which the spits were made certainly must have had an intrinsic value²²¹, but what was this? Here again, the evidence is limited. The idea that there was an equation between a silver obol and an iron spit has been shown to be misguided. However, the evidence on which the refutation of Courbin's 1:2000 ratio was based, comprising the exchange ratios from the Ancient Near East, and epigraphic material from late fifth century Athens offers little help in determining the worth of a spit dedication at an Archaic sanctuary, or, more importantly, who could afford to consume this quantity of wealth.

The best clue to the answer to these questions seems to be found by considering the quantities in which they occur over time. This is not easy, because the number of spits occurring at each site is often obscured by the many instances in which they are quantified as "numerous", or recorded as groups of fragments. The case of Olympia gives special cause for concern, because only twenty to thirty spits may be counted in the publications, whereas the true number of examples lies closer to one hundred and twenty²²². Nevertheless, the quantities of spits given in **Appendix B1 Table 1** may be added together to give the following totals²²³:

spits excluding Argive Heraion bundle	201
Argive Heraion bundle	ca.100
groups of fragments	13
unspecified number of spits	13

These figures lack precision, and may only imply an order of magnitude, but they suggest an average of between seventy and one hundred spits per century concentrated over the period ca. 750-450, depending on whether the bundle from the Argive Heraion (**S2a**) is included. If

²²¹A.E. Furtwängler 1980 94.

²²²Thomas Völling pers. comm.

²²³N.B. The total for Olympia (120) is inclusive of the sub-totals given under **S17b-d**.

this total provides within tolerable limits an accurate reflection of the number of iron spits in circulation at sanctuaries, then it would suggest that they were objects which were not particularly common. As in the funerary contexts, this conclusion may imply that they were artefacts of some value, rather than everyday possessions.

It is also relevant to recall that the number of sites producing spits seems to increase between the eighth and fifth centuries. **Appendix B1 Table 2** suggests that of those which could be dated within reasonable chronological limits, two may be placed in the eighth century, seven in the seventh, and nine in the sixth. In addition to these rough and ready statistics the numbers of individual spits involved in the largest single deposits seems to multiply over time. This pattern has already been identified from the funerary evidence, but the sanctuary finds see its culmination in the bundle from the Argive Heraion (**S2a**), and probably also in those dedicated by Phanaristos and Rhodopis. The giant spit from the Argive Heraion (**S2a**) belongs to the same category, on the basis that the quantity of metal required for its manufacture is comparable to that for the massive bundles. These inflationary symptoms indicate that the value of the spit was in decline.

4.5.5 Spits and Ironworking at Sanctuaries

Strøm raises the possibility that spits were manufactured in an organised manner at sanctuaries. She bases this proposition on Courbin's argument that the spits from the Argive Heraion bundle and Poseidonian Hypogaeum correspond in length, and there is therefore little need to consider the remainder of her argument²²⁴. Equally the idea that the large bar discovered with the bundle of spits at the Argive Heraion (**S2a**) "*may ... be interpreted as ... the raw material used for the manufacture of the obeloi*"²²⁵ seems unlikely. The conversion of iron into a solid block of such unwieldy size, which was also shaped and given a finished surface, would have proved more difficult to achieve than the production of numerous spits, and would have therefore served no useful purpose. The preserved section of this artefact indicates in any case that it was identical in form to the lanceolate type of spit found in the Argive Heraion bundle, and there seems to be no reason to interpret it as anything more complex than what it seems to be: a giant monumental spit.

Nevertheless, the question raised by Strøm is important and deserves consideration, because spits have occasionally been found with debris from ferrous metallurgical processes. However, even amongst the more convincing cases there is not one from which it is possible to infer a large-scale production. At the Samian Heraion a spit appeared in the same context

²²⁴Strøm 1992 44, 45, 49.

²²⁵Strøm 1992 45.

as a "considerable mass" of iron blooms, slags, and charcoal²²⁶, but it seems unwise to infer an association between the two on the basis of one fragment alone, especially as the same context incorporated much general rubbish, including items of ordinary pottery such as bowls, dishes, cups, and amphorae. A similar tale is told at Olympia, where a spit and some slag was found in the fill of one of the many wells, but the heterogeneous nature of the remainder of the objects found there suggest that there is no correlation²²⁷. A more convincing case is presented at Philia, where large numbers of spits were recovered from the site along with impressive quantities of materials and wastes from ironworking, but even here it seems that spits and metal-working were not associated, because the two were concentrated in markedly different areas²²⁸ in addition to which there is an absence of part-worked or mis-forged pieces.

The "Portico" of the sanctuary of Athena Chalkioikos at Sparta (**S25b**) presents a slightly different picture. Here numerous spits and a spearhead were found beside an apparent metalworking hearth of the Classical and Hellenistic periods, which Woodward & Hobling believed to be a manufacturing workshop²²⁹. However, the workshop dates to the period at the end or after that during which spits feature in deliberate deposits at sanctuaries, and it seems more likely that the finds from the Portico were brought to the site as scrap metal for the forge. This interpretation would explain why the objects were abandoned when the workshop was decommissioned and filled in.

4.6 CONCLUSIONS

What may be concluded from the survey of spits in sanctuary contexts? The tradition that spits were used as pre-coinage money hinders their interpretation, and an examination of the evidence independent of this view proves more productive. Such a study indicates that iron spits were used in sanctuaries for the roasting of meat, though the limited and sporadic distribution of these implements compared with the longevity and ubiquity of the rite of animal sacrifice at sanctuaries in Greece argues that wooden counterparts were far more common. The rarity of iron spits compared to the implicit profusion of wooden spits also suggests that the former were "best china" in relation to the latter. This conclusion is consistent with the occurrence or attestation of iron spits in contexts which suggest that they

²²⁶Furtwängler & Kienast 1989 144. Salter pers. comm. questions whether the "blooms" are in fact smithing hearth bottoms which, as is common, have been misidentified. This possibility would harmonise well with the finds of slags and charcoal rather than scrap metal or failed forgings.

²²⁷For the fill of this well see **S17b** well SW92.

²²⁸Kilian 1983 133 fig. 2 vs. 134 fig. 3.

²²⁹Woodward & Hobling 1923-1925 245. No analysis is offered for the various metallurgical wastes and so it is impossible to verify the activities represented.

were valued artefacts, including the Pentathlete's dedication at Nemea (**S16a**), the Poseidonian Hypogaeum (**S22**), and the bundles dedicated, often with elaborate accompanying stone bases, at the Argive Heraion (**S2a**), Perachora (**S.epig.1**) and Delphi (**S.epig.2** and **S.lit.1**). However, the contextual circumstances in which a number of spits were found cannot be accounted for by their use for roasting meat, and many spits appear to have been deposited in sanctuaries as votives to serve different purposes. One of the groups of finds from the Samian Heraion (**S23a(i) & (ii)**) seems to have been set up with a boukranion after a sacrifice as a monument to the occasion. Other spits, including especially the bundles, seem to have reached sanctuaries without any direct connection to this ritual, and to have been deposited as votive gifts in the same way as, for example, a tripod cauldron, to achieve the same aims of divine reciprocity and /or the demonstration of the wealth and power of the dedicatee²³⁰.

The distribution of spits from sanctuary contexts complements that from funerary contexts. Except for a small overlap, finds occur at sanctuaries in areas where they are absent from cemeteries, and the concentration of spits in the former follows chronologically that in the latter. The finds from sanctuaries also show evidence of the continuation of a number of trends which were identified amongst the finds from the funerary contexts. The number of spits in the largest single deposits again increases, culminating in the massive bundle found at the Argive Heraion (**S2a**). The length of spits may also increase, the largest example from a sanctuary context, which was found at Olympia, measuring 182cm²³¹, though the date of the find is not clear.

These trends imply that over time ever more spits of ever greater length were required to achieve the same effect, or in other words, that the value of a dedication of an individual spit gradually decreased. Some of the latest evidence from the sanctuaries suggests that the value of iron spits eventually fell to the point at which they were no longer valued for this purpose. At the Portico of the temple of Athena Chalkioikos at Sparta (**S25b**) iron spits seem to have constituted feedstock for the manufacture of new objects. At the foundry in the area of Pheidias' workshop at Olympia (**S17c**) spits had been used to reinforce the clay walls of a ladle for pouring molten bronze, but once the vessel had served its purpose, were not recovered. Confirmation that the evidence from these contexts is indicative of the value of the spits in the contemporary secular world may be found in Herodotos, who implies that the dedication of Rhodopis was perceived to be of no particular worth at the time he was writing

²³⁰For the religious and socio-political motivation behind dedications see esp. Burkert 1987 47-48; Langdon 1987 112; Linders 1987 118, 120-121.

²³¹See **Appendix D**.

in the mid-fifth century²³².

If the relationship between the traditions of depositing spits in sanctuaries and in graves extended to the motives governing each, then those identified for the sanctuary finds may be used to help explain why spits were buried with the dead. This interpretative analogy would suggest therefore that some spits were intended for the roasting of meat at a special meal to be enjoyed by mourners before the body was disposed of, or by the deceased after he or she had crossed the Styx²³³. The presence of some spits in tombs might be explained in this way, as indicated by the evidence for the provision of the many food-stuffs in Salamis Tomb 79, and of whole joints of meat in two native Italian tombs from Pontecagnano which emulate Greek burial practices in a number of respects²³⁴. However, it seems equally plausible that spits were placed in graves as objects of value to indicate the esteem in which the deceased was held.

²³²Hdt 2.135: "... μεγάλα ἐκτήσατο χρήματα ὥς [ἄν] εἶναι Ῥοδῶπιν, ἀτὰρ οὐκ ὥς γε ἐς πυραμίδα τοιαύτην ἐξικέσθαι. τῆς γὰρ τὴν δεκάτην τῶν χρημάτων ιδέσθαι ἔστι ἔτι καὶ ἐς τόδε παντὶ τῷ βουλομένῳ, οὐδὲν δεῖ μεγάλα οἱ χρήματα ἀναθεῖναι...."

²³³For introductory discussions and bibliography on feasting at the graveside and feasting in Hades see: Kurtz & Boardman 1971 39f, 66, 75f, 234, 332; Garland 1985 70, 158; Burkert 1985 192-193. However, Dentzer 1982 has argued that the "Totenmahl" inferred by Thönges-Stringaris 1965 is largely a modern fiction produced from a mis-reading of the representational evidence. Buchholz 1991 78 proposes that the inclusion of spits in graves is symbolic of a final meal together by members of a *sussitia*.

²³⁴Pontecagnano Tombs 926 and 928: see D'Agostino 1977a for a description of their contents and excavation, *ibid.* 16 for the joints of meat. See D'Agostino 1977b esp. 16-17 for a discussion of hellenising features.

CHAPTER FIVE

THE ICONOGRAPHIC EVIDENCE¹

5.1 The Corpus

5.1.1 Compilation

The corpus of vase paintings on which spits are represented is relatively straightforward to assemble thanks to the existence of previous studies which have collected the different scenes for various purposes. The majority concern aspects of the preparation and consumption of sacrificial animals in Greece, and these include: the discussion by Kron (1971) of the Homeric πεμπώβολος²; investigations by Mayer (1893) and later Rizza (1959-1960) into the possible influence of a lost sculpture by Styppax on the figure of the roaster; and more general works by, in particular, Metzger (1965), Berthiaume (1982), Durand (1986 & 1989), Detienne (1989), and most recently van Straten (1995). The latter incorporates the most complete list of relevant vases from amongst the sacrificial material³, both Attic and non-Attic⁴, and has been employed here as the basis for **Appendix E**. However, it does not include every representation of a spit. A search of the Beazley Archive Database⁵ using the terms "spit", "spits", "splachnopt" and "splachnopts" highlights further scenes in which spits feature, including the "Death of Orpheus" and a type of Centauromachy. These may be followed up under the appropriate headings in the *Lexicon Iconographicum Mythologicae Classicae* ("LIMC"). The only other categories of scene which must be added are those depicting "obeliaphoroi" and "obelias artos", which are listed by Crosby⁶.

The above methodology produces the corpus of vases listed in **Appendix E Table 1**. This table provides for each vase details of: its standard references (*Beazley Archive Database* /Beazley ABV or ARV² /museum catalogue /van-Straten's catalogue numbers); the painting

¹I would like to thank Tyler-Jo Smith for her kind advice and comments during the writing of this chapter.

²Kron 1971 131-144.

³Van Straten 1995 191-274 = Catalogue I: Vase Paintings.

⁴For non-Attic material a check through the more readily accessible and usable regional publications adds no further references to van Straten's catalogue (Amyx 1988 on Archaic Corinthian; Stibbe 1972 and Pipili 1987 on Lakonian; Kilinski 1990 on Boiotian; Rumpf 1927, Keck 1988 and Iozzo 1994 on Chalcidaian; Hemelrijk 1984 on Caeretan Hydriai).

⁵"<http://www.beazley.ox.ac.uk>". The search was carried out in March 1999. I wish to thank Thomas Mannack for helping me with this task.

⁶Crosby 1955 80-81 (referring to Bieber 1939 fig. 378 (= 1961 140 fig. 511) and van Hoorn 1951 42 & associated references).

technique; shape; provenance; date; artist /attribution; and a summary of the iconography. The vases are referred to here by two letters and a number in bold typeface. The first letter, "E", denotes Appendix E, the second, the category of scene, and the number, the number of the vase within the category (e.g. **EJ1** refers to Appendix E, scenes of "Herakles and Bousiris", vase number one). Whole categories of vases are referred to by the word "category" plus the relevant letter in bold typeface (e.g. **Category H** refers to "obeliaphoroi"⁷). Vases which are illustrated are marked with an asterisk and may be found listed under "Figure 5" (e.g. **Figure 5.H1** illustrates vase ***EH1**).

5.1.2 The Scenes

The corpus is divided here into those categories which prove the most advantageous for the study of spits. These are as follows:

Ref.	Scene type	No. vases
A	Non-Attic Archaic /Classical representations of sacrifice /butchery	2
B	Roasting standing with spit held acutely upwards	21
C	Roasting standing with spit held level /pointing slightly upwards	12
D	Roasting standing with spit held level /pointing slightly downwards	4
E	Roasting crouching	10
F	Roasting /preparing to roast: other postures	19
G	Scenes of Butchery	4
H	Obeliaphoroi	2
i	Obelias Artos	6
J	Herakles & Bousiris	11
K	Herakles' sacrifice at Lindos	6
L	Herakles amongst Satyrs	2
M	The Death of Orpheus	18
N	Centauromachy	3
O	Miscellanea	3

Nearly all of the scenes are associated in some way with the sacrifice and consumption of animals. **Categories A to G** (seventy-two vases) comprise scenes in which the sacrificial

⁷In category "i" the category letter has been placed in lower case to avoid confusion with the letter "l" or number "1".

animal is butchered, or in which some part of it is being roasted over the altar, or is about to be so. In **Categories L and O** (five vases), the scenes are not sacrificial, but the spits in each of the compositions are laden with meat ready for cooking, and might readily be transposed to the altar-side. In **Category J** (eleven vases), and vase ***EK1**, the spits clearly form part of the equipment for an imminent sacrifice, whether of Herakles in the former, or of a fine bovid in the latter. In **EK2 to EK6**, and possibly in **Category H** (two vases), spits are shown laden with meat for later consumption or storage, as is clear from comparison with scenes from ***EA1** and ***EA2**.

In **Category M** (eighteen vases), the connection with sacrifice is more implicit. In the myth pertaining to these scenes, Orpheus is a subversive character because he disdains the animal sacrifice, preferring instead vegetarian fare⁸. In so doing, he also disdains the πόλις by shunning the ritual which lies at the heart of its structure⁹. Such a dangerous threat to society must die, and it is most appropriate that he should be put to the spit. Indeed, it is so important that the viewer recognise the instrument of "execution" as one and the same as that of sacrifice, that it is on the vases in this category that spits are drawn with especial care and attention to the characteristic and diagnostic handle. Similarly, in **Category N** (three vases), spits are used in the scenes of combat between Lapiths and Centaurs as weapons rather than for roasting at the altar, but their presence alludes to the sacred occasion, a wedding, at which the violence erupts. It is only in **Category i** (six vases) that no obvious link to sacrifice may be found, but this is due mainly to the obscure nature of "obelish bread"¹⁰.

5.1.3 Exclusion: the Blinding of Polyphemos

The typology of spits in iconography proves as useful in determining what is not a spit as it does in determining what is. It is necessary here to illustrate this point with a rejection of one category of scene in which it has been claimed that an ὀβελός is represented, and much significance attached to this "fact". Snodgrass asserts that spits may be identified as the instruments with which Polyphemos is blinded by Odysseus and his companions in two scenes, one of which is painted on a fragment of a Protoargive krater, and the other on a Western Greek krater¹¹. Snodgrass uses this as evidence to support his argument that of the "Homeric" scenes found on vases, very few were composed as illustrations of the texts of the *Iliad* or *Odyssey* as we have them. Rather, the vast majority drew their inspiration from a

⁸Reeder 1995 393.

⁹See e.g. Durand & Schnapp 1989 53.

¹⁰Bread baked on spits or bread worth an obol: for a collection of the ancient sources see *PCG* Aristophanes Fragment I05. See also §6.2.1d.

¹¹Snodgrass 1998 89-98. For the identification of the instrument of blinding as a spit on the Protoargive krater fragment see also Courbin 1955 47-49.

rich pool of oral tradition which inevitably incorporated alternative accounts of the same epic incidents¹². In this specific case, in one version of the vulgate, so argues Snodgrass following Page, Polyphemos has his eye put out not, as in *Odyssey* 9.322-386, with a stake prepared from a hefty trunk of green olive wood, but with a spit on which some of Odysseus' companions had been prepared as a human supper for the Cyclops¹³.

It is not necessary here to consider for how long this version was current in Greece before its first possible attestation in literature¹⁴. Clearly, the question is whether or not the implement depicted on the two vases cited by Snodgrass is a spit. On the first, a fragment from an Argive krater¹⁵, Snodgrass's identification of the "*black instrument of blinding*" as a spit is based on the fact that it appears to be a "*long, thin*" object. However, he fails to comment that it has a distinct bulge or head at the "sharp" end being driven into Polyphemos' eye, a feature which is also found but with better definition on the instrument of blinding in the comparable scene on the Protoattic amphora¹⁶. Snodgrass comments that the latter "*must be a spear*" on the basis that it "*has a proper, leaf-shaped head*", and surely this diagnostic feature must prove equally decisive in the case of the Protoargive krater fragment. The evidence presented by Courbin in his discussion of this same piece also favours this conclusion, especially given the visual similarity which he notes between the head of the instrument of blinding and those of spears depicted on terracotta shields from Tiryns of a comparable date¹⁷.

The second vase cited by Snodgrass is a krater painted by Aristonothos and discovered in Etruria where it was perhaps manufactured¹⁸. Of the instrument of blinding, Snodgrass says that it "*again looks like a spit*", but the surface decoration seems damaged beyond the point at which such an identification may be made with any confidence.

The only other exclusion which need be mentioned is that of a pelike by Myson. In one of

¹²See Snodgrass 1998 ix for a summary of the thesis he proposes.

¹³Page 1955b 9-11. See Snodgrass 1998 for further references.

¹⁴The earliest literary reference to spits in the Cyclops story occurs in Euripides (*Cyclops* 303 & 393). Heubeck & Hoekstra 1989 33-34 comm. ad *Odyssey* 9.375-379 go no further than to state that the existence of the rival version before the Classical period is a "possibility".

¹⁵Snodgrass 1998 91, 95 & fig. 36.

¹⁶Snodgrass 1998 90, 95 & fig. 35.

¹⁷Courbin 1955 48 n1 & fig. 14. It is perhaps ironic that Courbin finally rejects this interpretation on the basis of the inconsistencies which it presents with narrative details taken from the *Odyssey*.

¹⁸Snodgrass 1998 91, 95 & fig. 37.

the two scenes painted on this vessel, Herakles is depicted in the house of Nereus, holding a long, thin straight object. The absence of the diagnostic detail of a handle argues against the identification of this object as a spit¹⁹.

5.2 Analyses

5.2.1 Date (Appendix E Table 2)

The corpus of iconographic representations of spits shows a chronological overlap with the archaeological material of about one hundred years. The earliest known depiction of a spit on a vase is found on a black figure fragment of a volute krater from the Athenian Akropolis (*EG1) dating to the first half of the sixth century. It is followed by fifteen further Attic²⁰ and two non-Attic representations²¹ decorated in black figure during the second half of the sixth century and the beginnings of the fifth. Therefore, of the fourteen specific categories of scene (i.e. excluding **Category O** = miscellanea), eight have at least one example in black figure. Of these, only **Category K** (Herakles' sacrifice at Lindos) is not translated into red figure.

Of the six categories of scenes depicted solely in red figure, **Category D**, which differs only marginally from **Category C**, is represented by a piece from the last decade of the sixth century (ED1). Of the remaining five without black figure or late sixth century antecedent, **Categories L, M, and N** share in common the fact that the spits in each scene are not used directly for roasting meat, but more as an allusion to sacrifice. In **Categories M and N**, the connection has already been explained. In **Category L**, the spits, recognisable as the implements of roasting laden with meat, which are more usually found at the side of an altar, here represent the food with which Herakles will be fed as he enjoys the company of satyrs. Vase EO2 may also be added here, in which the presence of a laden spit is one sign that the action of the scene, in which Philoktetes is bitten by a snake, takes place during a sacrifice.

The only other significant change in repertoire falls amongst the latest material in the corpus. During the fourth century, two new categories of scene are introduced. These comprise the two depictions of *obeliaphoroi* (**Category H**), one in Attic polychrome (*EH1), the other a "Phlyax" bell-krater (*EH2), both of which may have been inspired by a scene from New Comedy²². The fourth century also sees the introduction of **Category i**, comprising six

¹⁹For the vase, and Beazley's description of the scene see *BAD* 275132 = *ARV*².1638.2 bis & *Add.*².201.

²⁰EB1, *EC1, *EC2, EE1, *EE7, EF1, *EG2, EJ1, *EK1-6, O1.

²¹*EA1, *EA2.

²²Crosby 1955 80-81: the figures on the early fourth century polychrome Attic vase seem to wear comic masks. Ephippos wrote a comedy entitled "*Obeliaphoroi*", but not until the 370s, well after the painting of the vase. Crosby suggests that this difficulty may be resolved by postulating the existence of a lost earlier comedy

probable representations of ὀβελίας ἄρτος²³.

Turning now to the examination of groups of scenes and of individual scenes, a number of important biases may be identified in their chronological distribution. Among the sixty-six Attic scenes of men roasting or preparing to roast portions of the sacrificial animal (**Categories B to F**), four or five²⁴ are dated to the second half of the sixth century, fourteen to twenty-one to the first half of the fifth century, thirty-seven to thirty-eight to the second half of the fifth century, and four to the fourth century. The majority therefore belong to the later fifth century.

Among representations of roasters, an interesting change may be observed in preference of pose. Of the ten depiction of roasters crouching (**Category E**), only two may be placed after ca. 475. In contrast, of the thirty-seven depictions of roasters standing (**Categories B, C and D**), only six may be placed before this date.

Other chronological patterns may be noted amongst categories of mythical scene. A relatively brief interest is shown in the subject of Herakles and Bousiris. Of the eleven vases in **Category J**, at least seven, and perhaps as many as nine, date to the first half of the fifth century. This bias is not peculiar to scenes of Herakles and Bousiris which include spits, but is reflected in the wider corpus. Of the twenty one vases listed in *LIMC* under Herakles and Bousiris category "C", all but one falls in the period ca. 550 and ca. 450, and of these, fourteen belong to the first half of the fifth century²⁵. A similar phenomenon is observable in the subject of the Death of Orpheus. All eighteen of the vases in **Category M** belong to the fifth century and once again, this pattern is confirmed by *LIMC*, even when the two paintings which do not seem to feature spits are included: all twenty may be placed between ca. 490/80 and ca. 430/20²⁶.

Explanations for these biases are hard to find. The relative surge in interest in the figure of

of the same name. See also Trendall & Webster 1971 120 /IV,6; Taplin 1993 9, 73, 76.

²³Van Hoorn 1951 42.

²⁴The actual chronology of Attic vases of course resists categorisation into tidy quarter or even half centuries: whatever the units of time employed, a certain number of pieces inevitably cross the artificial boundary (e.g. of the vases in **Categories B to F**, four lie in 2HC6, fourteen in 1HC5, and thirty-seven in 2HC5. Of the overlapping periods, one vase falls into the fifty year period 4QC6 - 1QC5, and six into 2QC5 - 3QC5). It is therefore impossible to provide a precise total for each period, and it seems most advisable to deal with this problem by specifying the range within which the true figure must lie.

²⁵*LIMC* 3."Bousiris" nos. 8-28 148f, commentary 151.

²⁶*LIMC* 7."Orpheus" nos. 32-51, commentary 100f.

the roaster, and perhaps his elevation to a standing position, may have been stimulated by a work of Styppax. This sculpture, lost in antiquity, seems to have been set up in the later half of the fifth century and was well known in antiquity²⁷. In turn, it is possible to suggest that the short-lived popularity of scenes of cannibalistic Egyptians being worsted by Herakles owed its rise to an intensification of xenophobia as a result of the Persian Wars, and its subsidence to the active if disastrous support given by Athens and her allies to the revolt of Egypt led by Inaros against the Great King²⁸. However, such theories are highly speculative, and do little to advance knowledge of the spit. Of more practical application is the cautionary lesson that developments in the iconographic representations may have more to do with the history of the art of vase painting than they do with that of ὀβελοί.

5.2.2 *Shape (Appendix E Table 3)*

Analysis of the shapes of vases on which spits are depicted shows that in only one case, that of the lid of a Boiotian lekanis (*EA2), is there any possible direct connection between the subject of the painted scene, and the possible function of the vessel it decorates. This piece aside, the vast majority of the corpus of identifiable vases may be associated with the consumption of wine at the symposium:

Storing	Mixing	Pouring	Drinking	(Non-wine)
6 amphorai	44 krateres	10 oinochoai	17 cups	8 lekythoi
3 pelikai	10 stamnoi	6 olpai	4 kylikes	1 lekanis
4 hydriai	1 dinos	7 choes		
= 13	= 55	= 23	= 21	= 9

(2 unidentified fragments excluded)

There are therefore only eight lekythoi (besides the Boiotian lekanis lid) which belong to a separate category. These observations are of little significance given that most fine pottery was produced for the drinking of wine or personal toilet²⁹.

5.2.3 *Provenance (Appendix E Table 4)*

Analysis of the provenances of the 123 vases in the corpus shows that all but five were produced in Athenian workshops, the exceptions comprising a Caeretan hydria (*EA1), a

²⁷The only evidence for this lost work seems to be a bald statement by Pliny *N.H.* 34.81, beyond which nothing certain may be known. See in general Pollitt 1990 69, Stewart 1990 26. For speculative discussions of the possible form of this work see Mayer 1893 and Rizza 1959-1960.

²⁸Thucydides 1.104.1-2 & 109.1 - 110.4.

²⁹R. Cook 1997 207.

Boiotian lekanis (*EA2), a fragment of an Ionian vessel (EJ1), and an Apulian Dinos (EJ11) and krater (EM18). As for the destinations or customers for whom the vases were painted, this question must remain open in **Categories L, N, and O** due to the small numbers of vases included in each, and /or lack of information about provenance. For the remainder of the corpus, the sixty archaeological contexts which are known show that at least one example from **Categories B, C, E, F, G, H, and M** has been found in Athens /Attica, and of **Categories D, i, J and K** at least one has been found in Greece, suggesting that these scenes were not painted explicitly for the export market. If so, then it seems likely that they show Greek (or at least Athenian) scenes through Greek eyes, and therefore relate to Greek uses of Greek spits in Greek ways. This conclusion is of considerable importance given that types of spit similar to those found in Greece were popular in Italy at the time the vases were painted³⁰. The one possible exception is a Caeretan hydria (*EA1) which was probably produced in Etruria by Greek craftsmen but taken to the grave by an Etruscan³¹.

5.2.4 Artist (Appendix E Table 5)

The works of fifty-nine artists are represented in the corpus of depictions of spits. No single painter is responsible for more than four vases, and no developmental patterns of significance may be identified except in the case of **Category M**. The application of this scene to vases has been credited to Brygos, and it is found in the repertoire of his followers, including the Briseis Painter, the Dokimasia Painter, and the Painter of Louvre G. 265.

5.3 Discussion

5.3.1 Typology³²

With the above qualitative considerations in mind, the iconographic corpus may be used as a source of evidence for a number of aspects of the Archaic Greek spit. Of particular interest and importance is the information which it affords on typology. On thirty-six vases, the critical diagnostic information has been masked by the arrangement of the composition, and on seven more it has been drawn with too little definition to prove useful, but on seventy-one vases it may be discerned with reasonable clarity.

As referred to above, there are correspondences between the types of artefact portrayed on the vases, and types of spit found in the archaeological evidence. The crescent type is

³⁰For Italian spits see §7.2.1b.

³¹For the production of Caeretan hydriai in Etruria and the probable East Greek origin of the craftsmen who produced them see Hemelrijk 1984 193 (followed by R. Cook 1997 151-152 and Boardman 1994 161, 240-241). For the provenance of the "Ricci Hydria" (*EA1) in an Etruscan tomb from Caere see Ricci 1946-1948 47.

³²The observations and conclusions offered in the following typological discussion must remain tentative in advance of the publication by Thomas Völling of the large collection of spits from Olympia.

particularly well represented, appearing nine or ten times³³. There are also five examples of oblong /trapezoid types, both with grip³⁴ and without (**EM17**), and single examples of the rolled type (***EA1**), and of the flange-hilted type (**ED2**). However, there are no examples of the lanceolate-round-oval group of types, or of the spatula, pyramidal, or hook types.

A number of types are represented on the vases which are not attested in the archaeological evidence. These include: types combining an inverted crescent with an oblong (***EG3**, ***EG4**, ***EM5**) or semicircular terminus (**EM6**, ***EM9**); a type with a "T"-shaped handle with grip (***ED3**) or without (***EB20**); a type with a bead shaped terminus (***EM16**); and a type with a terminus shaped like a guitar (***EB19**). There also appear to be two fairly common but very basic types, one of which has a grip only³⁵, and the other of which is entirely plain³⁶. It is tempting to suggest that the simplicity of these latter two forms reflects the material from which they were made, that types such as these were made of wood, whereas those with more solidly defined handles, including those which correspond to types found in the archaeology, were made of iron. However, the simplicity of these forms may simply reflect artistic nonchalance towards the depiction of the ὀβελός.

Analysis of the typology of the spits depicted on vases therefore shows that there is some overlap but also much discrepancy between the iconographical and archaeological evidence, with neither source containing a "complete picture" in terms of type or distribution. This mismatch is also evident in the geographical locations both of the contexts in which archaeological examples of spits have been discovered³⁷, and of the workshops in which images of spits were painted. Of the former, not one has been found in Athens proper, whereas of the latter, Athens was the centre at which most vases were made and decorated.

5.3.2 Culinary Role

The principal use to which spits are seen to be put in the iconographic evidence is the roasting of portions of sacrificial animals³⁸. In those depictions in which this is actually

³³***EB8, EC3, EC11, EC5, EF7, EF13, EO3, EM1, EM14, ?*EA1.**

³⁴***EB2, EB3, EM3, EM4.**

³⁵**EB9, EB10, *EB18, EE5, EE6, *EF6, EF8, EM13, EN1, ?EB6, ?EB7, ?EF9, ?EF10, ?EM8.**

³⁶***EA2, EB11, EB12, EB13, *EC1, EC4, EC7, EE1, *EE7, EE8, EE9, EF5, EF11, EF12, *EG1, *EH1, *EH2, *Ei1-6, EM10, EM12, EM13, EN2, EO1, EO2.**

³⁷For the archaeological distribution see §4.2.3.

³⁸Whether or not all butchered meat in ancient Greece was derived from the rite of animal sacrifice (see Osborne 1993 esp. 394-395 n11 for the differing views), the interpretation of the role of spits as seen in the iconographic evidence is affected little, because the relevant generic scenes in which these artefacts feature as culinary implements all seem to be connected with sacrifice (on this last point see van Straten 1995 152).

taking place³⁹, as opposed to those in which it is about to be performed, or is merely alluded to, a large mass from the body of the victim⁴⁰ is shown supported over the altar fire on a spit. The identification of this mass is of importance when considering the precise context in which spits were employed.

There seems to be broad agreement that once the animal at a sacrifice had been slaughtered, its carcass was divided into several categories⁴¹. Of those destined for human consumption⁴², the σπλάγχνα and what may be referred to for convenience as the *taratalla* (τ' ἄρα τᾶλλα)⁴³ were especially important⁴⁴. The σπλάγχνα comprised a group of inner organs including the heart, lungs, liver, spleen and kidneys⁴⁵, was extracted during the initial stages of butchery, and was the first edible portion to be prepared. The *taratalla* comprised the meat proper, and this was prepared after the σπλάγχνα had been tasted.

There seems to be less agreement over exactly how the portions of *taratalla* were cooked. The Paris-Lausanne school constructs a dichotomy between σπλάγχνα and *taratalla*, and argues that one of the ways in which this was expressed, with an implicit qualitative difference⁴⁶, was in the methods by which they were cooked, the σπλάγχνα by roasting and the *taratalla* by boiling, a scheme which may be traced in its entirety on the "Ricci Hydria" (*EA1)⁴⁷. Further evidence for the boiling of the *taratalla* is found on the tondo of a kylix by

³⁹Esp.: *EA1, EB1, *EB2, EB7 (right hand roaster), *EB8, EB8bis, EB12, *EC1, *EC2, EC3bis, EC4, *ED3, ED4, EE1, EE2, EE5, EE6, *EE7, EE8, EE9.

⁴⁰The identity of the mass as a portion of a sacrificial animal is clear from the wider context of sacrificial scenes in general, and especially those in which a progression is seen from the process of butchering the carcass to that of roasting: esp. e.g. *EA1. See also van Straten 1995 Chapter Four = 115f.

⁴¹For what follows see esp. Detienne 1989 10.

⁴²For a discussion and description of the god's portion, see van Straten 1995 120f, 163, 190.

⁴³I follow van Straten 1995 144f in the use of this convenient label taken from Homer.

⁴⁴The lower portion of the viscera formed a further category, but played a marginal role in the rite of animal sacrifice (Durand 1989b 100), and is not of consequence here.

⁴⁵See esp. the work of Berthiaume (e.g. 1982), and of Durand (e.g. 1986) which are summarised by van Straten 1995 131f. For an ancient definition of the σπλάγχνα, see Aristotle *de partibus animalium* 665a 28f.

⁴⁶For the dichotomous distinction, see esp. e.g. Detienne 1989 10-11 and Durand 1989a 103 and further references.

⁴⁷See Durand 1989a esp. 99, 102; and with some differences van Straten 1995 147f.

Makron. This shows a man dropping butchered cuts of meat into a large cauldron⁴⁸, and the decoration on the exterior of the same vessel, which involves spits (*EG3), seems to imply a sacrificial context. Similarly, amongst the written evidence⁴⁹, there are attestations to the sequence of ὀπτησις σπλάγχνων, κρεῶν ἔψησις⁵⁰, and spits and cauldrons are often mentioned in the same breath⁵¹. Therefore, if this interpretation is followed, the large mass at the end of the spit in scenes of roasting must be the σπλάγχνα.

However, the written evidence also seems to show that there were alternatives to the boiling of the *taratalla*. In Homeric descriptions of sacrifice, this portion is invariably roasted on ὀβελοῖ⁵². In stories featuring cannibalistic banquets, it is a *topos* that a part of the meat is boiled and another part roasted⁵³. As a further variation, in Aristophanes' *Acharnians*, the meat from a hare is boiled and then roasted⁵⁴.

This evidence seems to challenge the legitimacy of the Paris - Lausanne interpretation as a safe generalisation. Moreover, if the iconographic corpus is re-examined, certain scenes may be identified in which the notion that spits were reserved for the σπλάγχνα alone seems problematic. In ten instances, the quantity of σπλάγχνα seems rather profuse to have come from a single animal, especially where more than one laden spit is represented⁵⁵. Moreover, in four of these same vases⁵⁶, it is possible to discern that there is only one ὀσφύς (the tail of

⁴⁸The substance being placed in the cauldron has also been identified as dough, but it seems more likely to be meat: see Durand 1989a 103 and van Straten 1995 152 & n23, and compare with the pieces of meat depicted on *EG2.

⁴⁹For collections of the relevant references see Burkert 1983 89 n29, 105, 109; van Straten 1995 147.

⁵⁰E.g.: LSAM 50.35, a decree of the Milesian Molpoi. This sequence is also implied by Herodotos during the description of animal sacrifice by non-Greek peoples, especially Scythians (see Hartog 1989 177).

⁵¹Esp. e.g. Aisop *Fable* 148; Herodotos 2.41; Epicharmos *fragment* 79; Euripides *Cyclops* 392-393; Anaxippos *Kitharodes* fragment 1 lines 1 & 5. These citations may be found in **Appendix F**.

⁵²For the most complete sequence of Homeric sacrifice see *Odyssey* 3.447f. For references to other such scenes in the *Iliad* and *Odyssey*, see Kirk 1981 64, or **Appendix F** below. Compare also the *Hymn to Hermes* 121 and *Epigrammata* Book 14 epigram 147 line 2, where sacrificial meat is roasted only. Berthiaume 1982 15-16 explains the fact that Homeric heroes eat only roasted meat as a literary construction.

⁵³E.g. Herodotos 1.108-119, where Harpagos is tricked into eating the flesh of his son. For the *topos* see Burkert 1983 89-90 n29.

⁵⁴Aristophanes *Acharnians* 1005. It is perhaps necessary to add the *caveat* that the victim in this case is perhaps too small for division, and that the scene belongs to comedy: has the character who barks orders to a slave to boil then roast become hilariously confused over the proper sequence?

⁵⁵EB1, *EB2, EB7, *EB8, *EB18, EC5, EC11, EF10, EF11, EF12. Here, as elsewhere in this discussion, a programme of archaeological experimentation would no doubt clarify many of the issues raised.

⁵⁶*EB2, EB7, EC5, and EC11.

the sacrificial animal which was placed directly on to the altar⁵⁷) and consequently that the portions on the spits seem to be derived from one animal. Similarly, on a cup from Vulci (EE5), a single roaster is shown with one laden spit in hand, and a further two propped up nearby and standing ready for the altar fire.

There are other cases where meat is being roasted or spits are being charged, but the butchery of the carcass is shown to have advanced far beyond the extraction of the inwards. On a black figured column krater (*EC1), the only parts of the sacrificial animal, a goat, which are still recognisable are its head and two legs. Of the rest, small cuts of meat may be seen on the top of a table, but these portions seem too few to represent the whole of the carcass, even allowing for the subtraction of the god's portion and of the *σπλάγχνα*⁵⁸. We are therefore encouraged to identify the mass being roasted on a spit in this scene as a portion of the *taratalla*. It could be argued that the composition is synoptic, with two sequential phases of the preparation of different parts of the slaughtered animal for consumption pictured together. It is difficult to exclude this possibility, but even so, there is an absence of any vessel for boiling. Therefore, irrespective of the ambiguity of the mass of meat on the end of the spit, this vase seems to imply that the *taratalla* will be roasted.

The tondo of a kylix painted by the Triptolemos Painter (*EG4) presents a related scene. In this composition, all that remains of the sacrificial victim is the head, which lies on an otherwise empty butchering table, and all that may be seen in the background is an empty spit. Some fragments round the edge of the tondo are missing, but none of these seem large enough to accommodate a cauldron. This vase therefore appears to imply that the only method of cooking applied to the sacrificial victim was roasting⁵⁹, though it must be remembered that the scenes painted on vases are often highly abbreviated, and so care must be taken not to read them too literally.

Therefore, it seems that the large mass shown on vase paintings being roasted on the end of spits may not necessarily be identified with certainty as the *σπλάγχνα* in every case. On

⁵⁷For the identification of the *ὀσφύς* see Jameson 1986 60-61 & fig. 2 and van Straten 1995 128-130.

⁵⁸Van Straten 1995 147 identifies the cuts of meat as *taratalla* on the same grounds, though he does not proceed to interpret the mass being roasted as one of them.

⁵⁹It is possible that the scene on the exterior of the kylix by Makron which has been referred to already (*EG3) presents a further example. In this composition, a man holding an empty spit in his left hand reaches out with his right towards a cleaver-wielding colleague who stands over a butcher's table. The former clearly expects to receive meat from the latter who has to offer a complete shoulder or several smaller cuts of meat (this latter detail cannot be seen in photographs because the paint with which it was depicted has worn off: see van Straten 1995 152 n122 and for a line drawing see Detienne & Vernant 1989 fig. 23). However, it is possible that the man with the spit has gone to load it with *taratalla* not for roasting, but for storage and /or transport: see below.

occasion, it may represent the *taratalla*, or even both categories of meat. If so, then the dichotomous opposition proposed by the structuralists between the roasting of the inwards and the boiling of the *taratalla* seems less sharply defined. If the identity of the cut of meat being cooked is ambiguous, then it would seem that its importance is diminished in the iconography. The act of roasting seems to matter more, and this is represented principally by the spit. This observation is of importance when considering why ὀβελοί seem to have been adopted as a medium for conspicuous display.

5.3.3 Filled Spits

The painted vase scenes show that spits were also employed at sacrifices for purposes other than the roasting of meat. A number of images depict spits which are laden, or are in the process of being loaded usually end to end with many large slices of meat⁶⁰. The Ricci Hydria (*EA1) shows these being prepared at the end of the sacrificial sequence, after the roasting and boiling. The same seems to be implied by the early sixth century black figured volute krater fragment from the Athenian Akropolis (*EG1): the individual in this scene who busies himself with the spits crouches to the right of a cauldron in which something is being boiled, no doubt parts of the *taratalla*. Some of the other vases show these laden spits in contexts other than the sacrifice, and frequently being fetched or carried. They are usually interpreted as the means by which meat, if it was not consumed at the sacrifice, was stored and /or, if permitted⁶¹, transported from the site where the ritual had taken place⁶².

One of the interesting problems presented by these fully laden spits is the method by which the meat will eventually be prepared for consumption, but this question cannot be answered owing to a lack of evidence. A more productive line of enquiry for this study seems to be to consider the significance of the use of the spit as a means for temporary storage and transport. In this case it is possible to note that the spit would serve as an immediate reminder of the sacred source of the meat. Its use as such a symbol must surely be deliberate, and once more underlines the importance of the artefact type.

⁶⁰*EA1, *EA2, *EG1, *EG2, EL2, Category K (except *EK1). See also Category H in which Crosby 1955 80 and Trendall & Webster 1971 120 & VI,6 identify the matter wrapped around the spits carried by the *obeliaphoroi* as ὀβελίας ἄρτος, "obelish bread", which may have been a large loaf baked on a spit and carried in processions in honour of Dionysos (Athenaios *Deipnosophistai* 3.111b; Pollux 6.75; Photius s.v. ὀβελίας ἄρτος). However, this object is probably that represented in Category i, and perhaps by the "bellows" of the Ricci Hydria (*EA1; contra Ricci 1946-1948 53; van Straten 1995 150), and seems quite different in appearance. The burden of the *obeliaphoroi* has a much more compelling similarity with the laden spits of the Boiotian lekanis lid *EA2, and Bieber 1961 140 seems more justified in identifying it as meat.

⁶¹See van Straten 1995 145-146 for prohibitions affecting the removal of meat from sanctuaries and its distribution.

⁶²For this interpretation see esp. Berthiaume 1982 52-53 & 118 n15; Durand 1989a 103 & 1989b 128; and van Straten 1995 147.

5.3.4 Offensive Spits

The only other use to which spits are seen to be put in the iconographic evidence is that of weapons. Their role as such is restricted to just two categories of scene (**Categories M & N**), and as mentioned above, is highly symbolic⁶³. Nevertheless, there are reliable written attestations to the use of ὀβελοί as effective make-shift spears⁶⁴ and the lateral thinking displayed by Thracian women (**Category M**) and Lapiths (**Category N**) alike was not, therefore, restricted to the fantasies of vase painters, but might be witnessed in reality.

5.3.5 Handling the Roasting Spit

Painted vase scenes provide unrivalled information about how spits were handled when being used for roasting meat. It seems they were grasped with both hands⁶⁵, and in the three poses in which the roaster stands (**Categories B, C, D**), one hand is placed near the handle and the other further towards the mid-point of the spit⁶⁶, no doubt to gain benefit from leverage to ease the difficulties of supporting a heavy lump on the end of a long rod. The spit handle would be a vital component in this equation, providing a substantial mass of metal to act as a counterweight to the meat. In the crouching pose (**Category E**), the position of the hands differs slightly in that the outside hand is placed closer to the centre of the spit, and the inside hand further towards the point. Here, a greater advantage against the weight of the meat is gained from the weight of the greater length of spit left unsupported behind the outside hand⁶⁷. The trailing end is also sometimes shown being leant against the body or the ground⁶⁸.

The iconographic evidence offers no clear illustration of the function of the "grip". If this is not, as seems apparent, the point at which the spit was gripped during roasting, what was it for? We may only conjecture. It might be interpreted as a guard to protect the hand from burning in case a piece of sizzling hot meat were to slide down the shaft of the spit, but the roaster would surely keep a careful watch and be able to anticipate such a crisis in good time by lowering the point. A more plausible explanation would be that the grip offered a hand hold whenever meat was being forced on to or drawn off from the spit. If so, the spit handle probably offered a comparable purchase for the other hand.

⁶³A discussion of the symbolic aspect of these scenes may be found in Dipla 1998.

⁶⁴See **Appendix F**.

⁶⁵Payne's attempt (1940 188) to use the manner in which the Paschal Lamb is cooked in modern Greece as an interpretative analogy therefore seems inappropriate.

⁶⁶E.g. *ED3.

⁶⁷E.g. *EE7.

⁶⁸E.g. EE1, EE2.

The vase paintings suggest that two or perhaps three laden spits might be held at the same time⁶⁹. If made of iron, each spit would weigh about one kilogramme⁷⁰ and, estimating from the size of the cuts spitted, this might be doubled when meat was added. The burden supported by the roaster would therefore have been heavy. The task of supporting even one laden spit for the time taken for the large pieces of meat to cook through must have been considerable, and would have been made more arduous by a number of other factors. The point of the spit became so hot during roasting as to become proverbial⁷¹, and if the spit was made of metal some of this heat would have been conducted along the shaft, probably making it uncomfortable to hold, especially for the inside hand. Moreover, the person holding the spit(s) of necessity had to stand near the altar fire, and while some protection against the intensity of the blaze and the hazard of hot ash or fat being spat out during the cooking process⁷² might have been afforded by clothing, many of the representations suggest that the role was performed naked⁷³. This detail could be artistic convention, but if not it is of little surprise that, with the exception of an enigmatic representation of Athena brandishing spits laden with meat (**EO1**), the role of the roaster is performed by fit young men.

5.3.6 Gender

If the spit was used for its proper purpose only by men, then it seems reasonable to infer that it was a male accoutrement. Depictions of the Death of Orpheus (**Category M**) do not undermine this view. Although spits with a sacrificial connotation are wielded by the fairer sex in this scene, the transgression of gender plays an important role in the composition. Orpheus, the subversive and reviled vegetarian is made all the more contemptible by being styled as effeminate and cut down helplessly by women⁷⁴. The masculinity of the spit is also confirmed by its phallic associations. These are readily apparent in the literary evidence⁷⁵, but there is a suggestion that they are also found in the iconography. On an oinochoe by the Karlsruhe Painter found at Nola (***EO3**), a winged Eros is depicted carrying a laden spit.

⁶⁹Two: **EB1, *EB2, EB5, EB6, *EB8, EB9, EB10, EB11, EB13, EB14, EB15, EB16, *EB20, *EC2, EC3, EC3bis, EC5, *EC6, EC8, EC9, *ED3, EE1, EE4, EE6, *EE7, EE8, EF6bis, EF15**; three: **EC7**.

⁷⁰See §4.3.2a.

⁷¹[Sophokles] fragment 814: "τὸ θερμὸν τοῦ ὀβελοῦ".

⁷²Compare with the comment on modern barbecues by D. Smith 1989 403 that "*Experience has taught me that implements with very long handles are what are called for in tending barbecue food!*"

⁷³***EA1, *EB2, EB5, EB6, EB7, *EB8, EB8bis, EB12, EB13, EB14, EB15, EB16, *EB18, EC5, *EC6, EC7, EC9, EC11, EE1, EF2, EF3, EF7, EF8, EF10, EF11, EF17**.

⁷⁴Reeder 1995 393.

⁷⁵See §6.1.4.

This curious composition may allude to the role of meat from the sacrifice as a type of gift exchanged between ἐραστής and ἐρώμενος⁷⁶.

5.3.7 Drachmai of Obeloi

Bundles or δραχμαί of spits are depicted on eleven vases⁷⁷ on which the spits are shown neatly stacked side by side. This arrangement is attested amongst the archaeological finds in the miniature bundles from the tombs at Sindos, and is common amongst finds of sets of spits from Italy. Therefore, it does not seem to be merely a conventional way of representing the drachma in art, though the spits from Salamis Tomb 79 in Cyprus were tied up in a more *ad hoc* manner, so not every bundle was made into a "flat pack"⁷⁸. In each of the representations, and above all in the "bilingual" amphora attributed to the Andokides Painter (*EK1), the bundles of spits are being carried, thereby emphasising their portable qualities. The number of spits per bundle offers a further point of interest. Artists were often indifferent to this detail, the number changing along the length of the δραχμή⁷⁹, but in some cases the bundles were drawn with more care. There are four spits in the bundle on the bilingual amphora by the Andokides Painter (*EK1), and five on a black figured fragment from Olynthos (EJ1), a red figured stamnos from Vulci by the Group of London E311 (EJ5), a fragment of a stamnos by the Pan Painter (EJ7), and on a stamnos by the Altamura Painter (*EJ9). Therefore the iconographic evidence, like the archaeological evidence, indicates that the number of spits per set was not fixed at six.

5.3.8 Krateutai

There are no instances where spits are rested upon supports of any kind which might be identified as κρατευταί, "firedogs". The one possible exception occurs on the lid of the Boiotian lekanis (*EA2), where meat is rested over the axes of three horizontal objects of differing types which stretch between three pairs of figures. One of these seems to comprise a long, thin, bar with an X-shaped terminus, and therefore bears some resemblance to a type of firedog attested at Sindos and Olympia⁸⁰. However, it seems difficult to proceed beyond the basic observation that the objects depicted serve to hold meat on the horizontal object in question off the ground. Certainly, there is no indication that any fire or other source of heat has been placed beneath it and that the meat is about to be cooked.

⁷⁶See van Straten 1995 153 and n129 for references.

⁷⁷*EK1 and Category J except EJ11. For the identification of representations of bundles of spits on vases see Kron 1971 140.

⁷⁸See §2.2.1 (Sindos) and §2.2.5 (Salamis).

⁷⁹Kron 1971 141-143.

⁸⁰For these firedogs see §2.2.1 and §4.5.2.

5.4 Conclusions

5.4.1 The Quality of the Evidence

Before drawing some overall conclusions from the iconographic evidence, it is important first to stress some of its limitations as a source. The material is restricted in terms of the chronological and geographical range of centres in which the vases were produced, with the result that there is a weighty bias towards Classical Athens. This means that with only a very few exceptions, the various scenes were painted after the end of the epoch during which most of the material evidence became buried in the ground, and in a place from which only one find from Mount Hymettos (**Appendix B1 (S15)**) is known from before the third century AD⁸¹. It is therefore necessary to retain a degree of caution and scepticism when using the one type of evidence for the interpretation of the other. It seems equally important to stress the selective nature of the iconographic corpus in terms of the choice of subject. As seen above, this can impede the unravelling of questions so fundamental as the fate of the *taratalla*. The most serious effect of these biases is perhaps to encourage overgeneralisation, but as with the archaeological evidence, this temptation must be resisted. The importance of this *caveat* is highlighted by the degree of variation which has been noted in matters such as the pose adopted by the roaster, the wearing or discarding of clothing, and the number of spits in a bundle, and it seems that there was no single standard way in which spits were used. This observation seems particularly relevant to the questions of the phases of the sacrifice in which they played a part, and the categories of meat which were placed on them.

5.4.2 Positive Observations

With these limitations in mind, a number of more positive conclusions may be drawn. The painted vase scenes provide clear evidence that the artefacts discovered in the archaeology and discussed above in **Chapters Two to Four** were used for roasting meat. They also illustrate at least some of the ways in which spits were applied to this practical task, and thereby yield unique and vital clues about the function of some details of design. Aside from the roasting of meat, the vases demonstrate that spits might be used for its storage and transportation. They also show images of the handy potential of the ὀβελός as a weapon. What the vases do not provide is any corroboration of the ancient historical tradition that spits were used as Archaic pre-coinage money, though as cautioned above, this absence of evidence cannot be used as reliable evidence of absence.

5.4.3 The Improbable Muscular Matron

The association which may be inferred from the vases between spits and masculinity opens new if tentative possibilities in the interpretation of some of the archaeological finds from funerary contexts. These prove especially instructive if the association is projected back into

⁸¹Knigge & Rügler 1989 85 & fig. 5.

the upper reaches of the Archaic period, albeit with the consequential risk of cultural overgeneralisation and oversimplification. As noted in §3.3, a significant number of spits occurred in the graves of elite females. What did burial with such male accoutrements denote? It is difficult to envisage a dainty princess or revered matron crouching or standing in public beside an altar fire, spit in hand, muscles rippling, and perhaps divested of all clothing. Therefore it seems unlikely that burial with a spit signified that a man or woman had regularly performed the role of roaster in life. Given that those buried with spits were members of the elite, it seems more likely that the spits had been used by others under their direction, perhaps servants or slaves, and we may speculate that the presence of a spit in a grave symbolises that the deceased had formerly enjoyed a leading social role in the organisation and direction of sacrifices.

5.4.4 Spits on Parade

The iconographic evidence is perhaps most useful in providing an insight into the visual dimension of the social context, Greek animal sacrifice, where spits were used. The Paris - Lausanne school has argued convincingly that this event was a central ritual through which much of the structure of the community was articulated⁸². Of necessity, therefore, it was a very public affair, visible to all, and as a result the individuals who performed it and the equipment which they used were, in effect, put on parade. This aspect of the sacrifice, as van Straten notes, was epitomised by the phrase "τὰ ἱερὰ καλὰ", "the holy things are beautiful"⁸³. The vases convey the ways in which the opportunities presented for the display of wealth and success were actively pursued, and one of these has already been encountered in the figure of the roaster. Here was a role in which the community might show off the dexterity, strength and endurance of its young men who were in their physical prime⁸⁴.

Without doubt, the spits played a memorable part in the proceedings. The act of roasting at the altar must have been a protracted affair given the size of the portions of meat which seem to have been involved. Aside from visual prominence, the spits probably acquired added significance as a tangible link between the community and the god receiving the sacrifice. At one end of the spit there stood or crouched the roaster, a representative of the assembled participants. At the other end of the spit was the meat roasting over the fire where the gods' portion burned, and which carried the savour of the sacrifice to heaven. At this point,

⁸²See in particular the volume edited by Detienne & Vernant 1989.

⁸³Van Straten 1995 1, who offers this translation of the phrase.

⁸⁴See Burkert 1987 258 on other ways in which a community might exploit the sacrifice as an opportunity for display.

therefore, man came close to god⁸⁵.

It is difficult to recognise much indication of the importance of the fabric, rather than the function of spits in the vase paintings. However, it must be remembered that the reign of the *ὀβελός* as a gift of note for the dead or for the gods was more or less at an end by the time the earliest representations were produced. If the context of display is read back into the Archaic period, it allows us to imagine why the spit would have been ideally suited for appropriation as a vehicle for the conspicuous competitive display of wealth.

⁸⁵Cf. Vernant 1989 54, who observes that in the division of the *σπλάγχνα* the shares of gods and men become difficult to separate.

CHAPTER SIX

THE WRITTEN EVIDENCE

6.1 OBELOI, OBOLOI, & OBELISKOI

This chapter begins by seeking to establish the relationship between terms for spits and terms for obols, or in other words between the ὀβελός, ὀβολός and ὀβελίσκος. However, it is necessary first to describe the process by which the citations used to answer this and other questions were collected.

6.1.1 Corpora of References (Appendices F & G)

The cd-ROM of the *Thesaurus Linguae Graecae* ("TLG") and that of its less advanced epigraphic cousin¹ were searched using *Pandora* 2.5 for Apple Macintosh². The search terms included the basic letter groups -οβελ- and -οβολ-, and also, to cater for crasis and dialectical forms, the groups -υβελ-, -ωβελ-, -οδελ-, -υβολ-, -ωβολ-, and -υδολ-. The words located by this procedure included some with no immediate connection to spits or obol coins, such as "ἄκωνθοβόλος", or the name "Dolobella", and these were filtered out. In the case of the *TLG* cd-ROM, the "word index" enabled the vocabulary isolated by the steps above to be compiled with relative ease, and the results may be viewed in **Appendix F §2**.

The search of the *TLG* cd-ROM produced a corpus of about three thousand citations taken from roughly two hundred authors³, and that of the epigraphic cd-ROM a corpus of about one thousand citations⁴. In the case of the literary corpus, the total number of citations is exaggerated. Many texts are duplicated in *TLG*, often because more than one edition of a work has been added to the thesaurus, or because one author has quoted another, and these factors may also work in combination, especially where the work of an author survives in fragments only. Such cross-referencing is an advantage in many of the other applications for which *TLG* may be used, but in this case, the duplication gives a misleading impression. It is impossible to quantify the effect of this problem without checking every individual reference, but an informed guess would place the true total at roughly two-thirds to one half of the original, or in other words between about fifteen hundred and two thousand references. This

¹For this thesis, the 1992 version of the former, and the 1991 version of the latter were employed.

²Developed by Elli Mylonas (Project Leader) et al., Dept. of Classics, Harvard University, Cambridge Mass., and distributed by Intellimation Software for the Macintosh, Santa Barbara, California.

³See **Appendix F §3**.

⁴See **Appendix G Table 1**.

problem affects the epigraphic cd-ROM to a much lesser extent, because the repetition of inscriptions in different publications may be identified and eliminated with ease.

For the purposes of analysis it was necessary to reduce the number of references from both corpora to more manageable proportions. This was achieved by the use of chronological filters, though these were applied differentially. Given the focus of interest on the Archaic and Classical periods, during which coinage was invented and first became widely used, no early material was excluded. For the later periods, different cut-off points were applied to the literary and epigraphic corpora, and to different subdivisions within each. In the literary corpus, all references were included up to ca. 300. Thereafter, as a first step, works of questionable date or merit, such as *vitae*, were removed. The material was then filtered differently according to words which included the letter group -οβολ-, and those which include -οβελ-. The number of references to -οβολ- words proved too numerous to include beyond the cut-off point of ca. 300. Those to -οβελ- words were more manageable, and it was therefore possible to include all of the material up to ca. AD 400. In some cases the above filters proved counterproductive because they excluded important references from works by authors who offer vital historical or dialectical information. Therefore, where necessary, some citations were reinstated, albeit by a somewhat subjective process.

The filtering of the epigraphic corpus was more complex. Again, the number of references to -οβελ- words was small compared to that of the -οβολ- words, and all of the former were included from the selection of inscriptions studied. However, for -οβολ- related terms, it was impossible to find any single date which would both exclude sufficient material from the more generous regions, such as Attica, Delphi, and Delos, but not exclude too much from areas such as Central Greece and Krete, where inscriptions are more scarce. A compromise solution was therefore followed whereby different filters ranging between ca. 350 and ca. 200 were applied according to the quantities of material from each region, though even this principle could not be followed in Ionia or Karia, where the absence of dating for almost all inscriptions precludes the use of any chronological filter.

It must be stressed that the quality of the results obtained by the above method, or indeed by any other method, can ultimately be only as good as the sources from which they were gathered. In the case of *TLG*, the 1992 edition of the cd-ROM which was searched is not the final completed version, but a partially finished draft, and it therefore does not include the whole corpus of extant Greek literature. As a result, the works of some authors are missing, whose writings include important passages about spits (e.g. Pollux). These omissions are revealed only from independent sources, such as *LSJ*. Nevertheless, it seems unlikely that the number of citations missed is large, or that their addition would alter substantially the conclusions reached below. A more pervasive and permanent problem is that *TLG* does not

represent a definitive thesaurus, but only a single interpretation of the textual tradition, open to variant readings concerning not only the words of the texts, but also their authorship. The effects of this factor may be seen especially in the reading of ὀβολοῦ in a passage from the Hippocratic corpus⁵.

In the case of the epigraphic cd-ROM, the problem of completeness was far more marked, and there are substantial omissions from the 1991 edition. In theory, it should be relatively easy to remedy the deficiencies by consulting the relevant volumes from the series of printed books on which the cd-ROM is based, and some progress may be made in this way.

However, many of the critical sections of *Inscriptiones Graecae* and of *Supplementum Epigraphicum Graecum* lack suitable indices, in addition to which, as is well known, there are large gaps in both series⁶. Some of these lacunae may be filled with the help of the earlier compilations of references to spits and obols by Tod (1947), and Lazzarini (1982), but by no means all.

However, it is important to bear in mind that even if it were possible to consult the full original version of every literary text and inscription ever produced, the corpora would still provide a very uneven view of the Greek world. As with the iconographic evidence, the written material was created predominantly in Athens and the regional and chronological variations which are so patent in the archaeological evidence must not be allowed to become buried by the inevitable need to generalise from the written riches of one city alone.

6.1.2 The Evolution of ὀβολός and ὀβελίσκος from ὀβελός

We may now turn to the matter of the relationship between the ὀβελός, ὀβολός and ὀβελίσκος, and the fundamental question of whether these words and their compounds comprise distinct vocabularies, or are descended from the same root⁷. If the ὀβελός and ὀβολός may be proven to be separate terms used to describe entirely different ideas, then the tradition that spits were used as a form of pre-coinage money is weakened significantly. The epigraphic corpus provides the best means with which to determine this matter because inscriptions, unlike literary texts, have not been copied and edited many times during many centuries before reaching their extant versions. Instead, they survive in the form in which they were originally cut and provide unique evidence about the evolution of vocabulary.

⁵Hippocrates *De Haemorrhoidibus* §2 TLG line 6 and see below.

⁶See Woodhead 1981 Ch. IX for a reasonably recent summary of the state of epigraphic publications.

⁷Partial treatment of this subject may be found in Tod 1947 with the addenda of 1955. However, these articles were written before the invention of the electronic book, and the literary evidence they include has therefore been gleaned from *LSJ* and other lexica, rather than the whole corpus. Moreover, the article is written from a mainly epigraphic and numismatic perspective, and shows more interest in the obol than the spit.

6.1.2a The Attic Sequence

Two contrasting developmental patterns may be discerned from this source, one in Attica, and the other in Doric-speaking Greece. The Attic sequence begins with the use of the word ὀβελός in four inscriptions of the late sixth and early fifth centuries, in one of which it means spit⁸, and in three of which it means obol⁹. During the fifth century, this single word seems to be superseded by a new vocabulary. The word "ὀβολός" is first attested in an inscription dating to just before ca. 460, where it is used several times to denote sums of obols¹⁰, and is found thereafter as the common term for these units of coinage. Similarly, the word "ὀβελίσκος" is first attested in inscriptions dated 414, where it is used to denote lots of spits sold at auction for sums of drachmas and obols¹¹, and is found thereafter as the usual term for these culinary implements.

There are some exceptions to this pattern, all of which seem to concern words used for spit. One or perhaps two inscriptions show that ὀβελός was still current with this meaning in the mid-fourth century¹². It is perhaps this word which a stone-cutter was trying to spell when he incised a mid fifth-century stone from Paiania with ὀβολός, a scenario which would readily account for the fact that the usage of this term in this way is otherwise unparalleled in the epigraphic evidence¹³. Human error may also explain the *hapax eiromene* of ὀβελίσχος, a word for spit which is found in a late fifth century inscription from Brauron¹⁴. In contrast, ὀβελεία may represent a synonym for ὀβελίσκος. This word is found in a fourth-century naval inventory¹⁵ amongst a list of equipment which includes drinking vessels. An implement for preparing food would therefore fit the context well but, in other inscriptions, ὀβελεία almost certainly does not denote a type of roasting implement, and in one case seems to refer to a structural beam¹⁶. Moreover, a second look at the naval inventory shows that it also includes a number of tools, and it is therefore tempting to conclude that the ὀβελεία had nothing to do with the cooking of mariners' provisions. However, there is an

⁸IG I³.232 (dated ca. 510-480).

⁹SEG 38.35 (dated ca. 550-525); IG I³.2 (dated ca. 500); IG I³.4 (dated ca. 485/4).

¹⁰IG I³.6 face C fragments bc & f lines 5, 12, 13?, 15?, & 22. See also Tod 1947 3.

¹¹IG I³.421 & 422. The sums of drachmas and obols are indicated on the inscription by numerals.

¹²SEG 3.76 and ?SEG 39.163.

¹³AM 66.172 (= SEG 10.38 B 7f). See also Tod 1947 3 and 1955 127.

¹⁴SEG 37.34.

¹⁵IG II².1631 (dated 323/2).

¹⁶IG II².1672, 1673, 1695. *LSJ* gives "an unknown iron object".

alternative solution which satisfies both explanations. Various literary texts mention a piece of military equipment known as the "ὀβελισκολύχνιον" which, as its Greek name suggests, seems to have doubled as a spit and lamp-stand, though it probably made a handy weapon too, if necessary. It seems quite plausible that the ὀβελεία likewise acted as a spit at the camp fire, but could fulfil some other role in different circumstances¹⁷.

The pattern outlined above shows that from the mid-fifth century the stem ὀβολ- was reserved for obols, and ὀβελ- for spits. Moreover, the references to spits and obols from later periods given by Tod (1947), Lazzarini (1982), and *LSJ* demonstrate that the new terminology remained fixed thereafter. However, the terms used for denominations of coins indicate that the distinction between the use of ὀβολ- and ὀβελ- was never quite so well defined. The letter group -οβολ- appears in the words for "three-obol", τριώβολον, and "five-obol", πεντόβολον¹⁸, but -οβελ- is found in the word for "half-obol", ἡμιωβέλιον¹⁹, and both in the words for "two-obol", διόβολον and διοβελία²⁰. There is, therefore, no consistency in the choice of stem used in the formation of the above compounds.

6.1.2b The Doric Sequence

The only other region in which it is possible to trace a pattern of development, though with less clarity than in Attica, is that in which the Doric dialect was spoken and written down on stone. In practice this comprises mainly Krete, the Peloponnese, and Delphi. The sequence starts with ὀδελός. This word appears as the Doric for "spit" in an inscription from Torricella near Taranto in Italy dated to the third quarter of the sixth century²¹, and in fifth-century literary texts composed by the Sicilian Epicharmos, and the Athenian Aristophanes (the latter when writing in Megarian dialect)²². Fifth-century inscriptions from Gortyn and Delphi show that ὀδελός was also used as the Doric word for obol coin, and it is found repeatedly in this sense, or sometimes referring to an obol's weight, in inscriptions from early fourth-century Arkadia and fourth /third-century Epidauros²³. Likewise, the stem οδελ- is

¹⁷For the ὀβελισκολύχνιον see esp. Aristotle *de partibus animalium* 683a, and *Politics* 1299b.

¹⁸First occurrences: τριώβολον: *IG* II².1414 (dated post 385/4); πεντόβολον: *IG* I³.476, (dated 408/7).

¹⁹First occurrence *IG* I³.6 (dated before 460). This is the same inscription in which the earliest use of ὀβολός is attested.

²⁰First occurrences: διόβολον *IG* I³.236 (dated 410-404); διοβελία *IG* I³.377 (dated to the late fifth century).

²¹**Appendix B1 S.epig.3.**

²²Epicharmos fragment 79 line 3; Aristophanes *Acharnians* line 796.

²³Gortyn: *IC* IV.72 & 84; Delphi: *FD* III.1.294 & *FD* III.4.369; Arkadia: *IG* V.2.3; Epidauros *IG* V.1.2.112 & N. Ins. Epidauros (Peek) 19.

found with probable financial overtones in inscriptions from fifth-century Argos and third-century Troizen²⁴. Later inscriptions show that ὀδελός survived in use thereafter unchanged in form, but that it came to denote only the obol²⁵, and an inscription from Lebena in Krete²⁶ shows that by the second century the term for spit had become ὀδελίσκος. Therefore, in the Doric pattern, as in the Attic pattern, the same word is at first used for both spits and obols. However, in Doric-speaking areas this original term then remains in use and only one new word is introduced.

6.1.2c The Rest of the Greek World

There is insufficient evidence to charter developments in the rest of the Greek world with any reasonable degree of certainty. ὀβελός, meaning "spit", occurs only once outside Attica in the corpus of references used for this study, in an inscription at Kos dated ca. 300²⁷, but is used for "obol" on three occasions, once in third-century Megara /Boiotia, and twice in second-century Thessaly²⁸. Interestingly, there are several examples of the use of ὀβολός for obol from Megara /Boiotia of roughly the same date as the ὀβελός text²⁹. It is ambitious to draw conclusions from so few inscriptions and from such disparate areas, but it is possible to observe that they show a sequence of developments consistent with the Doric pattern, the text from Kos representing the original use of ὀβελός for spit, those from Thessaly its appropriation for obol, and those from Megara /Boiotia the period of transition.

However, most of the rest of Greece increasingly followed the Attic pattern. The term ὀβολός for obol is attested in Delos, Delphi and Epidauros in the fourth century, the island of Tenos in the fourth /third century Euboea, Megara /Boiotia and the Rhodian Peraia in the third century, Arkadia in the second century and Lakonia /Messenia in the first century³⁰. At the same time there is evidence, though smaller in quantity, for the spread of ὀβελίσκος, which occurs at Delos from the mid-fourth century, and is found at Khorsiai in Boiotia in the

²⁴Argos: *SEG* 41.284; Troizen: *IG* IV.757.

²⁵E.g. *FD* III.4.371 (dated to the fourth century) 12, 14, 15; *FD* III.5.4 (dated 362-360) *passim*; etc.

²⁶*IC* IV.2.

²⁷*SIG* 1025.

²⁸Megara/Boiotia *IG* VII.1739; Thessaly *IG* IX.2.1109 & 1229 (ὀβελλος).

²⁹See **Appendix G §2**.

³⁰Delos: *ID* 7.103 & 104; Delphi: *FD* III.5.1 & 3; Epidauros: *IG* IV².1.106; Tenos: *IG* XII.5.872; Euboea: *IG* XII.9.207; Megara /Boiotia: *IG* VII.303; Rhodian Peraia: *IK* 38.352A; Arkadia: *IG* V.2.437; Lakonia /Messenia: *IG* V.1.1433.

early fourth century, and Kerkyra in the second century³¹.

6.1.2d Comparison with the Literary Evidence

The sequence in which the word for spit became the word for obol and was then replaced by two separate written words for each of these objects is also echoed in the literary corpus. Of the words ὀβελός, ὀβολός and ὀβελίσκος, ὀβελός is attested first as the term for spit in the "pre-coinage" epics of Homer, and in the Homeric *Epigrammata* and *Hymn to Hermes*³².

During the latter half of the fifth century, this word is still found with the same meaning in the works of Herodotos, [Sophokles] and Euripides³³. However, a fragment from Straton's *Phoinikides* implies that by the fourth /third century, ὀβελός was viewed as archaic³⁴. This seems to be confirmed by the fact that besides this passage and two occurrences in fragments of lost works attributed to Aristotle³⁵, no other author uses this word between the fourth and second /first centuries.

In its place is found another term, ὀβελίσκος, which has the same meaning. In theory, this word is first attested in one of Aisop's fables, which are traditionally placed in the sixth century. In practice, it must be remembered that the date at which this author lived, if indeed he is a historical person, and the date at which his stories took their final form are highly problematic³⁶. Moreover, the possibility that the original text was altered, and the word ὀβελίσκος substituted for ὀβελός by a later editorial hand, may not be ruled out. For this reason it is not until Aristophanes that ὀβελίσκος can be said with any certainty to have appeared in literature. Therefore, the development observed in the epigraphic evidence, whereby ὀβελός is replaced during the fifth century by ὀβελίσκος, seems to be matched in the literary evidence.

Turning now to ὀβολός³⁷, the stem -ωβολ- occurs in Homeric epic in the compound πεμπώβολον, a word which refers to a type of roasting implement other than the spit, the

³¹Delos: *ID* 7.104 & etc; Khorsiai: *SEG* 24.361; Kerkyra: *IG* IX(1).692. 'Οβελίσκος does not mean "spit" in all of these cases, but does always have a spit-connotation: see below §6.2.4.

³²Homer *Iliad* I.465 & etc, *Odyssey* 3.462 & etc.; *Hymn to Hermes* 121; *Epigrammata* 14.147 line 2.

³³Herodotos 2.41 & 2.135; [Sophokles] fragment 814; Euripides *Cyclops* 393.

³⁴Straton fragment 1 /*Phoinikides* fragment 1 line 42.

³⁵[Aristotle] Rose 1886 fragments 481 & 580 (= Pollux 9.77).

³⁶For the dating of Aisop see esp. Page 1955a and Saake 1972.

³⁷The material cited in this discussion may be found in **Appendix F §4**.

exact form of which is obscure³⁸. The earliest references in literature to the ὀβολός proper which may be dated securely are found in Aristophanes' *Knights* of 424³⁹, followed closely by a fragment of Eupolis' *Marikas* of 421⁴⁰. Thereafter, it is attested in many authors during the end of the fifth century and beginning of the fourth, including Ameipsias, Archippos, Aristomenes, Lysias, Nikophon, Phrynichos the comic poet, Plato the philosopher, Plato the comic poet, Theopompos the comic poet, and Thucydides.

A simple analysis of the use of the word ὀβολός suggests that its range of meanings was quite distinct from that of ὀβελός and ὀβελίσκος. Authors such as Aristophanes and Plutarch use one or other of the latter terms to denote spits or spit-shaped objects, and reserve ὀβολός for the obol coin. Moreover, ὀβελός is not found in the literary corpus with this latter sense, and it is therefore tempting to conclude that coins were never called ὀβελοί, only ὀβολοί. However, once the analysis is broadened to include compound words and dialectical forms, the conclusion that both groups of words share a common origin becomes inescapable. The word for spit in Homer is ὀβελός, but as mentioned above, the word for an object with similar function is πεμπώβολον⁴¹. Likewise, the word for spit in Euripides' *Cyclops* is ὀβελός, but in his *Andromache* the poetic compound ἀμφώβολος carries the same meaning⁴². Aischines, Demosthenes and Plato the philosopher speak of ὀβολοί, yet use the word ἐπωβελία to refer to a sum of money paid to Athenian courts as a fine⁴³.

Xenophon typifies inconsistencies found in various authors over the terminology for "half-penny", "one-pence", "two-pence", "three-pence", etc. He writes of the ὀβολός and τριώβολον, but speaks equally of the ἡμιωβέλιον and διωβελία. Confusion reigns likewise over the use of the dialectical form ὀδελός. As mentioned above, Aristophanes and Epicharmos use this word in the fifth century to denote spits, but Nikander employs the same term in the second century AD to specify small weights of herbs for pharmaceutical potions, while Hesychius defines the τριώδελον as "τριῶν ἡμιμναίων σταθμός", i.e. as a weight or measure⁴⁴. Another discrepancy is found in the name of a type of bread, which is given as

³⁸For the πεμπώβολον see Kron 1971 131-144 and A.E. Furtwängler 1980 95.

³⁹Aristophanes *Knights* lines 649, 662, 682, 945. Words containing the -οβολ- group of letters with a meaning connected to the obol coin are also found in lines 51, 255, 798, and 800.

⁴⁰Eupolis *Marikas* fragment 21 line 1.

⁴¹Homer *Iliad* 1.463, 1.465 & etc.

⁴²Euripides *Cyclops* 303, 393; *Andromache* 1133.

⁴³E.g. Aischines *In Timarchum* §97 & 163; Demosthenes *In Aphobum* §1.17 & 1.67; Plato (phil.) *Gorgias* 511d & *Laws* 921d.

⁴⁴Tod 1947 esp. 5 for similar conclusions.

either ὀβελίας ἄρτος or ὀβολίας ἄρτος. Athenaios prefers ὀβελίας, but argues with equal conviction that the name originated either because such bread was baked on spits, or that it was worth one obol (coin)⁴⁵. Both terms occur in fragments of Aristophanes⁴⁶. There is even evidence to suggest that copyists on occasion became confused. The clearest example comes from a passage in Hippokrates' *De Haemorrhoidibus* (§2), where the context demands a word for a long, straight, pointed, in other words spit-shaped, surgical instrument. The manuscript gives ὀβολοῦ, and in the light of the evidence presented above Littré seems fully justified in emending the text to ὀβελοῦ.

6.1.2e Discussion

Taken together, the epigraphic and literary evidence reveal an evolutionary sequence. This begins with ὀβελός and ὀδεός, both of which might be described as different written realisations of the same spoken word, and both of which originally mean "spit". Given the long "prehistory" of the spit, these words, or a very similar common ancestor, were probably in use for centuries before their earliest attestations⁴⁷. During the invention and introduction of coinage, ὀβελός and ὀδεός are the names given to the new obol, and these words therefore each have two meanings at this stage.

This situation does not last, but the next phase witnesses different developments in different regions. In Attica, ὀβελός is replaced by two new words, ὀβολός and ὀβελίσκος, one for each meaning. However, it seems that ὀβολός was coined first, and that ὀβελός continued in use for a time as the term for spit until it was superseded by the derivative ὀβελίσκος, and ultimately disappeared. Therefore in Attic, a new word for obol was followed later by a new word for spit. In Doric dialect, the sequence is more straightforward. Ὀδεός is preserved, but its original meaning, spit, is lost and displaced to the derivative ὀδελίσκος. This new word is clearly very similar to ὀβελίσκος, and it seems probable that changes in the one dialect influenced the other, but it is impossible to address this question due to the shortage of inscriptions in Doric dialect referring to spits during the crucial period.

The sequences described above may summarised as follows:

⁴⁵Athenaios *Deipnosophistai* 3 Kaibel 76. The form and nature of this type of bread remains obscure, though it may be represented in the iconography of some vases: see **Appendix E Categories H & i**.

⁴⁶Aristophanes fragments 103 & 440.

⁴⁷See §2.1.1.

0. Common spoken ancestor	
Attic (Ionic)	Doric
1. ὀβελός = spit	1. ὀδελός = spit
2. ὀβελός = spit & obol	2. ὀδελός = spit & obol
3a. ὀβελός = spit ὀβολός = obol	3. ὀδελός = obol ὀδελίσκος = spit
3b. ὀβελίσκος = spit ὀβολός = obol	

The explanation for these changes in vocabulary seems to lie in the success of the obol coin. The literary and epigraphic corpora reveal that there was never the same need to write about spits as there was for obols. In the literary corpus, of the authors selected for study, references to obols outnumber those to spits by four to one⁴⁸. In the epigraphic corpus, the figures are even more dramatic, with references to obols outnumbering those to spits by twelve to one in the selection of texts studied⁴⁹. Small wonder, therefore, that the coin should oust the spit from its ancestral name.

The fact that in Attica the change in vocabulary coincides with the beginnings of the production of regular detailed public accounts for the nascent Athenian democracy is surely no accident. In this context, the possible risk of confusing spits and obols could not be tolerated, and it seems likely that this factor, whether consciously or sub-consciously, brought about the switch from ὀβελός to ὀβολός, the main impact of which must have been clerical. The accent of both words falls on the third syllable, and while this would not, as in modern Greek, have marked a stress, it would have made the final part of the word more distinct than the middle syllable. To Athenian ears in everyday contexts, both words probably sounded the same.

The importance of distinguishing obols from spits in written accounts probably also explains the speed of the change from ὀβελός to ὀβολός, which occurred somewhere between *IG* I³.2 dated 485/4, and *IG* I³.6 dated to before 460. This period of about twenty-five years, or one generation, contrasts with the more sluggish and therefore less consequential abandonment of ὀβελός in the eventual favour of ὀβελίσκος. The implications of this discussion are quite

⁴⁸See **Appendix F Table 4 ii c**. There are 91 references to spits or words with spit connotations (=21%) compared with 335 references to obols or words with obol connotations (=79%). The 18 miscellanea are omitted from these calculations.

⁴⁹See **Appendix G Table 2**. There are 52 references to spits or words with spit connotations (=7%) compared with 655 references to obols or words with no spit connotations (=93%).

simple: there is no place for the independent evolution of the term ὀβολός because this word clearly developed from ὀβελός meaning "spit". There must therefore have been some way in which the spit and the obol coin were once linked which led to the use of the same word for both entities.

This fact seems all the more inescapable when it is considered that the collective noun for small groups of either objects was δραχμή. There seems little advantage in studying the occurrence of this word, or of its dialectical forms δράγμα, δαρχμή, δαρκνά, δαρκμά, or δαρχμά⁵⁰, for two good reasons. Firstly, the number of references in the literary and epigraphic corpora is vast, and presents a considerable methodological problem⁵¹, even with electronic books. Secondly, although the term is attested from the sixth century to at least the fourth as the collective noun for a bundle of spits⁵², δραχμή is not specific to these artefacts. It appears to have been used since the Late Bronze Age as more generally of any clutch of long and slender objects. In Linear B, "*do-ka-ma-i*" is found on two documents from Mycenaean Pylos, where it is thought to denote a collection of wooden shafts and to be derived from δράσσομαι⁵³. This same verb is connected with δράγμα, a word which refers in Homer to a handful of stalks grasped during the reaping of corn⁵⁴, and in Xenophon to bales of straw⁵⁵. It follows that if the bundle of spits was only one type of δραχμή, and that this word was in fact, as Plutarch / [Aristotle] assert⁵⁶, associated with a quantity which filled the hand, the term cannot have been applied to a denomination of six tiny coins independently of ὀβελός. This in turn implies that the obol was the basic unit of the new money introduced during the sixth century, and not the drachma⁵⁷.

6.1.3 Ὀβελός & ὀβελίσκος (Appendix F §5)

The link between spits and obols demonstrated above demands an explanation. However, for the moment we shall set this problem to one side and pursue what other information may be gleaned from the literary and epigraphic corpora. In the discussion which follows, the

⁵⁰Literary and epigraphic references to these words may be found in *LSJ* s.v. δαρχνά, δραχμή and δράγμα. See also Tod 1960 2.

⁵¹Cf. Tod 1960 1.

⁵²See **Chapter Four §4.3 & Appendix B1 S.epig.1 & 2.**

⁵³Wr 1480.γ & An 1282.3 on which see Shelmerdine & Bennet 1995 127 and 131-132.

⁵⁴Homer *Iliad* 11.69, 18.552.

⁵⁵Xenophon *Hellenika* 7.2.8.

⁵⁶Plutarch *Lysander* 17 = [Aristotle] Rose 1886 fragment 481.

⁵⁷Contra Carradice & Price 1988 91-93: see §6.4.2.

emphasis of the evidence now moves from the comparatively bald epigraphic citations to the rather more informative references found in the literary evidence. We begin by exploring the relationship between ὀβελός and ὀβελίσκος. As stated in the previous section, the difference between these terms may be explained in chronological terms, ὀβελός being an archaic form for ὀβελίσκος. However, this change takes place after the end of the period during which spits are visible in the archaeology, and it is necessary to consider the possibility that the transition from ὀβελός to ὀβελίσκος was accompanied by one of form. Does the latter, as suggested in *LSJ* s.v. "ὀβελ -ίσκος", denote a diminutive spit?

'Ὀβελίσκος does seem to denote a small spit in some contexts⁵⁸, such as Aristophanes' *Acharnians* 1007, where they are used to cook thrushes, or Archestratos fragments 9 and 57, where they are used in the preparation of fish and hare respectively. However, in other cases, such as Aisop's *"The Lion and the Bull"* (Fable 148), it is the gigantic size of "ὀβελίσκοι" which give the bull the vital clue that he has not been invited by the lion *for* dinner, but *as* dinner: the spits are too big to be used for roasting the sheep that was evidently mentioned in the lion's invitation, but ideally suited to a member of the bovine species⁵⁹. Moreover, ὀβελίσκος is employed by writers such as Hekataios of Abdera, Cassius Dio, Strabo and others to denote the monumental stone obelisks of Egypt. Only a few authors reserve ὀβελός or ὀβελίσκος for specific meanings, such as Diodorus, who uses ὀβελός for roasting spit and ὀβελίσκος for obelisks or obelisk-shaped items for which there was no Greek term⁶⁰. Therefore, it seems that the overall pattern is one in which both words could be used interchangeably, or in other words as synonyms, as exemplified by Plutarch, who uses both ὀβελός and ὀβελίσκος for roasting spit⁶¹. This conclusion in turn shows that the shift from one word to the other was not accompanied by changes in the physical form of the spit⁶².

6.1.4 The Idea of the 'Ὀβελός /ὀβελίσκος (Appendix F §5)

The main idea expressed by the words ὀβελός and ὀβελίσκος seems to be that of any long, rigid, thin, straight object with a point at one end. Other than spits, such articles constitute things for which there was no other Greek word. These most commonly include stone

⁵⁸Full references and short quotations of the passages cited in this section may be found in **Appendix F Tables 5 ii a-c**.

⁵⁹The summary of Fable 148 provided here follows version 1 of the story.

⁶⁰**Appendix F §5 i b** s.v. Diodorus Siculus.

⁶¹**Appendix F §5 i b** s.v. Plutarch.

⁶²Cf. Tod 1955 126.

obelisks, as for example in Hekataios of Abdera, Herodotos and Theophrastos⁶³. Other uses include a variety of miscellanea comprising: the shape of the blade of a *gladius* in Polybios (third /second centuries)⁶⁴; the railings of a fence in inscriptions from Delos (second century)⁶⁵; drainage conduits in an inscription from Kerkyra (second century) and in Diodorus (first century)⁶⁶; a type of long and straight incision in Dioscorides (first century AD)⁶⁷; and a *pilum* in Appian (second century AD)⁶⁸. In some instances, the desired meaning focuses more on the sharp-ended aspect. Josephus (first century AD) uses ὀβελός to describe spikes on parts of the Temple in Jerusalem which were placed at strategic points to hinder the perching of birds⁶⁹, while Pausanias (second century AD) and Philostratos (second /third century AD) use ὀβελός and ὀβελίσκος respectively to describe the form of a spiked fence around the oracle of Trophonios⁷⁰. Aristophanes (fifth /fourth century) is quick to exploit the phallic possibilities of the ὀβελός and ὀβελίσκος in *Acharnians*⁷¹, though it seems likely that the pun is intended in other plays too. This *double entendre* could account for the relatively high number of occurrences of spits in his works, and explain references which are otherwise puzzling. These include the reported theft of some ὀβελίσκοι in *Wasps*, Peisetairos' caution to Euelpides in *Birds* before the latter tries to kiss Prokne, who has two ὀβελίσκοι for a beak, and the use of ὀβελίσκοι in either play as improvised weapons⁷².

The image conjured up by the words ὀβελός and ὀβελίσκος certainly seems to have been deeply ingrained, as their use by various authors in descriptive ways indicates. Xenophon likens part of a horse-bit to an ὀβελίσκος (fourth century) while Galen (second century AD)

⁶³Hekataios of Abdera Jacoby 3a 264 fragment 25; Herodotos 2.111 & 170; Theophrastos *de Lapidibus* 24. For authors post ca. 300 who use ὀβελός /-ίσκος in this way see **Appendix F §5 ii Table 5 ii b** and associated references in **§5 ii**.

⁶⁴Polybios *Historiae* 6.23.7.

⁶⁵Delos *ID* 3.1403 & etc.

⁶⁶*IG* IX.1.692; Diodorus 19.45.4.

⁶⁷Dioscorides *De Materia Medica* 2.73.2.

⁶⁸Appian *Bellum Civile* 3.9.69, etc.

⁶⁹Josephus *De Bello Judaico* 7.5.224.

⁷⁰Pausanias *Graeciae Descriptio* 9.39.9; Philostratos *Vita Apollonii* 8.19.

⁷¹Jeffery Henderson 1991 123 & 144.

⁷²Aristophanes *Wasps* 354, 364; *Birds* 359, 388, 672.

uses the same word to describe the rigidity caused by a broken back⁷³. The idea of stiffness is found also in Epictetus (first /second century AD), where someone is told that they "wander about... as if they had swallowed an ὀβελίσκος", the ancient Greek equivalent of "having one's nose in the air"⁷⁴. In the context of the catalogue of meanings and connotations given above it seems all the more difficult to imagine how ὀβελός could possibly have come to be used, as in fact it was, to refer to a small, round, squat coin.

6.2 WRITINGS ABOUT ROASTING SPITS

6.2.1 Modes of Use

The texts attest to a variety of modes in which spits were used. In Homer, spits most commonly appear in a series of formulaic lines which usually concern their use at sacrifices. After the slaughter of the animal, and its butchering, morsels of meat are placed on spits, which are then hand-held over a fire until cooked and drawn off. However, in two passages in the *Odyssey* (3.463 & 14.77), the meat is not drawn off, but served hot on the spit. A more serious variation occurs in the *Iliad* (9.213), in which Achilles prepares a feast in which the spits are suspended over the embers by κρατευταί, "firedogs"⁷⁵. Other Archaic and Classical texts tend to be less explicit about the way in which spits were used. The roasting and drawing off of meat is referred to in Aristophanes' *Acharnians* (line 1005). The use of κρατευταί is not found elsewhere in Archaic or Classical literature, though these artefacts are referred to in the fourth century inventory from Khorsiai mentioned in §4.3.5⁷⁶, and in fourth-century sacred inventories from Athens and Eleusis⁷⁷.

6.2.2 Spits of All Sorts

The written evidence shows that a considerable range of fauna was cooked on spits. The species represented comprise animals from the air, sea and land, and range in size from the thrush to the bull via fish, hare, pigs, sheep, and (mythically) humans⁷⁸. Such variety seems

⁷³Xenophon *De Re Equestri* 10.8; Galen *De Usu Partium* Kuehn vol. 4 page 45.

⁷⁴Epictetus *Dissertationes ab Arriano Digestae* 1.21.2. The modern Greek equivalent is to say that someone looks as if they had swallowed a billiard cue.

⁷⁵Kirk 1981 63 explains the difference between the first and the second and third of these modes by the fact that the first takes place at public sacrifices, the other two in private settings. For the proper interpretation of κρατευταί see §2.3.4.

⁷⁶SEG 24.361 line 17. For the text of this inscription see also Platon & Feyel 1938 and Tomlinson 1980.

⁷⁷IG II².1425 (Athens, dated 368/7) Face B line 415 mentions four κραδευταί; IG II².1541 (Eleusis, dated 357/6) line 19 mentions six κραδευταί.

⁷⁸Archaic & Classical examples: **birds**: Aristophanes *Acharnians* 1007, Aristotle *Mirabilium Auscultationes* 835a; **fish**: Arcestratos fragment 9; Sotades fragment 1 (*Enkleiomenai*); **hare**: Arcestratos fragment 57; **pig**: Homer *Iliad* 9.210 & *Odyssey* 14.75 & 430, Aristophanes *Acharnians* 796; **sheep**: Homer *Iliad* 24.623; **humans**: Euripides *Cyclops* 393; **bull/cow/ox**: Homer *Iliad* 2.428 & *Odyssey* 3.462, Aisop Fable 148,

to demand a corresponding variety of types of spit. At least two sizes may be inferred from the corpora of literary texts and inscriptions. "Big spits" are mentioned in Aisop's tale of "the Lion and the Bull" (Fable 148), and these are surely what are denoted by the epithet βουπόρος, "ox-piercing", a word used by Herodotos when describing Rhodopis' dedication at Delphi, Xenophon when defining a spit being used as a weapon, [Aristotle] of the type of spit used as pre-coinage money, and in a third-century inventory at Delos⁷⁹. At the opposite end of the scale, "small spits" are attested in third-century texts from Delos⁸⁰.

As well as size, the variety of the spit seems to have extended to the materials from which they were made. Few documents supply this information and, as might be expected in view of the archaeological evidence, many of those that do so refer to iron. In the literary corpus, Herodotos mentions that Rhodopis' spits were σιδηρέους (2.135), and iron spits feature in Kinadon's plot in Xenophon's *Hellenika* (3.3.7). In the epigraphic corpus, two mid second-century inscriptions from Delos mention iron ὀβελίσκοι, though in this case the objects referred to are not spits but the balustrades of fences⁸¹. In several other inscriptions, iron may be inferred from the context. A fourth-century inventory from Mounychia lists spits with other objects of iron⁸², and a mid fourth-century inscription from Delos seems to inventory items by metal and includes spits in the section devoted to iron⁸³. Similarly, a mid third-century inventory from Delos lists ὀβελίσκου[ς amongst παλαιῶν σιδηρῶν τάλαντα, a talent of old iron⁸⁴.

However, inscriptions from Delos show that spits were sometimes made from other materials. Bronze spits are attested in three third century documents⁸⁵, and wooden spits in

Herodotos 2.41. These lists are not exhaustive: see **Appendix F §5** *passim* for further references.

⁷⁹Herodotos 2.135; Xenophon *Anabasis* 7.8.14; [Aristotle] Rose 1886 fragment 481; *ID* I.313 (dated 235/4) fragment i line 17 (restored by Tod 1955 125).

⁸⁰*IG* XI.2.161 (dated 278) Face B line 128; *IG* XI.2.195 (dated 300-275) line 3; *IG* XI.2.199 (dated 273) Face B line 78; *IG* XI.2.219 (dated 265) Face B line 73 (restored).

⁸¹*ID* 3.1417 (dated 155/4) face A col. II line 39; *ID* 3.1426 (dated 156/144) face B col. II line 42. For the meaning of ὀβελίσκος in these contexts see also *SEG* 40 (1990) p201.

⁸²*SEG* 39.163 (dated ca. 360-330).

⁸³*ID* 7.104 (dated 364/3) line 142.

⁸⁴*ID* 1.313 (dated 235/4) fragment i line 17.

⁸⁵*ID* 1.313 (dated 235/4) fr. i line 15; *IG* XI.2.164 (dated 276) face B line 17; *IG* XI.2.203 (dated 269) face B line 95.

one of the same inscriptions, plus a further two⁸⁶. Wooden spits are also found in the literary evidence. In Euripides' *Cyclops*, Odysseus' companions are made ready to eat with the aid of such spits (line 393)⁸⁷, and in a fragment of Polycharmos (fragment 1), they feature in a method of divination⁸⁸. The existence of bronze spits may be seen as a challenge to the conclusion implied by the archaeological evidence (**Chapters Two to Four**) that it was part of the quintessential nature of the Archaic Greek metal spit to be made of iron. However, the epigraphic evidence for bronze spits belongs to the Hellenistic age, and with one possible exception from Olympia there is no convincing evidence that bronze spits were in circulation from the early Geometric Period to the end of the Classical Period⁸⁹. It seems reasonable to conclude, therefore, that the third-century Delian examples represent the re-introduction of bronze spits.

The multiples in which spits occur also seem to vary, and without any perceptible bias according to date, place, size, or material. Multiples of six, which play such an important role in the tradition of pre-coinage spit money, do occur⁹⁰, but multiples of five prove equally common⁹¹. Twos, eights and seventeens are also attested⁹². Therefore, it seems that spits were made in different sizes, from different materials, and were bundled together into sets of

⁸⁶*ID* 1.312 (dated 237/6?) line 2; *IG* XI.2.199 (dated 273) face A line 62; *IG* XI.2.203 (dated 269) face A line 50.

⁸⁷The context (lines 382f) could suggest that Euripides has included this detail as part of the construction of a primitive, alien and fictitious world. However, the Cyclops is also the proud possessor of a cauldron made of bronze (line 392), and this piece at least of his culinary equipment would have been recognisable to the audience as a common item. It seems, therefore, that the giant inhabits a world filled with objects of familiar form but outlandish size, and that the wooden spits, crude though they are, were probably within the bounds of the experience of the fifth-century audience.

⁸⁸Spits loaded with meat were placed in a pond, and the way in which fish in the waters below nibbled at the morsels was interpreted by attendant seers.

⁸⁹Finds of bronze spits have been reported from a small number of Archaic and Classical sites. However, with the single exception of the find from Olympia (Karageorghis 1974 171) there are good typological reasons for rejecting these objects as spits: see **Appendix C**.

⁹⁰**Six:** *IG* 1³.421 (dated 414) col. II fr. c line 94; **Appendix B1 S.epig.3** (Torricella). **Twelve:** *ID* 1.313 (dated 235/4) fr. i line 15; *IG* XI.2.199 (dated 273) face B line 91; Anaxippos Fragment 6 /*Kitharodes* fragment 1 line 1. **Eighteen:** *IG* II².1424a (dated 369/8) col. II line 268; *IG* XI.2.203 (dated 269) face B line 95. **Forty two:** *IG* II².1425 (dated 368/7) face B col. I line 407. **Seventy-eight:** *IG* XI.2.154 (dated 296) face A line 66.

⁹¹**Five:** *IG* XI.2.287 (dated 250) face A line 25. **Ten:** *IG* XI.2.199 (dated 273) face A line 62; *IG* II².1673 (dated 327/6) line 17; *IC* I.xvii (Lebena).2 (second century) b 1. **Twenty five:** *ID* 1.312 (dated 237/6?) line 2. **Thirty five:** *IG* XI.2.199 (dated 273) face B line 78; *IG* XI.2.219 (dated 265) face B line 73. **Seventy:** *IG* II².1638 (dated 359/8) face B line 67; *IG* II².1639 (dated 355/4) line 8; *IG* II².1640 (dated 354/3) line 30; *ID* 7.104 (dated 364/3) line 142 and I04(10, 11, 12). **Eighty:** *ID* 7.104(19) (434-315) face B line 5.

⁹²**Two:** *IG* XI.2.164 (dated 276) face B line 17 (small); *IG* XI.2.205 (dated 267) face B fr. a line 14; *IG* XI.2.203 (dated 269) face A line 50. **Eight:** *IG* 1³.421 (dated 414) col. II fr. c line 93; *IG* XI.2.161 (dated 278) face B line 100. **Seventeen:** *ID* 2.403 (dated 189) line 25. **Thirty Four:** *IG* XI.2.148 line 70.

different multiples. This variety is epitomised by a reference in a fourth century Attic inventory which has been restored as "ὀβελίσκοι πα[ντοδαποί", "spits of all sorts"⁹³.

6.2.3 Value

Such diversity of form often renders evidence on the price of spits difficult to interpret, especially when the material from which they were made is not specified in any of the relevant documents. An inscription dated 414 records the auction of property confiscated from Alcibiades and others convicted of sacrilege⁹⁴. One lot of eight ὀβελίσκοι are listed as being sold for sixteen drachmas, and another of six for fourteen drachmas and two obols. No other information is recorded about these spits, but it is tempting to conclude that they were made of iron, because they are listed with other non-precious metal goods, and non-ferrous metals are usually specified. Moreover, the prices per ὀβελίσκος (two drachmas, and two drachmas two obols) lie well within those which may be predicted from a fourth century inscription from Delphi mentioned in §4.3.2d⁹⁵ when combined with the estimated weight of a spit. Following the exchange ratios given there for silver : iron = 1 : 100 to 435, the price of a spit weighing between one and two kilogrammes should fall within the following limits:

1000g iron spit:

= 2.28g to 10g silver or 3.17 to 13.89 obols
(roughly 3 1/6 obols to 2 drachmas 2 obols)

2000g iron spit:

= 4.58g to 20g silver or 6.33 to 27.78 obols
(roughly 1 drachma, 1/3 obol to 4 drachmas, 4 obols)

Prices for ὀβελίσκοι given in other inscriptions also compare well with these figures. An early third-century account from Delos records that one Herakleides was paid seventy drachmas for a talent of spits⁹⁶. The material is not specified, but the exchange ratio may be calculated as:

⁹³IG II.2.1463 (dated ?ca. 330) line 26.

⁹⁴IG I³.421 col. II fragment c lines 93-94. See Pritchett 1956 312-313 on these lines, who likewise conjectures that the spits were made of iron. However, Pritchett is not followed here in his restoration of the name of the bronze object mentioned in the line below on the inscription, which was sold for two hundred drachmas, as an [ὀβε]λός. As detailed above in this chapter, ὀβελοί and ὀβελίσκοι seem to have been distinguished carefully in Athenian democratic documents of this date, and it seems inconceivable that an ὀβελός should have been mentioned immediately after an ὀβελίσκος. The missing and damaged letters should therefore be restored in some other way.

⁹⁵FD III.5.27 col. IIA. For a commentary see FD III.5 page 142.

⁹⁶IG XI.2.148 (dated 297) line 70.

25860g spits : 301.4g silver = 86 : 1.

If the spits were made of iron, this would equate to about two drachmas four obols for a spit of one kilogramme, and five drachmas two obols for a spit of two kilogrammes. The lower end of this range encompasses the amount of money recorded in the same text as paid to a certain Artimas totalling forty-two drachmas for thirty-four spits, or one drachma and one and a half obols per spit⁹⁷. In a further inscription from Delos of a later date, seventeen spits are purchased for fifty six drachmas five and a half obols⁹⁸. This equates to three drachmas two obols per ὀβελίσκος, with a remainder of one and a half obols which may have covered some service such as polishing, packaging, transportation, and so forth for the set.

Another inscription from Delos records information of a different kind. *IG* XI.2.287 (dated 250) face A line 75 records that five ὀβελίσκοι weighing four and a half minas were purchased for one drachma per mina of weight. Assuming that they were identical, it is possible to calculate from this information that each ὀβελίσκος weighed nine tenths of a mina, or 387.9g, and that it cost five and two fifths of an obol, or 3.89g of coined silver. The ratio for exchanging weights of silver for weights of ὀβελίσκοι was therefore 1 : 73, and this must surely relate to metal rather than wood. Furthermore, if the ὀβελίσκοι comprised spits made of iron, their probable dimensions would correspond reasonably well with those of archaeological examples. Assuming a density of 6.6t/m³ for ancient Greek iron⁹⁹, an iron spit weighing 387.9g would have a volume of 59cm³. If it had a square cross section of 1.0cm, 0.75cm or 0.5cm it would have a length of about 59cm, 105cm or 236cm respectively.

However, while a credible case may be made that the ὀβελίσκοι mentioned in *IG* I³.421, *IG* XI.2.148 and *ID* 2.403 were made of iron, two other third-century inscriptions from Delos refer to ὀβελίσκοι of wood costing six drachmas a piece¹⁰⁰. This price falls within the range of those estimated for iron spits, and shows that it is not always possible to correlate cost and material. Moreover, the ambiguities and uncertainties are exacerbated by the known existence of bronze spits.

At this juncture it is prudent to return to the inscription relating to the sale of Alcibiades' property, and to consider Charias the ὀβελισκοποιός. This man was sold with other skilled slaves as part of the property of the convicted men, and Pleiner suggests that he was a

⁹⁷Ibid.

⁹⁸*ID* 2.403 (dated 189) line 25.

⁹⁹For this figure see §4.3.2c.

¹⁰⁰*IG* XI.2.203 (dated 269) face A line 50; *IG* XI.2.199 (dated 273) face A line 62: x 10.

black-smith who specialised in the production of iron spits¹⁰¹. The price paid for him is not preserved, but the fact that he was sold with Aristarchos the cobbler and several nondescript individuals leads Pleiner to infer that he, and hence his craft in general, was not highly valued by that time. However, it seems equally likely that Charias was a carpenter who produced wooden spits.

6.2.4 Social Dissemination

The prices for spits indicate that such articles were not especially cheap or expensive in the Classical and Hellenistic periods¹⁰². The same impression is given by the literary corpus. We have seen already in 4.3.6 that Herodotos, writing in the later fifth century, was dismissive of the financial value of the dedication at Delphi of the large heap of iron spits attributed to Rhodopis. A scene from Aristophanes' *Wasps* seems at first sight to offer a different view where, in line 354, two spits are deemed worthy of theft, but this is probably explained by the phallic connotations of the word ὀβελίσκος, rather than the material value of such objects. Similarly, an obscene joke is probably intended in a scene from *Clouds* (line 178), in which a spit is bent into an improvised hook. Nevertheless, the purpose of this reported action is to provide money for a meal, and it is instructive that this comes from the sale of a cloak rather than of the spit which was used to steal it. We may also note that spits appear elsewhere in the comedies of Aristophanes amongst the property of characters who seem to represent "ordinary folk", such as Dikaiopolis in *Acharnians*.

This wide social distribution may be inferred in the Archaic period from the Homeric Epics, in which spits are wielded by or on behalf of heroes such as Achilles and Menelaus¹⁰³, but are also employed by lesser mortals such as Eumaios the swineherd when he entertains Odysseus to a meal in his rude and simple hut¹⁰⁴. However, while this evidence suggests that from the eighth century, or perhaps earlier, spits were available to rich and poor alike, there is no need to assume that at both ends of the spectrum the type of spit used was the same. The calibre of man who was buried in the Panoply Tomb at Argos might have roasted with iron spits while his more humble neighbour made do with small wooden splints. More importantly, there is no reason to believe that the relatively modest prices given or implied for iron spits in the Classical and Hellenistic periods would have applied in the Archaic period.

¹⁰¹IG I³.426; Pleiner 1969 22.

¹⁰²See Carradice & Price 1988 102-103 for comparanda taken from the auction of property belonging to Alcibiades.

¹⁰³Homer *Iliad* 9.210, *Odyssey* 3.462-3.

¹⁰⁴Homer *Odyssey* 14 75-77.

6.2.5 *The Ptoön Enigma*

One further piece of epigraphic evidence must be mentioned in this Chapter. The base of a bronze statuette was discovered at the Boiotian Ptoön, bearing an inscription which Lazzarini restores as follows:

[Π]ρο[τ]ανίῳ ἔμῃ ὀβελός γα· Τασσιάδας ποίεσε
 "I am [the] obelos of Protanios; Tassiadas made [me]"¹⁰⁵.

The statue has a base of 5.6cm x 4.5cm and parallel examples suggest that its original height may be inferred as ca. 15cm and that it dates to the sixth century¹⁰⁶. There are, however, no other finds of statuettes claiming to be ὀβελοί, and so the interpretation of this piece is problematic.

Lazzarini provides an intelligent discussion, in which she offers a number of possibilities¹⁰⁷. She begins by noting that the dedication is clearly not a spit, though the use of the particle γα, the Boiotian equivalent of γε seems to insist that there was some connection. The possibility that the statuette held a life-sized version of a spit may be rejected, and likewise, unless such things held some personal significance for the donor, Protanios, it seems unlikely that it held a miniature spit, because the statuette itself would have been worth more than such an object. It is possible to imagine that the figure held a life-sized obol, but the effort expended on the manufacture of the human figure would again surely have exceeded the value of the coin. For this same reason, it seems unlikely that the figure represents a statuette worth the sum of one obol. Another possibility explored by Lazzarini is that the statuette was made from a melted down bronze spit. However, as demonstrated in **Chapters Two to Four** and in **Appendix C**, with the one possible exception of a find from Olympia, Archaic spits were made of iron, not bronze¹⁰⁸. A further solution proposed by Lazzarini is that the statuette was the equivalent in worth not of an obol, but of a spit, a hypothesis which likewise lacks proof, but which perhaps offers the most plausible explanation¹⁰⁹. However it seems more reasonable to conclude that the small bronze base with two tiny feet and the accompanying dedicatory inscription present an enigma which is at present insoluble.

¹⁰⁵Lazzarini 1982 9-11.

¹⁰⁶Lazzarini 1982 9, who takes her parallel examples from Ducat 1971.

¹⁰⁷Lazzarini 1982 11f.

¹⁰⁸Lazzarini 1982 12 & n19 in which she appeals to later epigraphic evidence for bronze spits, but see above §6.2.2. For the possible Archaic bronze spit from Olympia see Karageorghis 1974 171.

¹⁰⁹Lazzarini 1982 12.

6.2.6 Conclusions

A number of important conclusions may be drawn from the written evidence. First and foremost, the Greek spit shows considerable diversity in terms of the ways in which it was used for roasting, the materials from which it was made, the size of spit, and the number per set. Such diversity serves as a reminder of the need, already noted in the discussion of the archaeological and iconographic material, to avoid over-generalisation from one type of evidence, or from one period, or from one area. It seems unwise, therefore, to try to formulate any single interpretation of these artefacts which could be applied to every strand of evidence from every part of the Greek world. The texts also illustrate the bias of the archaeological evidence: spits were used over a much longer period of time and over a much wider area than that indicated by the finds from graves, sanctuaries or settlements.

6.3 THE HISTORIOGRAPHY OF PRE-COINAGE SPIT MONEY

The written evidence leaves no doubt whatsoever that the spit and the obol coin were linked in some way, because the same word was used to refer to both. However, the morphologies of the spit and the obol coin are quite different, and the nature of the relationship is not therefore immediately apparent. In ancient and modern times, the explanation customarily adopted is that spits were used as a form of pre-coinage money¹¹⁰, and were the immediate predecessors of obol coins. However, the examination of the sources attesting to the use of spits in this way at Sparta, Argos, and Byzantion, raises serious doubts about the credibility of this tradition.

6.3.1 SPARTA

6.3.1a The Tradition and the Sources

The majority of the sources concern Sparta¹¹¹, and the tradition which they preserve is as follows¹¹²:

Under Lykourgos, the possession of gold and silver, and especially their use as νόμισμα, was forbidden:

Xenophon:

Lakedaimonion Politeia 7.5-6: "5. [ὁ Λυκούργος] νόμισμα τοιοῦτον κατεστήσατο... 6. χρυσίον γε μὴν καὶ ἀργύριον ἐρευνᾶται, καὶ ἅν τί που φανῇ, ὁ ἔχων ζημιούται". (Xenophon uses the present tense in §7.6 because the law was in force when the *Lakedaimonion Politeia* (except §14) was written)

¹¹⁰For the sense in which "money" is used here see §2.3.4c.

¹¹¹For general discussions of this subject see esp.: Cartledge 1975 Appendix VIII 272-274; Cartledge 1979 156, 173, 314; Fitzhardinge 1980 123; Huxley 1962 63; Mitchell 1952 298f.

¹¹²The sources for Sparta are quoted *in extenso* in Appendix H.

(Pompeius Trogus):

Justin's *Epitome of the Historiae Philippicae* by Pompeius Trogus 3.2.11-12:

"Lycurgus... emi singula non pecunia, sed compensatione mercium iussit. Auri argentique usum velut omnium scelerem materium sustulit".

Plutarch:

Lykourgos 9.1: "[ὁ Λυκοῦργος] ἀκυρώσας πᾶν νόμισμα χρυσοῦν καὶ ἀργυροῦν" (cf. *Apophthegmata Lakonika* 226C, which has close verbal similarities with this passage).

Lysander 17.1-2 concerns the revival of the Lykourgan νόμισμα in the early fourth century.

Poseidonios:

fragment 240a (Edelstein): "(c) Λακεδαιμόνιοι δ' ὑπὸ τῶν ἐθῶν κωλυόμενοι εἰσφέρειν εἰς τὴν Σπάρτην... καὶ κτᾶσθαι ἄργυρον καὶ χρυσὸν". (In this passage ὑπὸ τῶν ἐθῶν surely refers to Lykourgan Sparta. The wider context discusses Spartan νόμισμα).

Iron was to be used as a νόμισμα in place of gold and silver:

[Plato]:

Eryxias 400B: "ἐν δὲ Λακεδαίμονι σιδηρῷ σταθμῷ νομίζουσιν"

Polybios:

Histories 6.49.8: "τὸ νόμισμα τὸ σιδηροῦν... κατὰ τὴν Λυκούργου νομοθεσίαν"

Plutarch:

Lykourgos 9.1: "μόνῳ χρῆσθαι τῷ σιδηρῷ προσέταξε [ὁ Λυκοῦργος]" (cf. *Apophthegmata Lakonika* 226C, which has close verbal similarities with this passage).

Lykourgos 19.1: "τὸ μὲν γὰρ σιδηροῦν νόμισμα ... ἐποίησεν ... ὁ Λυκοῦργος"

Lysander 17.2: "[τὸ πατριον νόμισμα] ἦν σιδηροῦν"

Pollux:

Onomastikon 7.105: "ὄβελοὶ σιδηροῖ, νόμισμα σιδηροῦν τὸ Λακεδαιμονίων";

Onomastikon 9.78: "σιδηρῷ δὲ νομίσματι καὶ Λακεδαιμόνιοι χρῶνται"

The iron νόμισμα had little value relative to its weight and bulk, especially outside the Spartan state:

Xenophon:

Lakedaimonion Politeia 7.5: "ὁ δεκάμνων μόνον ἄν εἰς οἰκίαν εἰσελθὼν οὐποτε δεσπότης οὐδὲ οἰκέτας λάθοι· καὶ γὰρ χώρας μεγάλης καὶ ἀμάξης ἀγωγῆς δέοιτ' ἄν."

[Plato]:

Eryxias 400B: "ὁ πολὺν σταθμὸν σιδήρου τοῦ τοιούτου κεκτημένος πλούσιος δοκεῖ εἶναι, ἐτέρωθι δ' οὐδενὸς ἄξιον τὸ κτῆμα."

Plutarch:

Lykourgos 9.1: "τούτῳ δὲ ἀπὸ πολλοῦ σταθμοῦ καὶ ὄγκου δύναμιν ὀλίγην ἔδωκεν, ὥστε δέκα μνῶν ἀμοιβὴν ἀποθήκης τε μεγάλης ἐν οἰκίᾳ δεῖσθαι καὶ ζεύγους ἄγοντος."

Lykourgos 19.1: "μικρὰν ἔχειν ἐποίησεν ἀπὸ πολλοῦ σταθμοῦ δύναμιν ὁ Λυκούργος"

Lysander 17.2: "βαρύσταθμον καὶ δυσπαρακόμιστον καὶ ἀπὸ πολλοῦ τινος πλήθους καὶ ὄγκου μικρὰν τινα ἀξίαν δυνάμενον."

Pollux:

Onomastikon 9.78: "ἐκ πολλοῦ ὄγκου ὀλίγον δυνάμενον"

The *Apophthegmata Lakonika* 226D quantifies the rate of exchange between the iron νόμισμα and silver coinage, stating that one Aiginetan mina of iron was worth only four χαλκοῖ (half an obol): "ὁ ἐστι μνᾶ ὀλκῇ Αἰγιναία, δυνάμει δὲ χαλκοῖ τέσσαρες".

The iron of which the νόμισμα consisted was quenched in vinegar to render it impossible to forge, meaning that it would have no value as scrap, and could serve no purpose other than as money:

Plutarch:

Lykourgos 9.2: "ὅξει γὰρ, ὡς λέγεται, διαπύρου σιδήρου τὸ στόμωμα κατασβέσας ἀφείλετο τὴν εἰς τάλλα χρεῖαν καὶ δύναμιν, ἀδρανοῦς καὶ δυσέργου γενομένου."

Lysander 17.2: "ὅξει καταβαπτόμενον ἐκ πυρός, ὅπως μὴ καταχαλκεύοιτο, ἀλλὰ διὰ τὴν βαφὴν ἄστομον καὶ ἀδρανὲς γίνοιτο"

Pollux:

Onomastikon 9.78: "ὄξει δ'αὐτοῦ τὴν ἀκμὴν εἰς τὸ ἄστομον κατασβεννύουσιν."

The units of the iron νόμισμα were spits:

Pollux:

Onomastikon 7.105: "ὄβελοι σιδηροῖ, νόμισμα σιδηροῦν τὸ Λακεδαιμονίων"

From the above, it may be seen that the earliest extant source for a peculiar form of Spartan νόμισμα comprises the *Lakedaimonion Politeia* of the early fourth century¹¹³. Thereafter, further references feature in: the pseudo-Platonic *Eryxias* of the third century¹¹⁴; the *Histories* of Polybios of the second century; a fragment of Poseidonios of the second /first century; and Justin's third-century AD epitome of the first-century AD *Historiae Philippicae* by Pompeius Trogus. These texts provide only brief allusions to Sparta's iron spit money and would be difficult to interpret without the more detailed descriptions given by Plutarch in various works¹¹⁵, the *Apophthegmata Lakonika* attached to his name, and by Pollux in the *Onomastikon*.

Plutarch wrote in the first /second centuries AD, but it is evident from *Lysander* 17.2 that he obtained at least some of his information about the Spartan iron νόμισμα from the lost fourth-century works of Ephoros and Theopompos¹¹⁶. Similarly Pollux, who wrote slightly after Plutarch, appears to have consulted texts from the Aristotelian corpus which are now lost¹¹⁷. Therefore, it seems likely that many of the details recorded by Plutarch and Pollux alone were gleaned from sources which are no longer extant. However, it is necessary to remember that Plutarch has a tendency to embellish and elaborate his writings with details of dubious historical veracity¹¹⁸. Similarly Pollux, as we shall see (§6.3.3), is by no means reliable on the subject of iron money at Byzantion, and it is hardly reassuring to note that he is the only author to state clearly that the form of the iron νόμισμα used at Sparta was spits.

¹¹³I follow MacDowell 1986 8f in accepting Xenophon as the author of all but §14 of the *Lakedaimonion Politeia*. See Flower 1991 90 n68 and further references for a more sceptical view.

¹¹⁴For the dating of this work see Souilh  1962 87-88.

¹¹⁵*Fabius Maximus* 27.4 is sometimes cited as a source for Spartan spit money (see, for example, Guarducci 1944-1945 180 or Pleiner 1969 16), but it records no more than that the only material possession found in the house of Epameinondas at his death was an iron ὀβελίσκος, and there is no firm indication in the context that a unit of money is implied.

¹¹⁶*Lysander* 17.2-3 = Ephoros *F. Gr. H.* 70 F205 and Theopompos *F. Gr. H.* 115 F332.

¹¹⁷Hence Pollux *Onomastikon* 9.77-79 = fragments 481 and 580 in Rose 1886.

¹¹⁸See Flower 1991 93 on *Lysander* 17.4-6, or for a more general illustration see e.g. Burn 1984 455 n10, 462 n29, 466 n41, 470 n52, 474-475.

6.3.1b *Commentary*

One of the difficulties which the tradition presents concerns what exactly is meant by νόμισμα in a Lykourgan context. In ancient Greek, the proper meaning of this word is "anything that was sanctioned by current or established usage"¹¹⁹, and therefore, it embraces both "money" and "coinage". As seen above, the establishment of the Lykourgan νόμισμα is referred to by Xenophon, Justin /Pompeius Trogus and Plutarch. However, in Xenophon's *Lakedaimonion Politeia* (7.5), the ambiguity of the term νόμισμα cannot be resolved, and likewise, in Justin's *Epitome of the Historiae Philippicae by Pompeius Trogus* (3.2.11-12), the use of the Latin word "*pecunia*" is unclear. In contrast, Plutarch's account in *Lykourgos* (9) seems more explicit. The iron νόμισμα was to be used in place of "τὸ κοινὸν νόμισμα", which must surely refer to coinage. Moreover, in the same passage, Plutarch implies that the Lykourgan νόμισμα was not a νόμισμα at all: "ἐπέβαινε τῆς Λακωνικῆς ... οὐ χρυσῶν τις, οὐκ ἀργυρῶν καλλωπισμάτων δημιουργός, ἅτε δὴ νομίματος οὐκ ὄντος" (9.3). Therefore, νόμισμα in Plutarch appears to denote coinage when referring to gold and silver, but money when referring to iron, and it seems that the Lykourgan νόμισμα is best understood as an "anti-coinage"¹²⁰.

Plutarch assumes that the Lykourgan νόμισμα post-dates the invention of coinage. For the chronology of the appearance of coinage, archaeological evidence is now favoured over the literary traditions. The earliest datable hoard from the Greek world remains that from the Ephesian Artemision and has a *terminus ante quem* of ca. 560, though some form of bullion "proto-coinage" was perhaps in circulation by the end of the seventh century¹²¹. In the western Aegean, coinage is thought to have come into use slightly later, probably first in Aigina, where large scale minting cannot be inferred before ca. 580/70 at the very earliest¹²². It follows, therefore, that the institution of an "anti-coinage" at Sparta cannot have occurred before the first half of the sixth century. This dating rules out the association of the iron νόμισμα with the Lykourgan epoch, which belongs no later than the seventh century¹²³.

Plutarch, and perhaps also Xenophon and Pompeius Trogus, were almost certainly not aware

¹¹⁹Von Reden 1995 173 & 189 n22 and *LSJ*.

¹²⁰Cf. Grayson 1974 327.

¹²¹Karwiese 1991 23 places the "*striated stage and the emergence of the first patterns*" in the last quarter of the seventh century.

¹²²For an overview see Howgego 1995 2. On the hoard from the Ephesian Artemision see Bammer 1990 150. On the dating of the inception of coinage at Athens, Korinth and Aigina see Kroll & Waggoner 1984.

¹²³See Fornara 1977 4 No. 2 for the ancient sources for the dating of Lykourgos and Jeffery 1976 249 for a summary of the various differing opinions on this subject which place him in the ninth, eighth, or seventh century.

of this chronological problem. In antiquity, the invention of coinage was attributed to a good many individuals, some of whom are mythological. Plutarch awards the honour to Theseus (*Theseus* 25.3). However, if we are to believe that there is any historical truth behind the tradition of an Archaic iron νόμισμα at Sparta, it is necessary to adopt one of two positions. On the one hand, the iron νόμισμα might have been instituted before the early sixth century as a pre-coinage alternative to exchange in bullion, spits replacing units other than drachmas and obols. On the other hand, the iron νόμισμα might, as the sources claim, have been introduced as an anti-coinage, but instituted in the sixth century or later and attached subsequently to Lykourgos. In either case, there would have been no direct transition from spits to coins, and so no occasion on which the name of the former could have been passed to the latter on account of association of use.

It is also noteworthy that there are no references to a Spartan iron νόμισμα before the fourth century. The silence in Herodotos is especially worrying, for not only does he provide the most reliable extant historical source for fifth-century traditions about Archaic Sparta¹²⁴, but he shows a particular interest in and knowledge of Spartan customs. If the iron νόμισμα was an anti-coinage established in the sixth century, we might expect to hear of it in the summary of Sparta at the time of Kroisos (1.65), or the discussion of Spartan oddities (6.56). The omission might be explained by resorting to the alternative view given above, for by giving the iron νόμισμα a higher chronology, we may then suggest that the law prohibiting the possession of gold and silver had lapsed by the time Herodotos was writing, thereby rendering iron money redundant. For the fifth century, there is certainly evidence for the private ownership of gold and silver objects. In particular, Herodotos tells us (9.80-81) that in 479, the Spartan army took home its share of the precious metal spoils from Plataia in the same way as the contingents from other states¹²⁵. However, if the iron νόμισμα had fallen into disuse, and had been forgotten to the extent that no-one told Herodotos or any other extant fifth-century author about this quintessentially Spartan practice, its recollection in the fourth century would require explanation.

The tradition reported by Plutarch and Pollux, that the units of the iron νόμισμα were quenched in vinegar to render them impossible to forge, is also hard to accept. An object which has a high surface to weight ratio and is thin and therefore loses heat rapidly, might be made too brittle to re-work cold after quenching if the iron from which it is made is

¹²⁴Starr 1965 263f.

¹²⁵For a discussion of this and other evidence see Michell 1952 298, MacDowell 1986 119, Flower 1991 90 & n78.

sufficiently carburised¹²⁶. However, quenching does not prevent iron from being forged hot, and the use of vinegar in place of water in the process makes little appreciable difference. Nonetheless, it is necessary to concede that it was common in antiquity to attribute magical properties to the small number of chemicals known, in this case the only acid, and it is conceivable that some men might have taken such palpable nonsense on trust¹²⁷.

The most problematic aspect of the tradition given by the ancient sources concerns the form of the supposed iron νόμισμα. Spits are not mentioned in this context until Plutarch (*Lysander* 17.3), who even then merely hazards the generalisation that all ancient money consisted of spits and that it was from these that the obol and drachma took their name:

"κινδυνεύει δὲ καὶ τὸ πάμπαν ἀρχαῖον οὕτως ἔχειν, ὀβελίσκοις χρωμένων νομίμασι σιδηροῖς, ἐνίων δὲ χαλκοῖς· ἀφ' ὧν παραμένει πλῆθος ἔτι καὶ νῦν τῶν κερμάτων ὀβολοὺς καλεῖσθαι, δραχμὴν δὲ τοὺς ἑξ ὀβολοὺς· τοσοῦτων γὰρ ἡ χεὶρ περιεδράττετο."

It is only Pollux (*Onomastikon* 7.105: q.v.) who states in clear terms that the iron νόμισμα of Sparta was ὀβελοῖ σιδηροῖ, and it is tempting to conclude that he has merely converted Plutarch's conjecture into a factual statement.

However, this position is reached through a very literal reading of the texts and is perhaps overly sceptical. Although Plutarch does not state explicitly in *Lysander* 17.3 that spits were used as νόμισμα in Sparta, this is surely what is implied. The sentence is connected to the discussion of the Lykourgan νόμισμα immediately preceding it in 17.2 by the particle καί, indicating a continuation. Moreover, the Spartan πάτριον νόμισμα must, by default, be included in Plutarch's generalisation in 17.3 that "τὸ πάμπαν ἀρχαῖον οὕτως ἔχειν", "that ancient money was entirely of this kind". Plutarch tells us what is meant by the last two words of this phrase in a genitive absolute which seems parenthetical, as if the use of spits as iron money could almost be taken for granted. Was this well known in antiquity through the relevant works, now lost, of Ephoros, Theopompos and Aristotle? The latter had discussed the etymology of drachmas and obols, while Ephoros, as we shall see (below §6.3.2), had probably alleged the use of spits as pre-coinage money at Argos.

The notion that the sources had spits in mind when writing about Spartan iron money is also consistent with what they tell us of its characteristics. The quenching of spits would have the limited metallurgical effect outlined above. More importantly, Xenophon, the author of the

¹²⁶Waldbaum 1982 349 comments that the metallographic examination by Maddin of spits from a seventh/sixth-century context at Delphi showed them to be made of soft and ductile iron, implying the absence of a significant degree of carburisation.

¹²⁷Michell 1952 301; Huxley 1962 63. On the quenching of Spartan spits in vinegar see also Halleaux 1987.

pseudo-Platonic *Eryxias*, Plutarch and Pollux describe the iron money as heavy and bulky, and a money of spits would have these attributes. We may also note that no other type of iron object is connected with the tradition of Spartan iron money. The possibility that iron coins are implied certainly seems remote. Iron coins are known from ancient Greece from textual and archaeological evidence, but they comprise base metal coinages with token values, are not attested before the latter half of the fifth century (see below §6.3.3), long after the supposed institution of the Lykourgan iron νόμισμα, and have not been found at Sparta. Moreover, the specimens which have been recovered are of a similar size to coins of precious metal, and are therefore small and artificially high in value relative to their metal content.

This brings us to a further problem. As stated above, the *Apophthegmata Lakonika* (226D) is the one source which quantifies the rate of exchange between the iron money and silver money, giving the ratio as one Aiginetan mina to half an obol. The weight standard of the latter is not expressed, but if an Aiginetan obol is implied, then we may express this ratio as $0.525 : 630 = 1 : 1200$. If, on the other hand, the author of the *Apophthegmata Lakonika* meant us to infer by default the Attic weight standard, then we may express the ratio as $0.36 : 630 = 1 : 1750$ ¹²⁸. Accordingly, one Aiginetan silver obol of 1.05g would be represented by 1260g or 1838g of iron. Both of these figures lie comfortably within the estimated weight of the "typical" Archaic spit (§4.3.2c), and therefore the exchange rate given in the *Apophthegmata Lakonika* implies that an obol's weight in silver was equivalent in value to a spit's weight in iron. It is hard to believe that such an equation ever existed. The evidence presented elsewhere shows that, in the Classical period, spits were worth much more than one obol each, typically being valued at about two silver drachmas each. Likewise, the ratio of iron : silver could be as high as $1 : 100$ ¹²⁹. Therefore, the exchange rate given by the *Apophthegmata Lakonika* cannot relate to a real value iron money. Similarly, it seems unlikely that the rate relates to a token value iron money because it would give the metal of the tokens a value which was many times higher than that of their official value.

Whatever the interpretation of the exchange rate given by the *Apophthegmata Lakonika*, or the actual value of an iron spit in Sparta, the existence of a money consisting of such implements seems most improbable. To illustrate this point, let us first consider the practical implications of the fine of fifteen talents imposed on the Spartan king Pleistoanax in 446/5¹³⁰.

¹²⁸Assuming a weight of 1.05g for the Aiginetan obol, and of 0.72g for the Athenian obol (see *OCD*³ s.v. "weights").

¹²⁹§4.3.2d, §6.2.3.

¹³⁰Fornara 1977 112 No. 104, who lists the sources as: Thucydides 1.114.2, 2.21.1 & 5.16.2-3; Plutarch *Perikles* 22.2-4; Diodoros 13.106.10; and Ephoros *F. Gr. H.* 70 F193 (= Scholiast to Aristophanes *Clouds* 859). Michell 1952 303 is sceptical of the size of the fine.

If we assume that, as in coinage, six spits made up one drachma, one hundred drachmas one mina, and sixty minas one talent, and if we also assume that the weight of one spit was 1260g, then fifteen talents would amount to a mass of 680.4 tonnes. This would occupy a volume of 103.1m^3 (assuming a density of $6.6\text{m}^3/\text{t}$)¹³¹ and, if stored in a solid block stacked up to a head height of roughly 1.5m, would require 68.7m^2 of floor space. For the purposes of transport, 680.4 tonnes would constitute something in the order of at least 1500 heavy cart loads¹³².

Not only does this seem an enormous amount of iron even for a king of Sparta to have possessed, but Pleistoanax was not the only individual who was expected to muster large numbers of drachmas¹³³: for example, the Spartan king Agis was threatened with a penalty of one hundred thousand drachmai in 418, Phoibidas was fined the same amount in 382, and Isidas was supposedly fined one thousand drachmas in 362¹³⁴. If these sums represent only a fraction of the iron money in circulation at Sparta, then vast mountains of metal and capacious treasuries for its storage must be inferred, yet neither has been detected through excavation¹³⁵.

Even if a considerable accident of archaeological preservation and discovery is postulated to account for this fact, further conceptual difficulties must be overcome. In particular, the idea that convoys of carts bearing iron spits could have been wheeled abroad to finance embassies to other states, or used to pay foreign mercenaries seems wholly incredible¹³⁶. In addition, there are numerous scandals of bribery and corruption at Sparta, in which the crossing of the palm with silver or gold would have been more appropriate and more subtle than battalions of porters clanking through the back door with heaps of iron¹³⁷.

¹³¹For this figure see §4.3.2c.

¹³²Based on the *raeda* of Late Antiquity, which could carry up to 1000lbs (see *OCD*³ s.v. "transport, wheeled"). In modern late twentieth century AD terms, 680 tonnes would make fifteen large (48t) lorry loads and would suffice for the production of about five hundred family cars.

¹³³Michell 1952 298f; Cartledge 1988 88-89; Hodkinson unpublished 1999.

¹³⁴Agis: Thucydides 5.63.2-4; Phoibidas: Plutarch *Pelopidas* 6.1; Isidas: Plutarch *Agésilaios* 34.8. The story of Isidas entails the young man anointing himself with oil, rushing into battle stark naked and striking down all comers armed only with sword and spear, after which he is decorated for his bravery, but penalised for his recklessness. The story has the ring of an apocryphal tale.

¹³⁵Contra Cartledge 1988 88, who speculates that "*exceptional Spartan individuals ... legally possessed large amounts of precious metal*", but there is no indication in the sources which mention the prohibition of gold and silver that anyone was exempted.

¹³⁶Cawkwell 1983 395-396, referring esp. to the hiring of mercenaries mentioned by Thucydides 4.80.5.

¹³⁷See Michell 1952 303, and Noethlichs 1987 for a detailed discussion of bribery in Sparta.

6.3.1c Invention of the Tradition

There are, therefore, many good reasons why it is difficult to accept that a real-value iron νόμισμα consisting of spits was instituted in Archaic or early Classical Sparta. However, if this tradition is to be rejected it is necessary to ask how and why it could be believed without the slightest hint of scepticism by fourth-century authors of good repute. The answer seems to lie in the political events to which the story is attached. These are as follows. After the capture of Athens at the end of the Peloponnesian War, Lysander found himself in possession of very large amounts of money. He entrusted to Gylippos the conveyance home of the larger part, totalling perhaps some one thousand five hundred to two thousand talents¹³⁸. Gylippos subsequently stole a considerable sum, was found out, and disgraced¹³⁹. Plutarch who, as noted earlier, is probably following Ephoros and Theopompos at this point, tells us that this crime caused shock at Sparta. In the aftermath, the merits of the sudden influx of wealth were discussed and debated, and the most radical proposal, put forward by a group Plutarch labels "οἱ φρονιμώτατοι", was reportedly that all gold and silver be driven out as imported evils ("ἀποδιοπομπεῖσθαι πᾶν τὸ ἀργύριον καὶ τὸ χρυσίον ὥσπερ κήρας ἐπαγωγίμους"), and that the ancestral νόμισμα of iron should be used as money in their place¹⁴⁰. This was opposed by a group Plutarch labels "friends of Lysander", who obtained the concession that gold and silver could be used on behalf of the state¹⁴¹.

If Plutarch's language reflects the character of the φρονιμώτατοι, we may infer that they were plutophobic idealists who would stop at nothing to see their proposals translated into reality. Under these circumstances, it seems more than likely that the φρονιμώτατοι would be prepared to fabricate a "Lykourgan Law" to support an impractical idea lacking in all common sense or relevance to the Greece of the late fifth /early fourth century. There are certainly plenty of other examples of the attribution of measures to Lykourgos which this legendary figure could not possibly have made, if indeed he ever existed. Therefore, as Michell, MacDowell, Noethlichs and Hodkinson conclude, the custom which the φρονιμώτατοι wished to impose was not old and lapsed, but new¹⁴².

The historical sources for fourth-century Sparta claim that the law by which iron anti-coinage

¹³⁸For the estimation of this sum see E. David 1979/1980 esp. 38-41 and Cartledge 1988 89.

¹³⁹For the disgrace of Gylippos see esp. Plutarch *Lysander* 16. See also Plutarch *Nikias* 19.4, *Perikles* 22.3, *Moralia* 10.C; Diodoros Siculus 13.106.8-10 (who says that theft amounted to three hundred talents); and Poseidonios fragment 240a (Edelstein).

¹⁴⁰Plutarch *Lysander* 17.1.

¹⁴¹Plutarch *Lysander* 17.1-4.

¹⁴²Michell 1952 303; MacDowell 1986 119; Noethlichs 1987 165f; Hodkinson 1994 198.

was "reintroduced" was taken seriously. Plutarch tells us that one of Lysander's fellow generals and friends named Thorax broke it, was caught by the Ephors and executed¹⁴³. We also hear of Spartans sending their amassed wealth of gold and silver abroad for safe keeping¹⁴⁴. Moreover, Xenophon (*Lakedaimonion Politeia* 7.5-6) and the author of the *Eryxias* (400B) refer to the law as if it were current. However, it does not seem to have remained so for long, as the demise of the iron νόμισμα is alluded to in the final chapter of the *Lakedaimonion Politeia* (14.3), perhaps added after the original completion of the work¹⁴⁵. Noethlichs postulates that the law would have lapsed after the battle of Leuktra in 371¹⁴⁶.

In contrast, Cartledge and MacDowell doubt that the law had much force in practice¹⁴⁷. Even for small-scale day-to-day transactions, such as the purchase of food, real-value iron money, especially if it was in the form of spits, would hardly prove convenient, and it seems likely that individuals would have turned to other more workable forms of exchange. Officially, however, the νόμισμα of Sparta was iron, and anyone who had asked why this state had adopted such a clumsy system would have been told that it was the fruit of a Lykourgan law set down to ward off the corrupting power of money. This fable would have appealed to the moralising writers of the fourth century, including Theopompos and Ephoros of the Isokratean school, and the author of the *Lakedaimonion Politeia*, who ascribed to wealth a major role in the decay and decline of Sparta after the Peloponnesian War¹⁴⁸. Their writings completed the process of translation from fiction to factoid.

6.3.2 ARGOS

Another centre to which the use of spits as pre-coinage money has been accredited is Argos. The sum total of the ancient tradition is given in the fifth-century A.D. *Etymologicum* of Orion of Thebes (Sturz 1820 column 118):

Ὁβολός· τροπή τοῦ ε εἰς ο. πρὸ τούτου γὰρ ὀβελίσκοις τραχέσιν
ἐνομίστευον τὰ πρὸς σταθμόν. οἱ μὲν οὖν ἴωνες ὀβελὸς, ἡμεῖς δὲ ὀβολός.
πρῶτος δὲ πάντων Φείδων Ἀργεῖος νόμισμα ἔκοψεν ἐν Αἰγίνῃ, καὶ διδοὺς
τὸ νόμισμα καὶ ἀναλαβὼν τοὺς ὀβελίσκους ἀνέθηκε τῇ ἐν Ἀργεὶ Ἡρᾷ.

¹⁴³Plutarch *Lysander* 19.4, though compare with [Xenophon] *Lakedaimonion Politeia* 7.6, who says that the punishment for breaking the law was a fine.

¹⁴⁴Poseidonios fragment 240a (Edelstein); Plutarch *Lysander* 18.2. See also Mitchell 1952 304.

¹⁴⁵MacDowell 1986 9-11.

¹⁴⁶Noethlichs 1987 170.

¹⁴⁷Cartledge 1988 90 and MacDowell 1986 120.

¹⁴⁸See esp. Hodkinson 1994 196.

ἐπειδὴ τότε οἱ ὀβελίσκοι τὴν χεῖρα ἐπλήρουν, τουτέστι τὴν δράκα, ἡμεῖς
καίπερ μὴ πληροῦντες τὴν χεῖρα τοῖς ἐξ ὀβολοῖς, δραχμὴν αὐτὴν λέγομεν
παρὰ τὸ δράξασθαι. ὅθεν ἔτι καὶ νῦν ὀβολοστάτην καλοῦμεν τὸν τοκιστήν,
ἐπειδὴ στάθμοις τοὺς ὀβελίσκους παρεδίδουν οἱ ἀρχαῖοι. οὕτως
Ἡρακλείδης ὁ Ποντικός. (cf. *Etymologicum Magnum* s.v. "ὀβελίσκος".)

We have noted already that this tradition is highly problematic (§4.3.2a). The lower limit for the dating of Pheidon is 600, and therefore he cannot have been responsible for the first issue of coinage at Aigina, the upper limit for which is 580/70. It is also difficult to believe that Pheidon could afford to call in a currency of iron spits and exchange them for silver coins entirely at his own expense. Likewise, we should expect the ruler of Argos to mint Argive coins in Argos, and not Aiginetan coins in Aigina. It was also argued that the bundle of spits and the giant spit discovered by Waldstein at the Argive Heraion could not be used to support the "compromise solution" whereby Pheidon had fixed the rate of exchange between iron and silver: the necessary data could not be obtained because of the poor preservation of the finds. In any case, evidence relating to the value of iron relative to silver indicates that one spit would have been worth far more than one Aiginetan obol, a conclusion which has been reinforced in this chapter by the evidence on the price of spits (§6.2.3).

The suspicion that the whole story is invented is strengthened considerably in the light of the fact that, as at Sparta, the main elements of the tradition cannot be traced before the fourth century. We shall follow here the lucid, thorough and convincing historiographical analysis by W. Brown (1950)¹⁴⁹. Brown begins by dividing the tradition given by Orion into its constituent parts¹⁵⁰, and proceeds from there to identify the earliest known source for each. As a first step in this process, Brown establishes that there is no need to attribute any of the information collated by Orion to Herakleides of Pontos, the fourth century pupil of Plato. Although a Herakleides of Pontos is mentioned at the end of the entry in the *Etymologicum*, the inference that any more than the final etymological point was drawn from this source is unnecessary¹⁵¹. If this argument is followed, then it seems likely that Orion is referring to Herakleides of Pontos, the first century A.D. pupil of Didymos, who wrote a work entitled

¹⁴⁹Brown's analysis is attacked by Kagan 1960, but his arguments fail to convince. Kagan exploits the elasticity of Archaic Greek history throughout his article, coaxing Pheidon into a long reign lasting from ca. 675 to ca. 625, and suggesting that he had been ruler of Argos when it had received and accepted an appeal from Aigina for help against Athens. The passage from Herodotos (5.82-89) from which the latter is drawn notes that after an Aiginetan-Argive victory both states made certain decisions in common. Kagan postulates that one such decision was to produce a common coinage, and hence Pheidon becomes responsible for the minting of coins at Aigina without being its ruler. Kroll & Waggoner's (1984 336-339) dating of Aiginetan coinage to not before 580/70 renders Kagan's views untenable (see also Kraay 1988 433).

¹⁵⁰W. Brown 1950 177.

¹⁵¹Contra Kagan 1960 123.

περὶ ἐτυμολογιῶν¹⁵².

However, this Herakleides was not the first to write about the etymology of ὀβελός because we know from a passage of Pollux already encountered (9.77) that a discussion of this subject was included in Aristotle's lost *Sikyonion Politeia*. Brown is quick to note that once again, just because one part of the tradition recorded by Orion may be traced to this author, it does not follow that Aristotle was the authority for the whole story, even though he is also known to have discussed Φειδώνια μέτρα. The discussion of ὀβελός need not have been linked with a story about Pheidon minting coinage at Aigina, and it seems more likely that it was attached to the tradition of Spartan spit money, especially as it is in this context that it appears to be echoed in Plutarch (*Lysander* 17.3). Likewise, Aristotle's reference to Pheidonian measures does not automatically imply a reference to Pheidonian coins. The measures given this appellation were still in use in Aristotle's day, and so Aristotle need not have been discussing them in a historical context. Even if he had, it does not follow that he would have associated their creation with the introduction of coinage, just as Herodotos (6.127) before him mentions Φειδώνια μέτρα without any reference to νόμισμα¹⁵³. We might add to Brown's analysis that it is similarly unnecessary to ascribe to Aristotle any specific reference to a pre-coinage money of spits at Argos.

The earliest source for the story that Pheidon invented coinage and struck the very first issue on Aigina appears, in fact, to be Ephoros. His works are lost, but we are told by Strabo that he made such statements¹⁵⁴. The fact that these central parts of the tradition may be traced back to this fourth-century historian gives a strong indication that the Pheidon-Aigina fable has been fabricated. Brown notes that the attribution of inventions to individuals seems to have been characteristic of Ephoros and equally characteristic is the fact that many such attributions are demonstrably false¹⁵⁵. For example, Ephoros accredits the invention of the potter's wheel to the Scythian Anacharsis, who may be placed in the early sixth century. Even without the benefit of archaeological evidence this claim was recognised as patent nonsense in antiquity by Strabo, because the potter's wheel features in Homeric epic¹⁵⁶. Brown next notes that the invention of coinage was an honour which was often appropriated

¹⁵²W. Brown 1950 178 & 199 n4. We may note that even if the etymological point was derived from Herakleides of Pontos, the pupil of Plato, we would still have a fourth century etymology which had been generated within the same broad intellectual circles as that suggested by Aristotle (see below).

¹⁵³W. Brown 1950 178-179.

¹⁵⁴*F. Gr. H.* 70 F176 (= Strabo 8.6.16) & F115 (= Strabo 8.3.33).

¹⁵⁵Brown 1950 194.

¹⁵⁶*F. Gr. H.* 70 F42 cited by Strabo 7.3.9. See W. Brown 1950 194 for further examples of the attribution of inventions to inventors by Ephoros which are clearly false.

for the glorification of various local heroes, such as Theseus, the several individuals named by Pollux, and even Servius Tullius at Rome¹⁵⁷. In the fourth century, much sycophantic attention was directed towards the kings of Macedon, and Brown accepts that one of the products of this interest was the tendentious claim that the ancestry of the royal line included Pheidon, because he was supposedly related to Temenos¹⁵⁸. Pheidon had therefore become a relatively popular subject for research¹⁵⁹.

Ephoros had probably acquired a favourable disposition towards Macedonia from his teacher Isokrates, and Brown conjectures that this combined with his interest in inventions and inventors to produce the Pheidon-Aigina fable through the following process¹⁶⁰. Ephoros knew from Herodotos that Pheidon was accredited with the establishment of standard measures in the Peloponnese. By a stretch of the imagination, this might also imply standard measures of silver, that is coinage. However, Ephoros also knew that the standard coinage of the Peloponnese was not Argive but Aiginetan. Furthermore, there may have been an existing tradition which gave the credit for the invention of coinage to the Aiginetans¹⁶¹. This problem could be overcome if, as seems to have been believed in the fourth century, Aigina was part of the original lot of Temenos, and thereby part of the territory over which Pheidon was reputed to have held sway¹⁶². Under these circumstances, it might be credible that Pheidon issued Aiginetan coins.

We may now deal with that part of the Pheidon-Aigina fable which states that Pheidon issued coins in place of spits, and that when the latter had been collected they were dedicated at the Argive Heraion. As mentioned earlier, it seems most improbable that anyone had the ability in the Archaic period to withdraw one type of money from circulation, "consume" it in the form of a dedication, and replace it with another form of money, entirely at his own expense.

¹⁵⁷W. Brown 1950 195 citing Plutarch *Theseus* 25; Pollux *Onomastikon* 9.83. For a summary of the traditions preserved in literature about early Roman coinage, including that connected with Servius Tullius, see Thomsen 1957 19f.

¹⁵⁸Syncellus 373, 498, 199 (= Diodoros 7 fragment 17 = Theopompos *F. Gr. H.* 115 F393 = Satyros *FHG* 3.165 fragment 21). For Pheidon's relationship to Temenos see also esp. Andrewes 1949 71-72; W. Brown 1950 195; Tomlinson 1972 81.

¹⁵⁹W. Brown 1950 195.

¹⁶⁰W. Brown 1950 196-197.

¹⁶¹W. Brown 1950 178, citing Aelian *Varia Historia* 12.10, who ascribes the invention of coinage to the Aiginetans, but does not mention Pheidon. Brown suggests that this comprises a variant tradition to that found in the Pheidon-Aigina fable.

¹⁶²W. Brown 1950 197 citing *Iliad* 2.562, Pausanias 2.29.5. See also Andrewes 1956 41.

Therefore Brown is surely right to see this as a further fabrication¹⁶³. As regards its origin, the only source from which this detail is known is Orion¹⁶⁴. Brown seems reluctant to regard it as part of the Ephoran concoction, and places it instead in the mind of "*another researcher*", but in this case Brown's scepticism seems unnecessary. We have seen already that the etymology of the obol and drachma was being discussed in the fourth century, most likely leading to the idea that the names for these coins were the same as those for the spit and bundle of spits because the former had superseded the latter as units of money. Ephoros was perhaps aware of this story, and it seems reasonable to conjecture that he would have believed that Pheidon's Aiginetan coinage superseded a spit-money. He would then need to account for what had happened to this, and we may suppose that he imagined that the spits had been collected in and exchanged on a one to one basis for the coins.

There would now remain the question of what happened once the spits had been collected, and the solution reached was that Pheidon dedicated them to Hera at the Argive Heraion. This would have the added advantage of strengthening the link in the story between Pheidon's activities on Aigina, and those in his proper home of Argos. Again, there is no evidence with which to prove that Ephoros was responsible for this particular element of the tradition, but neither is there any clear evidence that he was not. We must infer that the idea that the spits had been dedicated at the Argive Heraion was arrived at by pure guess-work. Brown's suggestion that it sprang from an actual dedication of spits at the Argive Heraion seems unlikely¹⁶⁵. As argued in 4.2.2, the practice of giving bundles of spits as gifts to the gods had ceased by the end of the sixth century. Furthermore, according to Herodotos (2.135), by the mid to late fifth century, the only such archaic bundle of which there was a story to tell, and perhaps the only one which was still visible, was that of Rhodopis. There is certainly no possibility that Ephoros or any other fourth-century historical researcher could have seen the giant bundle or bar from the Argive Heraion (**Appendix B1 S2**), which had become buried by the mid-sixth century.

The arguments proposed by Brown, as modified here, may be criticised on the grounds that they are highly conjectural. Indeed, Brown is prepared to go no further than to state that he has provided "*merely a demonstration of the ease with which the [Pheidon-Aigina] tradition could have arisen*"¹⁶⁶. Against this valid point must be set the greater historical plausibility offered by the scheme proposed, or something very much like it, than that offered by a

¹⁶³W. Brown 1950 193, 197.

¹⁶⁴W. Brown 1950 178.

¹⁶⁵W. Brown 1950 192-194, 197.

¹⁶⁶W. Brown 1950 197.

Pheidonian issue of silver coinage which replaced an existing money of iron spits.

As a postscript, we may note that the production of iron coins at Argos is attested by archaeological finds. However, these cannot constitute an intermediate step between a νόμισμα of spits, or of any other form of iron implement. As argued below (§6.3.3), they comprise a ferrous equivalent to the χαλκοῦς, a base metal coin worth one eighth of an obol, which does not appear until the second half of the fifth century. Iron coins at Argos therefore post-date the introduction of silver coins by a considerable margin¹⁶⁷.

6.3.3 *BYZANTION*

The third ancient centre where it has been said that spits were used as money is Byzantion. The only source for this claim is two passages of Pollux which we have encountered already:

7.105: ...ὀβελοὶ σιδηροί, νόμισμα σιδηροῦν τὸ Λακεδαιμονίων καὶ
Βυζαντίων...

9.78: Βυζαντίων γε μὴν σιδήρῳ νομιζόντων ἦν οὕτω καλούμενος σιδάρεος
νόμισμά τι λεπτόν, ὥστε ἀντὶ τοῦ "πρίῳ μοι τριῶν χαλκῶν" λέγειν "πρίῳ μοι
τριῶν σιδαρέων" ὅθεν καὶ ἐν τοῖς Στράττιδος Μυρμιδόσιν εἴρηται
ἐν τοῖς βαλανείοις προκέλευθος ἡμέρα
ἀπαξάπασα γῆ στρατιαὶ σιδαρέων¹⁶⁸
σιδηρῶ δὲ νομίσματι καὶ Λακεδαιμόνιοι χρώνται, ἐκ πολλοῦ ὄγκου ὀλίγον
δυναμένῳ ὅξει δ' αὐτοῦ τὴν ἀκμὴν εἰς τὸ ἄστομον κατασβεννύουσιν.

Of these two passages, the second (9.78) refers to a small coin called the "iron". Pollux tells us that this got its name on account of the use at Byzantion of iron money which, we are told in the first passage (7.105), was in the form of spits. However, the name of the σιδάρεος was almost certainly not derived from any use of spits as money. The earliest datable mention of σιδάρεοι occurs in the *Clouds* of Aristophanes of 423:

Sokrates: ποίους θεοὺς ὁμεῖ σύ; πρῶτον γὰρ θεοὶ
ἡμῖν νόμισμ' οὐκ ἔστι. Strepsiades: τῷ γὰρ ὄμνυτ'; ἦ
σιδαρέοισιν, ὥσπερ ἐν Βυζαντίῳ; (249).

The scholiast to these lines (*Clouds* 249bα) tells us that Plato the comic playwright, a close contemporary of Aristophanes, made a comparable reference in his *Peisander* (PCG

¹⁶⁷For finds of four iron Argive coins from Nemea see S.G. Miller 1984 184 & Plate 39d & e nos. C3002-5.

¹⁶⁸PCG Strattis fragment 37. Kassel /Austin emend this text as follows:
ἐν τοῖς βαλανείοις προῖκ' ἐλοῦθ' ὀσημέραι
ἀπαξάπασα γῆ στρατιαὶ σιδαρέων.

fragment 103):

χαλεπῶς ἄν οἰκήσαιμεν ἐν Βυζαντίῳ
ὅπου σιδάρεοισι [†]νομίμασι[†].

Clouds 249 is also quoted under "σιδάρεοι θεοί" by the lexicographer Hesychius who states:

"ἐπεὶ οἱ ἐν τῷ Βυζαντίῳ λεπτῷ νομισματίῳ σιδηρῷ καὶ ἐλαχίστῳ ἐχρῶντο".

Hesychius therefore confirms that the σιδάρεος was a small coin. However, the definition given by him under the variant spelling "σιδάριος" is "χαλκοῦς". This was a small bronze coin of low value, and the idea that in Byzantium the σιδάρεος was its ferrous equivalent fits the context well. Base metal coinage first appeared amongst the western Greeks during the second half of the fifth century, and the earliest known example, dating to ca. 435, comes from Akragas. It quickly spread to other parts of Greece. The earliest datable mainland Greek bronze coinage is that of the Macedonian king Archelaus (ca. 413-399)¹⁶⁹. In the eastern Aegean, bronze coinage was in use on Samos and Chios before the end of the fifth century, and in the Chersonese by the first half of the fourth century¹⁷⁰. Given that, as mentioned above, the coinage of Byzantium developed in tandem with that of the north eastern Aegean, the development of a base metal issue there by 423 seems early, but within the bounds of possibility. However, there was an important difference in that the base metal employed in Byzantium was not bronze, but iron. This choice was unusual, but, as we have seen already at Argos (§6.3.2), by no means unique. Moreover, iron coins have been found elsewhere in the Greek world at Tegea, Heraia, Phleious and Thebes, and according to the second book of the pseudo-Aristotelian *Oikonomika* (1348b) were once issued at Klazomenai¹⁷¹.

It is of no surprise that the σιδάρεοι of Byzantium should have found their way into at least two Attic comedies. The introduction of base metal coinage seems to have been a highly contentious issue in Athens during the second half of the fifth century. One Dionysios proposed this measure at some time before he joined in the foundation of Thouria, and his proposal was regarded with such utter contempt by the assembly that he was branded with the derisory nickname "χαλκοῦς"¹⁷². A token value base metal coinage was eventually

¹⁶⁹Price 1968 91.

¹⁷⁰For the introduction and spread of base metal coinage from Magna Graecia see esp. Price 1968. See also Kraay 1976 252-253; Carradice & Price 1988 67, 70, 83; and Picard 1989.

¹⁷¹Gansiniec 1956 401-404, summarised 413; Cartledge 1975 273; Price 1968 100; Pleiner 1969 17; Carradice & Price 1988 91.

¹⁷²Athenaios *Deipnosophistai* 15.669D. See also Price 1968 94.

introduced at Athens as an emergency measure towards the end of the Peloponnesian War in 407/6, though the reluctance with which it was accepted may be inferred from the fact that it was abandoned in 392¹⁷³. Under such circumstances, a coinage which was not even made of bronze, but was made of iron, was surely a subject ripe for ridicule.

Returning now to Pollux, we may note that the discussion of the σιδάρεος (9.78) is preceded immediately by the ancient etymological theory that obols and drachmas were so called because they had superseded spits as money (9.77). The two passages are linked together by Pollux, implying that he thought that the facts which they report were related. Pollux (or his source(s)) perhaps surmised that the name given to the σιδάρεος coin showed that iron had once been used as money in Byzantion. He knew from the ancient etymological theory, combined, no doubt, with the traditions about Sparta, that the form which iron money assumed in "olden days" was spits. These "facts" may have led Pollux to infer back from the coin called "iron" a money of iron in the form of spits¹⁷⁴.

6.4 THE MISSING LINK¹⁷⁵

6.4.1 The Problem

The historical sources relating to pre-coinage spit monies during the Archaic period at Sparta, Argos and Byzantion, therefore prove unreliable, consisting as they do of a mixture of invented traditions and factual misconceptions. As such, the historical sources bring us no closer to understanding why the obol and drachma should have been named after the spit and the bundle of spits. The crux of the problem remains the vast differences between the spit and the obol coin in terms of morphology, weight and value. The latter, in particular, seems to rule out the possibility that there was ever any direct equivalence between the spit and the obol, and therefore that the one superseded the other, either as a form of money which was actually exchanged, or as a type of object which was employed merely as a unit of reckoning (that is, in the same way as, for example, cattle sometimes feature in the Homeric epics). As before (§2.3.4c), we should perhaps stress that we are primarily concerned here only with whether spits acquired a special monetary role comparable to that of early Greek coinage. We need not exclude the possibility that spits functioned as money in its broadest sense in certain social contexts, such as the exchange of gifts in the form of a wide range of prestige

¹⁷³Gansiniec 1956 413; Price 1968 90; Kraay 1976 69-70; Carradice & Price 1988 100-101; Howgego 1995 7-10. Reference to the introduction of base metal coinage at Athens is made by Aristophanes in *Frogs* 717-726 (405 BC), and to its withdrawal in *Ekklesiazousai* 815-822 (392 BC).

¹⁷⁴It is interesting to note that in modern scholarship Price 1968 100 follows a similar line of reasoning about the advent of iron coins in general, believing that spits were used as pre-coinage money in Sparta: *"It is well known that iron spits were in use as currency at Sparta down to the fourth century, and it would seem that these iron coins are an adaptation of the metal of the spits to a coined form"*.

¹⁷⁵I would like to thank Henry Kim for his helpful comments and advice on this section.

goods¹⁷⁶.

6.4.2 The Drachma Theory of Carradice and Price

Carradice and Price approach the problem of the relationship between the spit and the obol from a different perspective. They argue that the equivalence between spits and obols lay in the employment of the same measure for each, namely the drachma or "handful". Other than the concept of a quantity which a hand could clutch, the drachma of silver bore no relation to the drachma of spits. Rather, this measure of silver was determined by the weight, but not the value of, some other commodity, such as grain, "*a natural unit of weight adopted in other places and at other times*". The silver drachma was then subdivided into denominations of one sixth, a regular fraction of the stater, and a natural fraction of the sexagesimal system of division. These sixths were then nicknamed "ὀβελοί"¹⁷⁷.

This theory has significant advantages. It offers a highly plausible explanation as to why the drachma should have been adopted by so many Greek states as a denomination of coinage, but subsequently varied dramatically in weight, even between cities as close to each other as Athens, Aigina, and Korinth. More importantly, it removes the need for the spit and the obol to equate directly in value. However, there are difficulties. Carradice and Price suggest that the sixth fraction of the silver drachma was called after the spit because spits had once been used as units of valuation. Their evidence for this latter supposition comprises "*convincing authority from ancient times*", by which we may infer that they mean the traditions relating to Sparta, Argos and Byzantion. If, as argued above, these traditions are flawed, then Carradice and Price are robbed of their explanation as to why the obol was named after the spit. Furthermore, as also noted previously (§6.1.2e), the drachma, when not applied to coinage, seems to denote a bundle of stick or rod shaped objects around which the hand would be clamped, and not a measure of seeds or similar such particulate material, under or around which the hand would be cupped or closed. The theory proposed by Carradice and Price also requires that the drachma existed as a weight before the advent of coinage but, as we shall see, the evidence suggests that the silver drachma post-dates coinage.

¹⁷⁶The Homeric evidence accords with these conclusions. In the *Iliad* and *Odyssey*, iron does feature several times as a type of money (*Iliad* 6.48, 7.473, 9.366, 10.379, 11.132, 23.261, 23.826, 23.851; *Odyssey* 14.324, 21.10, 21.61.), but on the two occasions on which the form of such money is specified, it comprises not spits, but axes and an unworked bloom (*Iliad* 23.851 (axes and half-axes), 23.826 (bloom)). Moreover, the use of iron as money differs little from that of non-ferrous metals. Iron in Homer performs much the same functions as gold, silver and bronze (but see Adam Brown 1998 on the possible special use and significance of the gold talent).

¹⁷⁷Carradice and Price 1988 91-94.

6.4.3 Morphological Link

Another approach to the problem is to return to the possibility that there was a morphological link between the spit and the obol, but to search for a correspondence which is more tangential. One possible link may be observed in the incuse rectilinear punchmarks found on pieces of bullion from the earliest hoards of coin-like material from the Ephesian Artemision and other sites nearby in Asia Minor¹⁷⁸.

The tool used to make such deep impressions must have been rectilinear in cross-section at one end, if not throughout, and of sufficient length to be grasped and held in place while being struck with a hammer and driven into the precious metal lumps. It also seems likely that the tool had not been purpose-made for the task, because specialised minting equipment can only have developed after the establishment of coinage. Therefore, the tool used for making the early incuse rectilinear punchmarks was probably either already in existence, or was improvised. As may be recalled, one of the principal diagnostic features of the spit is that it is rectilinear in cross-section (§2.2.1). The dimensions of all extant spits have been distorted by corrosion, but some examples do seem originally to have had widths comparable to those of the incuse rectilinear punchmarks¹⁷⁹.

We would not wish to suggest that whole spits were used to make these impressions, not least because unless broken or cut, a spit would not terminate at either end in the necessary flat rectilinear plane. However, it does seem possible that the requisite tool was made from a cut section of a spit. Even if this was not so, we may observe that the form of the tool used for making the punchmarks would have fitted the general idea encompassed by the word ὀβελός, that is a straight, long, thin implement (§6.1.4), and it seems reasonable to propose that the tool may have been called by this name.

The reason for the addition of the incuse rectilinear punchmark was probably that once precious metals began to be processed into units of regularised weight and artificially alloyed, the possibilities for fraud and deception were greatly enhanced. These could, however, be combated by punching the units, sometimes right through, so that the interior of the metal, and thereby its consistency, was exposed¹⁸⁰. We may imagine that for this reason, punched units of bullion would be preferred to plain units in financial transactions, and that

¹⁷⁸E.g. the hoards referred to as "Colophon 1940s", "Ephesus 1970", "Priene, *IGCH* 1157" and discussed by Spier 1998.

¹⁷⁹E.g. the more slender examples recovered from Artemis Orthia, some of which measure 5mm x 5mm: personal observation based on material from the old British excavations stored in the Archaeological Museum at Sparta. I am grateful to Richard Catling for granting me the opportunity to study the relevant finds.

¹⁸⁰Carradice & Price 1988 25; Karwiese 1991 20-21.

there would be a desire to differentiate the two, especially for the purposes of negotiation. The punched units would therefore need a label, and it seems possible that they took their name from that of the tool with which they were marked, itself being called an ὀβελός on account of its shape. This nickname may have been carried over into coinage proper, given that an ὀβελός-shaped tool was probably also used in the production of early coin types, which tend to have a square outline or frame, such as the "Union Jacks" of Aigina, or the "Owls" of Athens. We need not infer that this nickname was adopted universally throughout the proto-coin and coin-using Greek world.

The above theory again has the advantage that it explains the link between the spit and the obol without implying any equation between the two in terms of monetary use or value. However, the incuse rectilinear punchmark is not specific to one particular weight or denomination of "proto-coinage" bullion, nor is the rectilinear frame of early coin types specific to the obol. The hypothesis of a spit-shaped minting tool cannot therefore explain why, of all the multifarious fractions of electrum or silver bullion or coinage, the term "obol" should have been applied to just one.

6.4.4 Spits and Bundles of Spits as a Visual Analogy

Another approach to the problem is to consider the effect of the introduction of the obol and drachma as denominations of coinage. We shall begin by seeking to establish whether the obol and drachma were introduced as named measures of bullion before or after the inception of coinage. The evidence from which this question may be answered is limited, not least because the names of the denominations of Archaic coinages are seldom known to us¹⁸¹. However, a plaque from Ephesos dated ca. 550 refers to minas, staters, sixths and twelfths¹⁸², and we may infer tentatively from this that obols and drachmas were not features of the early coinages of Asia Minor. On the other side of the Aegean, an inscription from Eretria dated ca. 525 also refers to staters. Coinage was not issued at this city until ca. 500, and so we may again infer that the pre-coinage measure of bullion used here was the stater, and not the drachma and obol¹⁸³. We may also note that the third is a common fraction of the early Euboian stater¹⁸⁴, and that this cannot be expressed as a whole number of drachmas, a surprising feature if the latter were already in use as a weight of silver or denomination of coinage.

¹⁸¹Kraay 1976 7.

¹⁸²Jeffery 1990 344 No. 53 (commentary 399); Kraay 1976 316.

¹⁸³von Reden 1997 158 referring to *IG* 12.9.1273-1274.

¹⁸⁴Kraay 1976 329.

The only city at which there is possible evidence that the drachma existed as a weight of silver before the introduction of coinage is Athens. The evidence comprises a selection of Solonian laws specifying penalties and rewards in numbers of drachmas¹⁸⁵. Solon was archon in 594/3 (or 592/1), and the first issue of *Wappenmünzen* cannot be put before ca. 550¹⁸⁶, so these drachmas cannot refer to denominations of Athenian coinage. It is tempting, therefore, to infer the existence of the drachma, and perhaps also the obol, at Athens as pre-coinage weights. However, archaeological excavation has as yet produced no weights inscribed "drachma" or "obol" from Archaic or early Classical Athens¹⁸⁷. It seems pertinent to add here the general point that, other than for coinage, the obol is not attested as a weight before the end of the fifth century, when it begins to appear in this guise in medical writings such as the Hippocratic corpus¹⁸⁸. In turn, the earliest attested use of the drachma as a weight for anything other than silver appears to belong to the first-century AD medical writer Archigenes, who is cited in the second century AD by Galen¹⁸⁹. We might therefore conclude that the laws are spurious or have become attached to Solon erroneously, as have a number of other laws¹⁹⁰.

However, there is a third possibility. We may infer the use of bullion as pre-coinage money at Athens as a necessary precondition for the transition to coinage proper. Furthermore, the employment of silver in this way seems to be reflected in references to ναυκραρικὸν ἀργύριον in other Solonian laws¹⁹¹. Such pre-coinage bullion would be reckoned by weight, and in the absence of the drachma or obol measure, the unit of reckoning was surely that apparently used elsewhere in pre-coinage Greece: the stater, "weigher", of silver. It seems reasonable to suppose, therefore, that if Solon wrote the laws cited by Plutarch (*Solon* 23) setting out prices, rewards and penalties, he must have expressed the sums of money in staters and fractions of staters.

This conclusion leads us to the question of the weight of a stater of silver at the time of Solon, and how this related to a stater of other commodities. Official weights discovered

¹⁸⁵Plutarch *Solon* 23.

¹⁸⁶Kroll & Waggoner 1984 327-332.

¹⁸⁷Grayson 1974 309.

¹⁸⁸See **Appendix F**.

¹⁸⁹Tod 1960 9, cf. Grayson 1974 309.

¹⁹⁰Osborne 1996 220, 222.

¹⁹¹Andrewes 1982 383, Kroll & Waggoner 1984 332 citing the Aristotelean *Athenaion Politeia* 8.3 and Lysias 10.18.

during the excavation of the Athenian Agora suggest that these weights diverged at some point near the time of Solon¹⁹². This divergence may be related to the Solonian reform mentioned in the Aristotelian *Athenaion Politeia* (10), which seems to have entailed some sort of modification of Athenian weights and measures of silver and other commodities¹⁹³. However, if we infer as a working hypothesis that the Solonian commodity weight stater used for measuring silver was the same as that used later as the basis for Athenian coinage, that is ca. 862g, then we may imagine that the rewards, penalties and prices cited by Plutarch (*Solon* 23) may have been expressed originally as follows:

reward for the bringing in of a wolf: 1/36 weight stater (= ca. 5 drachmas),
one fifth of this amount for the bringing in of a wolf-cub;

penalty for the rape of a freeborn woman: 1/2 weight stater (= 100 drachmas),
one fifth of this amount if the woman was seduced;

reward for a victor at Isthmian games: 1/2 weight stater (= 100 drachmas),
five times this amount for a victor at the Olympian Games;

price of a sheep and a bushel of grain for a sacrifice: 1/192 weight stater (= ca. 1 drachma);

price of an ox: 1/36 weight stater (= ca. 5 drachmas),
one fifth for the price of a sheep.

As a final step, it is also necessary to infer that Solon's laws were revised or at least edited after the introduction of coinage, and that the Solonian rewards, penalties and prices expressed in staters were translated into sums of drachmas. This does not seem impossible, and a revision of the Solonian code has been postulated by some scholars¹⁹⁴. Moreover, the consistent use of the same factor of multiplication or division would greatly facilitate the rendering of the sums into drachmas.

The limited evidence available suggests that throughout the Greek world bullion, and

¹⁹²Lang & Crosby 1964 esp. 18-21, but see Grayson 1974 esp. Chapter Three, for a rather different interpretation of the same data. Grayson argues that silver was the first commodity to be measured according to a weight standard, and that the standard weight stater for other commodities was a later development. Grayson also argues that most of the variations in stater weights discussed by Lang & Crosby are due to metrological imprecision rather than variations in an official standard stater.

¹⁹³For a discussion of the Aristotelian *Athenaion Politeia* 10 see esp. Lang & Crosby 1964 2f, Kraay 1976 331, Andrewes 1982 382-384, Kroll & Waggoner 1984 326-333, Rhodes 1993 163f (comm. ad 10.2-3).

¹⁹⁴See Rhodes 1993 133 & 133-134 n9.

subsequently coinage, were originally measured in the same way as most other commodities, by the stater. The obol and drachma denominations were therefore a later development¹⁹⁵, and we must now consider the motive behind their introduction. The answer to this question seems relatively straightforward. It seems clear that from the inception of coinage small denominations were in high demand. Early hoards from Asia Minor show that fractions as small as 1/192 of the coin stater were mass produced by the million¹⁹⁶. Furthermore, it seems likely that the terminology with which such fractions were referred to was extremely cumbersome. As mentioned previously, little may be said at present about the names given to denominations of early coinage, but something is known of the terminology used at Athens between the late sixth and third centuries to refer to the general commodity weight stater, its multiples and fractions. The full sequence, compiled by Grayson, shows that in fractions, the denominator was expressed not as an ever larger number, but as an ever decreasing sub-division of the third or quarter, hence the twelfth and sixteenth are called the ἡμισυημίτριτον (half-half-third) and ἡμισυημιτετάρτη (half-half-quarter) respectively¹⁹⁷. If the terminology for fractions of the coin stater followed the same principle, then the 1/192nd fraction would have been expressed as a "half-half-half-half-half-half-third".

Drachma and obol denominations simplify this system by adding units below the stater, thereby decreasing the number of fractions required and increasing the size of the fractions of the smallest named unit. In some coinages, such as that of Athens, the half-stater becomes the drachma, the half-half-third stater the obol, and the size of the denominator in the fractions of the smallest unit is reduced by a factor of twelve. In other coinages, such as that of Corinth, the third-stater becomes the drachma, the half-third-third stater the obol, and the size of the denominator in the fractions of the smallest unit is reduced by a factor of eighteen. Drachma and obol denominations also regularise the fractions below the level of the half or third stater, because the drachma was invariably divided into six obols¹⁹⁸. The result is a system which is better adjusted to the small fractions of the stater in which coinage had come to be used from an early stage in its development. Moreover, we may note that the introduction of the obol denomination was not the final stage in this process, which culminated in the fifth century with the arrival of the chalkous, representing one eighth of an obol. The full sequence of changes may be illustrated from the 1/192nd stater. In coinages where the coin stater was divided into two drachmas, the 1/192nd became at first one sixteenth of an obol, and finally one half of the chalkous.

¹⁹⁵Cf. J.M. Jones 1986 72.

¹⁹⁶Howgego 1995 7, referring to recent research by Henry Kim.

¹⁹⁷Grayson 1974 224.

¹⁹⁸Carradice & Price 1988 91, 93.

It seems reasonable to suggest that the drachma and obol denominations were introduced to have precisely those benefits which have been outlined above: that a decision was made to tidy up the system of coin staters and fractions of coin staters through the creation of two new named units below the stater. The larger of these was set at one half or one third of the stater, and the smaller at one sixth of the half or third.

If we ask why these fractions were chosen for the new denominations, we may explain the relationship between the larger and lower units by the long established tradition in antiquity of using the sexagesimal system of division, of which the sixth is a natural fraction¹⁹⁹. The reason why the relationship between the drachma and the stater does not adhere to the same scheme is more difficult to explain. It seems likely that the amount of silver represented by the half or third stater was already *de facto* a common unit, and /or that this was true of the amount represented by what became the obol. Certainly, large numbers of coins from some of the early hoards in Asia Minor weigh about one gramme²⁰⁰, which approximates to the obol measure. However, it seems equally likely that the drachma and obol denominations proved useful as units of account to an authority wishing to deal in such sums, perhaps when defining standard payments for goods and services, rewards and punishments.

Having decided on the fractions of the stater at which to set the new denominations, it would next be necessary to think up short, convenient names by which to refer to them, and preferably names which would express the relationship between the two. The spit-shaped tool used for producing incuse rectilinear punchmarks and early types may have brought the word "ὀβελός" to mind, or perhaps, as proposed speculatively above, this label had already been applied to coinage unofficially to some extent. However, what made the terms for "spit" and "bundle" appropriate for the new denominations was possibly that they offered a fitting visual analogy for the concept of the obol and drachma.

This inference is suggested by the iconographical evidence, where the bundle of spits is regularly depicted as a single entity, though we can see that it is made up of a number of identical units²⁰¹. Moreover, the archaeological finds of miniature spits from Sindos, dating to the late sixth and early fifth centuries, indicate that the depiction of bundles in this way was not merely an artistic convention²⁰². Therefore, a bundle of spits of this sort equates to the drachma coin in that it stands as a whole unit in its own right, but may be divided into a

¹⁹⁹Carradice and Price 1988 22, 93.

²⁰⁰See esp. e.g. the hoards from Kolophon, Ephesos and Priene discussed by Spier 1998.

²⁰¹See for example **Appendix E J1 - J9** and **K1** and accompanying **Figures 5.J6, 5.J9** and **5.K1**.

²⁰²For the miniature bundles of spits from Sindos see §2.2.5.

number of equal parts which then also stand as units in their own right. At this level, the only substantial difference between the drachma of spits and the drachma coin is that the latter cannot be split without physical modification into the smaller obol unit. We may add that not only would the spit and bundle of spits have presented an ideal visual analogy with which to explain and remember the concept of the obol and drachma, but they would have the advantage of being immediately familiar through the widespread common use of the spit for cooking.

CHAPTER SEVEN

SPITS BEYOND THE PRE-COINAGE MONEY QUESTION

7.1 LIBERATING THE SPIT

7.1.1 Interim Conclusions

On the basis of the material and arguments presented in the chapters above, we may conclude that there is no convincing evidence that spits were used in Archaic Greece as a favoured form of pre-coinage money. Nevertheless, we would stress that we do not exclude the possibility or probability that they belonged to the wide and varied repertoire of goods which do seem to have functioned as pre-coinage money in its broadest sense, such as tripod cauldrons, precious metal vessels, women, slaves and livestock.

The case may not be stated more strongly, because many of the critical issues or "facts" resist definition, or have a certain plasticity. Much of this plasticity is attributable to problems inherent to the sources, such as the selectivity of what has been preserved. Other problems are more specific to each source, such as: the formation of the evidence and the determination of its chronology in archaeology; the stylisation of images in iconography; and the veracity of historical information in the written evidence. In particular, a number of questions vital to the acceptance or rejection of the interpretation of the spits as pre-coinage money have proved difficult to answer:

How many spits have been revealed by archaeological excavation but have not been recognised, recorded, or published?

How closely does the archaeological distribution of spits reflect the true distribution of spits, especially during the period for which no other sources are available?

What were the original lengths and weights of those spits which are known from the archaeological evidence, but do not survive intact?

Who originally brought the bundle discovered by Waldstein to the Argive Heraion, why and when? How long after this did the bundle become buried in the ground?

Who was Pheidon, what did he do, and when did he live? Did he exist at all? Was there one Pheidon, or were "multiple Pheidons" responsible for the various traditions about Pheidon?

Or general questions of a different kind:

How may we define ancient "money"? In what sense, if any, did the Greeks have "money" before coinage? What did the Greeks use as "money" before coinage? When, where, and how did coinage develop?

The lack of firm answers to such questions allows the evidence to be massaged into a case that spits may have been used in some sense as a favoured form of pre-coinage money in Greece. However, any such case must confront the series of serious objections detailed in the preceding chapters:

no localised standard sizes, types of spit, or denominations (duodecimal or otherwise) may be identified;

it is difficult to imagine a situation in which the value of one spit could have equated to the value of one obol coin;

the literary attestations to the use of spits as money in the Archaic period are highly problematic.

This negative conclusion may appear to render Archaic Greek spits very much less interesting than they might otherwise be¹, but the effect is perhaps more liberating than limiting, because we may break free from the pre-coinage money question and begin to consider the spits in other ways.

7.1.2 Towards a New Agenda

This thesis presents a self-contained artefact study of the Greek spit. Such studies form the basic building blocks of archaeological syntheses, and as such need no further justification. If one of the main criticisms is that they often *"become an end in themselves, innocent of both questions and answers, like the ... Beachcomber's List of Huntingdonshire Cabmen"*, then we have attempted here to take account of wider issues, including the context and formation of the evidence, and the ways in which different types of evidence relate to each other².

The structure and bias of each of these different types of evidence, archaeological,

¹This is especially true of the original question which directed me to the study of spits. I was interested in trying to identify ideological attitudes to iron in the Early Iron Age, and the use of this metal as money would have been of central importance to this subject.

²See Bradley 1990 xiii on the merits and limitations of the artefact study.

iconographic, epigraphic and literary, is illustrated by their synthesis³. In particular, the study of Archaic Greek spits demonstrates the extent to which the archaeological record can be meaningfully constituted, that is created or structured by choices made in antiquity about what to allow to become buried in the ground. There is evidence that spits were commonly used for roasting meat throughout Greece from before the Early Iron Age to Late Antiquity and beyond. However, the distribution of spits in archaeological contexts offers a poor reflection of this longevity and popularity: the finds are concentrated within a distinct chronological horizon lasting from the eleventh /tenth century to the sixth /fifth century, and within this horizon, are limited to particular types of site, periods of time and regions. For example, with the one possible exception of Geometric Pylos, spits are absent from domestic contexts in settlements in Greece (Sardis is a Lydian /non-Greek context) and have been discovered only in funerary or sanctuary contexts, where they came to be deposited almost always as a result of deliberate and conscious acts, rather than by accident. Moreover, even at these sites, spits are often represented by a single find, as at Lefkandi and Poseidi, or belong to a relatively short phase of deposition, as at Argos and Artemis Orthia. Sites such as the cemeteries around Knossos, at which the deposition of spits appears to have continued for a number of successive generations, provide the exception rather than the rule. However, it is the negative evidence which proves most telling, especially at Athens, where the popular use of spits is well attested by *escharai*, vase paintings, inscriptions and literary texts, but only one site from the Archaic period has produced spits⁴.

The study of Archaic Greek spits illustrates equally well the selective nature of the iconographic, epigraphic and literary sources, and illustrates the advantages of the holistic approach. No one strand of evidence tells anything approaching the whole story, and so our understanding of the spit is enhanced considerably when these strands are woven together. However, the study also demonstrates the need to avoid carrying the synthesis too far, especially where the evidence is derived from sources which are not contemporary nor distributed evenly across the area and chronological period being studied, and where the phenomenon being examined, and the behaviour associated with it, changes and evolves over time. In such a situation, the comparison may be inappropriate. For example, the archaeological evidence from the Geometric Period gives a very different impression of the value of a metal spit to that supplied by the literary evidence from the Classical Period⁵. Such disparities are disconcerting, especially where almost all the evidence for a certain aspect is contained in one type of source. So, the way in which spits were used for cooking

³The issues raised here concerning the evidence and methodologies for the study of Archaic Greece are not new: see for example I. Morris 1998 1-10.

⁴Knigge & Rügler 1989 85 report a find of spits from the Kerameikos, but it belongs to the third century AD.

⁵See §8.1.

meat is known mostly from Attic painted vase scenes of the sixth to fourth centuries, but how closely does this evidence represent the way in which spits were handled in, say, Cypro-Geometric Cyprus? It is necessary to avoid the temptation to over-generalise and produce a homogenised picture of the spit which is so far removed from the specifics of the evidence as to bear too little relation to them.

The need to avoid over-specialisation is also demonstrated. The division of the evidence for spits between the specialisms of archaeology, epigraphy, iconography, literature, historiography and numismatics has sometimes resulted in scholars being unable to "see the wood for the trees". For example, the tradition that spits were used as a form of pre-coinage money at Sparta has been recognised for some time as an invention of the fourth century, but this conclusion has not always percolated through to the archaeological evidence: recently Strøm (1992) explored the possible role of spits as pre-coinage money without ever discussing the historiography of the texts which suggest this interpretation. Even within the specialisms, the "right hand does not always know what the left is doing". For example, W. Brown, having argued so persuasively that the tradition connecting spits with Pheidon, Aigina, and the invention of coinage is thoroughly unreliable, proceeds to accept without question that spits were used as pre-coinage money in Sparta and Byzantion⁶.

The study of Archaic Greek spits also illustrates the way in which the agenda for the interpretation of the archaeological evidence has been dictated by ancient texts and continues to be so. This is true here as much of those who have sought to verify the story that spits functioned as a form of pre-coinage money as it is of those (including myself) who have argued against the story. Whether or not the conclusion that the latter group present the stronger case is accepted, it seems clear that the spits may be studied in ways which are not generated from the texts.

One avenue for exploration would be to examine in more detail the social behaviour associated with the spits in terms of their use, their role within the material culture of Archaic Greece, and how this changed over time. Why did the roasting spit become more important at the very end of the Bronze Age and the beginning of the Iron Age, as indicated by the decision to invest metal in such artefacts and enrol them in acts of conspicuous consumption? Why were spits apparently not regularly made of metal before this time in the Aegean World? Why is the metal spit important in the archaeological record of some regional cultures of Greece, but not in others? Are the variations in the distribution patterns governed by regional and chronological differences in the practices of depositing goods deliberately in the ground, or changes in the role and status of the spit and /or the act of roasting meat?

⁶W. Brown 1950 190.

What accounts for the sudden fashions in the deposition of spits, for example in Middle to Late Geometric Argive Graves, or seventh-century Artemis Orthia? The data which has been assembled above provides the foundation with which such questions could be addressed, though no attempt will be made to do so here as the scope of the enquiry would be too substantial to attempt within the confines of this thesis.

7.2 SPITS AND ARCHAIC GREEK IRON

7.2.1 The Iron Character of Greek Spits

The final section of this thesis explores one of the defining characteristics of Archaic Greek metal spits: that they were almost all made of iron. Of the non-ferrous metals, bronze spits are known, but they date either to the Late Bronze Age /beginning of the Iron Age⁷, or are attested from the third century onwards (§6.2.2). The fact that this was a very Greek characteristic, may be emphasised by a selective survey of extant metal types⁸ of spit from around the Iron Age Mediterranean world.

7.2.1a East of the Aegean and Cyprus

In Lydia, as seen above, iron spits of Aegean type have been found in seventh and sixth-century contexts at Sardis (§3.2). Iron objects of similar form have also been found in Phrygia at Gordion in burials of ca. 700⁹. There is also some possibility that fragments of spit-like implements have been found in the Levant in contexts dating to Iron I (ca. 1200 to ca. 1050) at 'Ai (et-Tell)¹⁰, Gezer (Tell Jezer)¹¹, and Khirbet Raddana¹². However, it seems that in the Ancient Near East, metal roasting equipment more usually comprised the bident or trident of iron or bronze. In Anatolia, an iron bident was found at Gordion in the same context as some of the putative spit fragments mentioned above¹³. In the Levant, an iron

⁷See §2.1.1 & §2.2.1a. The two later finds from Kition and Olympia are of the same type as the Cypro-Geometric bronze examples, and were recovered from contexts of secondary deposition. It seems likely therefore that they survived above ground for exceptional periods of time.

⁸For the use of non-metal spits in the Iron Age or before see §2.1.1 on Greece and the Near East, Krämer 1966 and Gomez de Soto 1993 on prehistoric Europe.

⁹R. Young 1981 27 no. TumP 42 = ILS 232 & fig. 16C, and 28 ILS 755 & fig. 17D, discussion 29. The artefacts belonged to the burial of a child in Tumulus P, and associated goods included bronze cauldrons and offerings of food and drink.

¹⁰Waldbaum 1978 25 reporting on find no. 0-12, B XXXVII.

¹¹MacAlister 1912 vol. 1 330 & 331 fig. 171 no. 10 from Gezer Tomb 59: see Dothan 1982 53 for the dating.

¹²McNutt 1990 173.

¹³R. Young 1981 27 TumP 41 = ILS 231 & fig. 16A, and 29 for further possible fragments from Tumulus K-III.

trident was discovered at Lachish in Tomb 521, dated ca. 1000¹⁴, and an iron bident was found at Tel Halif in an eighth century context on the floor of the chamber of a cave used for burial¹⁵. Further east at Sialk in the region of Iran, twelve bronze bidents, one iron bident, and one iron trident were distributed amongst nine graves of the ninth to eighth centuries¹⁶. Iron Age bronze bidents have also been found at Khirvin and Kalakent, and iron bidents at Hasanlu¹⁷.

These Near Eastern examples of metal roasting equipment raise the important question of whether Cypriot and Aegean spits owed their origin to the east. However, it will suffice for our purposes to note that the Greeks gave the roasting spit a distinctive form, making it their own, and that an intrinsic part of this form was its realisation in iron.

7.2.1b Italy¹⁸

West of the Aegean and Cyprus, metal spits are found in Italy from the late ninth /early eighth century onwards¹⁹. The number of finds up to and including the sixth century, and the number of contexts and sites from which they have been reported may be summarised from a catalogue compiled by Kohler & Naso (1991):

¹⁴Tufnell 1953 222 & plates 40.7 & 56.38.

¹⁵Biran & Gophna 1970 166 & plate 38 B; 167-168 for the dating.

¹⁶See Ghirshman 1939 53-54. Bronze bidents: plate 57 S.843 a & b (Tomb 15); plate 59 S.622 (Tomb 21); plate 62 S.768 (Tomb 25); plate 65 (& plate 24 no. 10) S.867 (Tomb 38); plate 68 S.711 a & b (Tomb 52); plate 73 S.932 (Tomb 66); plate 75 S.911 (Tomb 74); plate 77 S.969 & 968 (Tomb 78); plate 78 S.965 (Tomb 94). Iron bident: plate 68 S.723 a & b (Tomb 52). Iron trident: plate 57 S.845 a & b (Tomb 15).

¹⁷For Khirvin see Vanden Berghe 1964 27 & plate 39 no. 272, who also refers also to the finds from Kalakent. For Hasanlu see V. Pigott 1981 155.

¹⁸An attempt has been made here to take account of the chronological scheme for prehistoric Italy proposed by Pacciarelli 1999 esp. 63, which is based largely on correlations with prehistoric contexts in Switzerland with dendrochronological dating. The general effect is the raising of the dating of the Italian Iron Age.

¹⁹Cf. D'Agostino 1977a 18; D'Agostino & Gastaldi 1988 76.

Region	q. spts	q.cx C9/8	q.cx C7	q.cx C6	q.cx C ?	T. cx	N. sit
I Latium /Campania	57 +n	11	8		3	22	13
II Apulia /Hirpini	n		1			1	1
III Lucania /Bruttii	22 +2n		2	7		9	6
IV Sabini /Samnium	1	1				1	1
V Picenum	33 +n		4	9		13	7
VI Umbria	7			2		2	2
VII Etruria	100 +26n	6	32	24	1	63	18
VIII Aemilia	6	1		1	1	3	2
TOTALS	226 +31n	19	47	43	5	114	50

Key: **n** number unspecified /uncertain; **q.spts** number of spits; **q.cx** number of contexts; **C7** seventh century, etc.; **T.cx** total number of contexts²⁰; **Nsit** number of sites.

Spits therefore appear in Italy at about the same time that contact with Greece intensifies²¹. There is evidence that this fact is not coincidental, and that the idea of using metal for the manufacture of roasting spits was one of the many innovations brought to Italy at this time from Greece²². The early finds are concentrated in coastal areas²³, which would be consistent with the importation of the archetype from overseas, and the inscription at Torricella (**Appendix B1 S.epig.3**) and archaeological finds from the Poseidonian Hypogaeum

²⁰One "context" here = one grave or one sanctuary deposit or one settlement site.

²¹For an Italian perspective on this contact see in general Pallottino 1991 esp. 59f. For a specific example of the coincidence between the appearance of metal spits and of Greek material in the archaeological record, see Toms 1986 62 on Quattro Fontanili.

²²See for example D'Agostino 1990 on hoplite equipment. Note, however, that he argues that the transmission was limited mainly to the forms of the artefacts, and did not extend to the adoption of the associated behaviour of hoplite methods of fighting. Likewise with the metal spits, we must ask whether they brought with them Greek modes of feasting or were used in the articulation of existing customs.

²³Kohler & Naso 1991 42 and distribution maps.

(**Appendix B1 S22**) show that metal spits were in use in Italy in Greek cultural contexts by the sixth century.

However, the most convincing evidence that the idea of the metal spit was transmitted from Greece to Italy is supplied by typology, as may be illustrated with selective case studies²⁴. One of the earliest native sites in Italy at which spits have been found is the cemetery of Quattro Fontanili near Veii. Of the six hundred and fifty-one tombs excavated at this site, metal spits were found in fourteen²⁵, the earliest of which, EE10B, Toms (1986) places late in her phase IIA (ca. 850 to 810 in Pacciarelli's 1999 chronology). The spits from this group of finds show a clear overall similarity to Greek types in that they comprise simple bars of metal with a point at one end, and a handle at the other. More importantly, the examples from Tombs HH7-8 and EE17-18 correspond with the rolled type found at Olympia, Philia and Sardis (§4.2.3). That this type is Greek seems evident from the clear chronological precedent of the types with which it is associated at each of these Aegean sites, and that while we may conceive that an Italian spit may have reached Olympia or Philia, Sardis is a much less likely destination. Further examples of the rolled type have been found in Italy at Pontecagnano, the earliest in Tomb 3184, dating to Phase IIB²⁶ (ca. 810-750 in Pacciarelli's 1999 chronology), and later examples in Tombs 926 and 928 dating to the Orientalising Period²⁷. Other types of Greek spit or close relatives are also known in Italy. Again at Pontecagnano, aside from the examples of the rolled type several spits were found in Tombs 926 and 928²⁸ which are similar in form to the lanceolate types attested at Argos, the Argive Heraion, Emborio, Kalapodi, Olympia, the Samian Heraion, Spartan sanctuaries, and ?Sardis (§4.2.3).

²⁴It would, of course, be desirable to examine the spits from all of the contexts catalogued by Kohler & Naso 1991, but such an extensive task can not be accommodated within the confines of this thesis.

²⁵The numbers of spits, the materials from which they were made, and the tombs in which they were found at Quattro Fontanili are as follows (the tombs are listed in the order and with the chronology with which they appear in the seriation chart of Toms 1986): **IIA: EE10B**, two bronze spits (*NSc* 1965 138-146 A.C. Batchvarova). **IIB: EF11-12**, one bronze spit (*NSc* 1975 130-138 M. Bedello & E. Fabricotti); **Z1a**, two bronze spits and one *iron spit (*NSc* 1970 283-296 M. Franco, P. Mallett, A. Wachter); **CC1-2**, two bronze spits (*NSc* 1972 218-223 L. Brizio, M. Meaghes, M. Pandolfini); **Z15A**, one iron spit (*NSc* 1965 171-177 A.C. Batchvarova); **HHII9**, one iron spit (*NSc* 1965 198-199 A.C. Batchvarova); **G8-9**, two bronze spits (*NSc* 1975 99-106 M. Bedello & E. Fabricotti); **HH11-12**, one bronze spit (*NSc* 1965 123-138 A.C. Batchvarova). **IIC: LL12-13**, two bronze spits (*NSc* 1963 241-248 J. Close-Brooks); **HH6-8**, one iron spit (*NSc* 1967 252-258 M.T. Falconi-Amorelli); **HH7-8**, one iron spit (*NSc* 1965 189-192 A.C. Batchvarova). **Not seriated in Toms 1986: IIB: FFGG10**, one iron spit (*NSc* 1965 186-187 A.C. Batchvarova). **II?: EE17-18**, two bronze spits (*NSc* 1975 182-3 M. Bedello & E. Fabricotti); **JK8-9**, two bronze spits (*NSc* 1972 363-366 A. Morandi). **Note:** *iron spit denotes spits reported with an iron core and bronze skin, though it is not clear whether this phenomenon comprises an illusion created by the processes of corrosion.

²⁶De Natale 1992 49, D'Agostino & Gastaldi 1988 76.

²⁷D'Agostino 1977a 10 nos. R13 & R14 & fig. 3.

²⁸D'Agostino 1977a 10 R3-12, 13 R 9-18 & fig.s 4 & 5.

At Populonia, a tomb of the sixth century produced a spit²⁹ of the crescent type attested at Dodona, Nemea and Olympia (§4.2.3)³⁰.

Overall, however, examples of Greek types appear to be rare in Italy, and it seems that from the very beginning the archetype was typically converted into a native form through various modifications. For example, at Quattro Fontanili, one such modification comprised a variation in form. The spits from nine of the tombs mentioned above from this site, including that from EE10B, are of a type in which the shaft has been twisted for about one eighth of its length below the rolled handle³¹. Another modification entailed the abandonment of the square cross-section in favour of the round³² (a trait which raises interesting questions about possible differences between Greek and Italian modes of deploying spits). A third modification entailed the use of non-ferrous metals in place of iron³³.

The extent to which this last variation features in the spits of Italy may be discerned from information given by Kohler & Naso (1991):

Reg.	I	II	III	IV	V	VI	VII	VIII	T
no. spits	57 +n	n	22 +2n	1	33 +n	7	100 +26n	6	226 +31n
no. n-Fe	0	0	3	0	1	0	35 +n	0	39 +n
% n-Fe	0	0	11	0	3	0	22	0	13

Key: **Reg.** region; **n** unspecified number; **n-Fe** non-ferrous = % percentage of spits made of non-ferrous metals (where n = 1).

Kohler and Naso generalise that the proportion of non-ferrous spits to iron spits was roughly 1:4³⁴, though we may note from the table above that the proportion varied between regions.

²⁹Buonamici 1931 308 & plate 13 no. 1.

³⁰The question of the origin of the Italian metal types is raised by D'Agostino & Gastaldi 1988 76. Kohler & Naso 1991 45 argue that the development of spits in Italy was independent of Greece, but they overstate the differences between Greek and Italian spits, underplay the similarities, and do not take advantage of the material offered here.

³¹EE10B, EF11-12, Z1a, CC1-2, Z15A, HH11-12, LL12-13, HH6-8, JK8-9. Note: the form of the remaining finds at the site (HH11-12, G8-9 and FFGGI0) could not be discerned due to corrosion.

³²EE10B, Z1a, CC1-2, LL12-13, and JK8-9 (note: CC1-2 also has a spit with a square cross-section). The spits are all made of bronze.

³³EE10B, EF11-12, Z1a, CC1-2, G8-9, HH11-12, LL12-13, EE17-18, JK8-9 (all bronze).

³⁴Kohler & Naso 1991 46, but note that their calculations include firedogs.

In particular, in Latium/Campania (I), all of the finds are iron, but in Etruria (VII), nearly one third are non-ferrous. Non-ferrous spits were almost always made of bronze, though some spits were made of copper³⁵, and one find perhaps of lead³⁶.

7.2.1c Elsewhere

In Iberia, bronze spits appear from the seventh century onwards. In overall form these closely resemble Greek types, from which they are probably derived, though the Iberian versions differ in that the surface of the handles has been decorated, and the "grip" has been made into two sizable "wings". It is also significant that the Iberian bronze spits appear in a metallurgical context in which "*extensive use of iron artefacts can be detected*"³⁷, indicating that manufacture from bronze instead of iron was a matter of choice.

A rather different type of spit is also found in the Mediterranean. Made of bronze, it comprises a spit which could be turned along its short axis within an integral stand. The archaeological distribution of this "articulated" type is concentrated in the western Mediterranean and north-western Europe, including the Iberian Peninsula, France and southern Britain, though it has also been found as far east as Sardinia, and on Cyprus in a recently excavated Cypro-Geometric tomb at Amathous³⁸.

7.2.1d Iron vs. Bronze in Spits

The survey could continue³⁹, but the material presented so far is sufficient to demonstrate that the manufacture of a spit from iron was central to the definition of the Archaic Greek type. The existence of bronze types outside Aegean Greece and Cyprus also demonstrates that, as indicated elsewhere⁴⁰, the choice of iron was not dictated by necessity. It is true that an iron spit and a bronze spit would have different properties, bronze being more conductive of heat than iron, with the result that heat would be transmitted more readily from point to handle along a bronze spit than along an iron spit. However, in practice it seems that spits of both metals became too hot to hold comfortably, as indicated by the addition of heat-insulating handles to spits of bronze and iron alike. Bronze spits with traces of wooden handles have

³⁵Kohler & Naso 1991 cat. nos. 121 and 122 (Narce Tomb 18 = one spit, and Narce Tomb 25 = two spits).

³⁶Kohler & Naso 1991 cat. no. 65 (Tolfa "Tomb of the Firedogs" = ?two spits).

³⁷For the Iberian spits see Gamito 1989 148-153.

³⁸For the type and its distribution see: Karageorghis & Lo Schiavo 1989; Gomez de Soto 1993 194f; Kristiansen 1998 147 fig. 73 no. 3.

³⁹Spits in some other areas bordering the Mediterranean seaboard of southern Europe are referred to by Gomez de Soto 1993; Bouzek 1997 216; and Kristiansen 1998 145, 147, 152.

⁴⁰See §2.1.1 and §6.2.2.

been found on Cyprus, and iron spits with traces of wooden handles again on Cyprus and also on Krete. The handle of one of the iron spits of Greek type from the Kroisan levels at Lydian Sardis had been given an insulatory wicker wrapping⁴¹. This had been preserved due to exceptional circumstances, and such wrappings were perhaps common. Furthermore, the performance of a spit was probably affected far less by whether or not it was made of iron or bronze than by other variables such as the intensity of the source of heat, the height at which the spit was held over the source of heat, the length of time for which the spit was held over the source of heat, the size of the piece of meat being cooked, the type of meat, the length and thickness of each spit, and the personal tastes of the participants⁴².

7.2.2 Greek Spits as "Elite Ironwork"

A further aspect of the Archaic Greek spit is that the iron from which it was made was, of necessity, of good quality in terms of its suitability for forging. This conclusion may be reached by appealing to the analogy of research by Crew and Salter into the production of iron in British prehistory⁴³. Their work is founded on archaeology by experiment coupled with careful scientific analysis, which has as its goal the reproduction of objects and wastes with the same metallurgical composition and properties as those created in Britain during the Late Iron Age.

Crew and Salter concentrated in particular at first on a class of object known as "currency bars". These long, thin iron objects are not far removed in form from Greek roasting spits and, as their name suggests, were once thought to be a type of pre-coinage money⁴⁴. Like the Greek spits, this interpretation rested mostly on an ancient authority, in this case a corrupt passage of Caesar⁴⁵, and drew on ethnoarchaeological material from Africa for support⁴⁶. Interestingly, the interpretation also appealed to the ancient historical analogy of the use of spits as pre-coinage money in Greece, and the analogy has also been read in the reverse

⁴¹See §2.3.1c, and §3.2.2.

⁴²Cf. D. Smith 1989 9-11, who compares her experiences of using cooking vessels of various metals, including cast iron and copper, as well as more modern discoveries, such as aluminium and stainless steel. She implies that any technical differences in performance are negligible in practice.

⁴³See esp. Crew 1991 & 1995, and Salter 1989. I am indebted to the latter for numerous informal but carefully explained updates on the progress of this research.

⁴⁴See esp. R. Smith 1905 and Allen 1967.

⁴⁵*De Bello Gallico* 5.12.4, and see R. Smith 1905 186, Allen 1967 319 & n1 by Ogilvie.

⁴⁶R.A. Smith 1905: see 190-191 for the appeal to ethnographic material, cf. Waldstein 1902 61 n2 on the finds from the Argive Heraion.

direction⁴⁷. The notion that British Iron Age "currency bars" were used as a favoured or specialised form of pre-coinage money has now been discredited by Crew⁴⁸, and the study of this class of artefacts has moved forward. Among other approaches⁴⁹, Crew and Salter have explored the use of "currency bars" as *"refined bar iron ... used as trade iron"*⁵⁰, that is as units for trade in which iron was produced with a certain chemical composition and metallurgical structure. It appears that the properties of the metal were advertised by various morphological features, such as the production of different shapes of bar according to the degree with which the iron had been alloyed with carbon, or the working of the metal into a socket, demonstrating that it could be forged⁵¹.

Crew and Salter's work on British iron "currency bars" is relevant to the study of iron roasting spits in Archaic Greece because, aside from morphological similarities, the technology used in Britain to produce "currency bars" was probably similar to that used in Archaic Greece for the production of iron ὀβελοί. This inference must remain largely provisional at present because, as Photos notes⁵², the evidence for ironworking in Greece is limited. The literary sources were written by literary men who did not necessarily understand the processes they were describing, and likewise the small number of sixth and fifth-century pictorial representations of metallurgical activities were painted not by technicians, but by artists who, moreover, were governed by iconographic conventions and did not necessarily try to depict what could actually be seen. As for the physical evidence, precious little has survived or been recognised⁵³. However, this situation is gradually changing, and the material available for study has increased in volume and quality with the reporting or publication of a number of important recent discoveries, including the metallurgical finds from Asine in the Peloponnese, a number of sites in southern Lakonia,

⁴⁷See e.g. R.A. Smith 1905 191-192 on British "currency bars", and Forbes 1967 32 and Kraay 1976 315 n3 on Greek spits.

⁴⁸The position is summarised by Crew 1995 278: *"The concept of bars belonging to a standardized series of weights, as part of a currency system, is no longer tenable. There is a much wider variety of bar types than previously recognized and the consistency of each type arises from them being made on a regular production basis"*. These comments would be equally apposite to attempts to interpret Greek roasting spits as units of pre-coinage money.

⁴⁹See Hingley 1990 for a post-processual approach which considers the possible symbolic role of the bars.

⁵⁰The definition given by Crew 1995 277.

⁵¹See esp. Crew 1994.

⁵²Photos 1988 249f (= her Chapter Four).

⁵³Likewise in Britain the physical evidence was poorly recorded until the 1970s: Salter 1989 250-251.

Knossos and Kommos on Krete, and the Mazzola site on Pithekoussai⁵⁴. The evidence from such sites indicates that iron was produced in Archaic Greece using the same solid state chemistry⁵⁵ and with furnaces of a similar design and scale⁵⁶ as those employed in Iron Age Britain.

From the above, we may infer that Archaic Greek iron would have been capable of adopting the same range of properties as British Iron Age iron according to variations in the same set of parameters. One of the conclusions offered by Crew's work is that it is impossible to forge a lump of British Iron Age iron into a "currency bar" unless it is of good quality in terms of its consistency and forging properties: if not, the metal will crack and split as it is drawn down⁵⁷. This conclusion implies by analogy that Greek roasting spits were made of good iron.

There is evidence to confirm that this fact was recognised in antiquity in that spits were sometimes used as an improvised source of iron stock⁵⁸. This application seems to be attested in the literary evidence by the first-century AD writers Heron and Galen⁵⁹, while in the archaeology, as seen above, spits have been found in Classical contexts which imply that they were being used as scrap metal, including the foundry in the area of Pheidias' workshop at Olympia (**Appendix B1 S17c**), and in the Portico at the sanctuary of Athena Chalkioikos at Sparta (§4.5.5 & **Appendix B1 S25b**). Spits have also been found in the shipwreck of ca. 600 near the island of Giglio, the cargo of which had included a substantial number of ingots of non-ferrous metals. We must note, however, that the ship had also carried fine pottery for drinking and feasting, and it is possible that the spits were more closely associated with this portion of the cargo, or perhaps even the personal possessions of the crew⁶⁰.

⁵⁴Asine: Risberg 1995 esp. 129; southern Lakonia: Bassiakos 1988; Knossos: Sackett 1992 366-368 & Plate 314; Kommos: Shaw 1984 283; Pithekoussai: Ridgway 1992 91-93 & 152. This list is not exhaustive.

⁵⁵Photos 1988 271-273 concludes on the basis of ethnographic analogy with a nineteenth century AD Chinese fining process coupled with archaeological experimentation that the type of furnace used for smelting ores in Early Iron Age Macedonia would have been capable of producing cast iron. However, Photos 1988 250 notes that her case as yet lacks physical proof. On the question of whether or not cast iron was produced in ancient Greece see also Pleiner 1969 25-27.

⁵⁶See especially the material from Knossos.

⁵⁷Crew 1991 32-33.

⁵⁸In Homer we read of trade in iron in the form of "axes" and "half-axes" (*Iliad* 23.851), and a "σόλος", (*Iliad* 23.826, 839, 844: perhaps some form of bloom).

⁵⁹Heron *Pneumatica* 1 33; Galen *De simp. med. temp. ac fac. lib.* vol. 12 267.

⁶⁰Bound 1991: spits 24, 26-27; pottery 16f; ingots of copper and lead 24-27.

However, it is important to stress that even if iron was traded in Greece in the form of spits⁶¹, there is no evidence to suggest that Greek spits were manufactured specifically for this purpose. Furthermore, the hoard of iron discovered at Khorsabad, in the remains of the palace of the late eighth-century Assyrian ruler Sargon II, suggest that at this time trade in iron in the eastern Mediterranean did not match the sophistication shown in Later Iron Age Britain. Whereas in Britain we find a plethora of forms of trade iron representing different stages of the refinement process, as well as different types of iron⁶², in the Khorsabad hoard we may identify only two. These comprise a simple form of consolidated bloom, and finished artefacts⁶³.

In conclusion, the Archaic Greek roasting spit represents an investment in good quality iron. This investment was substantial, the individual spit comprising ca. 1000g of metal, a quantity which is greater than that found in almost any other type of iron artefact. Some appreciation of this fact may be gained from the preserved weights⁶⁴ recorded for various iron types from the Knossos North Cemetery: dirk: 200g; spearhead: 240-330g; javelin-head: 120-230g; sword: 560g; tanged axe: 100-350g; double axe-head: 790-1310⁶⁵. In sum, the spit, and all the more so a bundle of spits, may be described as "elite ironwork".

⁶¹As proposed by Pleiner 1969 15 and Bakhuizen 1976 67 n83.

⁶²Crew 1995 277.

⁶³See **Appendix I**.

⁶⁴The preserved weights probably differ substantially from the manufactured weights, but give an order of magnitude.

⁶⁵The weights given here, rounded to the nearest 10g, are based on the exempla for which the relevant data is supplied in *KNC*.

CHAPTER EIGHT

SPITS AND IRON IN THE "IRON AGE"

As illustrated in §2.1.1, §2.3.2 and §7.2, in Greece and Cyprus the spit was one of the major metal types which, at the start of the "Iron Age", began and then continued to be manufactured from iron instead of bronze. As such, iron roasting spits offer a commentary on the processes and consequences of the transition from bronze to iron in the region, especially through the light they shed on the value of iron in the sense of its intrinsic worth relative to precious metals¹.

8.1 Spits and the Value of Iron

It will be useful to begin by outlining the known facts. The earliest firm evidence for the value of iron in Greece comes from the fourth century when inscriptions indicate that the exchange ratio for silver : iron lay in the range of about 1 : 100 to 500. One of the relevant texts constitutes the mid fourth-century inscription from Delphi mentioned in §4.3.2d, which specifies a range of ratios for silver : iron of 1 : 100 to 435². To this may be added two Eleusinian building accounts. The first of these concerns the year 330/29, and records an expenditure for iron of 8½ obols per stater equating to an exchange ratio of silver : iron of 1 : 148, while the second concerns the year 327/26 and records an expenditure of 4 obols per stater of iron equating to an exchange ratio of silver : iron of 1 : 226³. Further to the above, an account from Epidauros dated 365 to 335 gives a price of 14 drachmas 2 obols per talent of iron, which equates to a ratio of silver : iron of 1 : 419⁴.

For direct evidence for the value of iron before the fourth century it is necessary to turn to the Ancient Near East. From the sixth century, as mentioned in §4.3.2d, Neo-Babylonian documents preserve exchange ratios for silver : iron of 1 : 229 to 831, the different prices most likely relating to different qualities of metal⁵. From the last quarter of the eleventh century, a text from Babylonia states that a single iron dagger was worth two full-grown

¹The working definition of value used here therefore lies closest to the "convertible" sense outlined by E.S. Sherratt 1994 62.

²FD 3.5.27 col. IIa.

³IG II² 1672.205-206 and IG II² 1673.53. The exchange rates given here have been calculated on the assumption that the texts refer to a Solonian weight stater of 105 drachmas.

⁴IG IV² 103. Cf. Treister 1996 250 for much of the material presented here.

⁵Zaccagnini 1990 502 cites similar evidence from Oppenheim 1967 but without cognisance of the different qualities of iron.

rams⁶. If this sum is equated to two shekels of silver, the weight of a shekel reckoned at 8.3g, and the weight of an iron dagger at 200g to 300g, then an exchange rate of silver to iron of approximately 1 : 12 to 18 may be inferred. From the near the end of the Late Bronze Age, the "Iron Letter" written by the Hittite king Hattusilis III (ca. 1289-1265), probably to the Assyrian ruler Shalmaneser I (ca. 1273-1244), implies that in the mid-thirteenth century, the single blade of an iron dagger was of sufficient worth to act as a suitable gift for exchange between two of the most powerful rulers of the Near East⁷.

Before proceeding, it is necessary to note that the highest and lowest ratios for silver : iron were smaller in fourth-century Greece than they were in the sixth-century Near East, where more iron could be bought for the same amount of silver. Given that the trend in the value of iron seems to have been ever downward, it is likely that the disparity between exchange ratios of the same date from Greece and from the Near East would have been greater. Moreover, finds of spits from the sixth century support this conclusion: the prestigious contexts in which spits appear or are attested on substantial monumental inscribed bases in sanctuaries in Greece contrast sharply with the ordinary domestic context of the eleven spits from under the shadow of the fortification wall at Sardis. Therefore, the ratios from the Near East, though they do not correspond with those in Greece, seem to place a lower limit on the value of iron there during the late second and early first millennium.

The evidence cited above shows that the value of iron declined considerably between the eleventh and the sixth centuries, but that there is no written evidence for the rate at which this change took place. The most widely accepted view is that iron became a cheap metal within at most one hundred and fifty years in Cyprus (ca. 1200-1050), or two hundred years in Aegean Greece (ca. 1200-1000)⁸, though what is meant by "cheap" is ill-defined, other than that iron was many times less valuable than bronze⁹. In opposition, a more gradual scheme has been proposed in which iron retains considerable value at least as far as the eighth century¹⁰.

Developments in spits favour this latter view. Between the tenth and sixth /fifth centuries,

⁶See Moorey 1994 289 for references to this text.

⁷Craddock 1995 257. For the "Iron Letter", KBo I 14 obv. 20-24, see Goetze 1940, who dates the letter using internal evidence and identifies the recipient on the basis of contextual, stylistic and historical arguments.

⁸Snodgrass 1971 239 & 1989 30, referring to the onset of his Stage 3. For the chronology see Snodgrass 1982 esp. 291-292 & fig. 2.

⁹See esp. Snodgrass 1989 27-28.

¹⁰Morris 1986 & 1989; cf. Pleiner 1969 31.

spits appear to experience a slow decrease in value from an object of considerable prestige to a more everyday item. This decline may be observed in three ways. Firstly, the number of spits in the most opulent deliberate deposits increases. In Cypro-Geometric Cyprus and Early Proto-Geometric Krete, iron spits are found only in ones and twos, but by the mid to late eighth century, the maximum number has increased to twelve in Aegean Greece and eighteen in Cyprus. The seventh and sixth centuries see this process culminate in vast bundles of spits at the Argive Heraion and Delphi¹¹. Secondly, though the number of examples for which such data is available is limited, the size of spits seems to increase. The longest preserved spit up to the mid-eighth century was found in Palaepaphos-*Skales* Tomb 67 and measures 75cm, whereas the longest spit from the mid-eighth century comes from Tomb 79, and measures 150cm, and late eighth /early seventh century examples from South Cemetery Area Tomb 1 at Argos measure 162cm¹². Thirdly, spits develop a wider social distribution, but do so slowly. They are at first restricted to burials of the elite, as at Palaepaphos-*Skales*, but subsequently begin to appear in tombs lower down in the implied social stratification, as at Argos¹³. It is not until the late sixth or even fifth century that spits seem to lose their value as special objects, at which time representational spits begin to be buried in tombs in place of life-sized examples (Sindos), dedications of massive bundles cease at sanctuaries indicating that the number required for a memorable gift has become prohibitive, spits begin to be recycled as scrap (Olympia and the sanctuary of Athena Chalkioikos at Sparta), and Herodotos implies that the bundle of spits left by Rhodopis represents no great wealth. Had the value of iron fallen precipitously, the developments outlined above would surely have taken place with much greater rapidity.

How does the scheme inferred from the spits compare with other evidence? Parts of the Homeric epics have sometimes been cited as evidence for the value of iron in the pre-Classical period, but these seem too chronologically ambiguous to prove helpful, because it is possible to argue with equal strength that references from the *Iliad* or *Odyssey* in which iron features in a context indicative of value, such as a ransom, belong to either the Late Bronze Age setting or the Early Iron Age context of composition¹⁴. This problem does not apply to Hesiod, but though he offers much evidence on the possible symbolic and emotive value of iron¹⁵, he offers no direct evidence about its value relative to other metals.

¹¹See §2.3.1a, §4.5.4.

¹²See Appendix D.

¹³See §2.2.1b and §2.2.4a(iii).

¹⁴See esp. Pleiner 1969 9 (Bronze Age), and I. Morris 1986 12 (Iron Age).

¹⁵See esp. E.S. Sherratt 1994 80-81.

Developments in the handles of iron knives have been used with more conviction. These show a progression from ivory to wood via bone, while the rivets which held them together change from bronze to iron over the course of the eleventh century in Cyprus and the tenth century in Aegean Greece. These changes have been taken to imply a drop in the value of the iron from which the knives were made to minimal levels¹⁶. However, other evidence indicates that, as suggested by the spits, iron retained much of its Late Bronze Age value throughout the Early Iron Age. Åström et al. (1986) analyse the assemblages of metal grave goods from Palaepaphos-*Skales*, Lapithos and Amathous, and show that during the early Cypro-Geometric period iron is usually found in rich tombs and with gold¹⁷. Similarly, Rupp has observed that the quantity of iron deposited in Cypro-Geometric graves is similar to that of gold¹⁸. There also seems to be a correlation at Lapithos between burial with iron and burial with a sacrificed slave¹⁹. Much later in time, there is evidence that iron still had significant value in Aegean Greece as late as the eighth to sixth centuries in the form of hoards at sanctuary sites including²⁰ the Argive Heraion (bundle of spits and giant spit), Halieis (spits, keys, etc), Delphi (billets of Ancient Near Eastern bi-pyramidal type), Perachora (hooks /sickles), Kalapodi (a votive bank east of the forecourt where all of the votive material was iron)²¹, and Dodona (spearheads)²².

8.2 The Relationship between Iron and Bronze

8.2.1 Relative Value

Spits also provide important evidence for the value of iron relative to bronze at a crucial point in the transition. For the background against which this must be understood it is necessary to turn once more to the Ancient Near East. Texts from this region dating to the Old Assyrian Period (ca. 2000-1600) which give exchange ratios for silver to iron, tin and copper show that iron was the most valuable. Iron was exchanged for up to ninety times the quantity of silver (up to ten times that of gold)²³, while tin and copper trailed far behind, the

¹⁶E.S. Sherratt 1994 71-72 & 74-75.

¹⁷Åström et al. 1986 37-40.

¹⁸Rupp 1989 353.

¹⁹§2.2.1b.

²⁰For hoards of iron in general cf. Pleiner 1969 17.

²¹Felsch et al. 1980 96f.

²²Carapanos 1878 plates 57 & 58, etc.

²³See M.A. Powell 1990 94 n82, 95 n83 & n84 and 96 n88 for references and bibliography to the relevant texts, and see also Muhly 1980 35-36 and Moorey 1994 287. Powell and Moorey warn that the interpretation of the texts is not secure (see §4.3.2d for a discussion of some of the problems concerning the interpretation of those which give ratios).

ratio of silver : tin being 1 : 10 to 14, and that of copper 1 : 46 to 180²⁴. As noted above, by the Neo-Babylonian period (612-547), iron had become many times less valuable than silver, and a text from Uruk indicates that by the same stage iron had also become less valuable than tin and copper, the exchange ratio of silver : iron given being 1 : 240 to 361, compared with 1 : 6 to 9 for tin and 1 : 180 for copper²⁵.

Therefore, in the Ancient Near East, the value of iron seems to have fallen from a point at which it was worth more than tin, copper, and therefore bronze, to a point at which it was worth less. Once again, the progress of this development is difficult to chart between the more fixed points, and it is not clear where the cross-over lies at which the values of iron and bronze would have been in effect the same. In Cyprus, the comparison of the contexts and distribution of Geometric bronze spits with those of iron spits may provide a navigational point, in that it indicates that the two metals were similar in value in the eleventh /tenth century²⁶.

Documentary evidence for the value of tin and copper becomes available towards the end of the fifth century, with the following prices quoted for tin, copper, or bronze in *IG I³ 472 col. 4c* dated ca. 421/20 - 418/7²⁷:

Lines	Metal	drs. /T.	silver
142-145	tin	230	1 : 26
139-141	copper	35	1 : 171
est.	[10% Sn brz]	[1 : 157]	

If we infer that the value of iron at this time was the same or perhaps slightly higher than that given by the fourth-century documents listed above, a conclusion which is consistent with the exchange ratio implied by the fifth-century price for spits discussed in §6.2.3, then it seems that while the value of the cheapest and probably poorest quality iron was lower than that of bronze, that of the most expensive and probably best quality iron was higher.

It is important not to lose sight of the wide spectrum of iron prices relating, we may infer, to an equally wide variety of qualities and grades. Nevertheless, the evidence presented here from fifth-century Athens combined with that of the spits from Geometric Cyprus implies

²⁴Muhly 1980 39.
²⁵Oppenheim 1967; M.A. Powell 1990 85.
²⁶See §2.2.1b.
²⁷See Price 1968 103 on the extract from the inscription quoted here, also Treister 1996 248.

that in the Greek world iron of the best quality was comparable in value to bronze throughout the first half of the first millennium. This conclusion offers a further contradiction to the common assumption noted above that all iron became cheaper than bronze within at most two centuries of the start of the Iron Age.

8.2.2 Aesthetic Appeal

Iron is also often thought to have been regarded as the "poor relative" of bronze in terms of its aesthetic potential between the Early Iron Age and the end of the Archaic period²⁸. Spits supply evidence to the contrary in a number of ways. It seems that the common roasting spit was made of wood, and that iron versions were regarded as "best china"²⁹. Furthermore, care was often taken to fashion the handles of Archaic iron spits into various shapes. The addition of handles carried ergonomic benefits, but it was by no means necessary to give them lanceolate or crescent profiles. Far more striking is the use of iron spits with firedogs in Argos, Krete and Cyprus to create a remarkable three-dimensional representation of a warship powered by oars³⁰.

To the above may be added numerous other examples of the manufacture of artistic objects or the visible components of artistic objects from iron almost to the end of the Archaic period. The use of iron in jewellery during the Early Iron Age has long been noted³¹, but has often been dismissed as an experiment dictated by the necessity of a shortage of bronze. If, as argued below, the choice of metal was not dictated by a shortage of bronze, then jewellery was most likely made from iron because it was deemed desirable to do so by those who purchased and wore it. Moreover, the use of iron in jewellery continues beyond the period during which the supposed shortage of bronze was in force, as may be illustrated from some of the archaeological sites studied in **Chapter Two** and **Chapter Four**. Of the funerary contexts, at Palaepaphos-*Skales* although iron jewellery was concentrated in tombs dating to the Cypro-Geometric I, one find was recovered from a tomb dating to Cypro-Archaic I³². At the Knossos North Cemetery, the use of iron in pins continues up to the Late Geometric, and in fibulae up to the Early Orientalising period³³. On the mainland, the use of iron in jewellery

²⁸See esp. Snodgrass 1989 27-28.

²⁹See §3.3, 3.4, 4.3.1, 4.4.1, 4.4.2, 4.5.1, 4.6, 6.2.2.

³⁰See §2.3.4b. Contra Pleiner 1969 29, who regards firedogs as a class of utensil, a purely functionalist categorisation which takes no account of the artistic form.

³¹See esp. Snodgrass 1971 Chapter Five.

³²**Appendix A Table 1b.**

³³**Appendix A Table 2b.**

is attested at Argos in tombs of the Geometric period³⁴, and in the north at Sindos in tombs of the sixth century³⁵. Also in northern Greece, finds from Vergina, a large burial site in use from the beginning of the eleventh century to the end of the eighth³⁶, show the pride of place which could be given to iron in the ornamentation of the body. Besides iron rings, a belt-buckle and a bracelet³⁷, small decorative plates were found which had been incorporated into head-dresses³⁸. In sanctuary contexts, the use of iron in jewellery, often in pins and fibulae, is attested in deposits mainly of Geometric date at sites such as the Argive Heraion³⁹, Ithaka⁴⁰, Kalapodi⁴¹, Perachora⁴², and Philia⁴³. Later material has also been found at sites such as Artemis Orthia at Sparta, where the use of iron in jewellery was attested from the Geometric up to Lakonian II⁴⁴, and the sanctuary of Demeter at Knossos, where iron rings were found in "Deposit H" which is dated no earlier than the fifth century⁴⁵. Iron was also used for two statuettes found at Bassai dating approximately to the mid-seventh century⁴⁶. If the collection of artistic iron artefacts seems small relative to that of bronze, it is necessary to remember that iron objects from archaeological excavations in Greece have in general received little attention, and the study of the extensive collections of unpublished material, especially if combined with a programme of x-radiography, may yield much further material.

An argument which has been used to support the notion that iron lacked the aesthetic appeal of bronze is that in composite artefacts, including jewellery, iron appears to be subordinate to bronze, the former being employed in functional or "working" parts, and the latter in

³⁴Courbin 1974.

³⁵See for example the pins in *Sindos* Tombs 25, 115 and 28.

³⁶For the excavation of the site see Andronikos 1969 Chapter 1; Leekley & Efstratiou 1980 104-105 for a summary. For the dating of the use of the site see Andronikos 1969 152.

³⁷Andronikos 1969: rings: Kv, Nix, Yi, AAv, AAviii, AΔi; belt buckle AZvii; bracelet AHix.

³⁸Andronikos 1969 258 & fig. 98, found in graves AΔi, AEv, and AZvii.

³⁹Waldstein 1905 298-331, Caskey & Amandry 1952 181, Hägg 1992 23.

⁴⁰Benton 1934-1935 70-71.

⁴¹Felsch et al. 1980 89.

⁴²Payne 1940 75.

⁴³Kilian 1983 131.

⁴⁴Dawkins 1929 197, 200, 225, 226, 229.

⁴⁵Coldstream 1973 158.

⁴⁶Yalouris 1979 91, Cooper 1978 193.

decorative parts. However, this distinction is rarely clear-cut. The bimetallic bronze /iron dress pin of the Proto-Geometric and Geometric period provides an illustrative example. In these artefacts, bronze is typically reserved for the head, and iron for the shank. The former may be described as decorative, and the latter functional⁴⁷, but it seems equally valid to argue that both parts have both roles. During the wearing of the pin, the head is not merely an aesthetic attachment, but performs the vital function of stopping the object from slipping off the garment. Likewise, the shank not only serves to hold the garment in position, but is clearly visible from the outside⁴⁸, and consequently has a decorative effect. The functional division between head and shank therefore seems blurred. While it may be observed that there was a tendency to work the head into various shapes⁴⁹, suggesting that this component was regarded as the more visually dominant, it is possible that the metals were chosen as they were because it was easier to produce the shape of the head in cast metal, and that of the shank in forged metal, rather than because it was thought that more of one metal should be seen than of the other.

A similar case is presented by the bronze cauldron and iron tripod lattice stand. It is tempting to see the cauldron as the only decorative element, and the stand on which it is placed as a purely utilitarian element. However, the cauldron could be described as the more functional part of the artefact, because of its role as a vessel for holding liquid, and the tripod stand as the more decorative element. The ornamental role of the stand is illustrated by the intricacy with which stands or parts of stands made of iron were crafted. For example, at Olympia two tripod legs have been recovered by excavation, one in the form of a stem with leaves, the other in the shape of a ram's head⁵⁰. Similarly, at Delphi, a noteworthy iron stand is said to have been dedicated there by Alyattes, the early sixth-century ruler of Lydia⁵¹. As with pins, the choice of metal in the bimetallic tripod cauldron would have been governed not by aesthetic preference, but by the greater physical suitability of bronze for the manufacture of the thin sheet metal required for the cauldron, and of iron for the more solid parts required for the stand.

⁴⁷So Snodgrass 1971 232 (but N.B. 1980a 348: "their working status is doubtful".)

⁴⁸See Jacobsthal 1956 illustrations nos. 331-338 and **Figure 8.2.2**.

⁴⁹Jacobsthal 1956 illustrations *passim*.

⁵⁰Hermann 1979 177 cat. nos. S3 and S4.

⁵¹Herodotos 1.25.2; Pausanias 10.16.1. Further proof that the stand was perceived as an important aesthetic component may be found in the artistry invested in cauldron stands of non-ferrous metal, the best example of which is the Serpent's Column from the dedication at Delphi to commemorate the Greek victory over the Persians in 479.

8.2.3 *Mystery*

A further antithesis between iron and bronze has been inferred in terms of the "*aura of mystique*" associated with each metal. This seems to be based largely on the observation that the production of bronze involves the mixing of ores or ingots from different sources⁵². However, the production of iron probably seemed at least as mysterious as that of bronze. At the basic level of obtaining metals from ores, the furnaces in which copper and tin were smelted differed little in chemistry, operation, and outward appearance from those of the iron industry⁵³. Bronze could be produced by smelting copper and tin ores together in the same furnace, but was usually produced in a secondary process which involved the melting down of ingots of each metal in a crucible. This step has no parallel in ancient ferrous metallurgy, but it may surely be regarded as no more complicated in principle than the mixing together of any two ingredients, such as water and wine. Copper and tin for making bronze were almost certainly imported to Greece from exotic sources, as opposed to iron which was probably procured locally, though imported billets are not unknown⁵⁴. However, the similarities and differences between the processes by which each metal was produced may have exerted little or no influence over how they were perceived. Ancient authors in general exhibit a poor understanding of the metal industries⁵⁵, indicating that this subject was *terra incognita* to those not involved.

There is also direct evidence that the working of iron did evoke an aura of mystery equal to that of bronze. A passage from Hesiod's *Theogony* links the melting of tin in crucibles and the smelting of iron together in a simile which is used to describe the drama of Typhoeus' impact with the ground after his defeat by Zeus⁵⁶. Similarly, in a vivid and well-known passage from Homer's *Odyssey*, the act of quenching iron is used as a simile to describe the

⁵²Snodgrass 1989 27-28.

⁵³The close relationship between the smelting processes of tin, copper, and iron is best brought out by the fact that iron could be produced adventitiously in the non-ferrous furnace: see Gale et al. 1990.

⁵⁴Twenty five examples of the bi-pyramidal type of billet attested in large numbers in the Khorsabad hoard and elsewhere in the Ancient Near East from the eighth /seventh centuries onwards (see **Appendix I**) have been found at Delphi in a context of the eighth to sixth centuries: see Perdrizet 1908 213-214. They were found on the eastern side of the temple and temenos of Neoptolemos, and seem to have lain in the stratum which included oriental objects (Perdrizet 1908 v). A further find is reported to have been made by Petrie at Naukratis: see Petrie 1886 39. The "large pig of iron" was found in levels dated to the sixth century, which also contain substantial metallurgical remains.

⁵⁵See esp. Photos 1988 58.

⁵⁶Hesiod *Theogony* 861-866: ...πολλὴ δὲ πελώρη καίετο γαῖα| αὐτῇ θεσπεσίῃ, καὶ ἐτήκετο κασσύτερος ὥς| τέχνη ὑπ' αἰζηῶν ὑπὸ τ' εὐτρήτου χοάνοιο| θαλφθείς, ἢ σίδηρος, ὃ περ κρατερώτατός ἐστιν,| οὖρεος ἐν βήσσησι δαμαζόμενος πυρὶ κηλέῃ| τήκεται ἐν χθονὶ δῖη ὑφ' Ἡφαίστου παλάμησιν (Text OCT 3 ed. 1990).

act of plunging a red-hot stake into Polyphemos' eye⁵⁷. The verb used for the smith quenching iron is φαρμάσσειν, a cognate of φάρμακον meaning a medicine or drug. According to *LSJ*, its appearance in this sense is unique to the *Odyssey*, and it is therefore possible that φαρμάσσειν = quench represents a poetic usage of the word, rather than an actual technical term, although it could be argued that the rarity of this connotation merely reflects an absence of any other reference to quenching in Archaic Greek literature. In either case, the use of φαρμάσσειν likens the blacksmith to a sorcerer⁵⁸.

To the passages from the *Theogony* and *Odyssey* may be added references to iron in Greek mythology and cult, such as the legends of the Daktyloi and Telchines, or the myths associated with Hephaistos and Prometheus⁵⁹. Furthermore, iron may have had a special significance in the mystery cult of the Great Gods at Samothrake⁶⁰. We may also note that iron and the crafts of the blacksmith have regularly evoked awe and mystery throughout the world in many ages⁶¹.

8.2.4 The Special Relationship

The similarities between iron and bronze in terms of their value, aesthetic properties and mystique suggest that in Early Iron Age Greece these metals were perceived less as different substances, and more as different "species" of the same material, a relationship described by Zaccagnini as "*complementarity*"⁶². This seems especially true of the point at which the new ferrous technology of the Early Iron Age arrives in Cyprus and Greece, during which time iron and bronze are often used interchangeably for the same types, as illustrated by the occurrence in both metals of spits of Karageorghis' "Type D" in Geometric Cyprus⁶³. The closeness of the relationship is perhaps of little surprise given that at the beginning of the Iron Age the bronze smith and iron smith seem to have been one and the same.

⁵⁷Homer *Odyssey* 9 391f: ὥς δ' ὅτ' ἀνὴρ χαλκεὺς πέλεκυν μέγαν ἤε σκέπαρνον| εἰν ὕδατι ψυχρῷ βάπτῃ μεγάλα ἰάχοντα| φαρμάσσω· τὸ γὰρ αὐτε σιδήρου γε κράτος ἐστίν·.

⁵⁸Cf. Bakhuizen 1976 68 & n91; Muhly 1980 52.

⁵⁹Pleiner 1969 7f & 36.

⁶⁰Lehmann & Spittle 1982 403f.

⁶¹See esp.: Forbes 1964 175-176, drawing on Celtic, African and Inuit material, as well as ancient references; B.G. Scott 1984 153-154 on the mystical aspects of blacksmiths in Irish epic; Frazer 1927 225-236 (= his chapter 5 §2) for circumstances from various cultures in which iron is tabooed; and see more generally the appropriate entries in M. Leach 1949 and S. Thompson 1958.

⁶²Zaccagnini 1990 502.

⁶³See §2.3.1c.

First and foremost, the same word, χαλκεύς, is used of the ferrous and non-ferrous metal smith⁶⁴. Secondly, although there are a number of differences between the working of iron and bronze⁶⁵, especially in the production of metal from ore, there are also many similarities, especially in the skills and facilities used for forging solid metal into shape. It is for this reason that the iron industry is often thought to have developed as an off-shoot of the bronze industry⁶⁶. Thirdly, there is direct evidence for the working of iron and bronze on the same spot and probably by the same people. Wastes from the working of iron and bronze have been found together at the Mazzola site on Pithekoussai⁶⁷ and, from a later period, in Classical levels at the "Unexplored Mansion" at Knossos⁶⁸. The evidence from Aegean Greece may be compared with that from Taanach in Palestine where, similarly, debris from ferrous and non-ferrous metalworking activities, including unfinished artefacts, was found in the same area in an Early Iron Age occupational stratum sealed by a destruction layer associated with the campaign of the Pharaoh Shishak I (ca. 925)⁶⁹.

Evidence of a different kind is contributed by B.G. Scott, who suggests that artefacts in which a combination of iron and bronze is used to decorative effect were probably produced by the same craftsmen⁷⁰. He draws this conclusion from the study of Iron Age Irish metalwork, but it is likely to apply to Greece where, as noted above, bimetallic artefacts include classes of jewellery such as pins and fibulae, classes of bladed implements, and tripod cauldrons. However, this argument should not be taken too far, else we should conclude that the worker in iron was also a worker in all other materials which might be used to adorn an iron artefact or its accessories, such as ivory, bone, wood and leather.

If there was a basic distinction between different types of smiths in the Early Iron Age, then it is more likely to have lain between those who produced finished artefacts, and those who smelted the metal for the production of these artefacts. Deposits of copper are not distributed evenly in the eastern Mediterranean world, and sources of tin lay outside this region. Trade was therefore necessary for the production of bronze, and evidence from shipwrecks in particular indicates that the form in which the metals were exchanged was more commonly

⁶⁴Pleiner 1969 20-21, 35, 52 n19.

⁶⁵See e.g. Maddin 1982 303-305.

⁶⁶Forbes 1964 217; Charles 1980 180; Photos 1988 44.

⁶⁷Buchner 1971 66; Ridgway 1992 84, 91-93 & 152. See also Waldbaum 1980 89-90.

⁶⁸Branigan 1992 367-368.

⁶⁹Stech-Wheeler et al. 1981 249, 256.

⁷⁰B.G. Scott 1990 34.

as ingots of copper and tin rather than as ingots of bronze or the ores of each metal⁷¹. This implies that alloying took place only for the production of specific artifacts, a procedure which would allow the smith to tailor the physical properties of the resultant metal to the specific application. In the iron industry the evidence is more limited, but there is some suggestion of trade in compacted blooms in the form of finds of bi-pyramidal billets of Near Eastern type at Delphi and Naukratis⁷². The applications to which iron and bronze were put in Greece and Cyprus did diverge over the course of the first half of the first millennium, leading to the establishment in the Classical period of workshops dedicated to the production of single artefact types⁷³. However, this development involves both metals equally, and may be viewed more as a move towards specialisation than as the elevation to supremacy of one metal at the expense of the other.

8.3 Why did Spits Begin to be Made of Iron?

The study of Archaic Greek and Cypriot spits also provides evidence on the motive behind the changes in the use of iron which occurred at the beginning of the Iron Age. A variety of theories have been proposed, but before these are discussed it is necessary to outline in more detail what these changes were. To do this we must understand how iron had developed up to the end of the Bronze Age over the whole of the eastern Mediterranean.

8.3.1 A Short History of Iron to the Beginning of the Iron Age

Waldbaum (1980) divides the pre-Iron Age history of iron into the four periods of the Prehistoric (before ca. 3000), Early Bronze Age (ca. 3000-2000), Middle Bronze Age (ca. 2000-1600), and Late Bronze Age (ca. 1600-1200)⁷⁴. To the Prehistoric period belong fourteen objects, the earliest of which was recovered from Grave A at Samarra in northern Iraq dated ca. 5000, and is described as a four-sided instrument with a preserved length of ca. 4.30cm. The other finds comprised three small balls interpreted as "polishers" from Tepe Sialk in northern Iran, and a ring and nine beads from Egypt⁷⁵.

To the Early Bronze Age belongs a larger and more varied collection of iron objects recovered from a total of sixteen sites distributed across Egypt, Mesopotamia and, for the

⁷¹See e.g. the Giglio wreck (Bound 1991), or Moorey's discussion of Mesopotamian ingots (Moorey 1994 244-245 & 298).

⁷²See note 54 above.

⁷³Pleiner 1969 21-23 & 32, Cf. Treister 1996 213f.

⁷⁴The question of how much early iron was crafted from meteoritic, telluric, or smelted iron is not addressed here because the methods by which it was originally determined have been shown to be unsound: see Photos 1989.

⁷⁵Waldbaum 1980 69-70.

first time, Anatolia. The total of twenty-two objects is made up of jewellery, tools, and weapons including several daggers /knives, and probably one sword which was robbed in recent times from a "royal tomb" at Dorak and is now lost. Early Bronze Age iron artefacts typically occur in exceptional contexts, such as elite graves, sanctuaries and hoards, and the metal is frequently combined with gold and other precious materials, suggesting that the objects and therefore the metal were of high status and value⁷⁶.

Middle Bronze Age finds of iron are sparse, totalling a mere eight objects. These were distributed between Egypt and Anatolia and, for the first time, also Cyprus and Krete, though the finds from the latter comprise merely two "lumps" from two tombs at Lapithos, and one "cube" from a funerary context at Mavrospelio⁷⁷. However, the Middle Bronze Age is the first period for which we have textual evidence, and this presents a rather different picture⁷⁸. In particular, an Alalakh text dating to the eighteenth century refers to four hundred weapons of iron, perhaps spears⁷⁹. Besides weapons, the Palace archives from Mari attest to the use of iron in decorative applications, such as personal ornaments and inlays, as well as for simple fittings and vessels⁸⁰. As mentioned above, other Middle Bronze Age documentary sources indicate that iron was many times more valuable than silver and even gold during this period.

In the Late Bronze Age, iron is attested by archaeological finds over a wider area and in greater quantities than before. Waldbaum lists a total of seventy-four finds from Mesopotamia, Egypt, Anatolia, Cyprus, Krete and, for the first time, Aegean Greece and Syria-Palestine⁸¹. She notes that the increase in the quantity and spread of iron over the eastern Mediterranean world is combined with an increase in the variety of types into which it is formed, and that these in turn represent a wider range of functions⁸². As before, many types comprise items of jewellery, such as rings or pins, and many are items of apparent special status, such as the iron battle-axe from Ugarit, which had a cast-on copper socket,

⁷⁶Waldbaum 1980 70-74.

⁷⁷Waldbaum 1980 74-75.

⁷⁸The information given by Waldbaum 1980 75 is supplemented here with that from more recent publications.

⁷⁹Waldbaum 1980 75 & n16.

⁸⁰Moorey 1994 287.

⁸¹Waldbaum 1980 76-82.

⁸²Waldbaum 1980 78.

was decorated with gold and had been deposited in a sanctuary context⁸³. Less familiar from previous periods are articles with the appearance of ordinary utilitarian implements, such as a tanged knife from Lesbos and the putative point of a drill from Mycenaean Thebes⁸⁴. It is important to note that the latter constitute more the exception than the rule in Cyprus and Aegean Greece, with the majority of iron objects comprising items which are decorative in function.

Textual evidence expands our view of iron in the Late Bronze Age, especially in Hittite Anatolia. The relevant documents list hundreds of iron objects from a repertoire which is far greater than that attested archaeologically, and which includes the use of iron in applications such as the fronts of headbands, statuettes of men and animals, an altar, a throne, a bath of 90 minas in weight, and vessels including a spouted pitcher, and rhyton⁸⁵. There are also many utilitarian items such as daggers, knives, spears, hammers, axes, maces, pegs /bolts and staffs /poles⁸⁶.

Increasing sophistication in the production of iron during the Late Bronze Age may be inferred from developments in the vocabulary for iron. Košak notes that plain "AN.BAR", "iron", in the Old Kingdom (ca. 1650 onwards), has been joined by "AN.BAR.GE₆", "black iron", by the reign of Suppiluliuma I (ca. 1380 to 1346), and by "AN.BAR SIG₅", "good iron", and "AN.BAR BABBAR", "white iron", by the reign of Hattusilis III (ca. 1289-1265)⁸⁷. In addition, the "Iron Letter" of Hattusilis III refers to "*parzillu damqu*", a phrase which Goetze suggests denotes metal of a particular quality, and translates tentatively as "good iron"⁸⁸. Such vocabulary provides evidence for the production and recognition of different types of iron which were distinguished by colour and quality⁸⁹.

The extent to which iron was exploited in Hittite Anatolia during the Late Bronze Age has

⁸³See Waldbaum 1980 76 For the battle-axe from Ugarit.

⁸⁴See Waldbaum 1980 77 & 78 for the drill-point and knife.

⁸⁵Košak 1986: headbands p131 section 1i; statuettes 129-130 1g; spouted pitcher 128 1d; rhyton 133 2c; bath 128 1d & 131 1j; altar 130 1h2; throne 129 1f. The list of articles given here and below is far from exhaustive of Košak's catalogue.

⁸⁶Košak 1986 1c & 2b.

⁸⁷Košak 1986 134.

⁸⁸Goetze 1940 28 n114.

⁸⁹Cf. Muhly et al. 1985 76.

persuaded some that iron had come into everyday use there⁹⁰. However, many of the objects listed, such as the throne and altar, seem to be associated with personnel and activities which were far from everyday, in addition to which the use of iron in such applications is indicative of high status and value. Furthermore, iron never became "standard issue" in the Hittite army⁹¹, despite the advantages of hardness, toughness and ease of repair which it can afford over bronze in weapons for cutting and stabbing. This tactical "edge" would surely have been capitalised on by the Hittites had the metal been widely available to them, as it was later by the Neo-Assyrian army. Furthermore, although certain classes of artefact including weapons and billets are listed in large numbers⁹², closer inspection reveals that few items, for which quantities are specified and legible, occur in amounts of ten or more, and that none occur in amounts of one hundred or more⁹³. Finally, returning to the archaeological material, Waldbaum notes that bronze remains more common than iron in tools and weapons⁹⁴. Therefore, it seems that the Hittite iron industry, though prolific in comparison with neighbouring industries, produced a limited amount of metal with a restricted circulation.

How does iron in the Early Iron Age differ from that of the Bronze Age? Waldbaum (1978) shows that between the twelfth and tenth century in Cyprus, Greece, Krete and the Aegean Islands the quantity of iron and variety of iron types in the archaeological record increases. The proportion of iron objects relative to bronze objects also begins for the first time to equal or surpass the latter in all or some of her three basic categories of weapons /armour, tools and jewellery⁹⁵. In §2.3.2, a related development was noted, in which iron types of unprecedented size begin to appear, of which spits are one example. The sum total of these changes seems to be that iron was available in greater quantities than ever before.

⁹⁰See esp. Muhly et al. 1985 73 and Siegelová 1984 (summarised by Košak 1986 135).

⁹¹MacQueen 1986 61-63: iron was only just beginning to be introduced for use in warfare in the Late Empire. Gurney 1954 86-87; MacQueen 1986 57-58: the misconception that the Hittites owed their supremacy to iron has long been disproved, and there now seems little doubt that their "secret weapon" in terms of military hardware lay in their particular adaptation and deployment of the horse-drawn chariot.

⁹²Muhly et al. 1985 73.

⁹³References to collections of 10 or more of any single artefact are as follows:

20 and 22 billets AN.BAR, Košak 1986 p126 section 1b.

66 ?billets AN.BAR.SIG₅, 134 3b.

56 dagger blades AN.BAR, 126 1c1.

81 *ARIKTU* (? = ceremonial) spears of AN.BAR.GE₆, 126 1c2.

30, 12 and 10 pegs/bolts AN.BAR, 126 1c4.

15 ? AN.BAR.GE₆, 133 2b1.

⁹⁴Waldbaum 1980 78.

⁹⁵Waldbaum 1978 45-55.

8.3.2 Hypothesis of Bronze Shortage

Let us now return to the question of what motivated this change. Snodgrass hypothesises a shortage of bronze. Noting the paucity of bronze in the archaeology of Early Iron Age Greece and Cyprus, he conjectures that the convulsions of the Late Bronze Age wreaked havoc with the long distance trading networks through which copper and, even more so, tin were procured. The consequential shortage of bronze forced people to find an alternative in iron, hence it began to be exploited on an unprecedented scale⁹⁶.

The "Hypothesis of Bronze-Shortage" won initial approval⁹⁷, but has now fallen out of favour⁹⁸. The presence of the bronze spit of Atlantic type of eleventh century date found in Amathous Tomb 523⁹⁹ indicates that trading routes with the western Mediterranean through which supplies of metals could be procured may not have been disrupted to the extent previously inferred. Likewise, the number of imports from the Near East found in early tombs at Palaepaphos-*Skales* and Kourion implies the continuation of exchange networks in the eastern Mediterranean¹⁰⁰. The rich metal finds from the same sites are also indicative of a flourishing bronze industry¹⁰¹, and reflect the fact that there appears to be too much copper and tin in circulation at the end of the Bronze Age and beginning of the Iron Age for there to have been a chronic shortage of these metals.

Further afield, lead isotope analysis of ingots from Sardinia suggests that large quantities of copper were being transported between Cyprus and Sardinia during the twelfth and eleventh centuries, a movement which is hardly consistent with a scarcity¹⁰². One interpretation of the dating of the Gelidonya wreck also gives us a substantial cargo of tin from the twelfth century, and the "Mines of King Solomon" in Wadi Arabah may have been in operation during the critical period¹⁰³. Finally, a recent substantial programme of analysis of bronzes from sites of the late second and early first millennium in Cyprus and other eastern

⁹⁶For the Hypothesis of Bronze Shortage see Snodgrass 1971 237-239, 1980a 348, 1980b 50, 1982 293, 1989 29.

⁹⁷See esp. Waldbaum 1978 71-75, Wertine 1980 1, Muhly 1980 47f.

⁹⁸I follow here the critique provided by Muhly 1996, but see also esp. Maddin 1982 303; E.S. Sherratt 1994 61; Zaccagnini 1990 496-500.

⁹⁹See §7.2.1c for this find.

¹⁰⁰Coldstream 1994 145.

¹⁰¹Ibid.

¹⁰²Lo Schiavo 1995 47-49, Muhly 1996 48.

¹⁰³Muhly 1996 48.

Mediterranean areas has produced no evidence for a decrease in the levels of tin except in northern Mesopotamia¹⁰⁴. The Hypothesis of Bronze-Shortage also fails as a convincing explanation for advances in ferrous metallurgy beyond the eastern Mediterranean. For example, in Kolchis no apparent disruption of bronze production preceded the widespread appearance of iron towards the end of the second millennium, or the sudden rise in ironworking in the region during the seventh century¹⁰⁵. Still further afield, no recession in the production of bronze may be detected in Hallstatt Europe prior to the increased exploitation of iron¹⁰⁶.

What, then, of the dearth of bronzes from Early Iron Age Greece and Cyprus? In answer to this question, I. Morris has noted that in Greece most of the metal objects from this period were recovered from deliberate deposits, and has argued that the assemblage from these contexts need not be representative of the circulation of metals above ground. The shortage of bronze is a mirage: what we see in deliberate deposits is not the result of a dearth of bronze, but its usurpation by iron as the "elite metal"¹⁰⁷.

8.3.3 Hypothesis of Wood Shortage

Wertime hypothesises a shortage of fuel brought about by a supposed deforestation of the eastern Mediterranean by the end of the Bronze Age as a result of the use of wood in industries associated with the production of bronze. Wertime argues that the production of iron was more fuel-efficient, and that therefore iron began to be exploited more intensively to obtain more metal per tree¹⁰⁸. This theory may be dismissed on the simple basis that Wertime has misunderstood the thermodynamics of the smelting process: the production of iron in fact requires far more fuel than that of bronze. Furthermore, it seems that the deforestation of the eastern Mediterranean is a product of the Industrial Age¹⁰⁹.

8.3.4 Marketing

E.S. Sherratt attributes the catalysis of the increased use of iron in Cyprus and Greece to the entrepreneurial exploitation of a technical innovation. She accepts a theory, which is considered below, that a means of producing iron on a regular basis from wastes arising from

¹⁰⁴Pickles & Peltenberg 1998 68-77 & 80.

¹⁰⁵Tsetskhladze 1995 309-312, 327.

¹⁰⁶B.G. Scott 1990 31-34.

¹⁰⁷I. Morris 1989.

¹⁰⁸Wertime 1982 & 1983 with Horne 1982a & b and Stager 1985, followed recently by Bouzek 1997 44.

¹⁰⁹See Åström et al. 1986 28, Muhly et al. 1990 162-163 and Pickles & Peltenberg 1998 81-84.

the production of copper was discovered on Cyprus during the twelfth century. As a result, iron ceased to be a rare and precious material and instead became a readily available sort of "rubbish". However, this could be sold at a premium to members of the sub-elite who aspired to a higher social status when packaged in the form of a knife /dagger blade with an ivory handle, not least because such implements carried appropriate connotations due to their circulation during the Bronze Age as prestige items. Iron knives /daggers therefore appealed to the sub-elite initially as personal adornments more than utilitarian tools. Nevertheless, iron blades which performed better than bronze blades ultimately led to the reversal of this situation, and so iron continued to be used as a utilitarian metal long after the marketing ploy had lost its novelty¹¹⁰.

E.S. Sherratt's model seems vulnerable for a number of reasons¹¹¹. As argued below, iron seems to have begun to be made regularly as a by-product arising from the production of copper during the Bronze Age, and given that iron had a high value during this period it follows that its supply by this route did not cause it to be regarded as near-worthless rubbish. Moreover, as in modern industry, the relationship between products and "waste" products may not have been so clear-cut, with groups of processes thriving in symbiosis, the waste from the production of one material being used as the sought-after raw material for another. Finally, as argued above, the value of iron did not decline at the beginning of the Iron Age in Cyprus or Greece with the required rapidity or severity.

8.3.5 Advances in Carburisation, Quenching and Tempering

A further difficulty with the theories outlined above is that the history of iron given above suggests that the quantities of iron in use had increased during every age since Waldbaum's Prehistoric period. From this perspective, the increase at the beginning of the Iron Age was merely the next step in a continuous and ongoing process. Therefore, theories which attempt to account for the motivation behind this change through a unique set of transient circumstances lack conviction.

An explanation which takes greater account of the Bronze Age ancestry of iron focuses on improvements in the physical properties of the metal, and holds that Iron Age iron was better than Bronze Age iron due to the discovery of some of the basic processes by which iron can be made harder, stronger and tougher than bronze. The benefits of these advances were realised mostly in implements for cutting or piercing, in which the resultant properties are

¹¹⁰E.S. Sherratt 1994 59-75.

¹¹¹E.S. Sherratt nevertheless raises several important issues in connection with the study of iron and the transition from bronze to iron. These include the definition of "value", the role of social factors in the process, and regional variations in the reasons for and the response to the increased availability of iron.

critical¹¹². In the long term, this factor undoubtedly did promote an increase in the use of iron, but it is not clear that the beginning of the Early Iron Age was the point at which the potential of iron for such applications was first recognised, or that the iron which was produced at the beginning of this period was substantially better than that of the Late Bronze Age.

The brief survey given above of iron before the Iron Age shows that iron implements for cutting or piercing are attested from the Early Bronze Age onwards¹¹³. Many of these articles were found or attested in exceptional contexts such as votive deposits, and /or were combined with costly materials such as gold or precious stones, suggesting that Bronze Age "utilitarian" iron artefacts were reserved for ornamental, prestigious and ceremonial uses, and were never actually used¹¹⁴. However, while the Bronze Age possessor of an iron implement probably would not wish to spoil his or her treasure by using it for everyday tasks, it seems unlikely that the properties of the metal were never tested, if not by the users, then by the smiths who made the artefacts¹¹⁵. Moreover, if the practical suitability of iron for implements for cutting or piercing had not been recognised, it is curious that it should be fashioned repeatedly into such implements, and with increasing frequency.

On the question of whether the physical properties of iron were better in the Early Iron Age than the Late Bronze Age, the most important process to consider is carburisation (steeling), by which iron becomes alloyed with carbon resulting in a harder metal. The degree of carburisation is critical: too little and there is too little benefit; too much and the metal becomes too brittle. The hardness of carbon steel may be enhanced further if the metal is quenched, meaning that it is cooled very rapidly when hot, usually by being plunged into cold water. Again, the benefit achieved depends upon various factors, including the degree of carburisation and the rapidity of the cooling, the latter being governed by the means employed and the size and shape of the object. Quenching increases the brittleness of steel as well as its hardness, but this can be ameliorated by tempering, a process in which an object is reheated and held at a particular temperature for a period of time. Again, the degree of tempering is critical: too little will have too little effect; too much will remove the advantages

¹¹²On the role of metallurgical developments in the Transition from bronze to iron see esp. Forbes 1964 217, Waldbaum 1978 68, Wertime & Muhly 1980 xv, Wertime 1980 1, Wheeler & Maddin 1980 124-125, Stech-Wheeler et al. 1981, Craddock 1995 258, McNutt 1990 esp. 151-158, Muhly et al. 1990 esp. 171-172, Zaccagnini 1990 497 and Pickles & Peltenberg 1998 68 & 84-86. On the role of the realisation that iron could be used to good effect in implements for cutting and piercing see esp. Snodgrass 1971 213, 1980a 336, 1989 23.

¹¹³Cf. Waldbaum 1980 69f and Zaccagnini 1990 500.

¹¹⁴See esp. Snodgrass 1982 285, Muhly 1980 50, and (on Hittite implements) Gurney 1954 67 and Kořak 1986 134.

¹¹⁵Bouzek 1997 44.

of quenching and begin to decarburise the metal¹¹⁶.

The evidence for the physical characteristics of iron from the Late Bronze Age and Early Iron Age lies in the structure of the metal, and this may be determined by metallographic examination. Few such analyses have been carried out on Bronze Age iron artefacts from Greece, Cyprus, or the eastern Mediterranean as a whole¹¹⁷, but the study of a Late Bronze Age axe from Boghazköy and two further Late Bronze Age artefacts from Alaca Hüyük by Muhly et al. (1985) revealed no evidence that Hittite smiths had mastered the arts of deliberate carburisation, quenching, or tempering. Muhly et al. suggest, therefore, that Hittite smiths were unable to produce iron which was stronger than bronze and consequentially more suitable for utilitarian implements¹¹⁸. However, the analysis of a Middle Bronze Age iron blade from Tomb 4 of the East Cemetery at Pella in Jordan detected carburisation, albeit heterogeneous in distribution, combined with evidence for quenching. Whether the blade had also been tempered was impossible to determine, because the surface layers of the artefact had been entirely eaten away by corrosion¹¹⁹. We may not generalise with confidence from such a small sample, though the blade from Pella demonstrates the possibility that whether by design or accident, Bronze Age iron could be produced which was harder than the best work-hardened bronze.

For the Early Iron Age, the metallographic analysis of a much larger number of artefacts has shown that iron was sometimes carburised, quenched and reheated after quenching¹²⁰. In particular, in Cyprus, of thirty-two Early Iron Age blades studied by Muhly et al. 1990, twenty-five were carburised¹²¹, implying that carburised iron was being selected for these implements in preference to plain iron. In Greece, the archaeological evidence is supplemented by the well-known simile from the *Odyssey* (9.389-394) referred to earlier, which states that iron acquires strength when plunged into cold water. However, the fact that there is more evidence for the use of carburised iron and quenching in Cyprus and Greece

¹¹⁶For a more detailed description of the effects of carburisation, quenching and tempering see B.G. Scott 1990 esp. 9-15.

¹¹⁷Waldbaum 1980 72-74, 79, 88.

¹¹⁸Muhly et al. 1985 76-79.

¹¹⁹R.H. Smith et al. 1984.

¹²⁰For Cyprus see the analysis by Stech et al. 1985 of fifteen Cypro-Geometric iron objects from Palaepaphos-Skales, from which the authors claim that Cypriot smiths understood the technique of deliberate carburisation. See also the analysis by Åström et al. 1986 of finds from Amathous, Idalion, and Lapithos dating from LC IIIB to CG IIB, from which the authors conclude that carburisation, quenching and tempering had been mastered.

¹²¹Muhly et al. 1990 171.

(and the eastern Mediterranean in general) during the Iron Age may reflect no more than the quantitative bias inherent in the evidence, and need not imply that carburisation and quenching were understood to a significantly greater degree.

Furthermore, while it seems clear that there was some recognition in the Early Iron Age that certain pieces of iron had different properties to others, it is not clear that the means of producing such iron at will had been discovered, and that the carburisation, quenching and tempering detected in the metallographic samples had been carried out intentionally and /or controlled. Recent research indicates that the carburisation of iron in ferrous technologies comparable to those of Greece, Cyprus, and the eastern Mediterranean in general in the Early Iron Age results primarily, if not solely, by default during the smelting of the ores, and not during subsequent processing when carbon is in fact lost¹²². Similarly, a hot lump of iron might be plunged into cold water merely to neutralise the danger it presented in the workplace, especially once it ceased to glow, and a piece of quenched iron may have been reheated for a variety of reasons other than purposefully to reduce the brittleness of a carburised and quenched product.

Whether or not smiths in Greece and Cyprus knew how to enhance the properties of iron better in the Early Iron Age, finds of swords, one of the major types of cutting /piercing implement, show that the metal they produced was not always superior in performance to the best bronze. At Palaepaphos-*Skales*, Athens, Lefkandi and the Knossos North Cemetery a number of swords were ritually killed before being deposited with the dead. In some cases, such as Palaepaphos-*Skales* Tomb 76, this was achieved simply by folding the blade in two along its short axis¹²³. In other cases, such as Athens Agora Grave 27 and Areopagos Grave D16:4, both dated ca. 900, the swords were bent right round the amphoras in which the remains of the deceased were interred¹²⁴. Iron swords which were ductile to this degree would be less prone to shatter than bronze swords, but their blades would have proved less hard than those of the best work-hardened bronze, and probably less effective. The grave disadvantage at which a sword prone to bending placed the warrior in combat may be illustrated by a passage from the Icelandic *Laxdaela Saga*, where Kjartan, the hero of the tale, is engaged in a fight which ends in his death: "*Kjartan's blows were hard but his sword was of little use, and he was always having to put it under his foot to straighten it*"¹²⁵.

¹²²Salter pers. comm.

¹²³Karageorghis 1983 fig. CXLII No. 22.

¹²⁴For Athens Agora Grave 27 see Snodgrass 1971 234 fig. 84; for Areopagos Grave D16:4 see Coldstream 1977 31.

¹²⁵Trans. Magnus Magnusson & Hermann Pálsson, Penguin 1969 174.

8.3.6 The Desire for Iron

Therefore Early Iron Age iron does not seem to have been substantially better than Bronze Age iron, and improvements to the physical properties of the metal cannot be employed to account for the increase in its use. Further illustration of this conclusion is provided above all by metal roasting spits, for which, as argued in §7.2.1, iron and bronze were equally suitable. The theories proposed so far all fail to take account of the fact that, as outlined above, iron had considerable value at the end of the Bronze Age, and was perceived to have aesthetic appeal. These factors were surely sufficient to make goods made of iron desirable, and to motivate ambitious metal producers to experiment with ways of producing iron in ever greater quantities. Such experiments had already succeeded in expanding the distribution of iron from its minuscule distribution in fifth and fourth millennia to the levels attained by the Hittites from the sixteenth to thirteenth centuries. The hopes of discovering processes yet more efficient, with the promise of vast financial benefits for the inventor, were surely one of the most fundamental factors which led to the increased exploitation of iron in the Early Iron Age¹²⁶.

8.3.7 Why were Spits not Made of Iron Earlier?

It follows that iron did not predominate sooner in spits and many other types because of some constraint which must have affected the production of the metal *per se*, or the production of artefacts from it. Taking the latter first, the repertoire of iron goods attested in the eastern Mediterranean during the Late Bronze Age shows that smiths of this period were able to produce a wide range of artefacts for a variety of applications, including implements for cutting or piercing, and some objects of considerable size. Furthermore, as argued above, Early Iron Age smiths were not substantially better than their predecessors at enhancing the physical properties of iron through the techniques of carburisation, quenching or tempering.

Evidence for the smelting of iron in Greece and Cyprus at present is limited during the crucial transitional period, and it is necessary once more to refer to material from other parts of the eastern Mediterranean world. The "Iron Letter" of Hattusilis III suggests that smelting was still a haphazard process in Late Bronze Age Anatolia¹²⁷. Metallographic studies suggest

¹²⁶Cf. B.G. Scott 1990 31, who proposes this theory to account for the adoption of iron in prehistoric Ireland.

¹²⁷"... As for the iron about which you wrote to me, there is no good iron in my storehouse in Kizzuwatna. The iron (ore) is (of) too low (a grade) for smelting. I have given orders and they are (now) smelting good iron (ore), but up until now they have not finished (the iron). When they have finished I shall send (it) to you. Meanwhile I am sending you a blade of iron for a dagger..." (see Muhly et al. 1985 79 for this translation). The idea that the passage provides evidence for a Hittite monopoly of the production of iron still occasionally appears, but has been discredited (see e.g. Craddock 1995 257 and Saggs 1984 184, though Saggs raises the matter only as a possibility). It is based on an overambitious interpretation of the passage (MacQueen 1986 52), and is contradicted by the distribution of iron finds which are too widely scattered in the eastern Mediterranean (esp. Egypt and Greece: Waldbaum 1980 80-82) and in Europe (esp. the former Czechoslovakia, Holland and Sweden: Collis 1984 32). It seems more likely that the passage manifests the standard operation of

that the Hittites occasionally used ores of high arsenical content, which produced a brittle and unusable metal¹²⁸, and this factor could account at least in part for the difficulties referred to in the letter. However, there is no reason to infer that the same difficulties were experienced elsewhere for the same reason.

Of more general relevance is evidence which indicates that Late Bronze Age iron was a by-product arising from the production of copper. The procurement of iron by this route has often been postulated on a number of grounds including: the *a priori* argument that it was inevitable; the observation of elevated levels of copper in a number of iron artefacts from Timna and certain Cypriot sites; analogy with exports of "Phoenician Type Slags" from Cyprus for the production of iron during the Ottoman period; and the production of iron by this means using archaeology by experiment¹²⁹.

The analogy from Ottoman times has now been exposed as a factoid: the eighteenth century AD documentary evidence from which it was taken in fact refers to the export of iron ores from mines¹³⁰. Furthermore, the discovery of elevated levels of copper in iron artefacts lacks significance, as copper is often found in the concentrations specified (up to 1%) as an impurity in iron artefacts which were clearly not produced during the production of copper¹³¹. The exact processes by which iron might have been produced by ancient metalworkers also require some qualification. It has often been thought that iron-rich copper slags were smelted to produce metallic iron, but while the viability of this possibility has been demonstrated experimentally, the yield is often very small. Moreover the types of furnaces used in the Late Bronze Age would only have been capable of reaching the temperatures required to reduce slags containing the iron oxide wüstite, and not the much more common iron silicate slags¹³².

However, iron could be obtained relatively easily during the refining of copper matte (a mixture of copper sulphide and iron oxide produced from the roasting of chalcopyrite

centralised palace control over the procurement and distribution of materials (Moorey 1994 289). See also McNutt 1990 140-142, and Moorey 1995 60.

¹²⁸Muhly et al. 1985 77.

¹²⁹See esp. Åström 1982 180-181, Bachmann 1982 149, Charles 1980 165-166, Gale et al. 1990 esp. 5f, Kassianidou 1994 77-78, Pickles & Peltenberg 1998 79-80, Stech et al. 1985 193, Stech 1982 109, Wertime 1980 20.

¹³⁰Kassianidou 1994 78.

¹³¹Salter pers. comm.

¹³²See esp. Kassianidou 1994 77-78.

ores)¹³³. Moreover, this process is implied between the fifteenth and thirteenth century at the Middle Assyrian site of Tell Brak near Hasake in north-eastern Syria by finds of copper matte, raw copper with an iron content typically of 25%, and copper-rich metallic iron¹³⁴.

For as long as iron was produced by this route the quantity in circulation would never eclipse that of bronze, because more copper than iron would arise from each smelting cycle.

However, once iron began to be made directly from iron ores, its availability would no longer be governed by that of bronze, and if, as suggested above, iron was desirable and therefore in high demand, the quantity in circulation would increase rapidly. The introduction of this innovation would therefore account for the intensification of iron usage during the Early Iron Age¹³⁵.

8.4 Spits and the Transition from Bronze to Iron

8.4.1 A Question of Significance

Spits in Archaic Greece provide a useful indicator of several developments in iron during the Early Iron Age. As argued above, their limited distribution, and the prestigious contexts in which they occur, suggest that iron was still valued highly in the eleventh century, and that though this value declined thereafter, it did so slowly over the course of several centuries and to a lesser degree than is often presumed. Moreover, an implied parity in the worth of bronze spits and iron spits in the eleventh century, combined with written evidence for the prices of each metal from the fifth century onwards, suggests that the best quality iron did not become the "poor relative" of bronze between the start of the Iron Age and the Classical period. Spits also provide evidence that iron was perceived to have aesthetic value. These observations make an important contribution to the interpretation of the motives and innovations behind the increase in the exploitation of iron which occurred at the start of the Early Iron Age. The evidence of the spits favours the view that iron began to be used in greater quantities because the metal was desirable, and the lack of clear functional advantages of iron spits over bronze spits undermines theories which imply that this change was driven by necessity, or by utilitarian considerations alone.

The scheme proposed here for the development of ferrous metallurgy has further ramifications for the interpretation of the "Transition" from bronze to iron, and what this implies. There can be no dispute that during the Early Iron Age in Cyprus and most areas of Greece iron begins to predominate over bronze for the first time, especially in implements for

¹³³Pickles & Peltenberg 1998 87.

¹³⁴Shell 1997 120-121.

¹³⁵Cf. B.G. Scott 1990 31 on the development of Irish ironworking.

cutting and piercing. This change is quantifiable, and therefore may be used to try to relate metal usage to the conventional chronological terms "Bronze Age" and "Iron Age", even though it has long been recognised that these labels, which were formulated in the nineteenth century for the study of European prehistory, now relate to periods defined by criteria other than the presence *per se* of bronze or iron in material assemblages¹³⁶.

However, there has been a tendency to allow the study of the development of iron to be influenced by the "Three Age System", and to become periodised into a parallel framework which does not merely organise material, but is thought to reflect a reality. In this, two long stable periods of millennia bracket a brief period of one to two centuries of dramatic change. In the Bronze Age or "pre-Transition", iron is encountered but no attempt is made to use it. In the Iron Age or "post-Transition", the use of iron is widespread but no innovations of consequence are discovered to the end of antiquity. In the "Transition", the most important advances ever in ferrous technology bring about the switch from the role of iron in the Bronze Age to that of the Iron Age.

Such a scheme is implied especially by Snodgrass, whose model for the transition from bronze to iron¹³⁷ has proved highly influential in the study of the development of iron in Cyprus, the Aegean, and elsewhere¹³⁸. The model treats the "adoption" of iron as a single event which took place in the space of about one hundred years, was preceded by two thousand years of *desultory experimentation*, and followed by a lack of significant advances until the discovery of cast iron, long after the end of antiquity¹³⁹.

¹³⁶See Snodgrass 1971 213, Waldbaum 1978 10, Wertime & Muhly 1980 xiii, and Pigott 1980 418.

¹³⁷The main studies by Snodgrass of the "Transition" comprise Snodgrass 1971 Chapter 5, 1980a, 1982 and 1989 (but see also Snodgrass 1980b 49-54, 1987 170 & 176, and 1994). The most important differences between the four main publications are that Snodgrass refines the chronology of his scheme, and that there is a gradual distillation of thought and argument. There is also progressively less description of the material evidence, especially of contextual information which proves to be of vital importance in the case of the spits.

¹³⁸For the application of Snodgrass's model to the Aegean and Cyprus see for example the recent text-book on Archaic Greece by Osborne 1996 27. For its application elsewhere to the Levant and Ancient Near East see e.g. McNutt 1990 154f, Moorey 1994 286f, and Muhly et al. 1990 172f.

¹³⁹The chronological scheme proposed by Snodgrass (esp. 1982 291-292 & fig. 2) is as follows:

	Stage 1	Stage 2	Stage 3
Cyprus	up to ca. 1150	ca. 1150 to ca. 1050	ca. 1050 onwards
Aegean*	up to <i>pp</i> ca. 1150	<i>pp</i> ca. 1150 to ca. 1000	ca. 1000 onwards

* metallurgically advanced areas only; *pp paulo post*.

8.4.2 Cyprus and Aegean Greece: Pioneers or Followers?

The first two stages of the sequence set out by Snodgrass may be identified with some conviction in Cyprus, and even more so in Aegean Greece, where iron artefacts are attested in extremely small quantities before the twelfth century. However, the survey of iron before the Iron Age in the eastern Mediterranean given above shows that further afield the history of iron was very different. In particular, in certain areas of the ancient Near East, archaeological evidence, supplemented where possible with documentary sources, attests to tremendous and progressive development in the exploitation of iron in terms of its geographical distribution, and in the quantity, range of types and applications in which it appears over the course of four millennia. These great strides forward indicate the introduction and gradual enhancement of a number of key innovations without which the increased use of iron in the Early Iron Age would not have been possible. These include: the recognition of suitable raw materials; the identification of suitable fuels with which to smelt them; the design of an appropriate furnace; mastery of the operation of such a furnace; the development of techniques for smithing the smelted metallurgical product (the bloom) into blades, sockets or other shapes; mastery of the technique of welding; and so on. Seen from this perspective, there was no "big bang" in terms of ferrous metallurgy at the beginning of the Iron Age. Rather, iron came to be exploited only gradually, and the change in its use during the Early Iron Age was only one chapter in a very long saga of epic proportions¹⁴⁰.

The disparity in the occurrence of iron before the Iron Age in the Greek world as opposed to other areas of the eastern Mediterranean casts doubt on the claim that Cyprus pioneered the advances in ferrous technology of the Early Iron Age. This claim is largely based on the assumption that the wealth of experience of Cypriot smiths in non-ferrous metal production would have encouraged them to experiment with the production of iron, and that thereafter, the new-won skills could have been passed on through extensive and well-established trading networks¹⁴¹. In addition to the difficulty that the use of iron in Cyprus during the Bronze Age is much less advanced than that in other areas, the iron types found in Cyprus during the twelfth and eleventh centuries are limited in range, and it does not necessarily follow that they were manufactured there, especially since no early ironworking sites have yet been

¹⁴⁰Cf. esp. Pleiner & Bjorkman 1974; Moorey 1994.

¹⁴¹Waldbaum 1982 325 traces the idea back to Lorimer, from whom it has passed to Desborough, Snodgrass, Muhly et al., Stech-Wheeler et al., Sandars, Tzedakis and Boardman. Waldbaum 1982 326 observes that the identification of Cyprus as the birthplace of Iron Age iron has the convenient advantage to those of hellenocentric disposition that it offers the happy compromise of an origin "*east of Greece geographically and culturally, but not too far east*". She adds that an even more chauvinistic and hellenocentric view entails the birth of ferrous technology in Greece at the end of the Bronze Age, its flight to Cyprus with Mycenaean refugees during the upheavals of the ensuing period, and its nurture there before a return to its homeland (Snodgrass 1980a 345, echoed implicitly 1982 292-293). Waldbaum describes this as "*the ultimate invasion theory - the Greeks (transmuted into Cypriots) invade themselves to produce cultural change*" (Waldbaum 1982 337).

identified on the island. Moreover, although there is better evidence during the Early Iron Age for the carburisation, quenching and tempering of iron in Cyprus, this is mostly a product of the distribution of metallographic studies and, as mentioned above, the significance of such evidence is hard to assess¹⁴².

A better candidate for the development of the ferrous technology of the Iron Age may be found if we consider what happened at the end of the Bronze Age to those who had been employed elsewhere in the production of iron goods, and especially to those working in Hittite Anatolia with its relatively well developed iron industry¹⁴³. V. Cook proposes that as Anatolia became engulfed in chaos at the end of the Late Bronze Age, smiths there moved to the relative security of Cyprus, taking their skills with them¹⁴⁴. However, such a movement could have taken place before this time¹⁴⁵ especially if Cyprus came under some sort of Hittite control at the end of the Bronze Age, as intimated by textual evidence¹⁴⁶. No arrival of such new technology is indicated by archaeology, but it is possible that the evidence was obscured by disruption and dislocation as the eastern Mediterranean plunged into chaos.

The claim that Cyprus and Aegean Greece were at the forefront of ferrous technology seems equally questionable for the period after the Transition. For the purposes of comparison we shall focus on Assyria, from which relatively good and well studied archaeological and textual evidence is available. It seems clear that by the ninth century the iron industry of Assyria was well developed. The Assyrians were at the height of a period of imperialist expansion which had been achieved by a succession of strong rulers who had led large armies to victory. These mighty armed forces had been equipped with weapons and tools of iron which must have created a requirement for the production of this metal on an unprecedented scale. A vivid illustration of the military applications of iron is offered by Hasanlu, a city which lay in the border territories between Urartu and Assyria but shows stronger material

¹⁴²Waldbaum 1982 326.

¹⁴³Little is known of the iron industries of peoples neighbouring the Hittites, and it is possible that ferrous technology was equally or more advanced in other parts of Anatolia, and that the smiths from one such region performed the role postulated here for Hittite smiths.

¹⁴⁴V. Cook 1988 31.

¹⁴⁵The movement of smiths to Cyprus before the collapse of the Hittite empire would satisfy some of the reservations of Zaccagnini 1983 258. Zaccagnini is dismissive of the idea that ferrous technology could have been passed from one region to another in this way, hypothesising that the fall of the hierarchical centralised Late Bronze Age political systems, far from leaving specialised craftsmen such as smiths redundant, created new opportunities for employment in decentralised village or tribal organisations. However, we may note that analogies for the spread of crafts from one region to another through the movement of skilled craftsmen are not difficult to find, such as the movement of Greek potters to Italy, or (probably) of Phoenician smiths to Krete.

¹⁴⁶See Zaccagnini 1990 495 for references. Note that the interpretation depends upon the identity of Alashiya.

links with the latter¹⁴⁷. About two thousand iron artefacts were recovered from late ninth century destruction levels at this site, amongst which were about seven hundred arrowheads, five hundred spearheads, and seventy swords¹⁴⁸. From the end of the eighth century at Khorsabad we have the hoard of 140 to 150 tonnes of putative trade iron which is discussed in **Appendix I**, and other finds from the ninth, eighth and seventh centuries show that virtually all tools and weapons of this time were made of iron¹⁴⁹. The archaeological evidence is mirrored by textual evidence, and especially lists of tribute and booty. These indicate that iron had become so plentiful and unremarkable by the reign of Sargon II (ca. 722-705), who initiated the construction of the palace at Khorsabad, that it is scarcely mentioned, and even then, only as finished artefacts which were "numberless"¹⁵⁰.

The evidence from Greece presents a very different picture. There are no large single assemblages of iron artefacts to compare with those of ninth century Hasanlu or late eighth century Khorsabad, and while it is true that this is in part the product of a lack of excavated settlement sites, it also seems true that where iron is found in Greece during the comparable period it appears in much smaller quantities to which considerably more importance is attached. What little evidence there is from settlement contexts seems to imply that most tools and implements in Greece were being made of wood, bone and stone, indicating that the circulation of iron or for that matter bronze for everyday practical purposes was restricted¹⁵¹. Iron is concentrated in deliberate deposits left by members of the elite, such as the Panoply Tomb from Late Geometric Argos. Coldstream has described the goods from this grave as *"the richest haul of Geometric offerings ever found in the Argolid"* and has also said of the assemblage that in it *"wealth is expressed in iron"*¹⁵². The context certainly suggests that the set of twelve iron spits and the associated pair of iron warship-shaped firedogs and pair of iron axes would have been the envy of the leading citizens of the city (§2.2.4a). It seems unlikely that the same goods would have evoked the same response in Hasanlu or Khorsabad.

¹⁴⁷Pigott 1989 74-78.

¹⁴⁸Pigott 1989 73.

¹⁴⁹Curtis et al. 1979 382-384.

¹⁵⁰These documents suffer from serious biases: the lists contain formulaic phrases, and some rulers exaggerated their achievements by inflating the quantities of goods obtained or including some not obtained (for example, the records of the rulers between the reigns of Shalmaneser III and Tiglath-pileser III appear to be somewhat fantastical). Iron, however, does not seem to suffer this fate, and the lists may be used to plot a steady increase in the quantity of iron in use. See Pleiner & Bjorkman 1974 292f and Moorey 1994 289f for a discussion of the relevant documents.

¹⁵¹See I. Morris 1986 9-11 for a summary of the evidence.

¹⁵²Coldstream 1977 146.

Therefore, at least as far as the end of the Geometric Period, the iron industry of Aegean Greece seems to have been less developed than that of Assyria. That this is so should cause no surprise because of the difference between the socio-economic conditions operating in each region. Assyria was politically unified at the start of the first millennium in a way which Greece was not, and was therefore able to embark on collective endeavours such as military conquest, or the centralised procurement of iron weapons for this task, on a scale which would not become possible in Aegean Greece until much later.

8.5 Conclusions

The behaviour of metal spits in the archaeology of Aegean Greece and Cyprus provides an important contribution to the interpretation of a number of aspects relating to iron in these regions during the Early Iron Age. This evidence indicates that the value of iron declined more slowly than is usually assumed. This conclusion has important consequences. In particular, where the study of social structure is based on the analysis of assemblages from funerary contexts, the interpretation of the status of a man or woman who is buried mostly with iron grave goods is affected radically according to whether we think that iron was cheap or expensive. Similarly, our view of the investment represented at sanctuaries by dedications of iron is affected.

The study of spits also supports the conclusion that iron was regarded as more of a complementary alternative to bronze than its antithesis in terms of value. Furthermore, we have argued that the relationship between the metals was also similar in terms of how their aesthetic appeal and mystery were perceived, and that they were at first worked by the same smiths.

The appearance of iron spits in the Early Iron Age is one manifestation of a substantial increase in the use of iron. This increase was probably brought about by the discovery of how to obtain the metal directly from the smelting of iron ores, instead of from processes associated with the production of copper, and was motivated primarily not by necessity, compulsion or practicality, but by the positive desire to procure larger quantities of a metal which had aesthetic appeal and considerable value.

The notion that at the start of the Iron Age Cyprus was the first place in which the technological breakthrough was discovered has been questioned, and the speculative theory advanced that the innovation was chanced upon further east just before the end of the Bronze Age, perhaps in Hittite Anatolia.

The change in the use of iron at the beginning of the Early Iron Age was not the single decisive step in the adoption of iron, but one of many in a gradual process stretching back in

time at least as far as the fifth millennium, and forwards to beyond the end of antiquity. Accordingly, the concept of a "Transition from bronze to iron" seems misguided and unhelpful in understanding the history of iron, because it implies a process with an identifiable beginning and end, and over-emphasises a single phase in its development.

CHAPTER NINE

CONCLUSION

Spits have been used for roasting meat from prehistoric times. In Greece and Cyprus, early spits were made of wood, but towards the end of the Late Bronze Age, they also began to be manufactured in small numbers in bronze. During the Early Iron Age, an important innovation in ferrous technology associated with the smelting of ores allowed iron to be produced in significantly greater quantities than before. This permitted the manufacture of iron artefacts in unprecedented numbers and of unprecedented size. One of the new types to result was the iron spit, with which the bronze spit coexisted for a short time in Cyprus before falling out of use until its reintroduction in Greece in the third century. The motive for making spits from iron instead of bronze was not that iron was better in terms of its physical properties, but that it was a more desirable metal, largely because of its value.

The spit presented an ideal medium for displaying the newly available wealth in iron for three reasons. Firstly, spits were large objects. Secondly, the form of the artefacts necessitated that metal of good quality in terms of its ability to be forged was used for their manufacture. Thirdly, the context of the communal feast in which spits were used ensured that they would be seen frequently, for considerable periods of time, and by a wide public.

The pride taken in the possession of spits is reflected in their inclusion amongst the grave goods of the elite and, later, in their dedication as votive gifts at sanctuaries. However, the prestige value of spits was not static, but decreased slowly over time. This decrease is reflected in the gradual widening of accessibility to the spit from the topmost echelons of society to those further down, and in increases in the length of the longest spits, as well as in the number of spits in the biggest single deposits. These processes culminate in the mid-sixth century in the huge bundle of spits and giant spit dedicated at the Argive Heraion, and the mass of spits deposited at Delphi by Rhodopis.

Thereafter, the contexts in which iron spits feature suggest that they have lost their appeal as prestige items. They are found in graves in small numbers, as at Tamassos and Idalion, or in token form, as at Sindos, while at sanctuaries, they appear to have begun to be used as scrap metal, as in the area of the workshop of Pheidias at Olympia and at the sanctuary of Athena Chalkioikos at Sparta. Iron spits also largely disappear from the archaeological record, though written evidence shows that they continued to circulate above ground, and that the spit-roast remained a popular means of cooking food.

The decline of the iron spit corresponds to a decline in the value of the metal from which it was made. This may be traced in exchange ratios for silver : iron given in documentary sources taken from the Ancient Near East for the Archaic and earlier periods, and from Greece from the fifth century onwards. It has long been known that iron lost value during the Early Iron Age, but the documentary evidence, when combined with the pattern shown by the spits, argues that this loss was far less severe than is commonly assumed, and took place much more gradually. Iron was made in a variety of qualities, and by the end of the Archaic period, the better of these tended to retail at about four times the price of the inferior grades. In relative terms, at the beginning of the Iron Age, the good quality iron, from which spits were made, was more than ten times less valuable than silver, but had about the same value as tin, and was about ten times more valuable than copper, so was considerably more expensive than bronze. By the fifth century, the more valuable types of iron had about the same value as copper, and so tended to be cheaper than bronze, but only marginally.

A generalised picture of the spit has been presented above, but considerable variation is attested in their appearance and use. Distinctive regional types developed, and spits were combined together in a number of multiples, especially fives and sixes, to make bundles of different sizes. Furthermore, wooden spits of different lengths continued to be used alongside the metal spits throughout the period studied here. The length was determined by the animal cooked, or the mode in which the spit was deployed, wooden spits commonly being placed over small portable braziers known as *escharai*.

When in use for roasting meat, iron spits were usually hand-held in a variety of positions. Iron spits were sometimes supported on "firedogs" and, on occasion, the combination of artefacts was fashioned into a three-dimensional artistic representation of a warship being rowed.

Spits had strong masculine associations because they were invariably wielded by men, and because they had phallic connotations. However, they were sometimes buried with women. The reason for this was perhaps that these women, all of whom belonged to the elite, had enjoyed in life some organisational role in the performance of animal sacrifice, of which the spits were a symbol. The same explanation may, in turn, account for the presence of spits in the grave goods of men.

Aside from roasting, the iron spit was used, on occasion, as an effective improvised weapon, and began to be recognised in Greece as a convenient form in which to store iron of a certain quality. The latter became more important as types derived from spits spread to the north-west through the heart of Europe, and ultimately to Britain. However, there is no convincing evidence that, given certain definitions, iron spits were used as a favoured form of

pre-coinage money. Moreover, the ancient traditions relating to Sparta, Argos and Byzantion on which this interpretation is based are thoroughly unreliable, and much evidence counts against the idea that spits were used in such a way, not least the disparity in value between one iron spit and one silver obol coin.

Obol and drachma coins do seem to have been named after spits and bundles of spits and, in the absence of the idea that the former superseded the latter in some sense, this fact seems difficult to explain. Nevertheless, it has been hypothesised that the link should not be sought in terms of function, but in terms of morphology. Early coinage seems to have circulated in very small fractions of the stater, and the way in which these fractions were expressed in Greek was cumbersome. One way of simplifying the system was to introduce below the stater two new denominations, the smaller of which was one-sixth of the larger, this relationship being determined by the sexagesimal system of counting which was prevalent in the eastern Mediterranean world. When searching for a name for these new denominations, the inventors may have been reminded of spits on account of the use of a tool with the shape of an "*obelos*" for adding incuse rectilinear punchmarks to coins. The fact that spits were commonly organised into sets or bundles of roughly the same size offered an immediate visual analogy with which to explain the concept of the obol and drachma, and remember which unit was the smaller, which the larger.

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AJA = *American Journal of Archaeology*.

AM = *Mitteilungen des Deutschen Archäologischen Instituts, Athenische Abteilung*.

Ann. Ec. Soc. Civ. = *Annales Économies Sociétés Civilisations*.

AR = *Archaeological Reports*.

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*ARV*² = *Attic Red-Figure Vase-Painters*, 2 ed., J.D. Beazley, Clarendon Press, Oxford 1963.

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CQ = *Classical Quarterly*.

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IG V.2 = *Inscriptiones Arcadiae*.

IG IX.1 = *Inscriptiones Phocidis, Locridis, Aetoliae, Acarnaniae, insularum maris Ionii*.

IG IX.2 = *Inscriptiones Thessaliae*.

IG VII = *Inscriptiones Megaridis et Boeotiae*.

IG XII.1 = *Inscriptiones Rhodi, Chalces, Carpathi cum Saro, Casi*.

IG XII.2 = *Inscriptiones Lesbi, Nesi, Tenedi*.

IG XII.5 = *Inscriptiones Cycladum*.

IG XII.7 = *Inscriptiones Amorgi et insularum vicinarum*.

IG XII.9 = *Inscriptiones Euboeae insulae*.

IK = Inschriften Griechischer Städte aus Kleinasien.

JAOS = Journal of the American Oriental Society.

JDAI = Jahrbuch des deutschen archäologischen Instituts.

JFA = Journal of Field Archaeology.

JHS = Journal of Hellenic Studies.

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