ABSTRACT

Jeffrey B. Spier
Merton College

D.Phil. Thesis
Literae Humaniores
Trinity Term, 1987

MINOR ARTS AND REGIONAL STYLES IN EAST GREECE, 700-500 B.C.

This study attempts to establish a body of material that can be attributed to East Greek workshops in the Archaic period. All bronzework, ivory and wood carving, jewelry and works in precious metal, rings, engraved gems, and coins are categorized and discussed. A corpus of all these materials is intended, with the exception of coins, where only an outline for future work is suggested. Special attention is given to findsites, contexts, and chronological problems.

Individual workshops for the various minor arts are identified, and their stylistic traits and development is discussed. In the seventh century, East Greek bronzework, ivories, and even iconography were dependent especially on the more advanced Mainland Greek schools as well as on Oriental models, but during the sixth century several distinctively Ionian stylizations and sculptural types were developed. Other minor arts, notably the jewelry in Ionia, were more innovative and appear to have been created late in the seventh century, perhaps under Lydian patronage. Gem engraving was a relatively late (mid-sixth century) orientalizing art that was quickly developed in East Greek schools, although they are difficult to localize.

The extent of an East Greek koine style is also examined. In many cases, a common style is not shared by different media, but some distinctive stylizations, especially those based on sculptural prototypes in the sixth century, can occur in a range of minor arts.

MINOR ARTS AND REGIONAL STYLES IN EAST GREECE, 700-500 B.C.



Jeffrey B. Spier
Merton College

Thesis Submitted for the
Degree of D.Phil. in Archaeology
Faculty of Literae Humaniores
University of Oxford

Trinity Term, 1987 [i.e. 1988]

TABLE OF CONTENTS

Introduction.....i

Note to the Reader.....iii

Abbreviations.....iv

Bronzework

Geometric Bronzework.....1
Tripods and Vessels.....3
Figurines and Pendants.....4
Seals.....12
Fibulae.....15
Early Orientalizing Bronzework.....23
Griffin Protomes and Related Material.....24
Tripods.....32
Figural Bronzes.....34
Belts and Belt Handles.....41
Relief Plaques.....44
Samian Rhyton.....49
Miniature Votive Objects.....50
Vessels.....58
Sixth Century Bronzework.....64
Tripods and Related Vessels.....65
Volute Kraters and Related Vessels.....80
Figural Attachments.....84
Other Vessels.....87
A Group of Decorated Mirrors.....93
A Lydian Bronze and Iron Kline.....96
"Cheese Graters".....97
Bridle Ornaments.....99
Sixth Century Figural Bronze Statuettes.....103
Korai and Kore-supports.....103
Kouroi and Kouros-supports.....114
Other Figures.....125
The Cesme Group.....132
Other Animal Figurines.....134
Conclusions.....139

Ivory, Bone, and Wood Carving

Introduction.....144
Seals.....147
Rhodes.....149
Samos.....153
Chios.....169
Ephesos.....169
Erythrai.....189
Old Smyrna.....192
Klazomenai.....193
Lydia and Phrygia.....193
Delphi.....199

Jewelry and Works in Precious Metal

Geometric Jewelry.....202
Conclusions.....211
Orientalizing and Archaic Jewelry.....213
The Seventh Century Orientalizing Workshop.....214
Other Seventh Century Workshops.....223
Rhodian Jewelry, Sixth Century.....227
Silver Plate.....233
Goldwork from Ephesos and Related Material.....238
Votives.....239
Pins.....243
Fibulae and Brooches.....248
Belt Handles.....253
Pendants on Chains.....254
Pendants and Amulets.....255
Non-figural.....255
Figural.....261
Necklaces.....269
Earrings.....281
Ear Studs.....292
Ear Caps.....299
Gold and Silver Plaques.....299
The Troad Group.....314
Gold Fringe.....315
Bracelets.....316
Buttons.....321
Conclusions.....322

Rings

Unengraved Rings.....331
Ring Mounts for Engraved Gems.....333
Engraved and Ornamented Rings.....335

Engraved Gems

Introduction.....350
Catalogue of Gems with East Greek Provenience.....354
Other East Greek Works.....365
Lydian Works.....373
Other Works.....378
Conclusions.....379

Coinage

Introduction.....386
Numismatic Method.....387
The Purpose of Early Coinage.....390
Early Electrum Coinage.....391
- Literature.....391
- The Date of the Earliest Artemision.....396
- An Outline of Early Electrum Issues.....401

Coinage c. 600-550.....424
- Lydia.....424
- Miletos.....428
- Northern Ionia.....430
- Kyzikos.....434

Coinage c. 550-500.....436
- Lydia.....439
- North Ionia.....449
  - Phokaia.....449
  - Mytilene.....454
  - Kyzikos.....455
  - Lampsakos.....457
  - Uncertain Electrum Issues.....458
- South Ionia.....462
  - Miletos.....463
  - Coinage of the Ionian Revolt.....465
  - Other Electrum Issues of c. 500.....467
  - Samian-weight Electrum.....470
- Other Silver Coinage.....471
  - Samos.....471
  - Chios.....473
  - Teos.....473
  - Ephesos.....474
  - Erythrai.....475
  - Rhodes and the Islands.....475
  - Karia.....476
  - Lykia.....478

Conclusions: Coinage and Regional Styles.....479

Summary.....499

Introduction:

Until recently, a balanced and objective view of the arts of East Greece in the Archaic period could not be made. Finds from the area, especially from properly excavated sites, were scant, and the importance of Ionia as a political and artistic center, well known from literature, lead early scholars to see Ionian influence everywhere without having original material to compare. Only the cemeteries and sanctuaries on Rhodes, excavated in the 1860s and again by the Italians in the 1920s and 1930s, produced large amounts of material but helped demonstrate how little was known of the other sites, especially in Asia Minor. The panionianism of the nineteenth and early twentieth centuries has fallen out of fashion (although remnants of it are still often seen), and a number of modern reappraisals have been made. There is a renewed interest in East Greece in relation to both the rest of Greece and the earlier Anatolian cultures, with seminal studies having begun by the late 1940s (cf. R.M. Cook, JHS 66, 1946, 67-98; G.M.A. Hanfmann, HSCP 61, 1953, 1-37; E. Akurgal, AJA 66, 1962, 369-379), and new excavations at Sardis, Gordion, Ephesos, Old Smyrna, Miletos, Erythrai, Samos, and Chios, have provided the first real archaeological material for study.

Specialized studies on stone sculpture have already appeared (Samos: Buschor, Freyer-Schauenburg, Pedley; Miletos and Didyma: Tuchelt, Oezgan; Sardis: Hanfmann; Chios: Boardman). The complex study of pottery and terracottas, which are extremely difficult to localize

because of their widespread distribution and common East Greek stylistic traits (but especially important for the same reasons), is still in its beginnings but is continuing, with a number of studies having appeared (Schiering, Kardara, Walter, Walter-Karydi, Cook, Boardman, Hayes, Greenewalt, and Dupont, Dacia 27, 1983, 19-43, using clay analysis). A comparative study of surviving East Greek architecture also would be especially productive and now achievable.

The intention of this paper is to establish a fundamental corpus of material that can confidently be assigned to East Greek workshops so that stylistic relations between workshops in East Greece, elsewhere in Greece, and in the East can be better understood. Special attention is to be given to findsites, contexts, and chronology in hopes that this method will objectively categorize various material, and then broader stylistic comparisons will be made. Stone sculpture, pottery and terracotta, and architecture will not be examined in depth, since the extensive work is either already published or in progress elsewhere, and will only be used as comparative material. The minor arts, including bronzework, ivories, jewelry and works in precious metal, engraved gems, and coins, will be examined. Except for the coins, a corpus is intended, although some material, notably bronzes from Samos, Rhodes, and no doubt others in Turkish museums and private collections, was not entirely accessible. Much material is

still being found, some of which appears on the art market. Numismatics has its own methodology, and although these methods are followed here, only an outline for future study is attempted (pending a complex die study). It is hoped that the contrasts between the different media studied here will help clarify how different styles developed.

Although establishing a complete body of material is the first and most important goal, a broader view of some aspects of East Greek style will also be attempted. Too many unsupported generalities about "Ionian" style have been made in the past, and there have been too few thoughtful studies of the sort made by Langlotz and, most recently, Croissant. It is hoped that once the corpus of material is established, the broader aesthetic view will follow more convincingly.

Note to the Reader:

Since so many individual objects are considered, the illustrations are extensive. However, in addition to these, several further books should be consulted. Hogarth's publication of the Ephesos excavations is essential throughout. Laffineur should be consulted for the corpus of jewelry from the Rhodian orientalizing workshop. For gems Boardman's AGG should be used, and for rings Boardman's article (in AK 10) would be helpful but not essential. Varieties of coins are especially numerous, and both Weidauer and Traite (vol. 1 and 2 with plates only) are necessary. Desirable for the fine photos, but not essential, are Buschor, AS, and Akurgal, Kunst Anatoliens.

ABBREVIATIONS

AAA	Athens Annals of Archaeology
Actes...CIN	Actes du Congres International de Numismatique
Aegean Island Cat.	Greek Art of the Aegean Islands (Exhibition, New York, 1979)
AGD	Antike Gemmen in deutschen Sammlungen, followed by collection
AGG	J. Boardman, Archaic Greek Gems (London, 1968)
AIIN	Annali dell´ Istituto Italiano di Numismatica
AJN	American Journal of Numismatics
AK	Antike Kunst
Akurgal, Alt-Smyrna 1	E. Akurgal, Alt-Smyrna I. Wohnschichten und Athenatempel (Ankara, 1983)
Akurgal, Kunst Anatoliens	E. Akurgal, Die Kunst Anatoliens von Homer bis Alexander (Berlin, 1961)
Anat. Civ.	The Anatolian Civilisations (Exhibition, Istanbul, 1983)
Anat. Stud.	Anatolian Studies
Annuario	Annuario della Scuola archeologica di Atene
ANSMN	American Numismatic Society Museum Notes
Art Antique	J. Doerig, Art Antique. Collections privees de Suisse romande (Geneva, 1975)
Asyut	M.J. Price and N. Waggoner, Archaic Greek Silver. The Asyut Hoard (London, 1975)
Bableon and Blanchet, Bronzes	E. Babelon and J.-A. Blanchet, Catalogue des bronzes antiques de la Bibliotheque Nationale (Paris, 1895)
Bammer	A. Bammer, Das Heiligtum der Artemis von Ephesos (Vienna, 1984)
BAR	British Archaeological Reports
Barnett, Ancient Ivories	R.D. Barnett, Ancient Ivories in the Middle East. Qedem 14 (Jerusalem, 1982)

Barnett, *Nimrud Ivories*	R.D. Barnett, *A Catalogue of the Nimrud Ivories in the British Museum* (London, 1975)
Berlin 1	A. Greifenhagen, *Schmuckarbeiten in Edelmetall* 1 (Berlin, 1970)
Berry Jewelry	W. and E. Rudolph, *Ancient Jewelry from the Collection of Burton Y. Berry* (Bloomington, 1973)
Beschreibung	A. Furtwaengler, *Beschreibung der geschnittenen Steine im Antiquarium* (Berlin, 1896)
Bieber, *Kassel Bronzes*	M. Bieber, *Die antiken Skulpturen und Bronzen des Koenigl. Museum Fridericianum in Cassel* (Marburg, 1915)
Biesantz	H. Biesantz, *Die thessalischen Grabreliefs* (Mainz, 1965)
Blink.	C. Blinkenberg, *Fibules Grecques et Orientales* (Copenhagen, 1926)
BMC	*British Museum Catalogue*
BMC Bronzes	H.B. Walters, *Catalogue of the Bronzes, Greek, Roman and Etruscan in the British Museum* (London, 1899)
BMC Gems	H.B. Walters, *Catalogue of the Engraved Gems and Cameos, Greek, Etruscan and Roman in the British Museum* (London, 1926)
BMC Rings	F.H. Marshall, *Catalogue of the Finger Rings, Greek Etruscan and Roman, in the British Museum* (London, 1907)
BMCJ	F.H. Marshall, *Catalogue of the Jewellery in the British Museum* (London, 1911)
Boardman, *Ashmolean Gems*	J. Boardman and M.-L. Vollenweider, *Catalogue of the Engraved Gems and Finger Rings in the Ashmolean Museum* 1 (Oxford, 1978)
Boardman, *Escarabeos*	J. Boardman, *Escarabeos de Piedra Procedentes de Ibiza* (Madrid, 1984)
Boardman, *Greeks Overseas*	J. Boardman, *The Greeks Overseas* (London, 1980)

Boardman, Island Gems	J. Boardman, Island Gems (London, 1963)
Boardman, GGFR	J. Boardman, Greek Gems and Finger Rings (London, 1970)
Boehlau	J. Boehlau, Aus ionischen und italischen Nekropolen (1898)
Boston	A.B. Brett, Catalogue of Greek Coins, Museum of Fine Arts (Boston, 1955)
BSFN	Bulletin de la Societe Francaise de Numismatique
Buschor, AS	E. Buschor, Altsamische Standbilder I-III (Berlin, 1934-5), IV-V (Berlin, 1960-1)
Buschor, Fruehgr. Jungl.	E. Buschor, Fruehgriechische Juenglinge (1950)
Caner	E. Caner, Fibeln in Anatolien I (PBF XIV, 8, Munich, 1983)
Chios	J. Boardman and C. Vaphopoulou-Richardson, ed., Chios. A Conference at the Homereion in Chios 1984 (Oxford, 1986)
CincClasStud	Cincinnati Classical Studies
ClRh	Clara Rhodos
Coldstream, Geometric Greece	J.N. Coldstream, Geometric Greece (London, 1977)
Coldstream, GGP	J.N. Coldstream, Greek Geometric Pottery (London, 1968)
Comstock and Vermeule, Bronzes	M. Comstock and C. Vermeule, Greek, Etruscan and Roman Bronzes in the Museum of Fine Arts, Boston (Boston, 1971)
CRAI	Compte Rendus de l'Academie des Inscriptions et Belles-Lettres
Croissant	F. Croissant, Les protomes feminines archaiques (1983)
De Ridder, Acropolis Bronzes	A. De Ridder, Catalogue des bronzes trouves sur l'Acropole d'Athenes (Paris, 1896)
De Ridder, Louvre Bronzes	A. De Ridder, Les Bronzes Antiques du Louvre (Paris, 1915)
Elektronmuenzen	F. Bodenstedt, Die Elektronmuenzen von Phokaia und Mytilene (Mainz, 1981)

Emporio	J. Boardman, Excavations in Chios 1952-1955. Greek Emporio (London, 1967)
Exochi	K.F. Johansen, Exochi. Ein fruehrhodisches Graeberfeld (Acta Archaeologica 28, 1958)
Furtwaengler, AG	A. Furtwaengler, Die antiken Gemmen (Berlin, 1900)
Gabelmann	H. Gabelmann, Studien zum fruehgriechischen Loewenbild (Berlin, 1965)
Gates	C. Gates, From Cremation to Inhumation: Burial Practices at Ialysos and Kameiros during the Mid-Archaic Period, ca. 625-525 B.C. (Los Angeles, 1983)
Glipses of Excellence	N. Leipen, Glimpses of Excellence. A Selection of Greek Vases and Bronzes from the Elie Borowski Collection (Toronto, 1984)
Hackens, RISD Jewelry	T. Hackens, Museum of Art, Rhode Island School of Design. Catalogue of the Classical Jewelry (Providence, 1976)
Hadaczek	K. Hadaczek, Der Ohrschmuck der Griechen und Etrusker (Vienna, 1903)
Higgins	R. Higgins, Greek and Roman Jewellery (London, 1980)
Hill, Walters Bronzes	D.K. Hill, Catalogue of Classical Bronze Sculpture in the Walters Art Gallery (Baltimore, 1949)
Hoffmann, Ten Centuries	H. Hoffmann, Ten Centuries that Shaped the West (Houston, 1970)
Hoffman and von Claer	H. Hoffmann and V. von Claer, Antiker Gold und Silberschmuck (Mainz, 1968)
Hogarth	D.G. Hogarth, Excavations at Ephesus (London, 1908)
Hommes et dieux	Hommes et dieux de la grece antique (Exhibition, Brussels, 1982)
HSCP	Harvard Studies in Classical Philology
IAMY	Istanbul Arkeoloji Muezeleri Yilligi

IGCH	M. Thompson, O. Morkholm, and C.M. Kraay, ed., An Inventory of Greek Coin Hoards (New York, 1973)
Ist. Mitt.	Istanbuler Mitteilungen
Jantzen, Bronzewerkstaetten	U. Jantzen, Bronzewerkstaetten in Grossgriechenland und Sizilien. JdI Ergaengungsheft 13 (1937)
Jantzen, GGK	U. Jantzen, Griechische Greifenkessel (Berlin, 1955)
Jb.Berl.Mus.	Jahrbuch der Berliner Museen
Jeffery, LSAG	L.H. Jeffery, Local Scripts of Archaic Greece (London, 1961)
JRGZM	Jahrbuch des Roemisch-Germanischen Zentralmuseums, Mainz
Kardara	C. Kardara, Rhodiaki Angeiographia (Athens, 1963)
Kraay, ACGC	C.M. Kraay, Archaic and Classical Greek Coins (Berkeley, 1976)
Laffineur	R. Laffineur, L'orfevrerie rhodienne orientalisante (Paris, 1978)
Lamb	W. Lamb, Ancient Greek and Roman Bronzes (London, 1929)
Land of Civilizations	Land of Civilizations, Turkey (Exhibition, Tokyo, 1985)
Langlotz, Hellenisierung	E. Langlotz, Die kulturelle und kuenstlersiche Hellenisierung der Kuesten des Mittelmeeres durch die Stadt Phokaea (1966).
Langlotz, Studien	E. Langlotz, Studien zur nordostgriechischen Kunst (Mainz, 1975)
Langlotz, Bildhauerschulen	E. Langlotz, Fruehgriechische Bildhauerschulen (Nuernberg, 1927)
Larisa am Hermos	J. Boehlau and K. Schefold, Larisa am Hermos (1942)
Lindos 1	C. Blinkenberg, Lindos I. Les Petits Objets (Berlin, 1931)
Master Bronzes	D.G. Mitten and S. Doeringer, Master Bronzes from the Classical World (Mainz, 1967)

Mendel	C. Mendel, *Catalogue des Sculpture Grecques, Romaines et Byzantines. Musees Imperiaux Ottomans* I-III (Constantinople, 1912-14)
Met.Mus.Bull.	*Metropolitan Museum Bulletin*
Mildenberg Cat.	A. Kozloff, ed., *Animals in Ancient Art from the Leo Mildenberg Collection* (Bloomington, 1981)
Neugebauer, *Berlin Bronzes* 1-2	K.A. Neugebauer, *Katalog der statuarischen Bronzen im Antiquarium Staatlische Museen zu Berlin* I (1931), II (1951)
NNM	*American Numismatic Society Numismatic Notes and Monographs*
Oezgan	R. Oezgan, *Untersuchungen zu archaischen Plastik Ioniens* (Diss. Bonn, 1978)
Ol. Forsch.	*Olympische Forschungen*
Ol. Bericht	*Bericht ueber die Ausgrabungen in Olympia*
Oxus	O.M. Dalton, *The Treasure of the Oxus* (London, 1964)
Pamatky Arch	*Pamatky Archeologicke* (Prague)
PBF	*Praehistorische Bronzefunde*
RA	*Revue Archeologique*
Reichel	W. Reichel, *Griechisches Goldrelief* (Berlin, 1942)
Richter, *Bronzes*	G.M.A. Richter, *Catalog of Greek, Etruscan and Roman Bronzes* (New York, 1915)
Richter, *Engraved Gems*	G.M.A. Richter, *The Engraved Gems of the Greeks and the Etruscans* (New York, 1968)
Richter, *Handbook*	G.M.A. Richter, *A Handbook of Greek Art* (New York, 1969)
Richter, *New York Gems*	G.M.A. Richter, *Catalogue of Engraved Gems in the Metropolitan Museum of Art* (Rome, 1956)
Richter, *Korai*	G.M.A. Richter, *Korai* (London, 1968)
Richter, *Kouroi*	G.M.A. Richter, *Kouroi* (London, 1970)
RN	*Revue Numismatique*
Rosen	N.M. Waggoner, *Early Greek Coins from the Collection of Jonathan P. Rosen* (New York, 1983)

Sardis 1	H.C. Butler, Sardis I. The Excavations, Part 1: 1910-1914 (Leiden, 1922)
Sardis 13	C.D. Curtis, Sardis XIII, Part 1. Jewelry and Gold Work (Rome, 1925)
SCE	The Swedish Cyprus Expedition
Schiering	W. Schiering, Werkstaetten orientalisierender Keramik auf Rhodos (Berlin, 1957)
Schimmel Cat.	O.W. Muscarella, ed., Catalogue of the Norbert Schimmel Collection (Mainz, 1974)
S.-S.	E. Sapouna-Sakellarakis, Die Fibeln der griechischen Inseln (PBF XIV, 4, Munich, 1978)
SNG	Sylloge Nummorum Graecorum, followed by the name of the collection
SNR	Schweizerische Numismatische Rundschau
Stathatos 1-4	P. Amandry, et al., Collection Helene Stathatos I-IV
Traite	E. Babelon, Traite des monnaies grecques et romaines I-IV (1901-1933)
Tuchelt	K. Tuchelt, Die archaischen Skulpturen von Didyma (1970)
UPennMusBull	University of Pennsylvania Museum Bulletin
v. Fritze	H. von Fritze, Die Elektronpraegung von Kyzikos. Nomisma 7 (1912)
Vorl. Grab.	Ephesos. Vorlaeufiger Grabungsbericht (Vienna)
Weidauer	L. Weidauer, Probleme der fruehen Elektronpraegung (Fribourg, 1975)
Young, Gordion 1	R.S. Young, et al., Three Great Early Tumuli (1981)
ZfN	Zeitschrift fuer Numismatik

BRONZEWORK

Geometric Bronzework:

Although a number of bronze objects of East Greek manufacture are plausibly datable to the Geometric period, usually in the late eighth and early seventh centuries although sometimes earlier, a distinction must be made between objects of Geometric style, which has been largely defined by the multitude of objects from Mainland Greek sanctuaries and cemeteries, and objects that display other styles, either orientalizing or merely primitive. Much of what survives is extremely close in style to either Mainland Greek Geometric work or to Eastern work, and a crucial first step is distinguishing the local from the imported. This process is complicated by the difficulty in isolating workshops in Mainland Greece (although recent work has helped; cf. H.-V. Herrmann, JdI 79, 1964, 17-71; W.-D. Heilmeyer, Ol. Forsch. 12, 1979, on the finds from Olympia; Coldstream, Geometric Greece, 175ff., on the Corinthian style; Zimmermann, forthcoming, on workshops for horses on stands) due partly to the fact that seemingly identical objects, especially pendants and the like, enjoyed a very wide distribution in this period (cf. the distribution maps in I. Kilian-Dirlmeier, PBF XI,2, pl. 101-7, and J. Bouzek, Pamatky Arch. 65, 1974, figs. 1-6). Identifying workshops in the East, including those in North Syria and as far away as Iran and the Caucasus, is also necessary for distinguishing imports but is only in the early stages of research (U. Jantzen, Samos 8, deals with Eastern imports at

Samos, with important reviews by H.-V. Herrmann, Gnomon 47, 1975, 392-402, and O.W. Muscarella, AJA 77, 1973, 236f.).

Although the fibulae (cf. below) are found at many sites, other bronze objects are few in number and are found at few sites. Only the sanctuaries at Samos, Lindos, and Kameiros, and rarely some tombs at Ialysos, Kameiros, and Exochi, have yielded Geometric bronzes. A few other less important pieces have been found at Chios, Ephesos, and perhaps Erythrai and Mersin, but these are not necessarily of local manufacture. Except for fibulae, pins, and other jewelry (cf. below, "Jewelry"), which can date back to the Protogeometric period, the bronzes appear to be exclusively late eighth and often seventh century in date.

The only careful study of East Greek material has been Gehrig's 1964 dissertation (Die geometrischen Bronzen aus dem Heraion von Samos). His full publication of the bronzes from Samos is awaited and will presumably revise some of his earlier findings regarding the Geometric material. His dissertation discussed sixty-two objects, most of which are imported, although he considered some of the best statuettes to be local works (see below). Rhodes is the other site that has produced Geometric bronzes in quantity, more than Samos, but these finds remain poorly published (the examples in the Rhodes Museum were not all accessible for study). Most excavated examples come from Lindos and the stipe votiva at Kameiros, and a number of others from Kameiros are in the British Museum.

It is the fibulae that best represent bronzework in the Geometric period in East Greece, for they are found in large quantities at all sites and are of distictively Island or East Greek shape. There can be no doubt about their local production. Similarly, there are pins and other bronze pieces of jewelry that are widespread (cf. below "Fibulae" and "Jewelry"). However, the votive statuettes, tripods, vessels, and even pendants so common at Mainland Greek sanctuaries are far less numerous at East Greek sites, although a similar range of items has been found, and much must be regarded as imported. The paucity of bronzes from Samos of local manufacture is surprising in view of the subsequent bronzeworking tradition there known to have begun by the beginning of the seventh century and suggests that little of Geometric style was produced anywhere in East Greece. Only a few objects, mostly from Rhodes, may be regarded as distinctively East Greek, and a search for an East Greek Geometric style comparable to Mainland Greek bronzes or local Geometric pottery has been largely unsuccessful.

Tripods and Vessels:

The large ring handle tripods (S. Benton, BSA 35, 1934-5, 92, 118f., the Lindos examples; F. Willemsen, Ol.Forsch. 3, 1957, 48, 57, 179, for Lindos and Samos; Gehrig, 98-101, 103 no. 55-58, no. 56-8, as Samian; M. Maass, Ol. Forsch. 10, 1978, 4 n. 24, 52 n. 7, 67 n. 11, the Lindos handle is called Cretan) best known from Olympia are attested in only

a few fragmentary examples from Lindos (Lindos 1, no. 742, a handle, and 743, a leg) [FIG. 1] and Samos (Gehrig, four handles; and one more since, AM 83, 1968, no. 106). Although Gehrig preferred to see a Samian workshop for some of those found in the Heraion, he pointed out their dependence on Mainland types. A double bull's head attachment from a cauldron or tripod found at Lindos has a mate from Olympia and appears to be an import (Lindos 1, no. 704=Herrmann, Ol. Forsch. 6, 117, 125, 129, pl. 54) [FIG. 2]. Local East Greek production seems unlikely in view of the finds, despite the likelihood that griffin cauldrons were produced by the beginning of the seventh century.

Simple vessels must have been produced, but few have survived, even as fragments. Cauldrons from Rhodes of the Archaic period are extant, but only simple vessels, such as phialai, have been found in Late Geometric contexts of the early seventh century (cf. "Orientalizing Vessels", below). A fragmentary bronze cup was found at Ialysos in a Late Geometric tomb again of the early seventh century (Ialysos, Grave 57, ClRh 3, 100). The so-called "cheese graters"--perforated bronze plates--known from Archaic and later examples where they are attached to animal figures (cf. "Graters", below), are already present in Late Geometric contexts (Samos: Gehrig, 97-8, no. 50-54; Lindos: Lindos 1, no. 693).

Figurines and Pendants:

The more accomplished votive figurines are best attested on Samos, although Kameiros and Lindos have also

produced some good examples. Gehrig listed only five pieces that may be considered of exceptional quality (no. 1-5), all of which he considered Samian (Gehrig, 103), but none of which is accepted so here. Three are human figures or groups, a woman holding a vessel (no. 1), a group with two women and animals (no. 2), and the famous lion hunt group (no. 3, now lost; to Gehrig's bibliography add: B. Schweitzer, Greek Geometric Art, 151f., pl. 186-187, as not Samian; also J. Boardman, Ashmolean Gems, 2, no. 3, compares the bronze seal from Mersin [cf. below] with the base of the Samos piece and suggests a possible East Greek origin for both). Despite Gehrig's arguments, an attribution to Samos or another East Greek site is not convincing in view of the close parallels from the Mainland (cf. J.N. Coldstream, Geometric Greece, 256-7). A fine team of horses (no. 4, and cf. the pair from Erythrai, below) and another horse with a bird on its back (no. 5) are also most likely imports from Lakonia and Corinth, respectively (W.-V. Herrmann, JdI 79, 1964, 18ff.; Coldstream, Geometric Greece, 257; W.-D. Heilmeyer, Ol.Forsch. 12, 1979, 111 n. 157; I. Kilian-Dirlmeier, JRGZM 32, 1985, 248; and Zimmermann, forthcoming). Other fine quality works, such as the horse from Lindos (Lindos 1, no. 1570, not pictured, but it seems typically Lakonian from the description) are probably also imports.

Especially important but difficult are the attributions of the human figures, the three examples from Samos and

several from Rhodes, including a fine standing, ithyphallic man from Kameiros (BMC Bronzes, no. 133) [FIG. 3], another with hands on breast (BMC Bronzes, no. 134), and several in poor condition from the stipe votiva (ClRh 6/7, 345, fig. 80, no. 6-7, male, 8, female, and 9, a figure on a circular base) [FIG. 4]. Best preserved and perhaps of finest workmanship is the man from Kameiros, British Museum no. 133, which resembles several Mainland examples; the head is much like the famous "goddess" from Delphi (attributed to a Corinthian workshop by Coldstream, Geometric Greece, 176f., fig. 58c-d; cf. Herrmann, JdI 79, 1964, 47f., fig. 33-35), although more bulbous, and the latter statuette is considerably larger. The stocky legs and square shoulders are common in statuettes of Geometric style from the Mainland (e.g. the Ortiz examples, Art Antique, no. 111-112; and de Menil collection, H. Hoffmann, Ten Centuries, 119, no. 37). An unusual composition in the Rhodes Museum shows two side-by-side female (?) figures joined at the arm and with a tang attached above the two heads (G. Konstantinopoulou, Archaia Rhodos, 1986, color pl. 52) [FIG. 5]. The closest parallel appears to be a roughly contemporary Villanovan pair of youths (Hunt collection, Wealth of the Ancient World, 94, no. 20), and some Mainland Greek prototype may be presumed. The human figurines may well be local works copying Peloponnesian types.

It is more difficult to categorize the less finely worked animal figures. Although they are from Greek sites and of Late Geometric date, most are crude works without the

characteristics of the conventional Geometric style known from the Mainland, and there is some difficulty in distinguishing local from imported Eastern examples. Examples of Greek work include four bulls, two stags and an uncertain animal from Samos (Gehrig, no. 6-9, 11-13, all otherwise unpublished). Other stags from the Heraion are considered imports from the Caucasus by Jantzen (Samos 8, 84, pl. 82). A bronze goat from a Geometric period tomb at Ialysos (Annuario 6/7, 1923/4, 262, fig. 162) is certainly not Greek and is very similar to examples from Samos that are viewed as Neo-Hittite by Jantzen (Samos 8, 62f., pl. 58; but cf. the remarks by Johansen, Exochi, 182). Greek works from the stipe votiva at Kameiros include a horse with the neck pierced for suspension and another stag (ClRh 6/7, 345, fig. 80, nos. 10-11; the two attributed to the same workshop by Gehrig, 64 n. 3) [FIG. 4]. Another stag from Kameiros is in London (BMC Bronzes, no. 142 [must be checked]), and a few other unpublished animals from Rhodes are in the Rhodes Museum. A horse in subgeometric (mid-seventh century?) style in London is said to be from Phanai on Rhodes (BMC Bronzes, no. 176) [FIG. 6]; it has a long, tubular body with limbs that appear to have been pinned on the original model before casting. One more stag and two bulls were found in the Late Geometric seventh century Grave Z at Exochi (Exochi, 182ff., fig. 168), one of the few datable finds of bronzework [FIG. 7]. Johansen points out that similar figurines of bulls were found at the ancient sanctuary of

Boukopion, near Lindos, and illustrates two examples now in Copenhagen (Exochi, fig. 233; Lindos 2, 897ff., fig.8) [FIG. 8]. Geometric bulls may have also been present in the sanctuary of Zeus Atabyrios at Kameiros, where later bronze bulls become a common votive (cf. especially the crude bull, ClRh 1, 88ff., fig. 71, upper left, and the bulls simply manufactured from hammered sheet bronze, which are paralleled by examples at Olympia, W.-D. Heilmeyer, Ol. Forsch. 12, 1979, 32, n. 71, fig. 1, but perhaps not so early as stated; cf. "Sixth Century Bronzework: Votive Animals", below. On the sanctuary, cf. L.H. Jeffery, Archaic Greece, 197).

Other primitive figurines of bulls found in Asia Minor (all without context) are of uncertain date and may not be Greek, many being from various Anatolian or North Syrian schools (cf. the two in Boston, M. Comstock and C. Vermeule, Bronzes, no. 37-38; and on the market, Ars Antiqua, Lucerne, Auction 3, 1961, lots 65 a-c and Auction 4, 1962, lot 88; and Muenzen und Medaillen, Basel, Sonderliste V, Dec. 1985, no. 3, "East Greek, seventh century, from Asia Minor"). It is difficult to determine which, if any, of these examples are of Greek workmanship since they are rather crude. Their date is also difficult to determine and some may even belong to the sixth century. The exceptions are the last cited example in Basel [FIG. 9], which does have strong similarities to bulls from Olympia, and perhaps a small bull in Oxford also said to be from Asia Minor (Oxford 1933.1097, Sayce bequest; L: 4.8 cm., H: 2.9 cm. [FIG. 10]; cf. also

two bulls from Samos, Jantzen, Samos 8, 41f., pl. 39, B 881 as Cypriot and 66, pl. 68, B 111 as Syrian). An unusual stag with flat, triangular head said to be from Ephesos is in Oxford (1890.137; L: 3.65 cm.), but the alleged provenience may have been derived from the type rather than the actual find site, and the work does not appear to be Greek.

Also best considered with the Rhodian Geometric material is a group of fibulae with added plastic figures as decoration (cf. below, "Fibulae"; the approximately fifteen known examples are classified by Sapouna-Sakellarakis, 100-104, Type VIII a-b). The fibulae are large and of Island type, but various plastic elements are added, including human and lion heads, as well as walking lions, rams, and birds (S.-S. no. 1459=Blink. IV 15a, fig. 114; a photo is in P. Jacobsthal, Celtic Art, 1944, pl. 225d; bought in Smyrna) [FIG. 11]. The shape of the fibulae, as well as the proveniences of nearly all the examples, demonstrate their Rhodian origin and relate them to the many other fibulae of the Late Geometric seventh century (one small, fragmentary bronze with human head from Phanai, Chios is placed with this group but is not necessarily part of a fibula; S.-S. no. 1462, otherwise unpublished). Again, however, their style has nothing of the conventional Geometric, but rather a primitive, orientalizing look for both the human heads and lions. They may be dated around the middle of the seventh century.

Besides the above mentioned human figures from Rhodes, there are only a few examples of figurines in true Geometric style that may be of East Greek manufacture. A fine recumbent cow on an openwork stand from Kameiros (BMC Bronzes, no. 140) [FIG. 12] is a work in a late Geometric style, already with an orientalizing pose and advanced modelling. It seems to have no close Mainland parallels and may be considered a good candidate for a local work. One may also consider a team of horses from the excavations at Erythrai (Izmir Museum, unpublished) [FIG. 13] which is of rather crude Geometric style with Mainland Greek parallels, although none particularly close (cf. above the Samos example and parallels in Gehrig, 36 n. 3, especially the example from Pherai, most recently Biesantz, pl. 52: L64). Since a number of early orientalizing bronzes have been found at Erythrai (cf. below), the existence of a Geometric workshop could be possible.

One group of objects in Geometric style which seems also to be East Greek, perhaps Rhodian, is the well attested double-headed animals or protomes on circular openwork bases, apparently pendants since they are often perforated. The animal heads may be goats, bulls, or rams, although the goats are most frequent, and the bases usually resemble wheels with spokes, usually six, seven, or eight in number. They are especially numerous from Rhodian sites. Many examples from Kameiros are now in London (goats: BMC Bronzes, no. 161-165, 167[?], 171[?]; bulls: no. 168-169; rams: nos. 170; also cf. no. 172, a pendant of joined ram

foreparts and Lindos 1, no. 1571, joined bull foreparts) [FIG. 14]. One example with goat heads was in the stipe votiva (ClRh 6/7, 346, no. 14, fig. 80) [FIG. 4]. Three further examples were found at Lindos (Lindos 1, no. 223b, 224, 225) [FIG. 15] and another at Phanai on Rhodes (BMC Bronzes, no. 166, base missing). The one example from Samos (Gehrig, 72, no. 20; I. Kilian-Dirlmeier, JRGZM 32, 1985, 248) is the only East Greek example not from Rhodes. Some of the British Museum examples from Kameiros were found in a well with material that appears to date from the first half of the seventh century (V. Webb, Archaic Greek Faience, 137), a date that had been proposed by Gehrig for the bronze from Samos (Gehrig, 72). The origins of this type of pendant is clearly rooted in Iranian and Caucasian traditions dating back to the second millennium (Gehrig, 72 n. 1; J. Bouzek, Pamatky Arch 65, 1974, 323), but the means of transmission, if these objects are indeed Greek, is not known. They are not common outside of Rhodes (cf. Olympia 4, pl.25: 477), and a Rhodian origin for the group seems likely, as both Gehrig and Bouzek suggest.

Somewhat similar are birds on wheel-like stands. These are well attested in Mainland Greece (categorized by Bouzek, Eirene 6, 1967, 115-139), and Bouzek has suggested that some may be Rhodian (ibid., 121-2, fig. 4: 1-2=Lindos 1, no. 228, 230) [FIG. 15-16]. He cites their similarity to the birds on fibulae (cf. below, "Fibulae") that are certainly Rhodian and the bird bowls typical of Rhodes. Other bird pendants

from Rhodes, as well as from Samos (Gehrig, no. 14-19; Bouzek, op. cit., 122-3 and Graeco-Macedonian Bronzes, 14, 19, 71) and Ephesos (Hogarth, 152, pl. 19: 8, now British Museum 1907.12-1.258; Bouzek, Eirene 6, 122-3 as a "Middle Greek" import; this is the only bronze of Geometric style from Ephesos), are seen as imports from Mainland Greece or Macedonia.

Other pendants, including "bottle-stoppers" and miniature jugs typical of Northern Greece and Macedonia, are most likely imports, although local imitations are possible ("bottle-stoppers" from Samos: Jantzen, AA 1953, 66; Gehrig, no. 38; Bouzek, Graeco-Macedonian Bronzes, 85, I1, "the Samos Stopper" group along with the example from the stipe votiva, Kameiros, ClRh 6/7, 345, no. 5, fig. 80; Bouzek, Eirene 18, 1982, 51. Miniature jugs from Samos: Gehrig, no. 26-27=Bouzek, Graeco-Macedonian Bronzes, 42 as Macedonian; Gehrig, no. 28, as uncertain; Gehrig, no. 29-31=Bouzek, 47 as "Greek" and presumably local, along with Lindos 1, no. 240). Bells may also be local works (Samos: Gehrig, no. 39 and 41=Bouzek, 91, C1-2 as local, but Gehrig, no. 40=Bouzek, 87-91, fig. 25=Jantzen, Samos 8, 81f. as an import; H. Moebius first raised the question and identified some bells from Samos as Caucasian imports in Marburger Studien, 1939, 156-166).

Seals:

Geometric stamp seals in bronze are rare throughout Greece (cf. Boardman, GGFR, 110; Island Gems, 114, 155f.; JHS 88, 1968, 7), and only two are possibly East Greek. The

first example is from Mersin, Cilicia, and is now in Oxford (Boardman, Ashmolean Gems, 2, no. 3; Island Gems, 114 n. 3). It is a square seal with a squatting man on top as a handle and a pattern of four swastikas underneath. Boardman notes that the pattern is the same as that under the Samos lion hunt group and suggests a possible East Greek origin. However, the Samos group is better considered an import, probably from the Peloponnesos, and the Mersin seal may also be more at home there, where quite a variety of figures with designs below occur (e.g. the pseudo-maeander pattern done in the same technique of raised lines below a Lakonian horse in the Ortiz collection, J. Doerig, Art Antique, no. 102). A different sort of bronze seal was found at Phanai, Chios (W. Lamb, BSA 35, 1934/5, 151, pl. 31: 39; Boardman, Island Gems, 156 n.3). It is large (4.7 cm. in diameter) and of conical shape with a knob handle that is not pierced. The intaglio device shows a remarkable figural scene with Herakles, Iolaos and the Hydra (Coldstream, Geometric Greece, 354; he compares the representation to that on a Boeotian bow fibula). No other comparable material or iconography is known from East Greece, and again the origin may be Mainland Greece (cf. the Tegea bronze seals, BCH 45, 1921, 370f., cited by Boardman).

Other Votives:

Few objects of solely votive function, such as miniature weapons, wheels, vessels, or astragals, have been found in Geometric context, although they certainly become

common by the end of the seventh century. A large (47.5 cm.), eight-spoked wheel from Samos may be the earliest example, although probably later than the Geometric period (G. Kopcke, AM 83, 1968, no. 138; AA 1964, 79, fig. 4, in situ). Votives of this sort are better considered with the orientalizing and Archaic material.

Fibulae:

C. Blinkenberg's basic and still useful 1926 study, inspired by the large number of fibulae from his excavations at Lindos (more than 1500 specimens), has been supplemented by a number of recent works. Most useful are O.W. Muscarella, Phrygian Fibulae from Gordion (1967), which deals with the Phrygian series and their East Greek derivatives (Blinkenberg's Type XII), J. Boardman, Emporio (1967), 205-211, which publishes the only well stratified examples from an East Greek site, and the two volumes in the Praehistorische Bronzefunde series, E. Caner, Fibeln in Anatolien I (1983) and E. Sapouna-Sakellarakis, Die Fibeln der griechischen Inseln (1978), which attempt a corpus of fibulae by type and findspot with drawings of every example. Thus a wealth of material is at hand (although there are some notable omissions from the new works, e.g. Blink. III, 5a and b from Kameiros, with glass bead on the bow; and of course there will be new additions to the distribution, e.g. the recently published finds from Kos and a newly discovered Caner Type Vb fibula at Sardis in a Lydian context, M84.9/8905; the fibulae from Old Smyrna remain unpublished).

Unfortunately, there is no consistent format or numbering system (occasionally Caner, Sapouna-Sakellarakis, and Blinkenberg coincide, but not often), and the groups distinguished (except at Emporio) are not always cohesive, so that possible dating and localization of production centers are by no means clear. There is little advance on

Blinkenberg's original study in this regard, but much could be done with more careful subdivisions. Muscarella merely follows Blinkenberg's numbering, although much progress is made in his careful discussion of each type and the refinement or removal of some varieties (Muscarella, 12-28). However, much could still be done in distinguishing Phrygian from Greek and in subdividing the Greek types (this is notable for types XII, 13-14, many of which are Greek, and type XII, 1, which as Muscarella points out is not cohesive and includes many Greek fibulae in precious metal that are of different forms). The stratified Emporio examples are divided into four distinct groups, G-K. Caner introduces a different system, lettered A-H, which is also useful but not completely satisfactory.

A complete survey of the types cannot be attempted here, but some relevant general observations about dating and workshops can be made. Four primary categories may be recognized as of East Greek manufacture. The first (Blink. I, S.-S. I, Caner I), "violin bow" in shape, is properly Late Mycenaean, but some were presumably made in East Greek settlements in Rhodes, Kos, and Karia. It is not clear how late this type continued, but it had no successors in the Archaic period and is not of importance here. The second group (Blink. II, S.-S. II, Caner II) is a simple arc, round or flattened in section, with pin and small catch plate, all of one piece [FIG. 17]. The type is so simple that it was likely made in many places for a long period of time, from the Late Geometric period at least through the sixth century

(as demonstrated by the silver examples in the Southwest Anatolian hoard, cf. below). A mould for a fibula of this type was found at Pythagoreion, Samos (Arch.Repts. 1985-6, 84, said to be of S.-S.IIB type, apparently from a relatively early, perhaps LG context). The third group is very large and the most characteristic of the Late Geometric period and seventh century in East Greece. This is Blinkenberg's "type des iles" (Blink. IV [and add III, 10-11]; S.-S. III, IV, V, VII, VIII; Caner III-VI; Emporio A-F) [FIG. 18], characterized by the asymmetrical shape with tall catch plate. There are a number of clear varieties of this type. The fourth group is Blinkenberg's "Types d'Asie Mineure" (Blink. XII; Muscarella XII, 1-14; S.-S. XII; Caner A-S; Emporio G-K) [FIG. 19], characterized by symmetrical bows and usually T-shaped catch plates, derived from Phrygian types that began by the mid-eighth century. In addition, there is a disc-shaped type (Blink. XV, 11; S.-S. X Ah; Caner VII) [FIG. 20], but few examples have been found and the type is presumably a minor variety. Also a few examples of large, asymmetrical fibulae with added human and animal plastic figures are known from Rhodes (S.-S. VIII) [FIG. 11].

The third group, the "types des iles", must be further subdivided, as already noted. S.-S. Type III (Caner III; Emporio F; Blink. III, 10-11 and IV, 11-12), a large series with numerous varieties that stretch from Protogeometric times to the end of the seventh century, is characterized by

the row of moulded "beads", sometimes spherical, other times lozenge- or reel-shaped, on the bow. Some fibulae are more asymmetrical than others, and catchplates vary from small and triangular or rectangular to tall and trapezoidal. Although the earliest examples are more symmetrical, it is not clear if there is a progression towards an asymmetrical shape, and varieties clearly existed simultaneously.

The earliest datable examples of this type are best attested at Iasos, where they are from Protogeometric graves (Caner, 24; D.Levi, Annuario 31-32, 1969-1970, 470f.), and at the cemeteries of Kos, where they occur in Protogeometric, Early Geometric, and later burials until late eighth century Late Geometric graves (L. Morricone, Annuario 40, 1978, e.g. Serraglio Tombs 22, 47, 49, 67 [EG], St. Pantaleo, Tomb I [LG], etc.; V.R.d'A. Desborough, Protogeometric Pottery, 223f.). Most datable graves from Rhodes that contain fibulae of this type, and indeed any type, are LG and often seventh century. At Emporio this type is represented in all seventh century levels ("They are already common in period I, but change little in over 100 years", Emporio, 210). An example of a mould for their manufacture from Samos is datable to the Late Geometric period (Arch.Repts. 1985-6, 83), and another steatite mould of later date was found also (S.-S., 6), as well as a number of bronze fibulae from the cemeteries datable to the second half of the seventh century. Some examples from Ephesos may be even later but are not securely datable (Hogarth, 147f.).

Other island types include an asymmetrical variety with

a single small or large sphere on the bow (Blink. IV, 9-10; Caner V a-b; S.-S. Va [large and small not distinguished]; Emporio A [large only]). They seem to be best attested in the late eighth and throughout the seventh centuries, and again may be slightly later at Ephesos. Many examples were found in the Athena sanctuaries at Ialysos and Kameiros, as well as in several graves at Ialysos of Geometric character, although some are of seventh century date. Other examples were found in the cemeteries of Pythagoreion (Samos) in graves of the second half of the seventh century, and some are found on Chios, only two at Emporio in early levels, but more at Phanai. In Asia Minor, a few examples are known from the Troad, "Izmir region" (a large find of fibulae, N. Firatli, IAMY 8, 1958, 75f.), Erythrai, Ephesos, Sardis (cf. above), and Assarlik in Karia.

The final island variety has, instead of a single sphere, knob or leech-shaped elements, sometimes surmounted with a knob terminal and, in a rarer variety, occasionally flattened to a diamond shape (S.-S. IV [not properly considering the Emporio D specimens, and IV b seem to be Cretan]; Caner IV-V; Emporio B-D). These varieties are not necessarily related and are perhaps better regarded as separate types. The knob type is probably related to the spherical variety (cf. Caner V a; but it does not necessarily succeed the spherical variety as is suggested in Emporio, 208, "Type B"). Other examples are more leech-shaped (cf. Caner IV d, with examples from Ephesos, "Izmir

region", the Troad, and Gordion. The type is perhaps related to the leech-earrings so popular in East Greece and derived from Eastern types, but there are also many leech-shaped fibulae from Rhodes where the earrings were not popular). Some large fibulae with incised decoration, S-spirals, zigzags, pricked triangles, concentric circles, tremolo, etc. (S.-S. IV c), are known from Rhodes with some others from the "Izmir region" find also having incised tremolo decoration. A special variety with added plastic birds on the bow (S.-S. VII b) is attested in numerous examples almost exclusively from Rhodes (all sites except Vroulia; only one other outside Rhodes, from the "Izmir region" find, Caner VI b), where birds were popular as a motif in the Late Geometric period.

Some interesting fibulae of island type, already noted above, admit plastic additions of animal and human heads and occasionally standing figures, including lions (S.-S. VIII a-b). All with known provenience are from Rhodes, and the style of the figures is early orientalizing of the 7th century.

The circular, shield-shaped fibulae with pin attached to the back (Blink. XV, 11; S.-S. X Ah; Caner VII) were known in only a few examples from Rhodes (one from a LG grave at Ialysos, S.-S. no. 1549A) until the "Izmir region" find produced thirty-one more examples. In view of their scarcity on Rhodes, an Asia Minor workshop should be suspected.

The Asia Minor type fibulae (Blink. XII; Muscarella

XII; S.-S. XII Aa-1; Caner A-H; Emporio G, H, J, K) seem derived from Phrygian models (cf. discussion of Phrygian-Greek relations, Muscarella, 59ff. and Caner, 201-210). The Phrygian fibulae were first produced sometime in the second half of the eighth century and many quickly reached Greek sites. However, there is increasing evidence that Greek copies began already in the late eighth century and certainly continued throughout the sixth century and perhaps later (cf. Muscarella, 40f., where some Greek examples are discussed as well as the East Greek example from a late eighth century grave at Ischia. Many other Greek, rather than Phrygian examples could be added).

Most Asia Minor type fibulae are of Blinkenberg-Muscarella type XII, 13-14--symmetrical with moulded elements spaced along the bow. Distinctive fibula types at several sites, as well as important finds of stone and bronze moulds for fibula production, demonstrate their widespread manufacture in East Greece. Stone moulds have been found at Old Smyrna (Muscarella, 40, pl. 16, figs. 83-84) [FIG. 21] and Sardis (J. Waldbaum, Metalwork from Sardis, 143, no. 950) [FIG. 22], and several others, although unfortunately not from excavated contexts, are clearly from western Asia Minor (Muscarella, 49, a stone mould in Istanbul and a bronze mould in a private collection, pl. 16, fig. 85 [FIG. 23]; another mould R. Toelle, Antike und Abendland 12, 1966, 91f. [FIG. 24]). In addition to Smyrna, Samos and Chios must have produced

fibulae of this type, judging from the numerous finds (at Samos, S.-S. no. 1680-6; at Chios, esp. Emporio H, with similar examples from Phanai). Although a number were found on Rhodes, they are much rarer than the island types and there is no one distinctive type. They may not have been produced locally (S.-S. no. 1675 was found in the late eighth century Grave 58 at Ialysos with several island type fibulae, and another from Grave 13 was found with a fibula of island type S.-S. V, cf. Annuario 6-7, 1923-4, 267, fig. 166).

Type XII fibulae in precious metal are known from a few Greek examples. Some gold and silver examples are attested only at Ephesos (cf. Muscarella, 14, type XII, 1, and below, "Jewelry") and were most likely made there. Silver examples from other sites are similar to the type XII, 13 bronze fibulae of Greek work, notably two from Phanai (W. Lamb, BSA 35, 1934-5, 152, pl. 31: 18, 28) and a group of five in the Berry collection that are probably from an Ephesian workshop of the mid-sixth century (cf. below, "Jewelry"; the shape is like Emporio H). Some others from the Southwest Anatolia hoard date from after the mid-sixth century.

It is difficult to say how long the Asia Minor type survives. Clearly they were most popular in the seventh and well into the sixth centuries, but they are not well attested afterwards. Some from fifth century context are from Larisa and Lesbos (Muscarella, 22 n. 37), and some may have survived as late as the first century, but this is most uncommon (Muscarella, 23, 25 n. 46).

Early Orientalizing Bronzework:

The orientalizing seventh century may be viewed as the formative period when experimentation, influenced by a variety of sources, led to the more formalized Archaic style of the sixth century. However, in the case of East Greek bronzework, there is little that came before (in view of the lack of accomplished Geometric material), and what little survives of this period is diverse and without coherent style, relatively late in date, and allowing no far-reaching conclusions. Although fibulae, pins, belts, simple vessels, and related material were manufactured throughout the seventh century, in some cases continuing an earlier tradition, figural work seems to be largely confined to the end of the century. In view of the accomplished jewelry, vase painting, and terracottas of the second half of the seventh century that were manufactured in East Greece, it is surprising that bronzework (with the important exception of the Samian workshop for griffin protomes, although even this may be dependent on Mainland Greek influence) lagged so far behind these other media in style. Innovative, transitional styles, such as the Daedalic, which are known in other East Greek media (for Daedalic in East Greece: terracotta, gold, and stone, cf. "Conclusions") are not attested in the bronzework (the famous bronze head in Karlsruhe [F 1890] from Olympia has often been claimed to be Samian [cf. D. Ohly, AM 66, 1941, 40], but no other similar material has been found and the provenience speaks against the attribution; cf. the discussion amd references, H.-V.

Herrmann, Ol. Forsch. 11, 207 n. 9-15). Unfortunately, there is also little to connect what does survive with the better known sixth century workshops, such as those on Samos.

The exception to this scarcity and diversity of types is the extraordinary workshop on Samos that was producing griffin protomes and related material perhaps as early as the end of the eighth century and continuing well into the sixth, a period of at least 150 years, from which much material survives.

Griffin Protomes and Related Material:

The large numbers of cauldron attachments found at Olympia and Samos, including "sirens," bull's heads, lion's heads (the last closely related to early griffin heads, but none have been found in Samos or East Greece), and especially griffin protomes, have long provoked arguments over their origin. At issue is whether they, or at least the prototypes, are of Greek or Eastern manufacture and where in Greece or the East the workshops were located (for a summary and discussion of the Greece versus the East issue, cf. O.W. Muscarella, "Near Eastern Bronzes in the West: The Question of Origin" in Art and Technology, 1970, esp. 109-112; also Boardman, Greeks Overseas, 64-67). The best studies point out the distinguishing characteristics of the early Greek work as opposed to the imports (the siren attachments: Herrmann, Ol. Forsch. 11, 6, and U. Jantzen, AK 10, 1967, 91-3; the bulls' heads: H. Kyrieleis, AM 92,

1977, 71-89), now thought mainly to come from North Syrian workshops. There is still no evidence for griffin head attachments in the East, and all examples are apparently Greek (cf. the discussion in Herrmann, Ol. Forsch. 11, 137-146, esp. 141f., supporting a Greek origin), although the form of the griffin head is certainly derived from Eastern types.

Siren attachments of Greek manufacture have been found at Mainland Greek sanctuaries and are most likely from Peloponnesian workshops. They are rare in East Greece, but some were certainly produced there, at least on Samos. Two examples from the same workshop have been found at Samos and recognized by Jantzen as local works with close parallels in early terracottas from the Heraion (U. Jantzen, AK 10, 1967, 91-3, pl. 26: 1-4; G. Kopcke, AM 83, 1968, 284, no. 97; Aegean Island Cat., no. 134; one once in Berlin and the other in Vathy, not found together) [FIG. 25]. The style of these two pieces is quite different from the Peloponnesian examples, not having the "geometricized" (cf. Boardman, Greeks Overseas, 65) features but more rounded features anticipating the Archaic styles at Samos. The comparisons with early Samian terracottas indicate a date early in the seventh century, perhaps slightly later in date than the siren attachments from Mainland Greece. Also from Samos are three similar heads that were attached to some sort of vessel, although not in the same manner and of somewhat later date than the siren attachments (Jantzen, op. cit., pl. 26: 5-8; 27: 1-3) [FIG. 26]. Another possible East

Greek workshop has been isolated by Herrmann in two surviving examples, one from Delphi and the other from Lindos (the sole siren attachment from Rhodes), which are distinctive for their "provincial" Greek look (Herrmann, Ol. Forsch. 11, 6, 82-84, pl. 27: 1-4). They are very close in style to North Syrian examples, but a Greek origin is possible.

Most bull's head cauldron attachments have generally been presumed Eastern imports, and indeed many are, but Kyrieleis (op. cit., 71-89; P. Amandry, Studies H. Goldman, 244-250; A. Furtwaengler, AM 96, 1981, 91-97; and cf. the Geometric style double-attachment from Rhodes, above) convincingly pointed out the Greek characteristics of a number of examples. Especially notable is the series from Samos which is most likely of local manufacture and contemporary with the main series of griffin head attachments. However, the early hammered examples must be viewed with caution, since hammered griffin heads may not have been produced at Samos (cf. below). Six examples from Samos are cited by Kyrieleis (op. cit., 80-1, 83-85) [FIG. 27], as well as a very similar example now in Paris (an early hammered example [Br. 4162], Kyrieleis, ibid., pl. 35: 3-4). Another example from Delphi may also be East Greek, and similarities to Rhodian plastic vases are notable (Kyrieleis, ibid., 84f., pl. 38) [FIG. 28]. On Rhodes itself only a single example has been found, at Lindos, but its origin is uncertain and need not be local (Lindos 1, no.

706; Herrmann, Ol. Forsch. 11, 6, 119).

It is the griffin protomes that survive in large numbers and are of the finest work, the most outstanding of the seventh century. Although some examples of griffin protomes have been found at various sanctuaries in Mainland Greece and East Greece (Ephesos, Didyma, Kameiros), as well as in Etrurian tombs, the vast majority are divided between Olympia and Samos, and it is in these two centers that workshops certainly existed. The relevant issues here involve the differences between the Samian and Olympian examples and the question of their ultimate origins, especially in view of their early date and accomplished style. Already depicted on Late Geometric pottery (Herrmann, Ol. Forsch. 11, 149 n. 18), the cauldron with griffin protome attachments became the votive offering par excellence throughout the Greek world in the seventh century. Jantzen's basic study prompted by the Samian finds (U. Jantzen, Griechische Greifenkessel, 1955) has been supplemented by a number of publications of further finds (U. Jantzen, AM 73, 1958, 26-48; AA 1966, 123-129; J. Benson, AK 3, 1960, 58-70; P. Amandry, BCH 96, 1972, 7-11; D.G. Mitten, Master Bronzes, no. 65-67, no. 65 now Hunt Collection. New finds from Samos: AM 74, 1959, 30f., Beil. 68-70; AM 83, 1968, 284f., no. 98-101, pl. 115; AM 96, 1981, 136-137, pl. 25, 34: 1-2; AM 100, 1985, 185, no. 48, pl. 42: 2; H.P. Isler, Samos 4, 1978, 77f., no. 18-21. From Ephesos: H. Vetters Vorl. Grab. 1973, 7, pl. 6; Bammer, fig. 63-65, 97; Miletos: G. Heres, Klio 52, 1970, 149-161, for

examples in East Berlin; C. Weickert, Ist. Mitt. 7, 1957, 129-130 for a recent find; on technical questions, C. Rolley, BCH 107, 1983, 111-132) and the study of the Olympian and related material by Herrmann (Ol. Forsch. 11, 1979).

Herrmann's discussion of categories, chronology, origins, and workshops is in great depth and most perceptive. He established (as did Jantzen in a less complete form in GGK) categories of Early, Middle, Late, and Large Size hammered griffin protomes; Early, Middle, and Late I-IV cast examples; and a diverse group of combined technique with a cast head and hammered neck. He showed (Herrmann, Ol. Forsch. 11, 146-155) that the early hammered examples began in the last quarter of the eighth century and flourished in the first half of the seventh, with only a few that can be dated a little later than the middle of that century. The cast examples began early in the seventh century, but gradually replaced the hammered examples, flourishing in the second half of the century and continuing well into the sixth. The combined technique occurred in the middle third of the seventh century.

A number of factors point to the Peloponnesos as the origin of the type. Herrmann's careful analysis of the find statistics (Herrmann, Ol. Forsch. 11, 156) shows that the hammered examples are the most numerous type at Olympia, while they are rare at Samos (only six examples found, three of the Early group and three of the Middle; also one Early

example from Didyma) [FIG. 29]. Similarly the fine style Combined Technique group, with cast heads and hammered necks (Herrmann, Ol. Forsch. 11, 118-136; Jantzen, GGK 65-68, his "Monumental Group"), is primarily from the Mainland, with only one example from Samos. Conversely, the cast examples are considerably more numerous at Samos than at Olympia [FIG. 30]. Although the rarity of early hammered examples (and the absence of the related hammered lion protomes) at Samos is not conclusive as an argument against a Samian origin, it is strong evidence (Herrmann, Ol. Forsch. 11, 157; I. Kilian-Dirlmeier, JRGZM 32, 1985, 237, 248f.). Other circumstantial evidence that points to a Peloponnesian origin is the Greek term for the griffin head cauldrons, provided by Herodotos' story (4, 152) of the mid-seventh century Samian adventurer Kolaios who, on his return from his dangerous voyage to Tartessos, dedicated a krater argolikos (cf. Jantzen, GGK 48f.; Herrmann, Ol. Forsch. 11, 153; on a date for Kolaios in the second quarter of the seventh century, cf. B. Shefton, Phoenizer im Westen. Madrider Beitraege 8, 1982, 344ff.). There is no necessity to see the griffin type as an East Greek creation, despite its later popularity there (Herrmann, Ol. Forsch. 11, 159f.), and at this early date--the end of the eighth century--accomplished bronzework is extremely rare in East Greece and what does survive seems to be largely imported from the Peloponnesos (see above, "Geometric Bronzework"). As Herrmann suggested (Herrmann, Ol. Forsch. 11, 157), it was the Peloponnesos that played the greatest role in the

innovation, and soon the type spread to Samos and perhaps other East Greek centers, such as Miletos and Rhodes.

It is unclear which are the earliest griffin protomes manufactured at Samos. The few hammered examples are either imports from the Peloponnesos or products of a local school directly influenced by the Peloponnesian workshop, perhaps by way of immigrant craftsmen who wished to take advantage of the demand for votives at the Heraion. Most of the earliest examples of the cast protomes, dating from the early seventh century, are from Samos and must be local, and there are also miscast examples (Jantzen, GGK 57f. no. 47, pl. 17; AM 83, 1968, 285, no. 101; cf. U. Gehrig, AA 1979, 553ff., fig. 7-9), which help demonstrate local manufacture. The earliest Samian cast example (Jantzen, GGK, no. 33, pl. 11-12) is very close in style to the hammered ones, but they change quickly to a more refined style that becomes more or less standardized throughout the Archaic period (Herrmann, Ol. Forsch. 11, 99f.). It is difficult to explain the change in technique from hammered to cast, and an East Greek innovation may be possible, but fine early cast work is also found at Olympia (cf. Herrmann, Ol. Forsch. 11, 100ff.), and the outstanding protomes in combined technique seem also to be of Mainland manufacture.

It is clear from Herrmann's find statistics that the Samian griffin protomes continue after the Olympian ones fall out of fashion and well into the sixth century (Herrmann, Ol. Forsch. 11, 157). His Late Cast Group IV is

very large, with about 100 examples of known provenience, and nearly all are from Samos, with only three coming from Olympia (Herrmann, Ol. Forsch. 11, 166-7). Two snake protomes, a type not known at Olympia, also are attested at Samos and must be local (Jantzen, GGK, 76, pl. 49: 1-2) [FIG. 31]. It may be this long tradition in Samos that contributed to the fame of the later sixth century Samian artists Rhoikos and Theodoros, who were credited in legend with the invention of bronze casting (Pausanias 8, 14, 8 and 10, 38, 6; Pliny, N.H. 25, 152; cf. Herrmann, Ol. Forsch. 11, 157, and Jantzen, GGK, 60).

Some other uses for bronze griffin protomes in this later period may also be briefly noted. Although no extant examples have been identified, such attachments were used as decorations for horse harnesses, as is demonstrated by their frequent depiction on architectural terracottas (A. Akerstroem, Die architektonischen Terrakotten Kleinasiens, 1966, pl. 16, from Larisa and Sardis; other examples are from Etruria) and marble reliefs (Mendel, no. 525, from Kyzikos; and C. Laviosa, Annuario 50-51, 1972-3, 397-418, from Iasos; both are late sixth century). Perhaps they were identical to the cauldron attachments and adapted to this other use.

A number of griffin heads that do not fit into the main series survive. Three small griffin heads that probably decorated a bowl were on the art market and probably from Asia Minor, although the given provenience of "Gordion" is unreliable (H. Hoffmann, Collecting Greek Antiquities, 1971,

colorplate 5; subsequently Sotheby, 14 Dec. 1982, lot 237). A similar small, squat griffin head, poorly cast and filled with lead, is in Oxford and said to come from Smyrna (G. 407; 6.4 cm., from "Smyrna, Mt. Pagus") [FIG. 32]. A miniature (H: 8 cm.) griffin cauldron dedicated in the Heraion at Samos was said to have been in a deposit datable to c. 600/580 (Vathy B2101; A. Furtwaengler, AM 96, 1981, 99, 137, pl. 31: 1, fig. 10). Griffin heads were used to decorate the handles of a sixth century bronze krater from Cilicia that may be of East Greek manufacture (Paris, Louvre, cf. below, "Sixth Century: Volute Kraters"). Also noteworthy is the so-called "scepter finial" (a vessel handle or furniture attachment?) from Tekirdag (Istanbul 7568; N. Firatli, IAMY 13-14, 1966, 228, pl. 69: 3; Anat. Civ. 2, 1983, 37, B.97) [FIG. 33], which combines a bronze griffin head and neck (c. 8 cm. in height) with a series of moulded reels and then a fragmentary iron extension with ivory inlay. The griffin head is somewhat more stylized than any of the known Samian examples, but has certainly been influenced by them. Small griffin heads in lead or precious metal were adapted to headdress decorations in the sixth century, as is demonstrated by the lead examples from a cult statue at Emporio, Chios (Emporio, 203, no. 166, nine examples) [FIG. 34], and the figures depicted in the frescoes from Gordion (cf. below, "Jewelry").

Tripods:

There can be no doubt that the tripod supports for the

seventh century cauldrons were also manufactured at Samos (although there is as yet no evidence for the early hammered conical stands known from Olympia), but nothing datable before the sixth century has been identified (similarly at Olympia, cf. Herrmann, Ol. Forsch. 11, 205). Many may have been made of iron and thus not survived (as observed by Furtwaengler, Olympia 4, 126, and Jantzen, GGK, 93). The dedication of Kolaios mentioned by Herodotos (cf. above) was said to have been held by kneeling figures, presumably in bronze (as noted by W. Lamb, 77, but the kneeling Gorgon support from Rhodes that she cites is mid-sixth century in date, cf. below), but nothing of this sort survives anywhere in Greece (cf. Herrmann, Ol. Forsch. 11, 171 n. 3). If such stands existed in the early seventh century--and Herodotos may have been incorrect or else referring to a sixth century support--they presumably would have been manufactured in the griffin protome workshops, but it is difficult to imagine what they may have looked like in this early period. Possible parallels from the late seventh century are the stone perirrhanteria, which have a wide distribution but are especially well represented in the Peloponnesos and are attested at Samos and Rhodes as well (cf. J. Boardman, Greek Sculpture. The Archaic Period, 25f.). Their origins, however, are not clear, and their possible connections with bronzework entirely unattested. Conical bronze stands like the one found at Olympia have not been found in East Greece, but a conical stone stand was found at Samos (E. Buschor, AM 55, 1930, 45f., Beilage 11-12; Herrmann, Ol. Forsch. 11,

171). The ring handled tripods of originally Geometric type probably continued throughout the Archaic period, although little survives. Some surviving relief plaques (cf. below) may have decorated tripod legs. The surviving material relating to tripods will be discussed with the sixth century bronzework, below.

Late Seventh Century Figural Bronzes:

With the exception of the Geometric figurines discussed above, many of which are early seventh century in date and perhaps better considered as orientalizing, and the griffin and bull protomes, there is little figural bronzework until the later part of the century. What does exist, from a variety of sites, shows considerable variation in style. Rhodes is again prominent, but finds have also been made at Samos, Chios, Smyrna, and Erythrai.

Two small bronzes from Kameiros, one a recumbent cow (BMC Bronzes, no. 141) [FIG. 35] and the other a squatting monkey playing a flute with the flute case over his shoulder (BMC Bronzes, no. 144) [FIG. 36], are very similar in style and may be from the same workshop. They are both about the same size and have similar oval plinths, and the modelling is also quite similar. They are somewhat removed in style from the Geometric animals from Kameiros and are highly orientalizing. The recumbent cow is a common oriental motif often copied in Greece (cf. especially the important Late Geometric cow from Kameiros, BMC Bronzes, no. 140, discussed above), and the flute-playing monkey is a remarkable

adaptation of Egyptian types and is reminiscent of the faience flute-players and squatting monkeys made in Rhodes and East Greece by the mid-seventh century (cf. V. Webb Archaic Greek Faience 20, 87, 104). The bronzes, too, may date from the mid-century and are likely to be local works.

Also from Kameiros but later in date, probably the end of the century, is a bronze lion set into a heavy, irregularly-shaped base (BMC Bronzes, no. 139; Gabelmann, 55, no. 49a, pl. 7: 2; its identification as a weight, as the British Museum catalogue suggests, presumably paralleled by Assyrian lion weights, seems unlikely and is not paralleled by other Greek examples) [FIG. 37]. It was found in a deposit just outside the Athena temple foundation wall with material dated c. 670-570 (V. Webb, Archaic Greek Faience, 138; R. Higgins, BMC Terracottas 1, 23), the lower date providing a useful terminus ante quem. The pose of the lion, lying on his left side with both hind legs extended to one side and the head turned in the same direction, is unusual in Greece and derived from Egyptian models (often seen in stone, but cf. especially the sixth century Saite ivory on a wooden plinth from Akhmin, now in London [EA 20763], Barnett, Ancient Ivories, 22, pl. 10f). In Archaic Greece the pose is only paralleled by the large stone lion at Ioulis on Keos, also of relatively early date (as Gabelmann has noted, no. 43, pl. 7: 1), and several examples from Didyma and Miletos of the sixth century. Gabelmann noted that the pose of the Kameiros bronze lion is Egyptianizing but that the stylized details, notably the

head and flank, are entirely Assyrianizing. This combination of features demonstrates the experimental nature of the style, which is difficult to parallel and isolate, other than noting that a similar type reached Keos. Again, the provenience and the Egyptian influence tentatively suggest a local Rhodian workshop. The connection with the slightly later Milesian types, which are even closer to the Egyptian prototypes, remains unclear.

In the same deposit as the lion was found a large (H: 9 cm.) bronze statuette of a standing bull (BMC Bronzes, no. 1811) [FIG. 38]. It is a very finely modeled, lively piece with a strong, stocky body and a large head. Recently Kyrieleis (AM 92, 1977, 88f., pl. 39: 1-4) has discussed the piece in connection with the bull's head attachments (cf. above) and has correctly seen it as a slightly later ("late seventh-early sixth century") but stylistically related object. He believes it to be Rhodian, especially considering the comparable terracotta bull's head aryballoi from Rhodes, but, as noted above, only one bronze bull's head attachment has been found on Rhodes. The provenience of the statuette may, however, speak for the Rhodian origin. Unfortunately, there are no surviving later sixth century bronzes from Rhodes to allow comparison.

Samos was certainly producing the highly accomplished griffin attachments and presumably cauldrons and tripods in the seventh century, but links to the many fine sixth century works are not attested. It seems that the early

sixth century saw the establishment of new workshops serving the Heraion (cf. below). However, one outstanding bronze that predates the main Archaic series was found in the Heraion, a water spout with the charming composition of a frog sitting on top of a lion's head (Athens Nat. Mus., inv. 16512; E. Buschor, AS 3, 57, fig. 213, 216, 217; Aegean Island Cat., no. 142; Gabelmann, 56-58, no. 46; J. Doerig, AM 76, 1961, 77f.; on frogs as a motif, cf. below, "Sixth century animal figurines") [FIG. 39]. The style is unusual, but Gabelmann pointed out the Assyrianizing features, such as the square head, U-shaped nose wrinkles, and folded ears, as well as the lack of the usual palmette-stylization on the nose. The nose wrinkles are strikingly similar to the limestone "Menekrates" lion at Korkyra, as both Jacobsthal (JHS 71, 1951, 89) and Gabelmann pointed out, but there is little other resemblance beyond the common Assyrianizing influence (and note Jacobsthal, ibid., pl. 32b for comparisons to real lions!). More useful parallels are seen in two small Ionian works of early Archaic date, a belt handle with lion's head terminals from Didyma (Gabelmann, no. 46a; cf. "Belt handles", below) and the gold fibula with lion's head terminals (a shape probably related to the belt handles) from the Basis of the Artemision at Ephesos (as noted by Jacobsthal, 89, pl. 31e; Hogarth, pl. 3: 2 and 4: 35, cf. "Jewelry", below). Gabelmann's categorization of the waterspout as an early Ionian work of c. 625 B.C. seems correct, although anytime in the last quarter of the century is possible. Buschor called it "ein wahrhaft monumentales

Werk der ´daedalidischen´ Epoche", and although not of Daedalic style, it is certainly a product of this period when many experimental, intermediate styles that anticipate the Archaic occur. A human head attachment of uncertain function was found in the "archaische Nordtor" area at Samos (Vathy B 1735; H: 4.0 cm.; H.P. Isler, Samos 4, 78, no. 26, pl. 39) [FIG. 40], which is in poor condition but may be of relatively early date, c. 580-570, according to Isler.

Unexpected finds from the recent Turkish excavations at Erythrai have demonstrated the existence of another early bronze workshop, probably located at that city. The finds and stratigraphy remain largely unpublished, but several pieces may be discussed. A crude team of horses that appears to be of Geometric style has been mentioned above. Two remarkable objects, highly orientalizing, may be from a single workshop. One is a small crouching lion supporting on its back a capital composed of a double row of leaves (Izmir Museum, unpublished) [FIG. 41]. The lion is finely modelled without highly stylized details, merely stippling, but is certainly based on oriental types. What the lion was supporting is unclear. The other work is a 12.5 cm. statuette-support of a nude female, hands rigidly at her side, with wig-like hair and wearing an elaborate necklace (Izmir Museum 8327; E. Akurgal, Erythrae, 1979, fig. 19; Anat. Civ. 2, 1983, 26, B.56; color photo in Land of Civilizations, no. 198) [FIG. 42]. She is linked to the first piece by the similarly accomplished orientalizing

style, but especially by the identical leaf capital which rests on her head. The features are Greek, although the treatment of the hair, the jewelry and the leaf capital are close to Near Eastern, Phoenician and Egyptian types (for Phoenician, Assyrian, and Anatolian leaf capitals, cf. E. Akurgal, The Art of Greece: Its Origins in the Mediterranean and Near East, 1968, 89ff.). She may have served as a mirror handle, and it is probably from Egyptian models that the Greeks copied nude female mirror stands (cf. L. Congdon, Caryatid Mirrors, 7ff.), early examples coming from mid-sixth century Sparta (Boardman, Greeks Overseas, 144, and note the Lakonian female mirror stand from Samos, Buschor, AS, fig. 115; Egyptian nude females, probably mirror stands, from Samos: Jantzen, Samos 8, 13 and 16f., pl. 14-15, 17; B1517, 1216 and 832; and another from Kameiros; also cf. the recently discovered wooden kneeling girl that served as a support from Samos, Arch. Reports 1984-5, 56, fig. 82), although Phoenician or North Syrian intermediaries may have influenced the Erythrai example. Akurgal proposed a date early in the seventh century, but a date later in the century would be stylistically more comfortable. Further publication of the material from Erythrai may resolve the problems in chronology.

Also from Erythrai are at least three examples of an unusual bronze fibula type. Two lions crouch on a thin, rectangular base perforated in each corner and with a catch pin below (Izmir Museum 5284, 5285, etc.; E. Akurgal, Erythrae, 1979, fig. 13; Anat. Civ. 2, 1983, 27, B.58; color

photo in Land of Civilizations, no. 203) [FIG. 43]. They are reminiscent of several types of Lydian or Achaemenid fibulae in precious metal (cf. "Jewelry: Fibulae", below) and are probably based on the same prototypes, although the Erythrai examples are simpler and certainly local. Akurgal dates them to the first quarter of the sixth century.

At Emporio, Chios there was little figural work, although bronze belt handles admitted crude animal head terminals (cf. below). However, one arched handle with a floral knob, based on Assyrian types, has added a small bearded head, another early orientalizing work of the late seventh century (Emporio, 224f, no. 389 and Greeks Overseas, 68f., fig. 52) [FIG. 44]. The head is very simple, with prominent nose, broad, straight mouth and eyes in relief, and incised straight hair. Prominent facial features of this sort are characteristic of early Archaic work.

An 11 cm. statuette with features similar to the Emporio handle was found in the excavations of the Athena temple at Old Smyrna (once University of Ankara, Archaeological Institute, now lost; Akurgal, Kunst Anatoliens, 187f., fig. 137-139 and Alt-Smyrna 1, 103f., fig. 99, pl. 134a-c) [FIG. 45]. He wears a short tunic, belted at the waist, and holds his hands in front of him. There is no body detail and the facial features and hair are simply cut or incised, although the nose is prominent and the eyes are in relief. The hair is shoulder length in back, but it is unclear whether it is drawn back from the

forehead, or whether there are short bangs. Akurgal has seen Syro-Hittite origins in the hair style, and interestingly compared the ivory "lion tamer" from Delphi (cf. "Ivories", below), but the figure is stylistically not very close to Eastern works. It appears to be another early East Greek work of c. 600 that attempts in a crude way what the Archaic artists would achieve a generation or so later (is the rather similar Etruscan example from Populonia, H. Jucker in Art in Technology, 1970, 197ff., fig. 6A-C, a comparable attempt?).

Belts and Belt Handles:

A distinctively East Greek fashion, certainly borrowed from their Phrygian neighbors, was the wearing of broad bronze belts, probably sewn on to leather. One end would have a long hook that fit into holes in the other end, an attached piece decorated with incised or punched designs (e.g. cables, maeanders, cross-hatching,etc.). The ends could be drawn together by an attached handle that closely resembles contemporary fibulae of "Asia Minor" type, but sometimes admits animal head terminals (for a reconstruction, cf. Emporio, 215, fig. 140-141) [FIG. 46]. It is the handles that survive most often, although some belts, or fragments of them, have been found at Phrygian sites (e.g. Gordion, the "Princess" burial, Tumulus P, late 8th c.; R.S. Young, Gordion 1, 17-20, 236-239, three examples; and in Istanbul, "from Afyon", Caner, G22) and in Greece at Samos and Emporio, Chios (Samos: Samos 8, 49-53, pl. 45-47, as Phrygian. Emporio: Emporio, 214-221). Greek

examples of the handles have been found at Emporio and Phanai on Chios, Samos, Ephesos, Didyma, Old Smyrna, and Erythrai, and examples are known without provenience. The variety of types speaks for a number of local workshops (cf. Boardman, Greeks Overseas, 90), as does their close relation to fibula manufacture.

Boardman first recognized and discussed the material and has categorized the various forms of the handles (Anadolu 6, 1962, 179-189; Anat. Stud. 16, 1966, 193f.; Emporio, 214-221; Greeks Overseas, 90f.). Caner also published some of the material and added an interesting example with lion head terminals from Erythrai (Caner, 193-9; the Erythrai example is G21). Two other example without certain provenience may also be added. One is from an uncertain location in Asia Minor (but closely related to Ephesian work) and is the first example in precious metal, combining a silver bow with bronze attachments (discussed under "Jewelry," below). The second is a relatively late bronze example with extraordinary added plastic decoration, discussed below.

The belts may have been borrowed from the Phrygians as early as the late eighth century, but the earliest datable examples are from Emporio HS Period II, c. 690-660 (Emporio, 217). They continue in use throughout the seventh century, as shown by the Emporio finds, and at least through the first half of the sixth, where they are known at Ephesos and in more developed examples with figural terminals. Also

demonstrating a sixth date is the bronze relief plaque from Olympia, noted by Boardman (Anadolu 6, 1962, 188f., pl. 22; this also helps identify the East Greek origin of the plaque, cf. below), which shows a potnia theron wearing just such a belt with handle. Boardman suggested that the belts were worn by young girls and dedicated in the sanctuaries on their marriage.

Of special interest for the early style are the belt handles with animal head terminals. The earliest datable piece is from late seventh century Emporio, but the lion's heads are very crude and small (Emporio, no. 293, HS Period IV). Early in the sixth century, the lion's heads are in the early "Assyrianizing" style and of much finer workmanship. Notable examples are from Didyma (Ist. Mitt. 13-14, 1963-4, pl. 32, correctly identified by Boardman, Anat. Stud. 16, 1966, 194; also discussed by Gabelmann, 57-8, no. 46a) and Erythrai (Caner, G21), as well as the British Museum example without provenience (London WA 132961; Boardman, Anat. Stud. 16, 1966, 193f.; Greeks Overseas, fig. 102). A very fine example with large ram's head terminals was found at Phanai, Chios (Chios Museum 470; ADelt. 2, 1916, 210, fig. 34; pl. 5, fig. 30).

The new bronze handle mentioned above is especially important since it has fine figural decoration (New York market, 1985, said to be from Asia Minor; L: 7.5 cm., light green patina) [FIG. 47]. Like the Phanai example it has ram's head terminals, and they are stylistically quite close with their bulbous noses. The new piece, however, also

admits a plastic human head set on the moulding in the center of the bow. The male head is in a fine early Archaic style, probably of the second quarter of the sixth century. The head is tilted up slightly, and the face is a broad oval with high cheeks and large eyes and nose. The hair is pulled straight back from the forehead and falls to the shoulders. The round face is similar to some Samian bronzes and, for example, the Ephesos ivory "hawk priestess" (cf. "Ivories", below) but does not exactly correspond to these or any other known pieces.

The handle itself is slightly different from the others in that it has a double bow that is rectangular in section and with rows of holes and pegs. There are three rectangular elements, two at the terminals and one in the middle of the bow on which the plastic figures are attached. They are grooved underneath and have holes for attachment to the backing material. The rectangular elements are closest to the Emporio Type D examples (Emporio, no. 288-289), and the closest example is the Emporio handle with the lion head terminals (no. 293), which also has rectangular elements with holes and a double bow (with a wire running between). Similarly constructed are the British Museum and Erythrai lion head examples, mentioned above. These are probably among the latest types, belonging to the first half of the sixth century.

Relief Plaques:

A remarkable series of bronze plaques with mythological

scenes executed in repousse work with much added detail in incision (or, more properly, tracing) have been found at Olympia and Samos. Although some plaques from Olympia are Mainland Greek work, the ones under consideration are clearly from the same workshop as the Samian examples and are most likely Samian works. A. Yalouri has observed many of the East Greek characteristics (AJA 75, 1971, 269-275, esp. 272f.; Arch. Ephem. 1972, 113-126, pl. 41-60), and P. Brize, who also noted their distinctively Ionian style, has collected all the known examples from Samos and Olympia and attempted to group them in a careful study (AM 100, 1985, 53-90, pl. 15-24). The style of all the approximately a dozen examples is remarkably consistent, and Brize's assigning the plaques to five different workshops over nearly fifty years (Brize, loc. cit., 83) may be too precise and spread over too long a time. For example, two of the warrior's departure plaques of nearly identical style and composition are assigned to different workshops, one the earliest and the other the latest, and other workshops are seen as non-Samian despite negligible differences in detail and iconography (Brize, ibid., 82, "Workshops 4-5").

The shapes of the plaques vary. Some are long with a single scene, while others are narrow with the scenes arranged in several panels. This latter type suggests a decoration for a tripod leg (cf. Aegean Island Cat., 185, no. 185), a suggestion followed by Brize in this case. However, the newly found plaque showing Herakles and Geryon (Vathy B 2518; Brize, loc. cit., pl. 15-20) is crescent-

shaped, and Brize's discussion of the function (Brize, ibid., 61ff.) is largely inconclusive, although several possible functions are proposed, including a shield decoration, a pectoral, and a horse trapping. Yalouri has seen the trapezoidal warrior's departure plaque as possibly having decorated a larnax (AJA 75, 1971, 269).

The mythological scenes present an extraordinary variety unparalleled in East Greece at this time. The very fine plaque recently found at Samos shows Herakles fighting Geryon, while Eurytion lies dead and the cattle of Geryon flee [FIG. 48]. Other scenes show Herakles shooting a centaur [FIG. 49], Herakles and the Hydra, the blinding of Polyphemos [FIG. 50], Kaineus with centaurs [FIG. 51], Orestes and Klytaimnestra [FIG. 52], the departure of a warrior (Amphiaraos?) [FIG. 53], Achilles and Penthesilea (?) [FIG. 52], and an Artemis-potnia theron accompanied by heraldic griffins and an eagle [FIG. 54].

The date and place of origin of the plaques has been somewhat controversial. Most of the views have been compiled by Brize (Brize, loc. cit., 77; and add, H.-V. Herrmann, Olympia. Heiligtum und Wettkampfstaette, 1972, 88 n. 343, as Cycladic, late seventh century), and these show that an East Greek or Cycladic origin was proposed soon after the discovery of the plaques at Olympia and subsequently followed by most scholars. Especially notable is the discussion of the potnia theron plaque by H. Payne (Necrocorinthia, 230f.; followed by E. Kunze, Ol. Forsch. 2,

67 n. 2), who saw an East Greek origin and dated it to the second quarter of the sixth century. R. Hampe and U. Jantzen followed by assigning an East Greek origin to a warrior's departure plaque (Ol. Bericht 1, 1937, 27f.). More difficult was the dating. For example, despite Payne's views on the potnia theron plaque, Schefold placed the Kaineus plaque from Olympia c. 630 (K. Schefold, Myth and Legend in Early Greek Art, 1966, pl. 27c) but dated the Orestes and Klytaimnestra plaque c. 570 (ibid., pl. 80).

After a methodical study of related East Greek objects, mostly ceramics, Brize (Brize, loc. cit., 65ff.) proposed the beginning of the series in the last quarter of the seventh century, continuing into the second quarter of the sixth. Brize especially emphasized the similarities of the filling ornament on the plaques to that on Wild Goat pottery (ibid., 72), although the similarity is really confined to Blattrosetten and dot-rosettes. However, the claim that these patterns indicate a date not later than the late seventh century appears to be contradicted by their occurrence on the Orestes-Klytaimnestra plaque, which he considered the latest in the series, dating to the second quarter of the sixth century. He also had problems with the Eurytion figure, who was said to appear stylistically later than the other figures on the Geryon plaque (ibid., 73), and the best comparisons of facial type and hairstyle were found with bronze kouroi of the early sixth century (ibid., 69f., although the often cited Stockholm bronze kouros is not East Greek but rather Etruscan, cf. W. Darsow, Marburg.

Winckelmann-Progr., 1949, 17 n. 25; and H. Hoffmann, AJA 65, 1961, 320). His comparisons to painted pottery, where figures and composition of the sort represented on the plaques are conspicuously lacking, is not compelling, and the differences in technique between painting and relief bronzework make the comparisons even more difficult. It is difficult to see a date as early as those proposed in view of the lack of comparable figural material in East Greece in the seventh century. The potnia theron plaque from Olympia, as Payne pointed out, is better placed in the sixth century (cf. J. Boardman, Anadolu 6, 1962, 189), and the other plaques must be closer in date than Brize suggests. The series probably started sometime in the first quarter of the sixth century and continued perhaps until the middle of the century, all pieces coming from a single workshop, although different hands may be discernible (cf. Aegean Island Cat. 185, no. 148-9, for a date "c. 570").

Brize is correct, however, in pointing out that the plaques are especially important as early examples of what is to become the sixth century Samian style exemplified by the bronze statuettes and stone sculpture that span the century. He also rightly noted that the composition of the plaques appears to follow Corinthian (or Peloponnesian) models (Brize, loc. cit., 85), as does the Euphorbos plate from a Wild Goat style workshop. The warrior's departure scene is strikingly close to the Late Corinthian krater once in Berlin (H. Payne, Necrocorinthia, 329, no. 1471, and cf.

139ff.; E. Pfuhl, Masterpieces, 1926, 21f., fig. 14), but the scene is somewhat abbreviated and some of the details are treated in an Ionian style.

Some other plaques are from Samos but do not belong to the previous series. One has an engraved design of a standing bull in good East Greek style and is from a deposit said to date c. 610 (Vathy B 2100; A. Furtwaengler, AM 96, 1981, 88ff., 136, pl. 24: 1) [FIG. 55]. Two others are identical and show a winged horse standing left within a thick square border (Vathy B 185 and 446, the former badly corroded; 13.7 x 14.9 cm.; Jantzen, Samos 8, 53f., pl. 49; Buschor, AA 1937, 203-210, fig. 5; AM 74, 1959, 18, Beilage 28: 2) [FIG. 56]. There are holes in the corners and many more smaller holes all the way around the edges. The style is odd and has prompted Jantzen to propose a Phrygian origin, but this is unlikely and has been rejected by Muscarella who saw the style as "pure East Greek" (O.W. Muscarella, AJA 77, 1973, 236f., review of Jantzen), although this attribution too is far from clear. Other relief plaques of uncertain style have been found at Miletos (Miletos Museum, unpublished, animals at a tree?) and Ephesos (Hogarth, 152, pl. 16: 3; rosettes and circles with perforations).

Samian Rhyton:

An inscribed bronze rhyton in the shape of a bull's head was found in the Heraion in 1965 and is a unique example in metal from Archaic East Greece (Vathy B 1866; E. Homann-Wedeking, AA 1966, 159, fig. 2; G. Kopcke, AM 83,

1968, 289, no. 113, pl. 121: 1-2; E. Homann-Wedeking, AA 1969, 553-4, fig. 4-5; Aegean Island Cat., 178, no. 140; H. Kyrieleis, AM 92, 1977, 83f.) [FIG. 57]. Several inscriptions appear on the neck, the earliest a dedication from Diagores to Hera (on the inscriptions: G. Dunst, AM 87, 1972, 144f.). The bull's head is finely modelled and detailed with engraved lines and recalls the fine Greek bull's head cauldron attachments and plastic vases of the late seventh century (cf. the discussion above and Kyrieleis, loc. cit., 83f.). It is especially close in style to an unusual series of pottery oinochoai with plastic bulls' heads made on Chios in the late seventh century (Emporio, 148, 150, no. 634, fig. 99-100, pl. 54). A date of c. 600 has been proposed, which is possible in view of the similarities to plastic vases, but may be slightly early. The rhyton had a long history in the East, but the Samian example appears to be the earliest known rhyton of Greek manufacture (cf. H. Hoffmann, AK 4, 1961, 21ff., n. 1, who knew of no early Greek rhyta). A ceramic rhyton, perhaps Klazomenian of the second half of the sixth century, was found at Old Smyrna (Akurgal, Alt-Smyrna 1, colorplate M2; J.M. Cook, BSA 60, 1965, 135, pl. 39, with further references on rhyta).

Miniature Votive Objects:

A number of bronze objects were made specifically as votives with symbolic intent and served no practical function. Most of these objects are miniature versions of

large objects presumably beyond the means of the dedicators. The most popular votives of this sort, paralleled by dedications in Mainland Greek sanctuaries, are miniature weapons and armor, wheels, and knucklebones (astragaloi). Some votive offerings have been found in tombs as well as in sanctuaries.

The date of these objects is difficult to determine with precision within the Archaic period, but most appear to belong to the sixth century rather than earlier; all are best considered together. As noted above (cf. "Geometric Bronzeswork"), a wheel at Samos was found with Geometric material, although the context need not have been so early and probably suggests an early seventh century date. Comparable wheels were found at Olympia and may be of relatively early date (cf. Olympia 4, pl. 25: 498-510; and E. Kunze, Ol. Bericht 7, 141ff., for a miniature chariot with wheels). A miniature shield, also from Samos (G. Kopcke, AM 83, 1968, 286, no. 105), is said to have been found with pottery from the second quarter of the seventh century, and an astragal from Samos was found in the late seventh century Bothros deposit.

Armor was often dedicated after military victories (cf. W. Rouse, Greek Votive Offerings, 1902, 95ff.), and dedications in East Greece are attested by the well known story of King Necho of Egypt dedicating his armor from the Syrian war of c. 608 in the temple of Apollo at Didyma, perhaps in gratitude to his Greek mercenaries (Herodotos 2,

159; Boardman, Greeks Overseas, 115). Amasis of Egypt was said to have made dedications at Delphi and Samos, and dedicated an embroidered corselet at Lindos (Herodotos 2, 182; 3, 47; Boardman, Greeks Overseas, 142). Kroisos of Lydia was said to have dedicated shields and spears of gold in the temples of Ismenian Apollo at Thebes (Herodotos 1, 52) and Athena Pronaia at Delphi (Herodotos 1, 92). Except for weapons (bronze and iron spears, swords, knives, etc.), little armor has yet been found in East Greece, but fragments have been found at Lindos (cf. Lindos 1, 186ff., on armor), including helmets (Lindos 1, no. 566-580, including one of iron), cuirasses (Lindos 1, no. 581-3), shields (fragments with a cable border, Lindos 1, no. 586-590), and horse trappings (Lindos 1, 196f., no. 613-625. Horse trappings imported from the East are popular votives at Samos). Armor may also have been deposited in graves on Rhodes (cf. the fragments of bronze shield and cheek-piece said to be from a sixth century grave in the Papatislures cemetery, Kameiros, R.M. Cook, CVA Great Britain 13, British Museum 8, 7, no. 4; Gates, 56f.). An extraordinary Corinthian helmet decorated with bronze bull's horns and ears is said to be from Asia Minor, but probably is of early fifth century date (Kassel, Dierichs collection; P. Gercke, Funde aus der Antike, 85-89, no. 45).

Miniature armor in bronze has been found at the Heraion at Samos and at Lindos. At Lindos were two miniature bronze helmets (Lindos 1, no. 1564, 6.3 cm., and no. 1565, 4.1 cm.) and two shields (Lindos 1, no. 1566 a and b, 5.2 cm.) [FIG.

58]. Also found were miniature gilt silver horse trappings that may have been imported from Cyprus (Lindos 1, no. 1567-8; cf. "Jewelry: Votives"). A number of miniature shields were found at Samos, some with fine embossed devices, including a flying bird (11 cm.; AM 74, 1959, 32, Beil. 74: 3 [FIG. 59]; E. Buschor, Neue deutsche Ausgrabungen, 216, fig. 20; another similar shield with the same motif was found recently, Vathy B 2613, unpublished but mentioned by P. Brize, AM 100, 1985, 67 n. 66; cf. J. Boerker-Klaehn, ZfA 61, 1971, 124ff., who attempted to trace the flying bird motif to Near Eastern sources, but the "Achaemenid" gold shield that is compared is false), a gorgon head (Vathy B 1286, 23.7 cm.; AA 1964, 86f., fig. 7; AM 83, 1968, 286, no. 104, pl. 115: 1; ADelt 18, 1963, Chron., 292, pl. 337b [FIG. 60]; cf. the late seventh century Greek shield from Carchemish, Boardman, Greeks Overseas, 51, fig. 20), and snakes (fragmentary; AM 74, 1959, 32, Beil. 74: 1-2 [FIG. 61], where the motif is compared to an Early Corinthian plate from Thera, AM 28, 1903, pl. 4), as well as shields without devices (a very large example and perhaps an actual shield, 62 cm., with cable border, Vathy B 1325, AM 83, 1968, 285, no. 103, pl. 114: 2; and another, Vathy B 1864, 23.7 cm., with other fragments, AM 83, 1968, 286, no. 105, pl. 115: 2 [FIG. 62], said to have been found with pottery of the second quarter of the seventh century; cf. the fragmentary Lindos shield mentioned above). Another shield from Samos is in the German Archaeological Institute in

Athens, this decorated with the protome of a lion (W.L. Brown, The Etruscan Lion, 76, pl. 27b; Gabelmann, 58f., no. 55). Rather peculiarly, a nearly identical example was reported to be on the Rome art market (Brown, op. cit., 76, pl. 27a). Further shields from the Heraion are undecorated (Vathy B 2093; 9.7 cm.; AM 96, 1981, 100, 136, pl. 24: 2, from a deposit c. 610) [FIG. 63], but one has traces of a votive inscription (Vathy B 1152, 14.8 cm., of the inscription only anetheken is preserved; G. Dunst, AM 87, 1972, 135, pl. 54: 2) [FIG. 64]. Miniature votive shields in terracotta of late seventh and early sixth century date are also well known at both Mainland and East Greek sites (cf. A. Stillwell, Corinth 15: 2, 216ff.). Examples have been found at Samos (cf. AM 58, 1933, 117f.), Emporio (Emporio, 232f., and further notes) and Phanai (BSA 35, 1934-5, pl. 37: 23, 30; ADelt 2, 1916, 200, fig. 67) in Chios, Larisa in Aeolis (Larisa am Hermos 3, 85f.), and in finely painted examples in the temple of Athena at Old Smyrna (Akurgal, Alt-Smyrna 1, 109, pl. 109-111, late seventh to mid-sixth centuries).

Votive wheels are attested in East Greece, as they are in Mainland Greece and Italy. A very large (47.5 cm.) but fragmentary wheel of eight spokes, a type associated with East Greece rather than the Mainland, was found at Samos with a Geometric ring handle from a tripod, perhaps but not necessarily indicating an early date (cf. above. Vathy B 1311; AA 1964, 79, fig. 4, in situ; AM 83, 1968, 296, no. 138). A wheel with four spokes was also found in the

Heraion, this with an inscription naming the dedicator, Argeios, and dating from c. 580-570 (25.3 cm.; G. Dunst, AM 87, 1972, 139f., pl. 55: 3) [FIG. 65]. Another wheel was found in a tomb on Samos, although this was of a shape not usually associated with East Greece (12 cm.; Boehlau, 44, Sarc. 40, no. 28, pl. 15: 7). Kameiros produced at least two wheels, a miniature six-spoked example from the stipe votiva (7.5 cm.; ClRh 6/7, 1932/3, 356, no. 67, fig. 83), and an inscribed example of six spokes dedicated by Onesos to Apollo and datable to the third quarter of the sixth century (Rhodes 14464; I. Kontis, Annuario 27-9, 1949-51, 347f.; L.H. Jeffery, LSAG, 349, 356 no. 13, 415 no. 13, with further literature; G. Dunst, AM 87, 1972, 140). At least two wheels, one of ivory and the other of wood, were found in the Artemision at Ephesos. The ivory wheel has eight spokes (5 cm.; Hogarth, 168, no. 42, pl. 27: 2), and the fragmentary wood wheel had seven (originally c. 5 cm.; Hogarth, 169, no. 43, pl. 27: 9. Another fragment may have been part of a wheel, Hogarth, 169, no. 44, pl. 27: 11).

Knucklebones seem to have had a number of functions both secular and ritual (cf. the comprehensive list collected by R. Hampe, Die Stele aus Pharsalos im Louvre, 1951, 9-22), and actual knucklebones are often found as votive offerings (e.g. the many examples found in Grave 76 at the Macri Langoni cemetery at Kameiros, probably of fifth century date, ClRh 4, 1931, 175, fig. 187; and a number found in ceramic lydia at Sardis in the context of the

Persian destruction of 547, unpublished [FIG. 118]). Examples in precious metal have been found at Sardis (cf. "Jewelry"), but these are probably purely decorative, as are the imitation "astragals" in metal and ivory, best attested at Ephesos (cf. "Jewelry"). Bronze astragals that closely imitate the actual examples appear to be of purely votive function. In East Greece, examples have been found in relatively early contexts at Samos (7.7 cm., from the late seventh century Bothros, AM 74, 1959, 32, Beil. 72: 1 [FIG. 66]; another, Vathy B 1306, 6.3 cm., G. Kopcke, AM 83, 1968, 296, no. 135). Especially important is the enormous (23 x 37 x 21 cm., 93.07 kg.) inscribed bronze astragal of the second half of the sixth century, one of a pair dedicated at Didyma, then taken by the Persians as booty in 494 and subsequently found at Susa (Paris, Louvre; A. Rehm, Didyma 2, 1958, 6f., fig. 10; L.H. Jeffery, LSAG, 334, 343 no. 30; Boardman, Greeks Overseas, 108, fig. 125; cf. the large, 926.5 g., astragal said to be from Gela inscribed ton geloion emi, now Vienna 3075, ex-Brueder Egger, Vienna, 10 Dec. 1906, lot 425; L. Jeffery, LSAG, 273, 278 no. 51, 411 no. 51, pl. 53) [FIG. 67].

Other less common bronze votives have also been found at East Greek sites. A miniature ring handle tripod with inscription was found at Samos (Berlin, diam.: 5.4 cm.; G. Dunst, AM 87, 1972, 158, pl. 54: 1; M. Maass, Ol. Forsch. 10, 1978, 117 n. 1) [FIG. 68]. The inscription is a dedication to Hera from Hephaistion (perhaps the same man who dedicated the bronze hare to the Apollo of Priene,

discussed below) and probably dates from the second half of the sixth century. It is not entirely unprecedented, since a miniature silver tripod was found at Phanai, Chios (cf. "Jewelry: Votives"). A tiny bronze krater-shaped vessel with a votive inscription was also found at Samos and dates from the first half of the sixth century (Vathy B 454, 3.2 cm.; G. Dunst, AM 87, 1972, 135f., pl. 55: 1-2) [FIG. 69], and the miniature griffin cauldron from Samos has already been mentioned. Another type of votive object is the small bronze kerykeion, better known from Mainland Greek and Italian sanctuaries (J. Crome, AM 63-4, 1938-9, 117-126; K. Schefold, Meisterwerke, 1960, 40 with further notes, and cf. no. 184, in the Ortiz collection, said to be from Crete; H. Hoffmann, Ten Centuries, 166, no. 78). An East Greek example is from Samos, inscribed as a votive from Aristarchos (now lost; fragmentary, 17.5 cm. as preserved; G. Dunst, AM 87, 1972, 138f.). A small pin (?) from Samos is a votive inscribed hera (Vathy B 2099; L: 5.5 cm.; A. Furtwaengler, AM 96, 1981, pl. 34: 3). Especially remarkable is a 24 cm. inscribed bronze bar with perforations, perhaps to hang small votive objects, found in the temple of Athena at Old Smyrna and datable to c. 600 (Akurgal, Alt-Smyrna 1, 111f., fig. 100, pl. 124 a-c, colorplate N 1-2, with reconstructed picture of how votives may have been attached, and, on the inscription, S. Sahin, ibid., 129f.) [FIG. 70]. The inscription actually calls the object a votive (ara) dedicated by Oinotimos, son of Protarchos, to Athena.

Vessels:

There are no examples surviving of the large and important vessels, such as the bronze and iron cauldrons that bore the fine griffin heads and related attachments, that stood in East Greek sanctuaries and were greatly admired in the seventh century, but they probably differed little from the examples found at Olympia, and in Etruria, Cyprus, and France (cf. "Tripods", below). Even smaller vessels rarely survive, but enough exists to demonstrate a strong Eastern influence and at least one important series of East Greek oinochoai.

Only fragments of the larger vessels survive, notably ring handles and their spool-attachments (e.g. Lindos 1, no. 714-723; Phanai, Chios: BSA 35, 1934-5, 149, pl. 31: 34-6; Emporio, 224f., no. 383-384; Samos: AM 83, 1968, 286, no. 106; cf. Boardman, Greeks Overseas, 68f, 88f.). The ring handles were widespread in the East, and probably reached Greece through a variety of sources. Phialai, especially of mesomphalic type, were ubiquitous in the East and became established throughout Greece in the seventh century for use in ritual libations, probably through Phoenician, Assyrian, and Phrygian models and reinforced by Achaemenid types in the later sixth century (H. Luschey, Die Phiale, 1939; Boardman, Greeks Overseas, 68). In East Greece, early examples from Rhodes were found with Late Geometric material (Kameiros, Papatislures, Grave 22, ClRh 6/7, 74, fig. 82; Grave 30, ibid., 104, fig. 116; and Kameiros, Kechraki, Grave 201, c. 680-670, ClRh 4, 345ff., no. 5, fig. 385),

while some miniature phialai from Emporio belong to the early seventh century (Emporio, 225f., no. 391-392, fig. 146). At least two examples from Samos are from late seventh century contexts (AM 74, 1959, 32, Beil. 73: 3, from the Bothros; and Vathy B 2097; AM 96, 1981, 100, 137, pl. 31: 3-4). Others from a variety of East Greek sites are more difficult to date since they continue throughout the Archaic period and later (Samos: AM 83, 1968, 286, no. 108-9; Ephesos: Hogarth, 152, pl. 15: 3; Lindos: Lindos 1, no. 749-763; Miletos: Izmir Museum, unpublished [FIG. 71]; and M. Pfrommer, Ist. Mitt. 36, 1986, 34ff., pl. 6, as sixth century; several examples with Karian inscriptions: H. Jucker and M. Meier, Mus. Helv. 35, 1978, 104-115; R. Gusmani, Kadmos 17, 1978, 67-75, for examples in Karlsruhe and New York [the latter, L.1976.43.2, Bastis collection]; an inscribed Phrygian example in silver in Geneva, C. Brixhe and M. Lejeune, Corpus des inscriptions paleo-phrygiennes, 1984, 272f., Dd-102, pl. 133, "seventh century?"). Several early phialai from Samos may be imitations of Phrygian types (Jantzen, Samos 8, 54, pl. 50, four examples as Phrygian; but H.-V. Herrmann, Gnomon 47, 1975, 393ff., only B 494 as Phrygian with the other three being imitations, presumably local; for certain Phrygian phialai, cf. R.S. Young, Gordion 1, 233-236).

Phrygian metalwork, which is now well attested by the finds from the Gordion excavations (R.S. Young, Gordion 1, 219-236), appears to have been highly influential in East Greece (cf. B. Shefton, Die "rhodischen" Bronzekannen, 25f.;

T. Weber, Bronzekannen, 114f. n. 4). Even fashions were affected, as is demonstrated by the use of bronze belts and fibulae closely copied from Phrygian prototypes (cf. above). The phialai and ring-handled vessels may not have been inspired solely by Phrygian models, but one group of ring handled dishes surely was. They are shallow dishes with ring handles attached to spool-elements and a supporting bronze band riveted along the rim. Phrygian examples are known from the late eighth century Tumulus MM at Gordion, where fifteen examples were found (R.S. Young, Gordion 1, 229-233). Although examples have not been found in excavations in East Greece, a number have appeared on the market and may be Greek rather than Phrygian (e.g., two in Hamburg: H. Hoffmann, AA 1974, 64; Karlsruhe: K. Schumacher, Beschreibung der Sammlung antiker Bronzen, 1890, 83ff., pl. 8; W. Hornbostel, Aus Graebern und Heiligtuemern, 1980, 11, no. 11, as Phrygian; Auctiones A.G., Basel, Auction 14, 2 Dec. 1983, lot 275; Summa Galleries, Beverly Hills, Auction 1, 18 Sept. 1981; two examples on Munich market 1985 and 1986; and others; a silver example on the German market in 1986 is false, probably a cast from a bronze example). Metal examples have been found on Cyprus (H. Matthaeus, PBF II, 8, 1985, 134-136 [FIG. 72]; in New York, G.M.A. Richter, Bronzes 203f., no. 538, and perhaps no. 537, said to be from Curium). That Greek examples existed is demonstrated by the mid-sixth century ivory "hawk priestess" from Ephesos (cf. "Ivories", below), who holds an example at her side (Hogarth, 156f., pl. 21: 6; 22; P.

Jacobsthal; JHS 71, 1951, 92 n. 37; Boardman, Greeks Overseas, 89f.), and by pottery imitations from Samos (Grave 45, contents now in Kassel; Boehlau, 46, no. 2, 150, pl. 8: 2; P. Gercke, Antiken in Kassel, 27f., pl. 29) and Sardis (Inderese Grave 61.2, second quarter of the sixth century, A. Knudsen, Berytus 15, 1964, 59-69). Other bronze vessels from sixth century Asia Minor, notably Lydia, show both Phrygian and local influence, but how these may have influenced East Greece is unclear (several bronze vessels in Lydian shapes, probably all of late sixth century date: a jug with slip-on lid, New York 68.11.18, D. von Bothmer, Met.Mus.Bull., Summer 1984, 34, no. 44; a bronze skyphos from a Sardis tomb, New York 26.164.12, J. Waldbaum, Metalwork from Sardis, 148, no. 973, pl. 57; two oinochoai, New York 66.11.28 and 1981.62, unpublished; a shallow bronze dish with engraved rosette in the interior, the ring handle ending in ducks' heads and attached to a semicircular element riveted to the dish and also terminating in duck's heads, Achaemenid influence, Getty Museum 78.AC.403 and another identical, handle only, private collection; other fragmentary bronzes, including a small oinochoe, from Lydian tombs are in Usak; another oinochoe, W. Hornbostel, op. cit., 12, no. 12, as Phrygian).

An important series of purely Greek trefoil oinochoai that is close in shape to some contemporary Wild Goat pottery types has been recognized as East Greek, although not certainly localized (B. Shefton, Die "rhodischen" Bronzekannen, 1979; originally discussed by P. Jacobsthal,

JdI 44, 1929, 198-223; also O. Frey, Marburg.Winckelmann-Prog., 1963, 18-26). The oinochoe has discs on the handle where it joins the rim and palmette and lotus elements at the base and top. They have a wide distribution through Europe as far west as Spain, and Phokaian traders have been seen as the likely source, with Phokaia being a possible place of manufacture (Boardman, Greeks Overseas, 214; Shefton, op. cit., 2f., 22f.). An early example was also found on Rhodes (Shefton, ibid., 22), and a handle, perhaps of a related oinochoe, was found at Didyma (K. Tuchelt, Ist. Mitt. 21, 1971, 84, no. 268, pl. 20). The ivory "hawk priestess" from Ephesos who carries the ring-handled dish in one hand carries an oinochoe not unlike these in the other. Shefton dated his earlier group A and B to the late seventh and early sixth centuries, and his later group C to the first half of the sixth century (Shefton, op. cit., 16f.).

An example of Shefton's Group A (Shefton, ibid., A1) was found in a late seventh century Etruscan tomb (F. Villard, Mon. Piot 48, 1956, 25-53, the oinochoe, Louvre Br. 4350, is fig. 3-7) [FIG. 73] along with two related bronze vessels, a small, simple bowl with a beaded rim (H: 7.5 cm.; Br. 4361) and a fine shallow dish with two omega-shaped ring handles and engraved decoration (Diam. without handles: 29.8 cm.; Br. 4351; F. Villard, ibid., fig. 1-2, pl. 3-5) [FIG. 74-75]. The shallow bowl is especially important for its engraved decoration, which includes a central rosette surrounded by a pattern of cup-spirals and palmettes, a frieze of lotus and palmettes, and a second frieze of birds,

a dog chasing hares, and a hunter (?). The figural frieze recalls the lower scene on the Corinthian Chigi vase, but the style, the patterns, and the shapes of the vessels indicate their East Greek origin, as Villard observed (Villard, ibid., 36-41, as probably Rhodian, c. 630-620). Furthermore, the technique and style of the engraved decoration is similar to a series of engraved bronze mirrors and related work in silver, the earliest of which is certainly East Greek of the early sixth century and the others Lydian and Achaemenid of the later sixth and fifth centuries (cf. "Mirrors", below). Rhodes need not have been the origin of the group, and perhaps an Ionian center is more likely.

Other types of vessels of early date found at East Greek sites are less clearly recognizable and some are Eastern imports. An early example of a kyathos with animal head terminal is from the Bothros at Samos (AM 74, 1959, 32, Beil. 73: 2) and a later example is from Ephesos (Hogarth, 152, pl. 19: 7). They are close to Phrygian examples and are most likely imports (cf. R.S. Young, Gordion 1, 227f., the Ephesos example as Phrygian). The unique bull's head rhyton from Samos appears to date from the beginning of the sixth century (cf. above). A bronze olpe-like jug and a small lebes were also found in the Bothros (AM 74, 1959, 31f., Beil. 73: 1 and 72: 2). A variety of fragmentary vessels were found at Lindos, but little can be said about them, and many must date to the sixth century or later (Lindos 1, no. 777ff.).

Sixth Century Bronzework:

Until the outstanding discoveries at the Heraion of Samos beginning in the 1930's and more recent finds elsewhere in Asia Minor, the paucity of East Greek figural bronzes at a time when they were diverse and plentiful in Mainland Greek and Italian sanctuaries was puzzling to scholars (Lamb, 101, "disconcerting"), and many bronzes of uncertain origin were attributed, often incorrectly, to various East Greek schools in an attempt to fill in the gaps. However, subsequent finds, especially at Samos, have demonstrated the fine quality and distinctive style of much Ionian bronzework. Other sanctuaries, including Ephesos, Didyma, Old Smyrna, Erythrai, and Emporio and Phanai on Chios, have yielded much less than Samos and sometimes nothing at all, but what has been found at these sites, along with various other chance finds, add to the overall picture. Perhaps future sanctuary finds in Asia Minor will supplement the rather poor view now available.

At present, East Greek bronzework of the sixth century appears to parallel in type the Mainland Greek and Italian material known from numerous sanctuary finds. The important works are decorated tripods, large kraters and other vessels, and votive statuettes of humans and animals. These are best known from the finds at Samos, although some statuettes are from other sites. Other decorated bronzes for everyday use, such as mirrors with figural handles and candelabra, are also now known, although they are rare. A few minor groups of bronzes, such as bridle ornaments, are

distinctively East Greek and probably derived from Eastern sources.

Tripods and Related Vessels:

The production of large votive tripods, certainly among the most accomplished works in bronze, continued in the sixth century at Samos and perhaps elsewhere in East Greece. Although little survives except fragments, enough is known to establish the East Greek origins and to reconstruct their appearance based on tripods from elsewhere in the Greek world. It is the rod tripods that seem to have been the most popular type and that survive in fragments, but other varieties must have also existed, as well as conical and other types of metal stands that were not tripods, none of which survives.

The originally Geometric type of tripod with flat legs and bowl with upright ring handles, so frequently represented in Greek art in all periods, must have been manufactured throughout the Archaic period and even later (cf. the tripods as prizes for a race under the handles of an East Greek vase fragment from Taranto, E. Homann-Wedeking, Archaische Vasenornamentik, 1938, 68, fig. 7). However, none survives from this period (for Geometric examples, cf. above), except an inscribed, miniature votive example from Samos (AM 87, 1972, 158, pl. 54: 1; M. Maass, Ol. Forsch. 10, 1978, 117 n. 1; cf. above). Perhaps the large gold tripod dedicated at Thebes by Kroisos of Lydia (Herodotos 1, 92) was also of this type. It is unclear what

the famous iron stand made by Glaukos of Chios looked like (Herodotos 1, 25; Pausanias 10, 16, 1; Athenaeus 5, 210c). Glaukos, credited with inventing the technique of iron welding, made the stand sometime early in the sixth century for Alyattes of Lydia, who dedicated it at Delphi where it still stood in Pausanias' time. Pausanias' description is difficult to understand, and although occasionally it recalls rod tripods (e.g. he mentions cross bars like rungs of a ladder), it does not correspond to the standard rod tripod and may not have been a tripod at all. Also important is the report by Athenaeus that it was decorated with small figures and florals in relief, a practice common by the mid-sixth century on rod tripods and related vessels (Athenaeus at this point is discussing vessel stands, engythekai, in general, calling the Glaukos stand a hypostema, and quotes various sources including Hegesander of Delphi and Herodotos, who calls the Glaukos stand a hypokreteridion, and seems not to be speaking of tripods).

The rod tripods, adapted from Near Eastern types, were already established in Crete and Cyprus and reached Mainland Greece in the Geometric period, but nothing from East Greece of such an early date has survived (the best study of rod tripods remains P. Riis, Acta Arch. 10, 1939, 1-30; also L. Savignoni, Mon. Ant. 7, 1897, 277-376, and the more specific studies of Herrmann and Jantzen, cf. below). Presumably rod tripods were used in the seventh century to support the griffin protome cauldrons, but nothing has been found in either Mainland or East Greece (cf. above; the only extant

early example comes from Cyprus). It is thus unclear how they developed into the ornamented varieties of the sixth century that spread throughout the Greek world. Fragments are known from many sites, including Athens, the Peloponnesos (the Olympia finds published by Herrmannn, Ol. Forsch. 11, 1979, 171-209), and East Greece (the Samos material is discussed by Jantzen, GGK, 87-94), and intact tripods have been found at Metapontum (Berlin, F. 768; Savignoni, loc. cit., 305, pl. 8; G. Bruns, Antike Bronzen, 1947, 32f., fig. 20; Lamb, 132, pl. 45a; cf. Herrmann, Ol. Forsch. 11, 173 n. 12), Trebinishte (Belgrade; N. Vulic, AA 1933, 465ff., fig. 2-5; L. Popovic, Archaic Greek Culture in the Middle Balkans, 1975, 79ff., fig. 6; further, Herrmann, Ol. Forsch. 11, 173 n. 13), and La Garenne in France (Chatillon-sur-Seine; R. Joffroy, Mon. Piot 51, 1966, 17ff., fig. 14-21). Etruria also produced examples of distinctive style (cf. Savignoni, loc. cit.; K. Neugebauer, JdI 58, 1943, 211ff.).

Despite the fame of Glaukos of Chios, it seems unlikely that East Greece played a major role in the development of the standardized rod tripod. Again, the Peloponnesian workshops must be viewed as the leaders in the development of the type, especially in view of the their tradition of metalworking and the standardization and distribution of the type over such a wide area (cf. Herrmann, Ol. Forsch. 11, 206; Popovic, op. cit., 79ff.). It is likely that they were at first produced by the same workshops that made the

griffin protomes (Herrmann, Ol. Forsch. 11, 206). The local varieties at Samos and Southern Italy that seem dependent on the Peloponnesian prototypes may be explained by the strong influence that the Peloponnesos had in both areas, with colonies in Italy, which would similarly produce fine bronzework in the sixth century, and strong traditional trading links to Samos.

It is through the complete examples from Metapontum and Trebinishte that the standardized mid-sixth century tripods can be reconstructed (and cf. Furtwaengler's reconstruction of an example from Olympia, Herrmann, Ol. Forsch. 11, 192, fig. 5 [FIG. 76]). The alternating bent and straight rods of bronze or iron would join to a ring at the top that held the cauldron. At the base the rods would fit into three lion's feet (or possibly combined figures and lion's feet). A lower ring, usually decorated with recumbent lions, would be placed near the base, often supported by snake-shaped elements (none surviving from East Greece). The upper ends of the rods would be ornamented with palmette and lily elements. Along the upper ring figural attachments, usually horse protomes and reclining banqueters or lions, would be added. Sometimes figures, such as griffins, sphinxes, bulls (as on the Metapontum tripod), or humans, could be placed under the curved arch of the rod leg (Jantzen's "Bogenfeldfiguren").

The surviving material from East Greek sites or attributable to East Greek workshops accords well with this standard type. Fragments of legs, floral elements, lion's

feet, horse protomes, lions, banqueters, and Bogenfeldfiguren have been found. Most have been found at Samos and are carefully discussed by Jantzen (GGK, 87-94). They are listed as follows:

Rod-legs: (two fragments from Samos with attached elements, cf. below: Lotus element no. 7; horse protome no. 2. A third fragment from Samos of a much smaller tripod, H.P. Isler, Samos 4, 1978, 78, no. 24, pl. 339, Vathy B 1879).

Palmette elements [FIG. 77]:

1. Samos. Vathy B 322. Jantzen, GGK, 90f., pl. 62: 1.

2. Samos. Vathy B 101. Jantzen, GGK, 90f., pl. 62: 5.

Lotus elements [FIG. 77]:

1-3. Samos. Vathy B 411, 648, 649. Jantzen, GGK, 90f., pl. 62: 6-8.

4. Samos. Vathy B 650. Jantzen, GGK, 91, pl. 62: 4.

5. Samos. Vathy B 230. Jantzen, GGK, 91, pl. 62: 2.

6. Samos. Vathy B 647. Jantzen, GGK, 91, pl. 62: 3.

7. Samos. Vathy B 722. Still attached under the arch of a leg. Jantzen, GGK, 90f., pl. 60: 1.

8. Samos. Vathy B 1883. H.P. Isler, Samos 4, 1978, 78, no. 23, pl. 39.

All the palmette and lotus elements are from Samos. The two palmettes are quite different (cf. E. Buschor, AM 58, 1933, 38), and both are different in style from the the example from Olympia (Herrmann, Ol. Forsch., 192f.). Jantzen noted that the seven lotus elements are of five different types, with no. 1-3 being identical and perhaps belonging to the same tripod, and no. 4 being similar. The

recently found example no. 8 from the "archaische Nordtor" area is unlike the others, resembling more an Ionic capital than a lotus.

Lion's feet [FIG. 78]:

1. Samos. 7 cm. Berlin BB 725. Jantzen, GGK, 92, pl 63:1.
2. Samos. 9.5 cm. Vathy B 462. Jantzen, GGK, 92, pl. 63:3.
3. Samos. 8.5 cm. Vathy B 458. Jantzen, GGK, 92, pl. 63:2.
4. Samos. 5 cm. Berlin BB 726. Jantzen, GGK, 92, pl. 63:1.
5. Samos. 8.5 cm. Berlin BB 727. Jantzen, GGK, 92, pl. 63:1.
6. Miletos. 10.5 cm. Izmir Museum? C. Weickert, Ist. Mitt. 7, 1957, 131, pl. 44.

Bull's Foot:

1. Phanai, Chios. 5.5 cm. BSA 35, 1934/5, 148, pl. 31:40.

Lion's feet were a very popular decorative motif (derived from Eastern examples) and were used for other vessel stands besides tripods (cf. the gorgon-support, below; also the large [20 cm.] wood example from Samos, D. Ohly, AM 82, 1967, 127ff., Beil. 68-70, fig. 11, which is probably not from a tripod), but the bronze examples from Samos all seem to be for tripods. Jantzen places no. 1 as the earliest example, then no. 2-4 as roughly contemporary with the Metapontum and Trebinishte tripods, and no. 5 as slightly later (cf. Jantzen, GGK, 92; and for Olympia, Herrmann, Ol. Forsch. 11, 195f.). The large single foot from Miletos is a fine early work, unlike the known Samian examples. The bull's foot from Phanai, not necessarily from a tripod, may be an Eastern import (cf. Herrmann, Ol. Forsch., 195, 206).

Kneeling gorgon supporting lion's foot [FIG. 79]:

1. "Found in the sea off Rhodes". 55 cm. Louvre, inv. MNC 482 (Br. 2570). A. De Ridder, Louvre Bronzes 2, 98f., pl. 92; Aegean Island Cat., 164, no. 121. Darsow, loc. cit., 16, as not certainly East Greek. E. Schmidt, Geschichte der Karyatide, 1982, 60ff., 159f., pl. 3: 1-2.

The kneeling gorgon support has a good parallel in the tripod base for the krater from Trebinishte (L. Popovic, Anticka Bronza u Jugoslaviji, 1969, 71, no. 33), although there the smaller gorgon kneels on the lion's foot, and is winged and of quite different style. The Louvre gorgon, however, is a monumental work, certainly from a large tripod. Lamb (op. cit., 77) has already noted the "kneeling colossi" on the tripod dedicated by Kolaios of Samos in the seventh century and mentioned by Herodotos, but this example must date to around the middle of the sixth century.

Horse Protomes:

1. Samos. Berlin BB 720. Jantzen, GGK, 88, pl. 60: 2 [FIG. 80]

2. Samos. Berlin BB 721. Jantzen, GGK, 88, pl. 60: 1 [FIG. 81].

3. Samos. Vathy. H. Kyrieleis in Chios, 1986, 197, fig. 9 [FIG. 82].

4. Phanai, Chios. Chios. K. Kourouniotis, ADelt 2, 1916, 209, fig. 29. Jantzen, Bronzewerkstaetten, 73, Anhang 9 no. 1. H. Kyrieleis in Chios, 1986, 195f., fig. 8 (best photo) [FIG. 83].

5-6. Lindos. Lindos 1, no. 744, pl. 31. Jantzen, Bronzewerkstaetten, 73, Anhang 9 no. 2 [FIG. 84].

The horse protomes were popular decorative motifs and well represented on tripods, including those from Metapontum, Trebinshte, Olympia (cf. Herrmann, Ol. Forsch. 11, 197f.), and Etruscan examples, as well as on handles for plates (Jantzen, AM 63-4, 1938-9, 152ff.). The Chios example may be the earliest (Herrmann, Ol. Forsch. 11, 198 n. 31; Jantzen, GGK, 88) and is notable for its style and fine incised details of harness and trappings, which appear to be distinctively Ionian (cf. the discussion of the horse type, J.D. Beazley, Lewes House Gems, 23f.; J.M. Hemerlrijk, Caeretan Hydriae, 176). The two examples from Lindos are just horse's heads rather than protomes and must belong together. The three from Samos are not especially close, and Jantzen notes that no. 1 is earlier and comparable to the Metapontum and Trebinishte examples. No. 2 is a rather crude example. The most recent find, no. 3, is somewhat similar to no. 1 and is of especially fine work, with exceptional modelling and a long, finely worked mane hanging across the right side. It is likely a local work, but distinctively East Greek traits are not apparent.

Reclining Banqueters:

1. Samos. Naked, holding drinking horn? L: 7 cm. Berlin BB 723. Jantzen, GGK, 89f. n. 146, no. 1, pl. 61: 1 [FIG. 85].

2. Samos. Wearing himation, holding drinking horn. H: 11.5 cm. Berlin (East). Fuehrer durch die Ausstellungen des

Pergamonmuseums. Antikensammlung. III, 1985, 16, fig. 9 [FIG. 86].

3. Samos. Wearing himation, holding drinking horn. H: 9.5 cm. Vathy B 2. Buschor, AS, fig. 181, 182, 193; Darsow, no. 5; Aegean Island Cat., 182, no. 146 [FIG. 87].

4. "Samos?" (Paris market, 1979). Wearing himation, holding drinking horn, L: 9.6 cm. Liebieghaus, Frankfurt am Main, I.N. 1593. P. Bol, Guide to the Collection. Ancient Art, 1981, 25-6, 290, fig. 28; E. Walter-Karydi, AM 100, 1985, 96, pl. 27: 3 [FIG. 88].

5. Dodona. Iannina Museum 4910. D. Evangelides, Praktika, 1953, 162, fig. 3. E. Walter-Karydi, AM 100, 1985, pl. 27: 2 [FIG. 89].

Reclining banqueters are known from many examples found throughout Greece and Italy (cf. list in Jantzen, GGK, 100 n. 146; further: B. Fehr, Orientalische und griechische Gelage, 1971, 180f.; E. Walter-Karydi, AM 100, 1985, 96 n. 24; D.G. Mitten, Master Bronzes, no. 43-45; and another, said to be from Thessaly, Geneva, Ortiz collection), some of which certainly come from the upper rings of tripods, as in the case of the Trebinishte tripod, while others decorated the rims of kraters (cf. Herrmann, Ol. Forsch. 11, 204 n. 54). Of the many known, only a few may be East Greek, most likely Samian. Two fine examples, nos. 2 and 3, are from Samos and have much in common with Samian kouroi of the mid-sixth century, notably the similar broad face and outlined eyes and the body mass entirely without modelled

musculature. No. 2 (which seems to have been unpublished, and certainly overlooked, until recently) appears to be the earlier of the two, perhaps dating from mid-century, while no. 3 is slightly later. Two other examples are so similar to the Samos example in dress and modelling that a Samian origin must be accepted (cf. Walter-Karydi, _loc. cit._, 96). The new example in Frankfurt, no. 4, is especially close to no. 3 (is no. 4 the example in a Swiss collection, L: 10 cm., cited by H. Jucker, _Mus. Helv._ 27, 1970, 117 n. 4? If not, another similar piece should presumably be added here). He is alleged to have come from Samos, but without further evidence this provenience must be regarded as suspect. No. 5 is also quite close in dress and modelling, although somewhat cruder in execution. Although he is from Dodona, he has nothing in common with most bronzes from that site, which are usually Peloponnesian (especially note the famous banqueter now in the British Museum), and may be viewed as a rare surviving East Greek export to the Mainland. The banqueter no. 1 from Samos is unusual for being nude and holding a cup, and his awkwardly raised right elbow is difficult to explain. Walter-Karydi has removed him from the series of Samian banqueters for unclear reasons (Walter-Karydi, _loc. cit._, 96 n. 25), but he must be Samian and perhaps an early example, as Jantzen notes (_GGK_, 90).

Mitten has seen another example, in Bowdoin College, as Ionian (_Master Bronzes_, no. 43, ex-Warren; B. Freyer-Schauenburg, _Samos_ 11, 121 n. 71 accepts the Samian attribution), citing the the round face and features.

However, it is unlike the Samian examples, and the carefully modelled musculature is unusual in East Greece. The face (which, however, G. Ortiz informs me is reworked in modern times) recalls the kouros now in the Borowski collection (Master Bronzes, no. 34; Glimpses of Excellence, no. 30; cf. below), which is dubiously said to be from Samos and also has problems fitting into the Ionian series.

Although it would be difficult to see the reclining banqueter motif as either distinctively or originally East Greek (and indeed few of the bronze attachments are East Greek), the type seems to have enjoyed a special popularity there since it is also represented in other media, such as small terracottas and, more importantly, stone sculpture. The dedicator of the famous group of sculptures at Samos made by Geneleos, "...arches" (or "...ilarches", cf. G. Dunst, AM 87, 1972, 132f., and Walter-Karydi, loc. cit., 95), is shown as a banqueter reclining on a wineskin and holding a drinking horn (Buschor, AS, fig. 99-100; B. Freyer-Schauenburg, Samos 11, 116ff., pl. 51-53; and most recently E. Walter-Karydi, loc. cit., 95ff. That the banqueter holds a drinking horn has been noted by B. Fehr and Walter-Karydi, ibid., 95 n. 20). Several other marble figures were found at Myous, including the famous one dedicated by Hermonax now in Berlin (C. Blumel, Die archaeisch griechischen Skulpturen der staatlichen Museen zu Berlin, 1963, nos. 66-68, pl. 212-6) and two others from Samos (B. Freyer-Schauenburg, Samos 11, 148, no. 70 A-B, pl.

58 and 150, no. 71), as well as two from Didyma and others from Ionia (Istanbul 5508; cf. Langlotz, Studien, pl. 49: 5; cf. the list in Fehr, op. cit., 120-123.). Another similarly reclining figure was found at Myous, but he holds a bunch of grapes and may represent the god Dionysos himself (K. Tuchelt, RA 1976, 55-66, fig. 4-8; Walter-Karydi, loc. cit., 96 n. 26). Samian terracottas show similar banqueters (cf. Walter-Karydi, ibid., 96 n. 23), as do terracottas from throughout Greece and Italy (cf. B. Freyer-Schauenburg, Samos 11, 120f.). The East Greek examples in all media appear most popular c. 560-540, but they may continue somewhat later.

Recumbent lions [FIG. 90]:

1-3. (three examples). Samos. Berlin BB 724. Jantzen, GGK, 92, pl. 63: 5. Gabelmann, 60, no. 51.

4. Samos. Vathy B 412. Jantzen, GGK, 92, pl. 63: 4. Gabelmann, 60, no. 52.

All four examples are from Samos. Jantzen saw no. 1-3 as identical and belonging together, probably from the lower ring of a tripod in the manner of both the Metapontum and Trebinishte tripods. The single lion no. 4 is of slightly later style. Another similar lion of uncertain provenience now in New York (ex-Baker collection, D. von Bothmer, Ancient Art in New York Collections, no. 146, as Etruscan) has been called East Greek by Gabelmann (Gabelmann, 60, no. 53) but Etruscan by Bothmer. Without the evidence of provenience, an Etruscan origin is more likely, and any strictly Ionian traits have not been demonstrated

convincingly. Another similar lion in Boston (MFA 66.9; M. Comstock and C. Vermeule, Bronzes, no. 433; Master Bronzes, no. 60), this one without head turned, is erroneously said to come from Asia Minor when in fact it comes from Cerveteri (previously Ortiz collection, information from G. Ortiz).

"Bogenfeldfiguren":

1. Griffin. Samos. H: 8.4 cm. Vathy B 123. Jantzen, GGK, 89, pl. 60: 4-5 [FIG. 91].

2. Lion. Athens, Acropolis. H: 4.5 cm. L: 5.7 cm. Athen NM 6656. A. De Ridder, Acropolis Bronzes, no. 475. E.A. Lane, BSA 34, 1933/4, 188 n. 4. Gabelmann, 36, 59, no. 50, pl. 6: 3 [FIG. 92].

3. Striding Athena. Unknown site, Asia Minor. 16 cm. Basel, Antikenmuseum BS 509. H. Herdejurgen, AK 12, 1969, 102-113 [FIG. 93].

These figural attachments are not well represented in East Greece, nor are the related figures added to rims of kraters. Striding griffins are a type well known at Olympia (cf. Herrmann, Ol. Forsch. 11, 201f. and n. 43; add: Houston MFA, H. Hoffmann, Ten Centuries, 159-160, no. 75, as East Greek; however, contrary to Hoffmann's comments, the Houston example is the same size and very close to the Olympian examples), but only one was found at Samos, and this is not the standard type. The griffin strides left and turns his head rather than looking forward. This piece matches another single example found at Olympia (Athens NM. 6187. Herrmann, Ol. Forsch. 11, 202f., S 75, pl. 88: 1; Herrmann,

ibid., 203 n. 48, follows Kunze in seeing this griffin as slightly later than the main series), and the two are notable especially for the identically stylized engraved lines on the wing, shoulder joint, and flank. Although this sort of stylization is typically "Assyrianizing," East Greece need not be seen as the intermediary of orientalizing bronzework. On the other hand, these two griffins certainly belong to the same workshop and are not like the main series from Olympia.

A similar problem of attribution is faced in considering a striding lion from the Acropolis of Athens that very likely stood on a tripod or some other vessel (no. 2 above, with references). Lane proposed an East Greek origin in 1934, and Gabelmann agreed, again citing the strongly "Assyrianizing" features, including the incised lines on the flank (much like the griffins). He further cited similarities to the ivory lions from Ephesos (Hogarth, pl. 23: 3) and especially from Old Smyrna (Akurgal, Alt-Smyrna 1, pl. 133), but the comparisons are not close enough to prove a connection, and the connections between ivory and bronze working appear remote. Assyrianizing lions should not be considered the exclusive domain of East Greece, and the question of attribution must remain open.

The most remarkable Bogenfeldfigur to come to light is the striding Athena now in Basel. She is unlike other early Athena types in pose and costume, striding with both arms outstretched (the forearms and hands are missing, but they almost certainly held a spear and shield; cf. Herdejurgen on

this as an early Athena Promachos type) and wearing an Ionian belted chiton. She certainly served as an attachment since only one side is finished, and holes for attachment at the lower end (there are no feet) of the back side are visible, but it is uncertain whether this was to a tripod or rim of a vessel. The attachment is in the manner of a number of others known from Mainland sites, notably an Artemis (K.A. Neugebauer, Berlin Bronzes 1, 107f., no. 214, from Dodona?), Amazons (cf. the three certainly from a tripod found on the Acropolis, Athens, de Ridder, op. cit., 327f., no. 815-817; from Thessaly, Biesantz, 33, L86; and cf. D.K. Hill, Walters Bronzes, 104f., no. 236, from Crete), female runners (Athens NM, from Dodona, and British Museum, from Albania, cf. Lamb, 97f., pl. 33; and cf. Palermo 8265, C.A. di Stefano, Bronzetti Figurati del Museo Nazionale di Palermo, 1975, no. 106), and maenads (Skopje, from Yugoslvia, N. Vulic, AA 1933, 481, fig. 19-20; L. Popovic, Anticka Bronza, no. 19a), and more elaborate figures and groups from Etruria (cf. L. Savignoni, loc. cit.). The Athena may have been from a group that included Perseus and Medusa (cf. the Perseus from Thessaly, Volos 749, Biesantz, 35, L110, and Langlotz, Studien, 137, for an attribution to North Ionia; and the Etruscan Perseus and Medusa group, L. Savignoni, loc. cit., fig. 24; another Perseus from North Ionia was on the art market in 1986, but appears to be an import).

The bronze is reliably reported to have come from

western Asia Minor and is of distinctive, certainly East Greek, style. As noted above, the costume is Ionian, and the style is perhaps best placed in Mainland Ionia. The pose and style recall several Athenas depicted on gems classed by Boardman as belonging to the "Group of the Leningrad Gorgon" (AGG, 90-92, no. 239, 240, 245), which he considered entirely East Greek. The head of the bronze is large with prominent nose and chin and broad, slanting eyes. The treatment is unlike Samian bronzework and recalls the earlier and cruder Ephesos bronze kore (Hogarth, pl. 14, cf. below). As an Ionian alternative to Samos, Herdejurgen's suggestion of a Milesian work of c. 530 is reasonable, since the important city of Miletos must have produced bronzes at this time (Herdejurgen, loc. cit., 106).

Jantzen also identified the kneeling runner from Samos as a Bogenfeldfigur (Buschor, AS, fig. 183-185; Jantzen, GGK, 89), but although the figure may have decorated a vessel (attached at the knee), it does not seem likely to have been from a tripod (cf. below).

Volute Kraters and Related Vessels:

The East Greek workshops that produced decorated tripods may have also produced a fine series of volute kraters and other vessels of various types, but except for a few volute kraters only fragments survive. The surviving elements are related to those on tripods and can be shared by different types of vessels, such as kraters, dinoi, and their stands. Again the Peloponnesian works, best attested by the Trebinishte finds, seem to have served as the models.

The forms of the kraters were certainly based on Peloponnesian, probably Lakonian, prototypes (cf. K. Hitzl, Die Entstehung und Entwicklung des Volutenkraters, 1982, 27ff., 66ff.; A. Rumpf in Charites. Festschrift Langlotz, 1957, 127-135; and for South Italian workshops, G. Vallet and F. Villard, BCH 79, 1955, 50-74; and C. Rolley, Les vases de bronze de l'archaisme recent en grande-grece, 1982), much like the two known from Trebinishte and the South Italian (?) example from Rua, Campania now in Munich (Inv. 4262; M. Maass, Griechische und roemische Bronzewerke der Antikensammlungen, 1979, no. 29), which have gorgons and snakes at the bases of the volute handles. Hitzl has plausibly attributed several closely related examples to an East Greek workshop, possibly Samos. A handle with moulded fingers and snakes from Didyma, now in Berlin (Hitzl, op. cit., 40ff., 245, no. 9), may be Samian (or Milesian?) and is the earliest, dating from c. 550-540. A fragmentary krater with only the neck preserved was found in a Scythian tomb at Martonosha (near Olbia) and is now in Leningrad (Hitzl, op. cit., 66ff., 271f., no. 18; cf. most recently L. Barkova, et al., Gold der Skythen, Munich, 1984, no. 34, as East Greek, late sixth century; H. Payne, Necrocorinthia, 218 n. 2, with the following example in Paris; Langlotz, Studien, 137, as North Ionian) [FIG. 94]. The handles are decorated with snakes and running gorgons. A very similar complete krater said to be from Cilicia was in the de Clercq collection and is now in the Louvre (Louvre Br. 4467; A. de

Ridder, de Clercq 3, 268f., no. 423; Hitzl, op. cit., 278, no. 19; Langlotz also calls this North Ionian, op. cit., 137) [FIG. 95]. It also has running gorgons under the handles, but instead of snakes, there are griffin heads, one of the most popular types of East Greek decorative attachments. A miniature example of this sort of krater was found on Samos itself and is now in Berlin (Berlin 31641, 9.4 cm.; Hitzl, op. cit., no. 20).

The East Greek origin of the examples cited by Hitzl is certainly possible, but aside from the griffin heads on the one example there is little to link the style of the decoration, notably the gorgons, with other known East Greek figural bronzes. If these are indeed East Greek works, they must closely copy Mainland types (cf. the bronze running gorgons from vessels found at Perachora, H. Payne, Perachora 1, 104f., pl. 34: 1-2, 42: 1-2; and also the comparisons to Chalcidian pottery, notably running gorgons, G. Vallet and F. Villard, BCH 79, 1955, 69f.). Although Samos need not be the only possible place of origin, the famous Samian artist Theodoros, who lived at this time, is said to have made large kraters in precious metal, a silver one for Kroisos that was dedicated at Delphi (Herodotos 1, 51) and a gold one that eventually came into the possession of the Persian kings (Athenaeus 12, 514f).

Perhaps also from a krater are the running lion and deer figures from Samos now in Berlin (Lion: Berlin 31639, L: 18 cm.; G. Bruns, Antike Bronzen, 33, fig. 21; A. Greifenhagen, Antike Kunstwerke, 1966, 8, 44, no. 14;

Gabelmann, 36, no. 54. Deer: Berlin 31640, L: 16.4 cm.; Greifenhagen, *op. cit.*, 8, 44, no. 15) [FIG. 96]. They are similar to the running dogs on the curved rods of the Trebinishte krater base and are also similar to the lions on the curved rods of the handles of the Vix krater, as Greifenhagen note d (cf. R. Joffroy, *Le Tresor de Vix*, 1954, pl. 7). A less likely possibility is that they are handles for pateras (cf. U. Jantzen, *Griechische Griff-Phialen*, 1958, fig. 1-2, and 27 n. 10 mentions the Samos lion; also cf. below, "Pateras") or thymiateria (cf. the fifth century, perhaps Achaemenid, example in Ars Antiqua Auction 2, 1960, lot 112). However, the two pieces appear to belong together on some sort of vessel, with the lion pursuing the deer. A lion almost identical in style, modelling and pose was found at Perachora, again suggesting that the Samian examples closely follow Peloponnesian models, if they are not actual imports (H. Payne, *Perachora* 1, 130ff., pl. 39, 40: 1-2; 15.2 cm.; another tiny lion [5 cm.], *ibid.*, 139, pl. 44: 6).

Some of the lion's feet mentioned above with tripod parts may belong to tripod ring bases for other vessel, such as the krater from Trebinishte (L. Popovic, *Anticka Bronza*, no. 33) that rests on a tripod base with winged gorgons kneeling on lion's feet (like the similar tripod part from Rhodes, above). Two ring bases with lion feet were found at Lindos (*Lindos* 1, no. 745, diam.: 8.5 cm.; and no. 746, diam.: 5.2 cm.). These must have supported smaller vessels, perhaps bowls. The East Greek candelabrum with winged kore

figure (cf. below, "Korai-supports") also rests on three lion's feet, but is not closely related to these workshops.

Figural Attachments for Related Vessels:

Very similar to the figures that decorated tripods, are other figures that decorated the rims of cauldrons and related vessels. They are well attested in Mainland Greece and Italy, but rare in East Greece and never in place on the vessel. A sitting satyr in Oxford (1937.237, W.H. Buckler gift, purchased from van Lennep c. 1913; H: 3.45 cm.; L: 5 cm.) [FIG. 97] is said to be from Asia Minor and may be the East Greek counterpart of the three satyrs found at Olympia (E. Kunze, Ol. Bericht 8, 1967, 236ff., pl. 114-117, with preserved pegs for attachment; cf. ibid., 240 n. 56, the fourth satyr in a Swiss collection, now H. Jucker, Mus. Helv. 27, 1970, 117-9, pl. 1-2, a reference I owe to M. Vickers), although the style is rather close and without anything distinctively East Greek to set it apart. It is smaller than the others (all, H: 5.1 cm.) and of less fine work, but the pose and general modelling are the same. The face is rather worn, which makes comparisons difficult.

Reclining goats and rams are especially popular and known from many examples from Mainland Greece and Italy. Two large reclining rams from the same vessel are in New York (1976.11.2, 3; L: 14 cm.; J. Mertens, Met.Mus.Bull. 43,2, Fall, 1985, no. 17) [FIG. 98]. They have highly stylized facial features, unlike any from Mainland Greece, and do indeed recall Eastern examples, as Mertens observed (cf. the recumbent rams of precious metal, "Jewelry", below;

and the bone ram head horse trapping from Lydia, "Bridle Ornaments", below). She also noted that the curved and hollowed underside may be more appropriate for the rim of a basin or stand (or tripod?) rather than a cauldron. They are dated to the third quarter of the sixth century. Another example, also from Asia Minor and now in the Ortiz collection (unpublished; L: 10.8 cm.; facing right rather than left) [FIG. 99], is similar but slightly earlier and not as highly stylized. A similarly posed recumbent cow was found in the "archaische Nordtor" area at Samos, and this too probably decorated a small vessel (Vathy B 1975; H: 3.3, L: 4.9 cm.; H.P. Isler, Samos 4, 79, no. 29, pl. 39 [FIG. 100]; he cites the nearly identical example, Olympia 4, 251, no. 961, pl. 56; cf. also the recumbent rams in precious metal that served as pendants, pin heads, etc.).

A bronze cock from Phanai, Chios (W. Lamb, BSA 35, 1934-5, 148, pl. 32: 28) appears to be an attachment to an uncertain type of vessel. Other examples are from Cyprus (G.M.A. Richter, Bronzes, 47, no. 73), Perachora (H. Payne, Perachora 1, 138, pl. 44: 7, "from a mirror"), and a Lydian tumulus (Usak Museum, unpublished). They recall the silver cock that stands on an incense burner from a Lydian tomb (New York 1980.11.12; D. von Bothmer, Met.Mus.Bull., Summer, 1984, 44, no. 68, who cites a bronze incense burner with cock attachment from Etruria, to which add: Villa Giulia, from Olmo Bello, Tomb 80, M. Pallottino, Il Museo Nazionale Etrusco di Villa Giulia, 1980, 91, no. 111; also cf. the

small silver cock attachment from Asia Minor, "Jewelry", below) and may have decorated a similar vessel.

Relief appliques from vessels in the manner of Mainland Greek types are not well attested in East Greece. An attachment from Samos in the form of a winged female bust (Vathy B 491; H: 6.6 cm.; Aegean Island Cat., 179f., no. 143) [FIG. 101] probably decorated the rim of a vessel and recalls the much earlier orientalizing siren attachments but belongs to the first half of the sixth century. A fragmentary applique from Samos may have decorated the neck of a krater or the side of some other vessel. Preserved is the lower half, from waist to knees, of a striding nude male figure, perhaps a warrior or athlete, in Archaic style but not well enough preserved to give much information (Vathy B 2172, H: 7.8 cm.; U. Sinn, AM 100, 1985, 157, no. 47) [FIG. 102]. A fine applique of a boar said to be from Asia Minor and now in London (BM 1909.5-23.1; cf. Langlotz, Studien, 137, as probably coming from the neck of a large krater), is of late Archaic East Greek type [FIG. 103]. It stands on a thin base, which may have been attached to a tubular rim, and is only finished on one side. Another applique was found at Lindos, this a reclining sphinx with head turned frontally with tendrils on either side (Lindos 1, no. 679). It may have been at the base of a handle on a hydria or oinochoe. There seems little East Greek in its style, however, and it may be more at home in the Peloponnesos, although no exact parallels are found there (but cf. the later, perhaps Tarentine, sphinx applique, which is probably

based on Lakonian types, Munich 702, M. Maass, Griechische und roemische Bronzewerke der Antikensammlungen, 1979, 54, no. 30).

Pateras:

The so-called "Griff-Phialen" with figural handles, especially nude youths, are often associated with the workshops that manufactured the larger vessels (U. Jantzen, Griechische Griff-Phialen, 1958). They are, however, conspicuously absent from East Greece. Only one example has been proposed (private collection; W. Hornbostel, Kunst der Antike, Hamburg, 1977, no. 51; youth, palmette, and ring handle, L: 43 cm., "late sixth century"; subsequently, Sotheby, 12 Dec. 1983, lot 379), but the style is crude and the connections to East Greece have not been demonstrated. Similar handles for thymiateria may occur in the later sixth century, but they appear to be Achaemenid (cf. the Ars Antiqua example cited above, and the handle with calf's head terminal and standing calf hinged-element on the thymiaterion from a Lydian tomb, New York 68.11.17, D. von Bothmer, Met.Mus.Bull., Summer, 1984, no.69; and Mon. Piot 61, 1977, 51ff.).

Other Vessels:

Bronze vessels of seventh century type may have continued well into the sixth century, but a number of new varieties, notably of oinochoai, appeared around mid-century. The "Rhodian" oinochoe certainly continued into the sixth century, as did the ring-handled shallow bowl.

Originally a Phrygian type of the late eighth century (cf. above), the bowl lasted in East Greece at least until the mid-sixth century as can be seen by the ivory "hawk priestess" from Ephesos, who holds an example at her side (Hogarth, pl. 22), and by the pottery imitations from Samos and Sardis. The ivory figure also holds an oinochoe at her side, and it too was probably meant to copy a bronze original. A bronze kouros from Samos (Buschor, AS, fig. 304-306) holds a narrow jug more like an olpe, as does a youth on a fine engraved cornelian scarab (AGG, 58, no. 97, for further parallels). Other simple vessels, such as phialai, also continued at many sites, but they are difficult to date precisely. Bronze cauldrons must have also been common, but do not survive well. Notable exceptions are two lebes with covers from sixth century tombs at Ialysos (Marmaro, Grave 33, ClRh 8, 55, fig. 141; Grave 60, ClRh 8, 179, fig. 167) [FIG. 104], and one with an inscription naming Brychon son of Timoles dedicated at Samos and perhaps dating from the first half of the sixth century (Vathy B 1759; G. Dunst, AM 87, 1972, 137f., pl. 62-66; Brychon is named as the father of Aiakes on a seated statue from Tigani, Samos, B. Freyer-Schauenburg, Samos 11, 139ff., no. 67, pl. 56-57 and 143 n. 206, and this may be the same Aiakes who was father of the tyrant Polykrates).

The sixth century types of oinochoai have recently been collected by T. Weber (Bronzekannen, 1983), who studies all varieties and their various origins, Greek, South Italian, and Etruscan. East Greek examples are rare, and only a few

examples are cited, although some stylistically do seem to be local. One example with lion mask at the handle is from Kameiros (Liverpool; Weber, ibid., 34, I.A.9), and two fragmentary handles were found in the Lindos excavations (Lindos 1, no. 779-780; Weber, op. cit., 264f., I.C.10-11). An early example (c. 550) with lions lying on the rim at the handle join is said to be from Pergamon (Berlin 10 409; Weber, op. cit., 53f., 243f., I.B.5) but is either an import or closely follows Lakonian prototypes. A fifth century example is said to be from Mylasa (Frankfurt, Liebieghaus 1615; Weber, op. cit., 266, I.C.13). A silver oinochoe with lion head and scalp on the handle was found in a Lydian tomb and appears to be an East Greek or Lydian work of the late sixth century (New York 68.11.11; D. von Bothmer, Met.Mus.Bull., Summer, 1984, no. 36; not known to Weber) [FIG. 105].

Especially important is the well known class of oinochoe with handle in the shape of a nude kouros, bent backwards and usually standing on two lions or rams and grasping the tails of lions who sit on the rim of the vessel. These also seem to be originally Lakonian of the mid-sixth century but become very wide spread throughout the Greek world (cf. D.K. Hill, AJA 62, 1958, 193ff.; for South Italian examples and similar hydriae, G. Vallet and F. Villard, BCH 79, 1955, 50-74; Weber, op. cit., 75ff., 83f.). East Greek examples are elusive, and only one is listed by Weber as certainly in East Greek style, this from an unknown

site in Asia Minor and now in Bloomington, Indiana (1978.58; W. Rudolph, Highlights of the Burton Y. Berry Collection, 1979, 11, no. 7; Weber, ibid., 279f., I.D.12, as third quarter of the sixth century) [FIG. 106]. Another possible examples is in Paris (A. de Ridder, Louvre Bronzes 2, no. 2787; Weber, op. cit., 78 n. 5, 281, I.D.14). The unique silver example in New York, the only example known in precious metal (66.11.23; D. von Bothmer, Met.Mus.Bull., Summer, 1984, no. 35; Weber, op. cit., 75ff., 83, 275, I.D.8) [FIG. 107], is from a late sixth or early fifth century Lydian tomb, and Bothmer proposed an East Greek origin. Weber dated the piece around 525 or shortly after but was noncommital on its origin. It does not seem to be closely related to the lion head oinochoe, perhaps from the same tomb, mentioned above. The style of the kouros and other figural decoration has little in common with known East Greek figural work, and its East Greek characteristics are not easily detected, but this may again be due to the close following of Peloponnesian prototypes. However, the many other distinctive silver vessels from the Lydian tombs are clearly either Lydian or Achaemenid works, and this oinochoe appears to be the exception, suggesting a different origin. Closer study of all the silver material from this and related Lydian tomb finds may provide a clearer picture.

A further group of five oinochoai, probably from Karia, are in the Dierich collection in Kassel (P. Gercke, Funde aus der Antike, 29, 75-81, no. 36-40). They are said to have been found with pottery that dates from the first half

of the sixth century. The shapes vary but generally correspond to contemporary pottery shapes. Two examples have figural attachments, one with an animal head terminal where the handle joins the rim (no. 39), and the other with a woman's head at the handle within the rim and two ram's heads at the base of the handle where it joins the body of the oinochoe (no. 40). They are evidently local works of some Greek city in Karia.

Foot Aryballoi:

Ceramic plastic aryballoi are popular and common in East Greece (M. Maximova, Les vases plastiques dan l'antiquite, 1927; J. Ducat, Les vases plastiques rhodiens archaiques en terre cuite, 1966; R. Higgins, BMC Terracottas 2, 1959), as well as widely exported, by the late seventh century, but there is little evidence to indicate that metal versions were manufactured. The exception is a group of aryballoi in the shape of a foot wearing a sandal. One example was found at Lindos (Lindos 1, no. 803; 10.6 cm.) [FIG. 108], and another is said to be from the vicinity of Smyrna (private collection, unpublished). A third example is in Oxford, but is not necessarily East Greek (Oxford 1967.1274, 6.3 cm., unpublished) [FIG. 109]. It has been noted that the ceramic foot aryballoi differ from the main series of plastic vases and are of later date, probably of the second quarter of the sixth century (Maximova, op. cit., 93, pl. 26, no. 99; J. Ducat, op. cit., 181-5, who lists thirty-two examples and dates them c. 575-550; R. Higgins,

pp. cit., 32-34, no. 1655-8, as non-Rhodian, East Greek). The bronze examples should be roughly contemporary or slightly later.

Common bronze implements, such as mirrors and strigils, have not survived well, and there is little evidence for dating or workshops (mirrors, all undecorated: Lindos, sanctuary of Athena, *Lindos* 1, no. 409-415; Kameiros, Macri Langoni, Grave 33, *ClRh* 4, 114, fig. 108, sixth century; Kameiros, Macri Langoni, Grave 91, *ClRh* 4, 131ff., fig. 126, mid-sixth century; Kameiros, Grave 61, *ClRh* 4, 158, fig. 156, fifth century, mirror and grater [cf. below]; Ialysos, Marmaro, Grave 62, *ClRh* 8, 180, date?; Ialysos, Tomb 68, *Annuario* 6-7, 1923-4, 323, no. 10, bronze with iron handle, mid-sixth century; Sardis, from a tomb, J. Waldbaum, *Metalwork from Sardis*, 150, no. 991, Oxford 1937.233; a number of other mirrors from Sardis tombs, some with ivory handles, are lost, cf. Waldbaum, *ibid.*, 1 n. 7; the rare figural handles and a class of decorated mirrors are discussed below. Strigils: Kameiros, Macri Langoni, Grave 76, *ClRh* 4, fig. 187, iron strigil, date?; Ialysos, Marmaro, Grave 6, *ClRh* 8, 106f., fig. 94-5, fifth century; Ialysos, Marmaro, Grave 31, *ClRh* 8, 153f., iron strigil, sixth century?; Ialysos, Marmaro, Grave 37, *ClRh* 8, 157, fifth century; Miletos, Izmir Museum, unpublished [FIG. 71]).

A Group of Decorated Mirrors:

A small group of bronze mirrors, which are notable for their engraved decoration, may be briefly considered here. Most are Lydian or Achaemenid in style, but at least one is East Greek and appears to represent an earlier tradition. The group has been most fully discussed by A. Oliver (Studies Presented to G.M.A. Hanfmann, 1971, 113-120), although Greifenhagen had already noted the Greek characteristics of a mirror in Berlin (A. Greifenhagen, AK 8, 1965, 13-19). Oliver began with an example from a Sardis tomb (Istanbul 4572) [FIG. 110] that has a disc 21.5 cm. in diameter with an engraved border on both sides, one side with patterns of guilloche and triangles filled with dots, and the other side with guilloche and hatched maeander. A moulded element with double horses' heads, back-to-back, of Achaemenid style (as Oliver notes, ibid., 118) joins the bronze handle to the disc, and the terminal of the handle is a typically Achaemenid calf's head. Another mirror without engraving but with a similar handle is in Ankara and said to be from Unye (ancient Oenoe) near Samsun on the Black Sea (Oliver, ibid., 114). A third mirror acquired by the British Museum (WA 132221; R. Barnett, BMQ 26, 1963, 96, pl. 42; Oliver, op. cit., pl. 31; A. Greifenhagen, loc. cit., 17, fig. 1) [FIG. 111] has a similar handle terminating in a calf's head but with back-to-back calves' heads rather than horses' heads joining the disc. Along the border on both sides of the disc are engraved friezes of animals and decorative devices, including a winged solar disc. The

final mirror is in Berlin and said to be part of a mid-sixth century tomb group that included East Greek plastic vases and jewelry of Ephesian type (A. Greifenhagen, AK 8, 1965, 13-19, pl. 5; Oliver, op. cit., pl. 31) [FIG. 112]. The handle is missing, but there is no trace of an animal head element. Along the border of one side of the disc is an engraved guilloche and a frieze of animals, including confronted cocks, sphinxes, a boar, dogs, a bull, a griffin, an eagle, and stags.

Oliver correctly pointed out the similarity of the engraved patterns on the Sardis mirror to those on silver vessels from Lydia, although he did not explicitly call for a Lydian origin (Oliver, op. cit., 116; cf. especially a silver alabastron in Istanbul from near Smyrna, P. Amandry, Stathatos 3, 268, fig. 172, which has a similar guilloche pattern, and the lid of an incense burner from a Lydian tumulus near Usak, M. Mellink, AJA 71, 1967, 172, pl. 59, which has similar triangles filled with dots). Since Oliver wrote, much more Lydian silver has come to light that allows closer comparison to the decoration of the bronze mirrors. Most important are the silver objects in New York that came from Lydian tumuli at Usak and elsewhere. Some of these, notably several alabastra and a skyphos, add not only further examples of the patterns Oliver noted but animal friezes as well (D. von Bothmer Met.Mus.Bull., Summer, 1984, 35f., no. 45-48, alabastra, the first with engraved animals and the others with guilloche and dotted or hatched

triangles; and the skyphos, ibid., 37, no. 49, also with animals; a fragmentary bowl with similar decoration is in the Usak Museum, unpublished; undecorated silver mirrors have been found in a mid-sixth century cremation burial at Gordion, with remnants of an ivory handle, UPennMusBull 16, 1951, 20, fig. 1; and in Lydian tumuli, New York 68.11.10, Bothmer, op. cit., 45, no. 71; another similar example from a Lydian tomb was on the Munich art market in 1986, and one more is in the Usak Museum, unpublished). The engraving, although not identical to the mirrors, is similar in style, composition, and technique.

Although all the mirrors are related, they are not all of the same style and appear to be spread over a significant period of time. The Sardis mirror is from Tomb 213, which also contained silver bowls of Achaemenid type, gold jewelry, and a Lydian-Achaemenid gem, all of which suggest an early fifth century date (Oliver, op. cit., 119f.). Barnett called the British Museum mirror Urartian, and Akurgal (E. Akurgal, The Art of Greece. Its Origins, 1966, 216f.) saw it as "Median" (presumably pre-Achaemenid), but such an early date has been correctly challenged by Greifenhagen (Greifenhagen, loc. cit., 17f.) and Oliver (Oliver, op. cit., 115), who saw the mirror as Achaemenid in style, related to the Berlin and Sardis examples and best placed in the second half of the sixth century or later. The Lydian silver objects support the Achaemenid date and may suggest a specifically Lydian origin for at least some of the mirrors.

The Berlin mirror can be dated by the associated objects to around the mid-sixth century or slightly before. This mirror is not only the earliest of the four under consideration, but it has engraving that is purely Greek in style and is lacking any Achaemenid influence. The late seventh century engraved bronze dish now in Paris from an Etruscan tomb, which Villard correctly saw as East Greek (F. Villard, Mon. Piot 48, 1956, 25-53, fig. 1-2, pl. 3-5; discussed above), displays a style and technique remarkably similar to the Berlin mirror, as Akurgal has already noted (Akurgal, op. cit., 216f.). In view of the early date of these objects, it appears that the tradition is an East Greek one that only later reached Lydia. It may also have been such East Greek work (or perhaps now lost silver vessels utilizing the same style and technique) that influenced the sixth century engraved silver vessels and mirrors made at Graeco-Scythian sites on the Black Sea, such as Vani and Kelermes (cf. Boardman, Greeks Overseas, 254, n. 154, fig. 294; and 260f., n. 174-5, fig. 303-4; O. Lordkipanidze, RA 1971, 282ff., fig. 19, for the engraved silver aryballos from Vani).

A Lydian Bronze and Iron Kline:

Also related to the engraved mirrors in the technique of decoration and the types of patterns is the remarkable bronze kline in Malibu (J. Paul Getty Museum 82.AC.94, which is reliably said to have come from the vicinity of Sardis), which is probably from a Lydian tomb. It is bronze over an

iron core with carefully worked, turned bronze legs. The frame is decorated with engraved lotus, star, rosette, and maeander patterns. The details of decoration recall the mirrors and the engraved Lydian silver, and a number of patterns are especially close (cf. especially the New York skyphos decoration, Bothmer, op. cit., 37, no. 49, and the maeander on the Sardis mirror). Similarly, the date must be late in the sixth century or early in the fifth.

The shape of the kline recalls an Achaemenid example with turned legs from Beth Pelet in Palestine (H. Kyrieleis, Throne und Klinen, 1969, esp. "persisch-griechische Mischformen: Klinen", 146ff.; also G.M.A. Richter, Ancient Furniture, 1926, 68ff.). Another kline of similar form was found in the Regolini-Gelassi tomb in Etruria, which may be an East Greek import or at least influenced by East Greek types (L. Paroti, La Tomba Regolini-Gelassi, 1947, 285f., no. 236, pl. 30).

"Cheese Graters":

Jacobsthal (AM 57, 1932, 1-7), citing a passage in Aristophanes, identified an apparently common type of household cheese grater as having a handle in the form of a lion or other animal. Bronze and iron perforated plates, which have been identified as graters, have been found at many Greek sites in contexts ranging from the late Geometric to at least the Hellenistic period. A number of animal handles for such graters have now been collected by A. Kozloff (Bull. Cleveland Mus. 63, March 1976, 77-79). East

Greek examples of the plates without animals are known from early examples, perhaps Late Geometric, at Samos and Lindos (cf. "Geometric Bronzework", above) and in later examples from Ialysos (Grave 183; ClRh 3, 1929, 192, fig. 186=Jacobsthal, loc. cit., fig. 1), Kameiros (Grave 61, fifth century?, ClRh 4, 1931, 158, fig. 156=Jacobsthal, loc. cit., fig. 2), and Sardis (iron, from a level thought to date from the Persian destruction of 547; N. Ramage, AJA 90, 1986, 419).

Examples of animal handles have not been found in excavations, but three listed by Kozloff are said to be from Asia Minor, to which can be added a fourth in the Mildenberg collection (a standing goat; D.G. Mitten, Mildenberg Cat., 101, no. 82, as "East Greek or Anatolian, seventh century"). None of these four, however, is necessarily Greek, and all may be Anatolian or Eastern works. The Boston example, a reclining ibex (Kozloff, loc. cit., 78, fig. 13), is certainly Achaemenid in style, although perhaps made in Asia Minor. The Mildenberg, Schimmel (H. Hoffmann, Schimmel Cat., no. 22, "sixth-fifth century"; Kozloff, loc. cit., 77, fig. 9-10), and Cleveland (Cleveland 74.37; Kozloff, loc. cit., 77) examples, the last a recumbent bull with grater still attached, do.not appear to be Greek. None of the animal handles listed by Kozloff is convincingly Greek.

Bridle Ornaments:

Ornaments that decorated the crossing leather straps of a horse's bridle are now well attested and recognized in numerous examples in bronze and other materials found at East Greek sites (cf. J. Waldbaum, Metalwork from Sardis, 40ff., with notes, and AK 26, 1983, 67-72; D. Hansen, BASOR 168, 1962, 27-36; Langlotz, Studien, 137 n. 9). Originally an Eastern fashion, these ornaments had a long life in Anatolia and especially with the Scythians (cf. J. Waldbaum, Metalwork from Sardis, 40). The East Greek examples begin by the early sixth century or even before. The ornaments take various forms, some figural and others not, but are characterized by either two loops or two crossing drilled holes in the back, which allow two crossed straps to pass through.

Some of the most distinctive bronze bridle ornaments from Asia Minor have figural reliefs in the shapes of animals, usually recumbent boars or ibexes. The only properly excavated examples are from Sardis, a boar (J. Waldbaum, ibid., 41f., no. 88) [FIG. 113] and an ibex (ibid., 41, no. 87) [FIG. 114], the latter miscast, suggesting that it was made locally. Other examples are discussed by Waldbaum (AK 26, 1983, 67-72) and include an ibex said to be from Izmit, an ibex and a boar in the British Museum (the ibex is said to be from the Troad, cf. Hogarth, 163), and two ibexes in Boston. Further examples include boars in the Mildenberg collection (Mildenberg Cat., no. 36, as "Iranian") [FIG. 115]; a later (fifth-fourth

century) ibex from Gela in Syracuse, the only one from a non-Eastern site (P. Orlandini, Arch. Class. 8, 1956, 1ff., pl. 3: 1-2); an ibex in Oxford (1968.1162, "Persian, fifth-fourth century"); and several from Asia Minor that have appeared on the art market (Muenzen und Medaillen, Basel, Auction 18, lot 18; Ars Antiqua, Lucerne, Auction 1960, lot 106; and another, private collection [FIG. 116]).

Other bronze ornaments are in the shape of a hawk's head, including two from the excavations at Sardis, which Waldbaum calls Scythian (J. Waldbaum, Metalwork from Sardis, 40f., no. 85-86, the latter highly stylized) [FIG. 117], and similar examples were found in South Russia. Two other bronze examples are in Boston (1970.511 and 1970.512; J. Waldbaum, ibid., pl. 6). One further bronze example, this in the form of a rosette, was recently found at Sardis (unpublished) [FIG. 118]. It is especially important since it was found in a context believed to be associated with the Persian destruction in 547.

The bridle ornaments are especially notable for their early date, many belonging to the first half of the sixth century (cf. the discussion, J. Waldbaum, AK 26, 1983, 71). Although the only bronze examples with secure provenience are from Sardis, ornaments in other materials, notably ivory, have been found elsewhere. Three such ivory bridle ornaments have been found in the Artemision of Ephesos, all of which date from the first half of the sixth century. The first is an ibex, which is in the same pose as some of the

bronzes (Hogarth, 163, no. 23, pl. 21: 5, 23: 2; Akurgal, Kunst Anatoliens, 216, fig. 184). The style is purely Greek. The Austrian excavations in the Artemision discovered a kneeling ram, which on the back had a similar square attachment with crossing drilled holes, now broken (H. Vetters, Vorl. Grab. 1972, 183, pl. 6b; Bammer, fig. 72, 104 [the back]; Anat. Civ. 2, 20, B.28; Land of Civilizations, no. 195, color plate) [FIG. 119]. The carving is very fine, nearly in the round, and again purely Greek.

Also found below the Kroisos temple was an ivory ornament depicting a boar (Hogarth, 164, pl. 26: 3a,b; Akurgal, Kunst Anatoliens, 216, fig. 185; Barnett, Ancient Ivories, pl. 57c) [FIG. 120], but the style is quite unlike the bronze boars and the other ivories. It is much closer to the Animal Style figures of Scythian manufacture, as Hogarth already noted. Especially close in style are several bridle ornaments of bone overlaid with gold and silver of uncertain provenience (New York 1979.352.1, B. Porter, Met.Mus.Bull., 41: 4, 1984, 35, no. 42 [FIG. 121]; A. Farkas, "Animal Style" Art from East to West, 1970, 58, no. 35a-b; Ernst Brummer collection, Sotheby, Nov. 17, 1964, lot 174). The Ephesos boar is probably a Scythian work and a rare and important example of the Scythian presence western Asia Minor in the early sixth century. Other Scythian bridle ornaments have been found in western Asia Minor, including the bronze hawk's heads from Sardis and the examples in Boston mentioned above, and bone chapes in

Animal Style, perhaps locally made, were found at Sardis (cf. "Ivories: Sardis", below). Waldbaum has noted the story in Herodotos regarding wandering Scythians seeking the protection of Alyattes at Sardis (Herodotos 1, 73; J. Waldbaum, AK 26, 1983, 70).

To the group of ivories may be added a bone ram's head bridle ornament said to be from Lydia (unpublished, private collection, "from Manisa") [FIG. 122]. The style again is purely Greek, similar to the late seventh century plastic aryballoi in the form of rams' heads (cf. R. Higgins, BMC Terracottas 2, no. 1639-1640, pl. 16), and may be compared to the Ephesos ivory ram, which is a finer work but similar in style and function and also of early sixth century date.

Bridle ornaments were also used in Asia Minor by the Persians by the late sixth century and probably until the fourth. A silver ornament in the shape of a horse's head in Achaemenid style is in the Schimmel collection (O.W. Muscarella, Schimmel Cat., no. 157), and a similar example in bronze is in New York (52.119.9, "from Iran", D. Schmandt-Besserat, Ancient Persia: The Art of Empire, Univ. of Texas, 1978, 25, no. 10). A kaolin lion's head in fine Achaemenid style is in Boston (98.694, ex-Tyszkiewicz collection). Horn-shaped examples of ornaments in various semi-precious stones were found in the Persepolis Treasury and are represented on the reliefs there (Persepolis 2, 100, pl. 79: 3-6).

Figural Bronze Statuettes:

Figural bronzes representing humans, animals, and mythological creatures served either as decorative attachments to implements or else as votive statuettes made specifically for dedication in a sanctuary. Mainland Greek and Italian sanctuaries have demonstrated the quantity and variety of votive statuettes in the sixth century, and a similar situation may have existed in East Greece, but few sanctuaries have been explored. Sanctuaries and graves on Rhodes have provided few bronzes of sixth century date, in contrast to the more numerous finds of earlier date. There is also little from the pre-Kroisos Artemision at Ephesos or the temple of Athena at Old Smyrna. A chance find near Cesme (in Ionia) apparently uncovered a sanctuary full of small, locally-made figures, but the exact site is unknown. However, the excavations in the Heraion at Samos yielded a spectacular series of bronzes, especially kouroi, supporting the reputation of Samos as an artistic and cultural center in the sixth century and allowing a careful stylistic evaluation through a suitable amount of material. Stray finds have been few but provide interesting contrasting material.

Korai and kore-supports:

1. From Ephesos (24.3 cm., Istanbul 2605). Hogarth, 145, pl. 14. Richter, Korai, no. 78. Akurgal, Kunst Anatoliens, 210, fig. 176-177. Langlotz, Bildhauerschulen, 118, no. 14. Lamb, 76, pl. 22c. W.

Darsow, Marburg. Winckelmann-Prog., 1949, 13. Tuchelt, L25. [FIG. 123].

2. Ephesos (8.7 cm., Istanbul?). Hogarth, 146, pl. 16: 1. Darsow, loc. cit., 13. Tuchelt, L20.

3. Ephesos (5.7 cm., Istanbul?). Hogarth, 146, pl. 16: 2. Darsow, loc. cit., 13. Tuchelt, L19.

4. Ephesos (Lead, 7.3 cm., Istanbul?). Hogarth, 153, pl. 20: 5.

5. Samos (sphyrelaton, 14.5 cm., Vathy). Buschor, AS, fig. 74, 77, 313-6. [FIG. 124].

6. Samos (18.5 cm. with base, Berlin). Buschor, AS, fig. 353-356. G. Bruns, Antike Bronzen, 23, fig. 13. [FIG. 125].

7. Samos (27 cm., Vathy B 1441), AA 1964, 223-5, fig. 6. A. Greifenhagen, Jb.Berl.Mus. 7, 1965, 145, fig. 25. B. Freyer-Schauenburg, Samos 11 (1974) 26, 40. Aegean Island Cat, no. 151 (with color plate, p. 36). Croissant, 129-131. [FIG. 126].

8. "Asia Minor via London market" (10.6 cm. with plinth, Oxford 1967. 518). H.W. Catling, Arch. Repts. 1967-8, 53, no. 21, fig. 9 ("North Ionian c. 550-530"). [FIG. 127].

9. "From Rhodes, bought in Smyrna" (7.5 cm., 9.0 cm. with base, Kassel). M. Bieber, Kassel Bronzes, no. 115, pl. 38. Darsow, loc. cit., 14. [FIG. 128].

10. "Said to have been found in Samos" (4.9 cm., Toronto, Borowski collection). N. Leipen, Glimpses of Excellence, 37, no. 34. [FIG. 129].

11. Support, Olympia (21.5 cm., Athens NM 6149). Olympia IV, 24, pl. 7: 74. Buschor, AS, fig. 118-120, 126-127. Langlotz, Bildhauerschulen, 118, no. 15, pl. 69d. Lamb, 103, pl. 36c. Darsow, loc. cit., 13. E. Schmidt, Geschichte der Karyatide, 61, pl. 2: 2. [FIG. 130].

12. Support, "from Asia Minor" (7.6 cm., Toronto, Borowski collection). N. Leipen, Glimpses of Excellence, 36, no. 33. [FIG. 131].

13. Support, Athens Acropolis (11 cm., Athens NM 6493). A. de Ridder, Acropolis Bronzes, no.772. Langlotz, Bildhauerschulen, 103, no. 11, pl. 60a. Lamb, 103, pl.36b. Darsow, loc. cit., 13. [FIG. 132].

14. Support (mirror handle), "Smyrna market" (10.8 cm., figure 7.8 cm., Geneva, Ortiz collection). L. Congdon, Caryatid Mirrors, 1981, no. 17. K. Schefold, Meisterwerke, 69, 222, no. 255, "500-480". [FIG. 133].

15. Support (mirror handle or candelabrum?), Asia Minor, (c. 17 cm., with additional 8 cm. base, Geneva, Ortiz collection). Unpublished. [FIG. 134].

16. Candelabrum support, "Asia Minor" (38.5 cm. total, figure 9 cm., Hamburg, Kropatscheck collection). W. Hornbostel, Aus Graebern und Heiligtuemern, 1980, 23f., no. 17; JdI 94, 1979, 200 n. 104; Kunst der Antike, Hamburg, 1977, no. 50. [FIG. 135].

Four korai were found in the Artemision of Ephesos. The well known kore, here no. 1, is especially noteworthy

for its size (24.3 cm.), distinctive style, and presumably early date. She stands with her arms stiffly at her sides and wears a sleeved chiton gathered at the waist by a broad belt, but with no overfold. She wears the epiblema wrapped around her and tucked in her belt, like "Cheramyes' Hera" (Buschor, AS, fig. 86-89), and over her head as a veil, held by a fillet. Her feet are not shown. Her head and features, especially the nose, are large. It is especially the large features and stiffness that suggest a place early in the series of East Greek votive statuettes, although the rather complex costume and drapery seem developed and even stylized. The findspot, outside the northwest corner of the Basis (Hogarth, 42) gives little assistance in dating, merely suggesting a date sometime before the beginning of the Kroisos structures. It was found with a number of other objects, including ivories, coins, jewellery, and another bronze kore (no. 2), apparently an accumulation of votives deposited just outside the temple.

Kore no. 2 from Ephesos appears to offer some contrasts with no. 1 but is so corroded (the head indistinguishable) that observation must be cautious. There is more modelling in the body, and the treatment of drapery seems to be more advanced, with a peculiarly long overfold and parallel folds continuing from only mid-thigh over legs considerably thinner than the upper trunk. The feet are indicated. The arms are held stiffly at her side. Kore no. 3 has little to offer, being badly corroded and very small with little detail.

Also to be noted here is kore no. 4, an example in lead, also in poor condition and missing the head, but of noticeably different type, observing Daedalic structure. Here the upper body is triangular, broad shouldered with a thin waist and long lower body. An early date is implied, but a comparison must be made with other lead statuettes (cf. below).

Although yielding many kouroi, the Heraion of Samos has produced only three widely differing korai. No. 5 is the upper half of a kore in sphyrelaton technique, hammered sheet bronze which was then nailed to a wooden core. The preserved half is an intact section with the circle of nail holes visible at the bottom. The complete figure would have been quite large, at least 35 cm. ("almost half a meter", Buschor, AS V, 73). The sphyrelaton technique is associated with early seventh century work, especially with the Dreros (Crete) cult statues of c. 700. The early griffin head vessel attachments, although probably not produced on Samos (Herrmann, Ol. Forsch. 11, 155-160; cf. above), were also made of hammered sheet bronze, rather than cast. However, it is not known how long the technique was used or whether the function or size of the object determined whether it was cast or hammered. Hollow objects made by hammering in precious metals continued to be manufactured in East Greece throughout the sixth century. Although the facial details of the sphyrelaton kore are not clear, the type is canonical sixth century East Greek, wearing a fillet and clutching a

bird (or animal?) to her breast with her left hand. The nose is quite large and pointed, but the head is not oversized. A date early in the kore series, perhaps as early as 600, is indicated but surely not as early as is often suggested (Buschor, AS V, 74, "670").

Kore no. 6 is stylistically closest to the kouroi series (cf. kouros no. 6, discussed below), especially in facial features. Notable here and characteristically East Greek for most korai in all media is the cylindrical trunk of the body, with chiton splaying at the feet which are shown below the cut away hem (J. Boardman, Greek Sculpture. The Archaic Period, 69). She wears a chiton with mantle draped over her right shoulder and under her left arm, but not over her head as a veil, although she still wears a fillet. She holds uncertain attributes and stands on a circular plinth on a thick square base decorated with a maeander pattern. The third kore from Samos, here no. 7, is large (27 cm.), and has quite different facial features, a very broad, round face with smiling lips and once inset eyes. Her hair style is unusual, rectangular patches of hair falling over her shoulders, remarkably Egyptian in appearance. The trunk is again cylindrical, and she wears a chiton with a mantle evenly covering her upper body. She holds the central fold of her skirt with her right hand, and her left hand is outstretched, once having held an offering or attribute. Her large rectangular feet with large toes protrude from the cut away hem, and stand on a rectangular plinth.

A kore in Oxford, no. 8, is said to be from Asia Minor, and the costume seems to support the attribution. She wears a chiton and mantle, her hair is shoulder-length, perhaps covered, and held with a fillet, and her right hand is held to her breast while her left clutches the drapery of her chiton, all characteristic features of East Greek costume and pose. However, unlike other korai, she advances her left leg and has a decidedly backwards slant. Her trunk is not cylindrical like most other korai. She wears pointed shoes and stands on a small, rectangular plinth.

Two other korai of probable East Greek origin may be discussed here. A very small (7.5 cm. without the base) kore in Kassel, here no. 9, is said to be from Rhodes and purchased in Smyrna. The Rhodian provenience must remain uncertain, but an East Greek origin is likely. The figure is not cylindrical but rather flat and the work is summary, although the costume is clear enough. She wears a chiton with mantle, the folds being shown as incised vertical lines on the front and parallel, horizontal lines on the back. A central fold for the lower half of the chiton is shown. Her face is broad and round, both arms outstretched (now missing), and the feet protruding under the garment. Somewhat similar, although certainly not from the same workshop is another small, rather rectangular kore in the Borowski collection, no. 10. It is a crude work with a stiff, stocky body with arms held to the side. The head and features are oversized with little detail, as Leipen notes,

and the hair is a solid mass that falls straight back. The costume is typically East Greek, a belted chiton with an arching overhang in front, and her feet protrude. She has little in common with known Samian pieces, and the alleged provenience is dubious, but an East Greek origin is probable.

Several korai not intended strictly as votive statuettes but as attachments of some sort also survive. The well known kore from Olympia, here no. 11, has long been recognized as displaying strongly East Greek characteristics. The costume and pose are typical. She wears the chiton which splays at the feet, visible under the hem, and holds the central fold with her right hand, her left hand held to her breast. The trunk is entirely cylindrical. The face is broad and oval. She wears a fillet and a hair style not unlike the sphyrelaton kore. A notable detail is the pronounced side curls of hair before the ears, perhaps meant to be held by some ornament (cf. "Jewelry", below). This fashion is also seen on the two korai with veils and fillets on the relief column drums from Didyma now in Berlin (cf. Tuchelt, K76; Akurgal, Kunst Anatoliens, 256, fig. 223-225). On her head is a cylindrical element in which there is a hole for attachment, but the element does not appear to represent a "polos" headdress.

Another kore, no. 12, served as some sort of support and is said to be from Asia Minor, although this provenience must be treated with caution. She is unusually stocky, with

a rectangular trunk, nearly square in section. The shoulders are broad and square with little neck, and there is little modelling of the body through the long, straight chiton, which is uncharacteristic in East Greece. The drapery is shown by incised lines. She holds her left hand at her side and a bird, perhaps a hawk as Leipen suggests, to her breast. The head is large and crude, and the features have little detail. The eyes are elongated. The rolled-up hairstyle, as Leipen notes, is unusual and may indicate a relatively late date, perhaps the end the sixth century or later. She wears a splaying headdress that has a deep hole within, and there are holes through each arm and two through the base. She was certainly a support and may have served the same purpose as the previous example from Olympia.

A small kore support, no. 13, from the Athenian Acropolis has been recognized for some time as a likely East Greek work. The costume again suggests the attribution, since she wears a typical belted chiton with overhang and central row of vertical folds below the waist. Her hands are held at her side. She does not wear a veil or fillet, but has hair in a straight row along her forehead and falling straight back behind. Her head is large, and the facial features are clear but not especially careful. The back is smooth and pierced with a square hole, and the base is also pierced. The manner of attachment or purpose is unclear.

East Greek versions of figural mirror stands are conspicuously absent, but what may be an early orientalizing example from Erythrai is known (cf. above, "Orientalizing Bronzework", allegedly early seventh century). The only certain East Greek figural mirror handle of sixth century date (also suggested as East Greek but unlikely to be are the handle in Warsaw, L. Congdon, op. cit., 55ff., 135 no. 12, and the Acropolis support, Berlin 8622; K.A. Neugebauer, Berlin Bronzes 1, no. 207; Langlotz, Bildhauerschulen, 119, no. 19, pl. 69c; Buschor,AS, fig. 380-383; Darsow, loc. cit., 17 n. 25; L. Congdon, op. cit., 222, no. 133; as well as the following kore no. 15) is the Ortiz example, no. 14, said to be from the Smyrna area. She is a kore clothed and posed in typcial fashion, wearing a chiton buttoned at the shoulders, a summarily treated short mantle over her right shoulder, and a fillet. She holds out her skirt with her left hand and awkwardly clutches a bird with her right hand at her side. Her side is shown typically as a mass of shoulder length hair with small curls incised along the forehead and again side curls before the ears. The face is not unlike the Samian korai and kouroi, but the modelling of the body is quite different, being very flat with broad shoulders, a short upper body ("dwarfish", L. Congdon, op. cit., 55), and short arms.

Another bronze in the Ortiz collection said to be from Ionia is an excellently preserved kore wearing a chiton and himation with drapery held at her left side and hanging in long folds from her raised right arm; her right hand holds a

flower before her. Her hair falls in four tresses over her breast and in a rectangular mass with detailed tresses down her back. A row of wavy locks frames her forehead, and she wears a braided fillet. She stood on a circular base decorated with moulded elements and an engraved, highly stylized lotus and palmette pattern. It was evidently attached to a stand, and parallels are frequently seen in Greek mirror stands (cf. Congdon, _op. cit._, for a complete study). The head of the kore is flattened, which may suggest an attachment for use as a candelabrum rather than a mirror, but the pose and base are best attested for mirror stands. Although the dress is termed "Ionic", the treatment of the drapery and pose are not typical of known East Greek korai and are much better represented by Peloponnesian kore-mirror stands. The facial features and treatment of the hair are also best paralleled in Peloponnesian works (cf. the very similar hair and fillet of the Lakonian Artemis Daidaleia in Boston, M. Comstock and C. Vermeule, _Bronzes_, 20f., no. 19), and strongly suggest that the kore is an import or a local work closely copying imported types. Other contemporary imported Peloponnesian bronzes have already been noted, and an imported mirror handle was also found at Samos (Buschor, _AS_, fig. 115-117; Congdon, _op. cit._, 216, no. 124), where no local examples are attested.

Perhaps also best considered here is a unique East Greek example of a candelabrum with figural attachment of a sort best known in Italy and Etruria. A bronze shaft in the

form of closely stacked rings is supported by three legs with lions' feet. At the base are two small palmette appliques surmounted by half figures of winged, bearded males. Between the base and the shaft stands a winged female figure of purely East Greek style. She wears a chiton and himation and holds the drapery at her left side. Her right hand is held to her breast, perhaps holding an animal or bird. Her four curved wings are typically East Greek (cf. AGG, 32), and she is particularly close in pose and style to a figure on a gold ornament from Asia Minor in Berlin (Greifenhagen, Berlin 1, 30, pl. 10: 6-7; cf. "Jewelry: Plaques"). Individual elements of style are at home in East Greece, but nothing comparable in bronze survives (many bronze candelabra imported from Cyprus were found at Samos, Jantzen, Samos 8, 43ff., but nothing is local; a Lydian bronze candelabrum of unique shape ornamented with horses' heads is in the Usak Museum, unpublished).

Kouroi and kouros-supports:

1. Samos (19 cm. with plinth, Vathy B 1675?). Buschor, AS, 9, 64, fig. 5, 7, 8, 252. Richter, Kouroi, no. 22. Darsow, loc. cit., no. 1. Akurgal, Kunst Anatoliens, 215, fig. 178-180. Aegean Island Cat., no. 144. [FIG. 136].
2. Samos (20 cm., Vathy). Buschor, AS, 9, fig. 6, 9, 10. Richter, Kouroi, no. 23. Darsow, loc. cit., no. 2. [FIG. 137].

3. Samos (19 cm., Vathy B 652). Buschor, AS, 13, fig. 35, 37, 38. Richter, Kouroi, no. 52. Darsow, loc. cit., no. 8. Aegean Island Cat., no. 145. [FIG. 138].

4. Samos (19.5 cm., without base, Vathy). Buschor, AS, 13, fig. 36, 39, 40. Darsow, loc. cit., no. 9. [FIG. 139].

5. Samos (23 cm., Berlin). Buschor, AS IV, 68, fig. 275-277. G. Bruns, Antike Bronzen, 22-23, fig. 12. Darsow, loc. cit., no. 3. [FIG. 140].

6. Samos (4.5 cm., head only, Vathy B 2171). U. Sinn, AM 100, 1985, 156, no. 44. H. Kyrieleis, AA 1980, 347f., fig. 15.

7. Samos (18cm., broken at knees, Vathy B 2252). H. Kyrieleis, AM 99, 1984, 105-9, pl. 17. [FIG. 141].

8. Samos (6.1 cm., head only, Vathy B 2251). H. Kyrieleis, AM 99, 1984, 109-11, pl. 18. [FIG. 142].

9. Samos (17.6 cm., broken at knees, Vathy B 1686). AA 1966, 160f., fig. 6. AM 83, 1968, no. 112. [FIG. 143].

10. Samos (32.6 cm., 28 cm., without base, Berlin 31098). Buschor, AS, 70, fig. 293-300. G. Bruns, Antike Bronzen, 20-21, fig. 11. A. Greifenhagen, Antike Kunstwerke, 7f., pl. 8-11. U. Gehrig, Jb.Berl.Mus. 17, 1975, 45-50 (base in Samos). U. Gehrig, AA 1979, 554ff. (on technical aspects). [FIG. 144].

11. Samos (12 cm., Berlin). Buschor, AS, 71, fig. 304-306. Buschor, Fruehgr. Jungl., 146, figs. 167-168. [FIG. 145].

12. Samos (11 cm., with base, Vathy B 89). Buschor, AS, 11, 67, fig. 29, 31, 32, 264. Richter, Kouroi, no. 51.

Darsow, loc. cit., no. 7. [FIG. 146].

13. Samos (11 cm., broken at knees, Vathy). Buschor, AS IV, 69, fig. 285, 287, 289, 291. [FIG. 147].

14. Samos (16 cm., lost?). Buschor, AS IV, 69, fig. 286, 288, 290, 292. [FIG. 148].

15. "Said to have been found in Samos" (13 cm., broken below knees, Toronto, Borowski collection). N. Leipen, Glipses of Excellence, 34, no. 31. [FIG. 149].

16. "Scala Nova, near Miletos" (16 cm., Paris, Bib. Nat.). E. Babelon and J. Blanchet, Bronzes, 44, no. 96. Richter, Kouroi, no. 55. Langlotz, Bildhauerschulen, 124, pl. 59a. Lamb, 102. Darsow, loc. cit., 15. Tuchelt, L32. [FIG. 150].

17. Delphi (15 cm., Delphi Museum 2846). C. Rolley, Delphi 5, 1969, 119ff., no. 179, pl. 31. Fouilles de Delphes 5, 29, pl. 1: 6. Langlotz, Bildhauerschulen, 103, no. 9, pl. 59b. Lamb, 102, pl. 36a. Richter. Kouroi, no. 42. Darsow, loc. cit., 16 n. 21, as perhaps local. [FIG. 151].

18. "From Corinth, bought in Athens" (?, private). Darsow, loc. cit., 13. [FIG. 152].

19. Candelabrum (?) support. "Asia Minor" (c. 20 cm. total, figure 16 cm., broken and repaired at waist, Geneva, Ortiz collection). Unpublished. [FIG. 153].

20. Support. Lindos (9.7 cm., broken at waist, Copenhagen?). Lindos 1, no. 681. Darsow, loc. cit., 13. Langlotz, Studien, 142, pl. 50: 5. [FIG. 154].

21. Tigani, Samos (lead, 11.5 cm., Florence, Mus. Arc.). Buschor, AS IV, 62, fig. 233-235. Richter, Kouroi, no. 21, fig. 111-113. [FIG. 155].

What appears to be the earliest East Greek votive kouros has already been discussed (cf. "Orientalizing Bronzework", above), a crude figure wearing a short tunic from the Athena temple at Old Smyrna, dating perhaps as early as 600. The main series of votive kouroi statuettes are represented almost entirely by the extensive group from the Heraion of Samos (which await full publication with the other bronzes from Samos by U. Gehrig. A newly found kouros from Samos inscribed Smikos Herei is unpublished, cf. Arch. Repts. 1984-5, 56). Only a few kouroi from other sites are known.

Most of the kouroi exhibit characteristics that help define the East Greek style of this period, especially the middle years of the sixth century. All are nude, and one may immediately see how little concern was given for the anatomy. The modelling is minimal and very "soft" with thin, slightly elongated bodies, rounded shoulders, legs and surfaces in general, with only slightly defined musculature, even in the arms and chest. The detailing is reserved for the heads and hair styles. The hair is characteristically (as with the large stone sculpture) brushed back from the forehead, falling in a mass down the back, often bound with a fillet and often with additional side locks of hair brushed up above the ears (as on no. 1, 2, 5, 7, 8, 10, and

perhaps 4), a style also seen on vase painting and on a fine archaic engraved scarab, probably the work of an East Greek immigrant in Etruria (AGG, 58, n. 21, no. 97). Most of the kouroi held their arms in front carrying objects of uncertain type. The only object preserved is the jug that no. 11 carries, and again one is reminded of the same Archaic scarab where the youth holds a similar jug in one hand and a kantharos is the other. Most kouroi have their left foot advanced, and they all probably stood on bases, the plinths being preserved on nos. 1 and 12 and the bases on nos. 4 and 10.

Kouros no. 1 is notable for the large head, probably an indication of a date early in the series. Other unusual features are the indication of clavicles, detailed kneecaps, and boots denoted by incision (boots are also indicated on no. 2, the ivory "lyre" attachment from Samos [cf. "Ivories"], the fragmentary colossal sculpture, Buschor, AS, 45f., fig. 156-159, and the "Kleobis and Biton" in Delphi). No. 2 is of similar size and build as no. 1 (Buschor and Richter associate the two, but cf. Darsow who notes the differences), but the head is of more realistic size, thus giving the figure an elongated look. The mass of hair is the same shape but treated differently in finishing, having horizontal rows in the back rather than incised vertical lines, and without the two tresses falling over the front of the shoulders. Nos. 3 and 4 are also of similar size as the preceding two, but are of less awkward proportions. No. 3 wears a fillet around his forehead, but it is difficult to

determine how the front of no. 4's head was treated because of the poor condition. It should be noted that no. 4 seems to be somewhat better modelled in the upper arms and chest than no. 3. Only the head survives of kouros no. 6 and it is badly corroded. The condition makes comparisons difficult, but it seems to be close in style to the previous two examples. In even poorer condition is the fragmentary kouros no. 15, which appears to have been burned and is now lacking all detail. The alleged provenience is Samos, but this must be treated with caution. However the hairstyle does associate it with the previous Samian bronzes, and the attribution to Samos is conceivable.

Kouros no. 5 continues this series of stylistically similar examples at a slightly later date with a more carefully worked example. The body has become more elongated, especially in the legs. There is some surface detail, notably the indication of the bottom of the thorax and the addition of nipples, although the modelling remains minimal. The hair is again brushed back with locks pulled back over the ear and held in the back with a fillet, but here there are four braids in front and back. The mouth, lips, chin, nose, eyes, and eyebrows are carefully worked. It is close in style to kore no. 6 (cf. below).

The recently discovered kouroi no. 7 and 8 are notable for their exceptionally fine detailing of the hair and head. No. 7, which would have originally stood c. 24 cm., has his hands at his sides, and the body modelling is typically

soft. The hair is carefully modelled and incised, parted in the middle and swept back over the ears in the typically Samian manner. Six tresses fall in the back and four over the shoulders in front. The head is oval and the forehead slopes back in line with the nose. The face is broad, with slightly slanted and outlined eyes, and the mouth is smiling. Also of exceptionally careful work is kouros no. 8, only the head of which is preserved but which would have been of similar size to no. 7. The head is even more ogival, although the forehead does not recede so sharply, and the facial features are similar. The eyes are slanted and outlined, and the mouth is smiling. The face is somewhat fatter. The hairstyle is similar, although the treatment of detail is different. There are no separated tresses, and the back of the hair is treated as a mass without engraved detail. The typical locks parted in the middle and brushed back from the forehead over the ears are carefully detailed with cross-hatched engraving.

Kouros, no. 9 is of the same size and sleek proportions as the main series of Samian kouroi but differs from the others in several regards. The arms are held at the sides, but more important is the difference in treatment of details, which is very summary. There is little modelling in the face, the eyes and the eyebrows being merely incised and the mouth simply cut, and the hair is simply patterned, a horizontal edge at the forehead falling in the back.

The famous "Opfertraeger" in Berlin, here no. 10, is the latest of the Archaic kouroi from the Heraion and also

the largest (28 cm.) and finest. It exemplifies the high degree of stylization sought by the Samian artists but adds a new approach to facial types. The body is sleek to a mannered degree, elongated with little modelling and no surface detail; not even the knees are distinguished. Yet the head and hair are of extraordinarily fine execution. The carefully patterned mass of hair falling far down the back is most reminiscent of the youth on the Archaic scarab in its fine detail. The face is not only carefully worked, but finely modelled with high cheek bones, broad cheeks, modelled eyelids and full, straight lips, all of which anticipate Severe and Classical features. Closely comparable facial characteristics are seen on the latest Archaic marble kore from the Athenian Acropolis, the Euthydikos kore (Acropolis no. 686; H. Payne and G.M. Young, Archaic Marble Sculpture from the Acropolis, 1950, 40-42, pl. 84-88, who suggested an origin for the style in the Peloponnesos), and the slightly later "Blond boy" perhaps by the same sculptor (Acropolis no. 689; ibid., 45, pl. 113-115), and the similarities suggest a date for the bronze of c. 500 or slightly later (Buschor's date of c. 530 must be too early). It is unclear how the new facial features developed on Samos, but on the bronze kouros they are integrated with the typical Archaic Samian style with remarkable success.

The small kouros with jug, no. 11, is like the "Opfertraeger" in its similar proportions and similar heavy,

long mass of hair, but it is of much simpler execution and probably earlier in date.

Another kouros, no. 12, is different from the others from Samos in pose, modelling, and treatment of hair and face. He is small (11 cm. with plinth) and stands with hands clenched at his sides (although this pose is matched by kouros no. 9 and the three-figure group, below). Most distinctive is the treatment of the body. The proportions are odd--long legs, buttocks placed too high, short and narrow waist and chest, broad shoulders, and overly large head, giving a stocky appearance. There is little surface detail, but the modelling is fairly extensive, though crude. Pectorals, nipples, lower thorax and median line from lower thorax to navel are indicated. Musculature is shown by bulging forearms and heavy thighs and calves. This treatment gives the body a lumpy appearance, quite unlike the smooth modelling of the other kouroi. Additionally, the hairstyle is somewhat different, having a row of waves along the forehead, although the hair then falls back in a mass of horizontal ridges in the back with two tresses falling over each shoulder in the front, not so unlike some other examples.

Also somewhat different from the main group is a pair of nearly identical kouroi, nos. 13 and 14. The bodies are softly modelled, rounded with no musculature, but the proportions are odd, with a very short upper body somewhat like no. 12. The faces and profiles are distinctive, with prominent cheek bones, receding foreheads, and protruding

lips. The hair is parted in the middle and swept back over the ears to shoulder length, and the eyes were inlaid.

One of the few kouroi not of Samian provenience is now in Paris and said to have been found at "Scala Nova" near Miletos (for the site, cf. Darsow, loc. cit., 15 n.6), here no. 16. It is a crude work with what little surface detail there is indicated by incision (eyes, nipples, navel). A comparable technique was used for the Samian kouros no. 9. There are similarities to the Samian series, such as the hairstyle, the receding forehead, the sleek, simply modelled body (although the chest is unusually broad), and the position of the arms held in front of the body. However, the Paris kouros is a much less accomplished work.

A similar kouros, no. 17, was found at Delphi and has long been recognized as of probable East Greek origin. Langlotz noted the similarity to the Paris example in size, hairstyle, and body modelling, especially the unusual treatment of the chest. The face and hair of the Delphi example are much better detailed but considerably worn.

The fragmentary kouros no. 18, preserved only above the waist and in poor condition was published by Darsow in his brief study of East Greek bronzes. Although the provenience is not East Greek, similarities in hairstyle make the attribution likely, but not to any group already known.

The exceptionally fine kouros figure no. 19 in the Ortiz collection, said to come from Ionia, served as a support rather than a votive. He stands on a round plinth

attached to a cylindrical element, and a similar element is attached above the head. The lower element, which appears to have been attached to a shaft, seems inappropriate for a mirror handle, and the piece most likely served as part of a candelabrum or perhaps a thymiaterion. The youth holds his right arm before him and his left slightly out to the side. The body is very much in the Samian style--sleek and slightly elongated, with minimal body modelling and musculature. Only the clavicles, shoulder, pectorals, and knees are articulated. The thighs and buttocks are unusually square and heavy, perhaps to give the stand better support. Like on many Samian kouroi, detailed attention is only given to the head and hair. The face is exceptionally fine and delicate, with carefully modelled features, including the thin nose, protruding and slightly smiling lips, convex eyes and eyelids, high cheekbones, and sculpted ears. The hair in front is carefully engraved and depicted as swept back and over the ears, falling down the back in a rectangular mass detailed with horizontal lines. Ortiz (verbally) has reasonably suggested a Milesian workshop, presumably in view of the alleged provenience and the importance of the city of Miletos, where bronzes have been conspicuous by their absence (cf. Herdejurgen's attribution of the striding Athena Bogenfeldfigur, above), but the similarities to known Samian works from the Heraion perhaps make Samos a more likely origin.

A large but fragmentary kouros-support from Lindos, no. 20, may also have been part of a candelabrum or

thymiaterion. It is only published in line drawings and must be further studied, but could certainly be East Greek.

Also said to be from Samos, but from Tigani rather than the Heraion and now in Florence is a small lead statuette, no. 21, of apparently early character. The body is flat with protruding, stylized pectorals with corresponding shoulder blades in the back. The waist is slim and the thighs heavy. The face is triangular, and the rows of hair are treated in the Daedalic manner. The eyes are dots. The style of this and the other lead figurines will be discussed below.

Other figures:

1. Three figure group, kore and two kouroi. Samos (13 cm., Vathy). Buschor, AS, 12, fig. 30, 33, 34. Richter, Kouroi, no. 134 (right kouros only). Darsow, loc. cit., no. 6. [FIG. 156].
2. Flute player. Samos (42 cm., Athens NM 16513). Buschor, AS, 43f., fig. 146-149. Langlotz, Bildhauerschulen, 118, no. 10. Darsow, loc. cit., no. 11. Aegean Island Cat., no. 147. [FIG. 157].
3. Runner. Samos (10 cm., Vathy B 232?). Buschor, AS, 50, fig. 183-185. Darsow, loc. cit., no. 12. R. Thomas, Athletenstattuetten der spaetarchaik und der strengen Stils, 1981, 21, pl. 1: 1. [FIG. 158].
4. Rider. Samos (19.5 cm., Vathy). Buschor, AS, 53, fig. 190-192, 198, 199. Darsow, loc. cit., no. 13. R. Thomas, op. cit., 64. Jantzen, Bronzewerkstaetten, 73. Richter, Handbook, 214. [FIG. 159].

5. Waffentaenzer. "Tschabik-Su, Tauros" (12 cm., Berlin 30209.). K.A. Neugebauer, Berlin Bronzes 1, no. 209. Darsow, loc. cit., n. 20, as not certainly East Greek. R. Thomas, op. cit., 72, pl. 31: 1 and 32: 1 ("500-490"). [FIG. 160].

6. Standing, bearded man. Gambrion (8 cm., Berlin 30025). K.A. Neugebauer, Berlin Bronzes 1, no. 208. Darsow, op. cit., 13f.. Tuchelt, L102. R. Oezgan, Untersuchungen zur archaischen Plastik ioniens, 1978, 101, 103, fig. 48. Langlotz, Studien, 108. [FIG. 161].

7. "Herakles", nude, bearded male with lion on each shoulder. "Smyrna region" (4.45 cm., Geneva, Ortiz collection). Art Antique, no. 180. Hommes et dieux, 98, no. 46. [FIG. 162].

8. Sphinx or siren head. Samos (?, Berlin). Buschor, AS, 97f., fig. 398-399. N. Himmelmann-Wildschuetz, Ist. Mitt. 15, 1965, pl. 23: 1-2. [FIG. 163].

9. Sphinx. Gergis (4.4 cm., Paris, Bib. Nat. 766). E. Babelon and J. Blanchet, Bronzes, 335, no. 766. Langlotz, Studien, 107f., 137. [FIG. 164].

Other figures must also be considered before schools can be determined. Again all but a few come from the Heraion of Samos. They also are presumably votive, but now include athletes, musicians, mythological figures, and others of uncertain function.

No. 1, a three figure group of a kore and two kouroi, can be contrasted with the main group of korai and kouroi.

It is small and apparently unfinished (cf. Buschor, AS, 12), and perhaps made by some cheaper method of manufacture, although apparently not the two piece mould of the lead figurines (cf. below). The flatness, the stiffness in pose, and the treatment of certain details, such as dots for eyes, indicate a method of production not concerned with adding detail. The work is certainly more summary than for the other statuettes, but nevertheless not primitive in modelling. The bodies, despite the flatness, show developed treatment of, for example, the thorax, pectorals, and knees, other details being obscured by the lack of finishing or the poor condition. Also to be noted is the developed rendering of the kore's mantle wrapped around her chiton, over her left shoulder and hanging behind her. Buschor has suggested a possible mythological meaning for the group, but one is also reminded by the Geneleos sculptures that a votive group made up of individual korai and kouroi can exist.

The well known flute player from the Heraion, now in Athens, is exceptional for its large size (42 cm.) and pose, but the very corroded conditon makes observations of details difficult. Despite this, Buschor (AS, 45) has noted sculpture from Samos with similar treatment of drapery. The sleek body proportions and rounded modelling are consistent with the kouros series, and the treatment of the hair hanging in back is very reminiscent of both kouros no. 5 and kore no. 6.

The extensive series of statuettes of athletes

participating in various events, which are found throughout Greece, has been studied by R. Thomas (*op. cit.*). These statuettes were popular votives, although East Greek examples are rare. The runner in starting position, no. 3, displays an entirely rounded body with no modelled musculature or surface detail, entirely consistent with the kouros series (Jantzen, *GGK*, 89, suggests that the runner may be a *Bogenfeldfigur* from a tripod, but this seems unlikely in view of his placement among the votive athlete statuettes, although he does appear to have been attached to something at the knee).

The rider (a second rider has been found at Samos but is not yet published, cf. *Arch. Repts. 1984-5*, 56), however, is quite different, having a wiry body with muscular calves, thighs, arms, and chest. The modelling is superb. The face is distinctive--thin with a long nose, receding forehead, and slanted eyes. The hairstyle is unusual, with three horizontal bands, each higher than the last, stretching across the forehead, giving the way to a mass of unpatterned hair falling down the back. These horizontal bands in front are seen on the Dionysermos kouros in the Louvre, of unknown provenience but certainly East Greek and close to Samian types (P. Devambez, *RA*, 1966, 195ff.). However, only the hair and no other features link him to the rider.

Another figure participating in the athletic event, the *Waffentaenzer* in Berlin, is not from Samos, but said to be from "Tschabik-Su" (?) in the Tauros. An East Greek origin is certainly possible, but the condition makes it difficult

to determine, and it seems close to Mainland examples. The date is probably beyond the sixth century (Thomas, op. cit., 72). A remarkable statuette of a warrior in silver was found on Chios (H.L. Lorimer, BSA 42, 1947, 88, fig. 5, 89, 110; cf. "Jewelry: Votives", below) which has no parallel in precious metal and is closest to bronze examples. However, the workshop cannot be localized with confidence.

A figurine of a clothed, bearded man is said to be from Gambrion (in Mysia) and is now in Berlin. He stands with arms held in front and wears a chiton; a mantle with an engraved maeander border is wrapped around him. He is small (8 cm.) and again the condition is not good, the face being quite worn, but an East Greek origin seems likely, given the provenience, in view of which Langlotz proposed a North Ionian workshop. The proportions, pose, costume, and hair style are also consistent with the Samian examples, and although comparison is difficult, it should be noted that a clothed and bearded colossal statue was found on Samos (Potokaki) which Buschor suggested represents a god (Buschor, AS, 48, fig. 174-176). The bronze could be a similar representation and would presumably have held attributes in the outstretched arms.

An even smaller figure, no. 7, is said to come from the vicinity of Smyrna and is notable for the odd iconography. A nude, bearded man strides forcefully and carries a small lion on each shoulder. The added details are minimal, and the modelling is simple, although the musculature is well

conveyed. Herakles, of course, comes to mind, but the presence of two lions is difficult to explain. He may be a variation on the *posis theron* theme, but the pose is without parallel. There is some similarity to the Cesme group discussed below, but this piece is of better quality and does not belong there.

A head from Samos, no. 8, is somewhat similar to the series of kouroi, especially in the treatment of the hair, but can be seen to have belonged rather to mythological creature, either a sphinx or a siren. The hair style is much like that of the kouroi, swept back over the ears and falling in a mass down the back. From the curve of the back, however, one can see that the body was non-human. A sphinx is a likely choice and was suggested by Buschor, but parallels are difficult to find. A marble sphinx in Istanbul is very badly worn (Mendel, no. 531). The identification of a number of East Greek marble heads as sphinxes has also been proposed (cf. the head from Keramos, Izmir Museum 1022; Langlotz, *Studien*, 109, pl. 33: 1-3; and a head from Halikarnassos, B. Ashmole, *Festschrift A. Rumpf*, 1952, 5ff., pl. 1-2; also the female-looking head, perhaps from Lydia and now in New York [?], Langlotz, *Studien*, 107, pl. 31: 5), most of which look like kouroi heads but are comparable to the Samian bronze. Also comparable, and perhaps closest, is the siren from the vicinity of Kyzikos now in Copenhagen (F. Poulsen, *Acta Arch.* 5, 1934, 49ff., pl. 1; Langlotz, *Studien*, 108, pl. 33: 4-6).

Another sphinx, no. 9, is said to have been found at Gergis in the Troad and is entirely different from the Samian example. It is quite small (4.4 cm.) and may have served as an attachment (cf. the perhaps Corinthian example in the Ortiz collection, K. Schefold, Meisterwerke, 32f., no. 171; and the two small silver sphinxes on a Lydian kyathos in New York, D. von Bothmer, Met.Mus.Bull., Summer, 1984, 41, no. 59). The work is simple and little can be said of its style, although Langlotz suggested a local workshop. Another small sphinx and a siren were among the Cesme finds but are not close in style to the Gergis example.

The Cesme Group:

Early in the 19th century a large number of bronze figurines were found in the vicinity of Cesme in Ionia, probably a single find of votives from a sanctuary. By way of H.P. Borrell in Smyrna, many found their way to the British Museum, while others went to the British School in Athens, Cambridge, Copenhagen, Breslau, and the art market. More than a hundred years later, the find was reconstructed in an informative article by D.E.L. Haynes (JHS 72, 1952, 74-80; also cf. J.M. Cook, Greeks in Ionia, 1962, pl. 34). He traced thirty-three specimens and cited the existence of some others that then could not be located, five of which have since come to light. The figures form a coherent stylistic group, all from the same workshop if not by the same hand, and are rather simple, with little body modelling and less added detail. They are generally quite small, usually only 5 to 10 cm. in height or length. However, there is a surprisingly large variety of types--human, animal, and mythical.

One of the most unusual types, an ox-cart driven by a bearded man and a woman, was known from the Borrell sale catalogue at Sotheby in 1852 and again in 1872, but could not be found in 1952. It was acquired by the Boston Museum of Fine Arts in 1958 (58.691; M. Comstock and C. Vermeule, Bronzes, no. 16) [FIG. 165]. Haynes' speculation that the figures might be Cybele and her consort has proven incorrect since the larger figure is clearly a bearded man, and the iconography remains unclear.

The iconography of a number of other pieces is also uncertain. There are seven examples of a group depicting a ploughman driving oxen facing in opposite direction (the seventh now in Berlin, 1966,5; U. Gehrig, Berl.Mus. N.F. 16, 1966, 2f.; this and the two other Berlin pieces from Cesme are from the Morgenroth collection, Santa Barbara, California, cf. M. Del Chiaro, Greek Art in Private Collections of Southern California, 1966, no. 6-8; and G.M.A. Hanfmann, Ancient Art in American Private Collections, 1954, no. 193-194) [FIG. 166]. Bothmer has cited a Hittite ritual to explain the meaning (D. von Bothmer, AJA 59, 1955, 192), but it remains uncertain. Also of unclear meaning are two groups in London which show combatants, in one case men, and in the other women [FIG. 167]. A single statuette in London shows a standing figure with the head reversed, looking backwards [FIG. 167], which has a parallel in a bronze said to be from Tegea and now in Berlin (K.A. Neugebauer, Berlin Bronzes 1, 66f., no. 163, pl. 23). Local myths or cults may be shown here, and one is reminded of the "Herakles" with two lions on his shoulders (cf. above), which is said to be from the same general area and is somewhat similar in style, although not from the same workshop, and may portray another unknown local myth.

Other mythical figures are more familiar. There are two centaurs (the second ex-de Kolb collection, cf. D.G. Mitten, Master Bronzes, no. 68), two tritons, a sphinx, and a siren. There is quite a variety of non-mythical animals,

including deer, stoat, goat, sheep, bull, two dogs (the second now in Berlin, 1966,6; Gehrig, loc. cit., 2f.), a lion, a "panther", a horse, four mice (the fourth in Berlin, 1966,7; Gehrig, ibid., 2f.), two birds, a dolphin, three fish, and a snake.

The date of the group is difficult to establish since the figures are so crudely worked, but an early date, such as the "c. 600" proposed by Comstock and Vermeule, is highly unlikely. Haynes (loc. cit., 78) had already pointed out that they are not likely to be earlier than the sixth century, and a date late in the century is probable in view of the advanced poses and especially the twisting of the bodies of some examples, notably the triton and the dogs [FIG. 168], who turn their heads to the side in a lively manner (cf. the fine bronze dog from Samos, probably early fifth century, below). Despite the simple workmanship, the stylistically advanced poses could only occur in small bronzes like these at a relatively late date.

Other Animal Figurines:

A few animal figurines of various types have been found at several East Greek sanctuaries, including Ephesos, Kameiros, Lindos, and Samos, as well as at a few uncertain sites. Some were clearly made as votives, while others may have been attachments to small vessels (cf. "Sixth Century Vessel", above). They continue the earlier tradition of small figurines as votives that began by the Late Geometric Period and continued throughout the Archaic period.

One of the finest votive statuettes known has already been discussed above in connection with early orientalizing bronzework, this being the large bull from a deposit at the sanctuary of Athena at Kameiros pre-dating 570 (cf. above; found with the reclining lion of similar date). Many bulls of later date were dedicated in the sanctuary of Zeus Atabyrios at Kameiros, and some are of the Archaic period, but they are not well published (cf. ClRh 1, 88ff., fig. 71; W.-D. Heilmeyer, Ol. Forsch. 12, 1979, 32 n. 71; L.H. Jeffery, Archaic Greece, 197).

Several hawks in bronze have been found at Ephesos, as well as one at Lindos. As an animal sacred to Artemis and as a generally popular motif in East Greece at this time, their presence is to be expected, and they are also well represented by examples in gold, silver, and glazed terracotta. The first bronze example from Ephesos grasps a hare in its talons (for the motif, cf. the silver stamp seal-pendant, "Jewelry", below) and turns its head to one side (6.7 cm.; Hogarth, 146, pl. 15: 14; Akurgal, Kunst Anatoliens, fig. 175) [FIG. 169]. Another hawk looks straight ahead and stands on a thick plinth (Hogarth, 146f., pl. 15: 16; 5.8 cm.). Both were found with the large bronze kore (no. 1) discussed above. A third example that was found in the East Area once had inlaid eyes and stands on a thin, rectangular plinth (Hogarth, 146, pl. 15: 15; 6.6 cm.). All three examples are well modelled with incised detail. The example from Lindos (Lindos 1, no. 418; 4.2 cm.?) is a simpler votive with a flat body and only detailed

in the head (cf. the flat, "silhouette" type silver hawk votive, Hogarth, 116, pl. 11: 9).

A standing stag, another animal strongly associated with Artemis, was recently found in the Artemision excavations and dates from the mid-sixth century (Ephesos Museusm, 77/K368; Bammer, 191, O, not illustrated) [FIG. 170]. It stands on a thin plinth and may have been a vessel decoration. A small, crude stag is in Oxford (1890.137; unpublished) and said to be from Ephesos, but it does not appear to be Greek and the provenience may easily have been invented, inspired by the type. A very fine stag head, probably from a larger statue, was found in the Samian Heraion and dates from the end of the sixth century (12 cm.; Buschor, AS IV, 59, fig. 222-223). The fine dog from Samos with head turned left and upward, mentioned above, belongs to the early fifth century (10 cm; Buschor, AS IV, 60, fig. 231-232). A final bronze piece from Ephesos is a "tiny" dolphin mentioned but not pictured by Hogarth (Hogarth, 153), which may have been merely a pinhead.

A simple type of votive was made by forming a flat "silhouette" of the animal rather than a modelled figure. The figure could either be cut from sheet bronze and hammered or else cast in a simple, shallow mould without detail. Examples of the former technique are known from Late Geometric examples at Olympia, and bulls have been found at the Zeus Atabyrios sanctuary at Kameiros, although of uncertain date (ClRh 1, 88ff., fig. 71; W.-D. Heilmeyer,

Ol. Forsch. 12, 32 n. 71, fig. 1). A cast examples representing a horse was found at Samos (Vathy B 99; Jantzen, GGK, 59f., pl. 64: 4; the date within the Archaic period is uncertain) [FIG. 171] and is paralleled by early examples from Olympia (Olympia 4, no. 731-2).

A small bronze statuette of a dead hare inscribed "Hephaistion to Apollo Prieneos" in London is said to be from Priene but obtained in Samos (BMC Bronzes, no. 237; L.H. Jeffery, LSAG, 330, 342, no. 15; Daremberg-Saglio, "Donarium", 375, fig. 2537) [FIG. 172]. It is of relatively late date, c. 500 according to Jeffery. The same man may have dedicated an inscribed miniature tripod to Hera at Samos (G. Dunst, AM 87, 1972, 158; cf. above).

Other small votive figures of uncertain date but perhaps as early as the sixth century include locusts and grasshoppers from Rhodes. An example of a locust from Lindos is now in London (c. 9 cm.; BMC Bronzes, no. 236) [FIG. 173], and others were in the Zeus Atabyrios deposits at Kameiros (ClRh 1, 88ff., fig. 71).

A number of tiny frogs exist from both Mainland and East Greek sanctuaries, some of which were votive but others apparently having served as attachments for small vessels (cf. J. Bouzek, Graeco-Macedonian Bronzes, 100, for examples from Sparta and Argos; W. Deonna, BCH 74, 1950, 1-9, for the possible religious significance of frogs and their derivation from Egypt; and P. Jacobsthal, Greek Pins, 57ff., for an interesting discussion of frogs as a decorative motif, dismissing any religious importance). A number of

bronze frogs from Peloponnesian sanctuaries were certainly votives (cf. one with a votive inscription in Berlin, K.A. Neugebauer, Berlin Bronzes 2, 2f., no. 2, pl. 5; one from the Argive Heraion, Argive Heraeum 2, 203, no. 31, pl. 76: 31; one from the Artemis Orthia sanctuary, W. Lamb, BSA 28, 1926-7, 103, no. 20, fig. 4; and another without provenience in Cambridge, GR.2.1963, R.V. Nicholls, Arch. Repts. 1965-6, 50, fig. 10). A small bronze frog was found in the Heraion at Samos (4 cm.; Buschor, AS IV, 57, fig. 212) that was certainly an attachment since it had a pierced tang in the back and its two front feet were pierced, and it recalls a series of Etruscan examples that served as hinges for infundibula, although no Greek examples are known (cf. M. Zuffa, St.Etr. 28, 1960, 187ff., pl. 30; Muenzen und Medaillen, Basel, Sonderliste O, Dec. 1972, no. 22; and cf. a similar frog with hinge and slightly convex bottom without provenience in the Ortiz collection, K. Schefold, Meisterwerke, 19, 148, no. 119; also cf. the small curved bronze lid with hinge from Samos, Vathy B 1969, H.P. Isler, Samos 4, 80, no. 42, pl. 40). These may be compared to an early example in thin gold from the Basis of the Artemision at Ephesos (Hogarth, 96, pl. 4: 17). It too has grooved feet and is slightly curved and appears to have been an attachment for a very small vessel of some sort.

Sixth Century Bronze Workshops: Conclusions:

Aside from Buschor's wide ranging survey of Samian art (AS) and the periodic reports of new discoveries at Samos by the German excavators, there has been little attention paid to East Greek bronze workshops. Langlotz's early Bildhauerschulen (1927) took some bronzes into consideration, but it was written before the discoveries at Samos and is clearly dated. His chapter "Kleinbronzen" in his final work, Studien (136-139), is brief and only deals with a few relevant objects as North Ionian. Although later studies sometimes mentioned bronzes, only W. Darsow ("Eine ionische Bronze", Marburg. Winckelmann-Prog., 1949, 9-18) attempted to list the known East Greek figural bronze sculpture and to exclude examples often given erroneously as East Greek (ibid., 17 n. 25). His discussion, however, was brief. U. Gehrig's full publication of the Greek bronzes from the Heraion of Samos is awaited.

There are few enough examples of bronze sculpture from East Greece, and fewer cities that can claim them as local. In some cases, the proveniences must be respected as the most likely place of origin, but there is little other information. Only in the case of the Samian Heraion does the extensive series of kouroi gives a clear view of the development of the local style. The production of tripods and elaborate vessels also appears to be largely confined to Samos. What little there is from Ephesos is consistent with other finds made there and are presumably locally made. Other minor workshops in Asia Minor, such as the one that

produced the Cesme bronzes, are evident but difficult to localize, and recognition of other important centers must await further discoveries.

The Samos finds, which include at least fourteen kouroi, three korai, and a variety of other figures, provide enough material to allow useful comparisons, and among these examples a series with characteristic features can plausibly be distinguished, although it stretches over several decades and exhibits considerable variety in individual treatment. Most characteristic are the facial features, hair styles, pose and costume, and these same features usually distinguish East Greek from Mainland Greek styles. Less easily discerned, but of greater aesthetic importance, is the treatment of body modelling and surface decoration. Like the contemporary stone sculpture, the bronzes display a disregard for anatomical structure, instead favoring soft, rounded, and patterned surfaces, at a time when realism was being pursued on the Mainland. The korai, as noted above, have cylindrical trunks and the kouroi sleek, non-muscular bodies. Both types are highly mannered.

Although conclusive links between the statuettes are rare, the following form a stylistically close series, allowing for development over time: kouroi no. 1-8, 10, 11, korai no. 5 and 6, the three figures group no. 1, the flute player no. 2, and the runner no. 3. The kouroi show clear development as discussed above. Kouros no. 5 and kore no. 6 may be by the same hand ("brother and sister", G. Bruns,

Antike Bronzen, 22f.), as could be the flute player, although the last is by no means certain. Allowing for differences in technique, the sphyrelaton kore no. 5 is at home here, as is the three figure group. Probably also belonging to the Samian series is kouros no. 9, although the pose and the technique of simple incision for the features is odd, especially in view of its relatively large size. All are likely Samian works. The kouros-support no. 19 from mainland Ionia is also probably Samian, or else it is a unique example of a new major Ionian workshop.

Kouroi no. 13 and 14 are certainly by the same hand, and, judging from the face and body modelling, are certainly East Greek. They may belong to a Samian school, but the face, hair style, and odd body proportions separate them from the main series. Similarly kouros no. 12 has little in common with the main series, and the body modelling even allows for a non-East Greek origin. The poorly preserved no. 15 may be Samian, but its provenience is uncertain, and even an Italian origin is possible.

The style of the lead figurines kore no. 4. and kouros no. 21 (to which may be added for consideration the example in the Stathatos collection, Athens, from the temple of Apollo at Phigaleia; Richter, Kouroi, no. 13, 3.7 cm.) must be observed with caution, taking into account the differences in technique from bronzework. They have little in common with the bronzes, since they are conceived as two dimensional, a front and back, each made in a mould and then joined. Some Daedalic conventions are used probably bacause

of the similarities of technique in making terracotta plaques or attachments, but the date should not necessarily be so early since the technique of cheap fabrication may account for stylistic lag. The examples from Samos are presumably locally made.

Kore no. 7, with her broad, smiling face is unlike the other Samian statuettes, although there is only one other comparable kore from the Heraion, and Croissant has proposed a Phokaian origin (Croissant, 129-131). However, the Egyptianizing look of the head and hair may suggest Samos as its home, in view of the strong traditional links to Egypt, and many imported Egyptian bronzes were dedicated in the Heraion (cf. Jantzen, Samos 8). In any event, she remains firmly in the East Greek koine.

The Samos rider no. 4, as noted above, is especially divergent from the main series of Samian bronzes. The face and especially the body modelling have no parallels at Samos and are fundamentally different in aesthetic intent. The only comparable hairstyle is that of the Dionysermos kouros in Paris, which is probably not from Samos. The distinctive facial features are characteristic of profiles seen on late sixth century North Ionian works which Langlotz has seen as probably Phokaian (cf. "Coinage: Phokaia", below), and the bronze may have come from that area. The Oxford kore no. 8 is also unusual in pose and modelling in taking a step forward, having a backward tilt, and a rectangular trunk. She has been assigned to a North Ionian workshop by Catling,

but there is nothing in North Ionia to compare her closely, and her costume is at home anywhere in East Greece.

Of the statuettes from Ephesos, only no. 1 is sufficiently well preserved to suggest a local type. The large head and features, as stated above, suggest an early date, but no real parallels exist. Comparisons with the small gold foil korai from the Basis (e.g. Hogarth, pl. 4: 4, 13), the recently found gold statuette (Bammer, fig. 60-62, 86; cf. "Jewelry", below), and the ivories (Hogarth, pl. 24: 3, 5, 10) indicate the popularity of korai with similar costume and pose in various materials as votives. The small gold figurines from the Basis demonstrate that the type had begun by the late seventh century (contra P. Jacobsthal, JHS 71, 1951, 91; cf. the discussion of the Ephesos chronology, "Coinage", below), but the bronze statuette does not seem so early, especially in view of the detailed treatment of chiton and epiblema. An early sixth century date at the earliest seems likely, as many have proposed.

The support from Olympia is closest in style to the korai stone sculptures from Miletos and Ephesos, and a mainland Ionian origin, perhaps Miletos (as likely a place as any), may be conjectured. Also presumably from mainland Ionian workshops are the kouroi no. 16 and 17, which are stylistically close, perhaps no. 18, the bearded god (?) no. 6 and sphinx no. 9, which may both be North Ionian, the "Herakles" no. 7, and the korai no. 8 (mentioned above), no. 9, and mirror handle no. 14.

IVORY, BONE, AND WOOD CARVING

Ivory, Bone, and Wood Carving:

The existence of numerous schools of ivory carving in both the East and in Greece from the ninth through the sixth centuries has become readily apparent through a series of remarkable excavation finds. A number of Assyrian, Phoenician, North Syrian, and Anatolian sites, notably Nimrud, Samaria, Hama, Arslan Tash, Khorsabad, Zincirli, and Urartian Altintepe (an excellent survey with bibliography is Barnett, Ancient Ivories, 39-55) have yielded much material from the Assyrian, Syrian, and Phoenician schools, mostly datable to the ninth and eighth centuries. Greek sites have not produced such quantities of material, but the variety and quality have been surprising. Ivories were discovered at the Argive Heraion in the 1892-5 excavations, followed by the spectacular ivory finds at Ephesos in 1904-5, and at Sparta in 1906-10. Further Peloponnesian work would be found at Perachora and other finds at Delphi. In addition to Ephesos (where ivories continue to be found), other East Greek sites produced both imported and local work. Rhodes, especially Kameiros, was rich in ivories, and a remarkable variety of material in both ivory and wood was found preserved in the waterlogged lower levels of the Heraion at Samos. More recently, a few works were found at Old Smyrna, and several pieces attesting an early local workshop were found at Erythrai. Other sites and chance finds account for a few more pieces. There are also some comparable ivories from contemporary non-Greek sites in Lydia and Phrygia, which often appear dependent on Greek types.

Ivory was one of the precious and exotic Oriental imports that were regularly reaching Greece by the Late Geometric period. Many examples of Phoenician, Syrian, and Egyptian work are known from Rhodes and Samos (cf. Barnett, Ancient Ivories, 47; the Ialysos finds remain unpublished, but cf. ClRh 1, 8; and Barnett, Nimrud Ivories, 51, 128, fig. 15. Lindos: Lindos 1, no. 419-421, 684, 686, 1581-1583. For Samos: B. Freyer-Schauenburg, Elfenbeine aus dem samischen Heraion, 1966, 51-116 for Oriental, West Phoenician, and Egyptian finds, and 117ff. for other sites with imported material; cf. Boardman, Greeks Overseas, 62 n. 85; a fine Egyptian ivory lion from Samos: A. Furtwaengler, AM 96, 1981, 107-127, pl. 27-30), as well as Old Smyrna (Akurgal, Alt-Smyrna 1, 1983, 101f., pl. 136a-b), Ephesos, Crete (E. Kunze, AM 60-1, 1935-6, 218ff.), Thasos (F. Salviat, BCH 86, 1962, 95-116), and Perachora (J. Stubbings in Perachora 2, 1962, pl. 173: A9; Barnett, Ancient Ivories 57, pl. 43e-f). Barnett has noted (Barnett, Ancient Ivories, 56-58 n. 32) that ivory became sufficiently popular in Greece, and especially equated with the beauty of human skin, to allow the female name Elephantis, "Ivory-girl", engraved on a silver ring of c. 600 from Kameiros (cf. "Rings", below).

Although there is little difficulty in distinguishing Greek ivory work from Oriental imports, there is equally no mistaking the Greek dependence on Eastern prototypes. In view of the close similarities between Greek and Eastern

ivories in type, style, and function, the presence of Oriental craftsmen working in Greece is more apparent for ivory work than for any other medium. Barnett has suggested a likely explanation for the widespread emigration of ivory craftsmen, namely the disruption of the Syrian and Phoenician ivory carving centers by Assyrian advances in the late eighth century. The well known ivories found in a mid-eighth century grave at Athens (Boardman, Greeks Overseas, 62 and n. 87 for literature; and Barnett, Ancient Ivories, 56, pl. 56d-e) copy Syrian types but add a distinctively Greek style to the body and facial modelling, as well as a maeander pattern to the headdress. They may well be the work of an immigrant craftsman in Attica. Bammer (Anat. Stud. 35, 1985, 103-108) noted that some carvings in ivory and bone found at Ephesos may have been locally made but are in Phoenician style and suggested that Phoenicians living in Ephesos may have had a substantial cultural impact there. Other ivories from Ionia, especially some from Ephesos, are dependent on North Syrian styles but combine many new features, both Greek and "Anatolian", to form distinctive new types that are surely products of North Syrians working locally. The influence on Greek art of the "Anatolian" peoples, including the North Syrians (Neo-Hittites), Phrygians, Karians, Lydians, etc., has been proposed by Akurgal and others (in regard to the ivories: Akurgal, Kunst Anatoliens, 195ff.; The Art of Greece. Its Origins, 212-216; Festschrift H. Vetters, 1985, 43-49), and, although it is often difficult to determine precisely where the influences

are from, there can be little doubt as to the intermingling of the Anatolian and Ionian cultures at Ephesos in the seventh and sixth centuries.

There is considerable difficulty in determining the function of many ivories, most of which are fragmentary. Most of the animal and human figurines appear to have been supports or decorations for furniture, or handles or attachments for vessels, some of which also survive in ivory. Plaques survive that may have served as decorative inlays, while others may have been purely votive. Jewelry (pins, fibulae, pendants, ear studs, combs, etc.), seals, horse trappings, and musical instruments are also known in ivory. Since the various schools of ivory carving generally have a distinctive local character, the finds will be examined here by site, except for the seals. The seals from a number of East Greek sites may be the earliest objects in ivory from local workshops and will be considered first.

Seals: (cf. "Engraved Gems", below)

Boardman has noted a number of East Greek ivory seals and their relations to both the extensive Peloponnesian series and possible Eastern prototypes (Island Gems, 154-155; JHS 88, 1968, 10f.). Seals carved as recumbent lions with crudely incised, subgeometric motifs underneath have been found at Kameiros, Chios (Phanai and Emporio), Paros, Delos, and Ithaka. The examples from Kameiros were found with many other ivories in the Well in the temple of Athena, where votive objects were deposited in the mid-seventh

century (C. Smith in Hogarth, 178-182; cf. V. Webb, Archaic Greek Faience, 137, fig. a), and the example from Emporio, Chios, was also found in a mid-seventh century level (Emporio, 237, no. 534) [FIG. 174]. In view of the many other ivories found at Kameiros, a Rhodian origin is most likely. A seal in the shape of a pair of lions with incised device (a griffin?) below was found in a deposit at the Heraion of Samos of c. 630 (Vathy E 60; B. Freyer-Schauenburg, Elfenbein aus dem samischen Heraion, 46-50, pl. 11; Boardman, JHS 88, 1968, 10f.) [FIG. 175]. Freyer-Schauenburg has seen it as a local work, but Boardman, while noting the difficulty in determining the Oriental origins of the Peloponnesian and East Greek series, suggested that it may be a North Syrian import.

Other seals with recumbent animals or low relief scenes were also found in the deposit at Kameiros (Hogarth, pl. 30: 1-3, 5; 31: 1-3), and although they do not belong to the uniform group of lions, they are similar. Here the devices underneath are linear patterns. There is also an important series of rectangular seals in the shape of female heads with intaglios or linear patterns used as devices underneath (Hogarth, 179, no. 1-3, pl. 28: 1, 4; 30: 14; 31: 14, 17, 20), and in one case in the shape of two standing females with a pattern of spirals in relief on the back (Hogarth, 179, no. 9, pl. 30: 13; 31: 16). In one other case, which may have served a different function, the female head has no design on the back, but rather the strands of hair are detailed (Hogarth, 179, no. 4, pl. 30: 18; 31: 21). The

female heads, as well as other ivories from Kameiros (cf. below) imitate the North Syrian examples known from the Nimrud finds, especially the Loftus Group (cf. Barnett, JHS 68, 1948, 4, n. 26). Ivory female heads used as seals are also seen in a much finer and more Hellenized style at Sparta (cf. Boardman, Island Gems, 151f.; L. Marangou, Lakonische Elfenbein- und Beinschnitzereien, 1969, 131ff., no. 74-83), and they are certainly local works of the mid-seventh century. It seems most likely that both the Peloponnesian schools and the less accomplished East Greek (probably Rhodian) schools were independently influenced by the North Syrian models (cf. Boardman, JHS 88, 11, and Marangou, op. cit., 197).

A further group of seals are disc- or scaraboid-shaped with subgeometric devices and include examples from the Well at Kameiros, Lindos, and Emporio (Boardman, Island Gems, 154f.; the Emporio example, Emporio, 237, no. 535) [FIG. 176]. Two slightly later examples, one with potnia theron device and the other carved in the shape of an animal head with horseman device, are from Ephesos. Later examples of ivory seals are not attested in East Greece, but some late Phrygian examples were found at Gordion (cf. below).

Rhodes:

The ivories from Rhodes, nearly all of which were votives from the Athena temples at Kameiros (now in London) and Ialysos (which remain unpublished, cf. above), are notable for their close dependence on Syrian and Phoenician

prototypes and their early date, probably all from the first half of the seventh century. Ivories were not among the objects found in the many rich tombs, except in one apparent instance, chamber tomb P.7 in the Papatislures cemetery excavated by Biliotti in 1864, where "ivory fragments with incised human heads, darts, small cylinders, etc." were found (D. Bailey, BMC Lamps 1, 1975, 172f., Q381; Gates, 55; V. Webb, Levant 12, 1980, 86 n. 53). The material is now in the British Museum and remains unpublished except for two plaques with incised busts of Hathor which appear to be Egyptian or Phoenician imports (Hogarth, 180, no. 12, pl. 30: 4, 6; and cf. the Phoenician plaque from Ephesos, A. Bammer Anat.Stud. 35, 1985, 103, pl. 14).

Like the seals with female heads carved on the backs discussed above, many of the other ivories from the Kameiros Well are similarly close to the Loftus Group of Syrian ivories from Nimrud. Both style and type are similar in the standing nude females (Hogarth, 179, no. 5-7, pl. 30: 15-17; 31: 19) and pairs of females (Hogarth, 179, no. 8, pl. 30: 9; 31: 11). Their functions are not clear, but they appear to be attachments or handles, as are the Nimrud examples. Other examples, probably imported, are highly Egyptianizing and typical of Phoenician work, for example an inlay of a Bes face (Hogarth, 181, no. 26, pl. 30: 12). Imported Phoenician ivories have been found elsewhere on Rhodes (Ialysos and Lindos, cf. above), and it is from these imports and perhaps direct contact with Phoenicians that

ivory carving was learned (for Phoenicians living on Rhodes, cf. J.N. Coldstream, BICS 16, 1969, 1-8).

Various simple ornaments and pieces of jewelry in ivory and bone were also locally made. Pendants in the shape of bulls' heads are known from Kameiros (Hogarth, 181, no. 27-28, pl. 31: 6-7; ClRh 6/7, 341, no. 45, fig. 73; cf. the example from Sparta, Artemis Orthia, 240, pl. 170: 3) [FIG. 177], and other crude pendants are known from Kameiros (ClRh 6/7, 341f., fig. 74), Lindos (Lindos 1, no. 206-218) and Ialysos (unpublished). Rectangular objects with compass-drawn circles that may have been pendants are found at Lindos (Lindos 1, no. 424-446) [FIG. 178] and are matched in a few examples from Ephesos (Hogarth, 190, pl. 37: 2-5; 194, pl. 37: 7-8). Simple pins and needles are also known at Lindos and Kameiros, including one disc pin head from Kameiros (Hogarth, 181, no. 23, pl. 31: 5), a type better known at Ephesos, and a number of simple spindle whorls were found at Lindos (Lindos 1, no. 383-403). Although more complex musical instruments must have existed, only fragments of flutes in bone and ivory have been found, or at least identified (Lindos 1, no. 448-454).

The ubiquitous ivory and bone spectacle fibulae known from most Greek sites are also well attested in Rhodes and East Greece. A number of examples were found at Lindos (Lindos 1, no. 133-134), Emporio in contexts spanning the seventh century (Emporio, 211, no. 231-239, pl. 86), Ephesos (Hogarth, 186f., pl. 32; with some single discs) [FIG. 179], and Erythrai (unpublished, but illustrated in Akurgal, Alt-

Smyrna 1, pl. 124c) [FIG. 70]. Although beginning early in the seventh century, the series continued well into the sixth (cf. J. Boardman, Tocra 2, 80).

There is little evidence for later, sixth century ivory work on Rhodes, although wood carvings must have been popular as votives in the temples. The Lindian Record, a first century B.C. list of accumulated votive objects in the precinct of Athena, speaks of a gift from the Lindians who left to settle Kyrene in the sixth century, a lotus wood group showing Athena watching Herakles strangle a lion (Lindos 2, part 1, 168-170, no. 2 [XVII]; L.H. Jeffery, Archaic Greece, 198). The group was apparently a major work, but the existence in the sixth century of such a group is not unlikely in view of the accomplished sculpture known, for example at Samos. However, there is no need to suppose it was made at Lindos itself. Also from Lindos is a very fine cut-out relief (applique?) in ivory of a man leading a horse that appears to be a mid-fifth century work (Lindos 1, no. 685) [FIG. 180].

Fine ivory plaques that decorated a small casket were found in a burial of the second half of the sixth century at Ialysos (Tomb 68; A. Maiuri, Annuario 6-7, 1923-4, 320-324, fig. 216) along with an Attic kothon, core-formed glass vases, jewelry, and a bronze mirror. The figural plaques show a Triton, a curled-up sleeping deer, and three birds. However, these plaques seem to be identical in style and technique to an extensive series found in Etruria, first

studied by L. Pollak in 1906 (L. Pollak, RM 21, 1906, 314-330) and more recently by Y. Huls (Y. Huls, Ivoires d'Etrurie, 1957, 66-80, pl. 33-45). All of the ivories are from Etruria or elsewhere in Italy except for the Ialysos examples and three listed by Pollak as from Cyprus (Pollak, loc. cit., 318, no. 12-14, although the provenience may be suspect since they were on the Paris art market at the same time and with the same dealer as other examples said to be from Etruria), and Huls' belief that all are exports from Etruria appears justified (Huls, op. cit., 193f.).

Samos:

The Heraion at Samos has been a most productive site for a wide range of ivory, bone and, extraordinarily, wood carvings, both imported and local, from the mid-seventh through the mid-sixth centuries. More than a hundred objects in ivory and an equal number in wood have been found to date, although much of the material is of a highly fragmentary nature and much has been lost both during World War Two and through the decomposition of the wood. A number of careful studies of the wood and ivory carvings by their German excavators have appeared, notably by Ohly (AM 68, 1953, 77ff.), Freyer-Schauenburg (Elfenbein aus dem samischen Heraion, 1966), Kopcke (AM 82, 1967, 89ff.), Kyrieleis (AM 95, 1980, 87ff.), and Sinn (AM 97, 1982, 33ff.).

Much of the material is imported from the East, and Freyer-Schauenburg discussed only ten ivories that she saw as Greek. However, a difficult and controversial problem

remains in distinguishing local work from imports made elsewhere in Greece. The controversy surrounds the earliest Greek pieces of the mid- and late seventh century and has important implications for understanding the development of the local East Greek style. The key objects are the following:

1. E1 (Athens NM S. 201 No. 726). Ivory plaque showing Perseus, accompanied by Athena(?), cutting off the head of Medusa; height: 9.7 cm.; B. Freyer-Schauenburg, *op. cit.*, 4, 30-38, no. 4, pl. 3, 4b; [FIG. 181].

2. E78. Very fragmentary ivory plaque depicting Troilos and Achilles; height: 7.5 cm.; Freyer-Schauenburg, *ibid.*, 5, 38f., no. 6, pl. 8a; [FIG. 182].

3. E10. Very fragmentary ivory plaque with head of Medusa; height: 6 cm.; Freyer-Schauenburg, *ibid.*, 5, 39ff., pl. 8b; Marangou, *op. cit.*, 197, fig. 58; [FIG. 183].

4. H1 (now lost, disintegrated). Wood plaque with standing "Zeus and Hera"; height: 19.5 cm.; D. Ohly, *AM* 68, 1953, 77-83, Beil. 13-15, 18-19; [FIG. 184].

5. H41. Wood statuette of a female in long dress with belt and shoulder mantle, wearing tall *polos*; height: 27.5 cm.; D. Ohly, *AM* 82, 1967, 89-99, Beil. 43-47, and G. Kopcke, *ibid.*, 102-107; H.-V. Herrmann, *Festschrift E. Homann-Wedeking*, 39f., pl. 5a; [FIG. 185].

6. H100. Wood statuette of a female in long dress with belt and shoulder mantle; height: 17.3 cm.; H. Kyrieleis, *AM* 95, 1980, 94-103, pl. 21-22; [FIG. 186].

7. H5. Wood statuette of a youth in short chiton with belt; height: 33 cm.; D. Ohly, AM 68, 1953, 86ff., Beil. 20-21; Buschor, AS IV, 62, fig. 237; Herrmann, loc. cit., 39, pl. 5b; [FIG. 187].

8. H3 (Athens NM 18801). Wood head of female(?) with long tang below neck; D. Ohly, AM 68, 1953, 84-86; Buschor, AS IV, 64, fig. 249; [FIG. 188].

9. H45. Wood aryballos in shape of female head; height: 8.7 cm.; G. Kopcke, AM 82, 1967, 115, Beil. 58; [FIG. 189].

10. E88 (Athens NM). Ivory statuette of nude kneeling youth wearing belt and boots, an attachment for some object; height: 14.5 cm.; H. Walter, AM 74, 1959, 43-47; Buschor, AS IV, 62ff., fig. 238-248; Freyer-Schauenburg, op. cit., 3, 19-26, pl. 2, with further references; Herrmann, op. cit., 42, pl. 5c; [FIG. 190].

All of these finds are in styles that are strictly Daedalic or heavily influenced by Daedalic work. The Daedalic style is not well attested in East Greece, except on Dorian Rhodes, and the sixth century East Greek styles, with their rounded, fleshy modelling of human bodies and faces, seem to owe nothing to the angular and highly stylized Daedalic work which was prevalent in Crete, the Peloponnesos, and the Western Greek colonies. The problems of placing Daedalic work in the development of Archaic Ionian style has been noted on a number of occasions. Buschor and other early writers on the subject were content to see Samos as a major center for the Daedalic style, while recently, most notably in regard to ivory and wood carving,

some scholars have been troubled by a lack of comparable material in East Greece and closer similarities to non-East Greek work (cf. the excellent discussion, H. Kyrieleis, AM 95, 1980, 97-103; similar observations have been made by Freyer-Schauenburg, and cf. Marangou, op. cit., 196f., on relations between Samos and Lakonia; Kopcke noted the controversy but accepted a Samian origin for at least some of the works, AM 82, 1967, 104f., n. 11).

When close parallels for some of the Samian finds in question are found, they are in Cretan or Peloponnesian work. The fine ivory reliefs (here no. 1-3), and especially the Perseus and Medusa plaque, are matched by finds at the Artemis Orthia sanctuary at Sparta (the Perseus and Medusa plaque from Sparta, Athens NM 15365: Marangou, op. cit., 44, 72ff., no. 34, fig. 55) and appear to all come from the same Lakonian workshop. The wood plaque showing a hieros gamos of Zeus and Hera is in the Daedalic tradition, although somewhat removed as can be seen in the rounder modelling of the faces. Near Eastern traits have been seen (Akurgal, The Art of Greece. Its Origins, 207ff.), but its Greek origin has not been questioned, and its style, as well as details of dress, is closest to Cretan and Lakonian types (D. Ohly, AM 68, 1953, 78; Boardman, Greek Sculpture. The Archaic Period, 16). Recently found terracotta plaques from Metapontum depicting the same scene in very similar style (E. Paribeni, Scritti, 1985, 160, fig. 246-247; G. Olbrich, Archaische Statuetten eines metapontiner Heiligtums, 1979,

A5; H. Kyrieleis, AM 95, 1980, 101 n.64) demonstrate that the type was common enough and probably disseminated via the Peloponnesos.

Some large wood statuettes (of uncertain function) from Samos, probably dating from the third quarter of the seventh century, are entirely Daedalic in structure. H41 (no. 5 above), which may represent the goddess Hera herself, is a 27.5 cm. figure wearing a tall polos, long belted chiton with engraved patterns and shoulder "cape", all characteristic of Daedalic dress, particularly on Cretan examples. Kyrieleis has denied any Ionian characteristics and favored a Cretan origin (cf. Kyrieleis, AM 95, 1980, 97ff.), and a comparable, though not identical, ivory figure has recently been found in the Idaean Cave on Crete, supporting his contention (cf. Arch. Repts. 1985-6, 91, fig. 140). One is reminded that the cult statue of Hera at Samos was said to have been made by Smilis of Aegina, a contemporary of Daidalos, who may well have worked in the Daedalic style of Crete (Pausanias 7, 4, 4; cf. Herrmann, op. cit., 40).

A large (33 cm.) male figure (H5, no. 7 above), wearing a short chiton with belt, is also purely Daedalic and may be from the same workshop as the "Hera" (Kyrieleis, loc. cit., 101f. n.67, prefers a local origin). A third statuette (H100, no. 6) is another female in typically Daedalic costume (without the polos), and Kyrieleis has again proposed a Cretan origin. However, the carving is summary, notably in the facial details, and the workshop is more

difficult to specify. It may have been one on Samos that copied the more sophisticated works, perhaps the same workshop that produced the ivory warrior from Samos (cf. no. 11, below) which is similarly derived from Cretan types but is somewhat removed in style. The female holds some object in her right hand close to her side, perhaps an oinochoe in the manner of the famous "hawk priestess" from Ephesos (cf. below). Another crude copy of a Daedalic female figure is seen in an ivory from Erythrai, probably a local work (cf. below). A wooden head (no. 8) is sub-Daedalic with more rounded features very similar to the Zeus and Hera plaque. It too may be an import or a copy closely following Cretan or Peloponnesian models.

Another head in pure Daedalic style is seen on a small wood head-aryballos (H45, no. 9). The type of aryballos in terracotta is known from Rhodian examples, including some in less formal Daedalic style (R. Higgins, BMC Terracottas 2, no. 1601 and 1607; J. Ducat, Les vases plastiques rhodiens archaiques en terre cuite, 1966, 155, pl. 23: 1-2; M. Maximova, Les vases plastiques dan l'antiquite 2, 1927, no. 112, the example from Rhodes now in London, as perhaps Samian), but any connections with Samos are unclear. Vases with female heads on the neck in Daedalic style are also known from Crete (D. Levi, Hesperia 14, 1945, 28f., pl. 26), and a later, probably sixth century, example in ivory, no longer Daedalic, was found at the Artemis Orthia site in Sparta (Marangou, op. cit., 195, fig. 164 a-d).

Perhaps the finest ivory from Samos, or any other Greek site, is the late seventh century kneeling youth, nude but for a belt and boots and wearing a diadem, with some amber inlays still preserved in the diadem and other inlays for the eyes, earstuds, and pubic hair now missing. It certainly served as a support for some object, and Ohly has argued in a careful, although not entirely convincing, article that it was one of a pair of arms for a lyre (AM 74, 1959, 48-56). E. Simon has further elaborated on Ohly's identification and seen the youth not as kneeling but jumping in the air as a dancer in accompaniment to the music of the lyre, in the manner seen on a Corinthian aryballos in the Corinth Museum showing a flute player and two leaping dancers (E. Simon, AK 21, 1978, 66-69).

However, this interpretation is unlikely. A detail that may immediately be noted is that the toes of the youth are bent back, indicating that they are pressed against the ground on which he is meant to be kneeling (D.G. Mitten has already noted the same detail and pose on a plastic vase from Corinth, AK 9, 1966, 4-5). A comparison in pose can be made with the bronze kneeling gorgon figure from Rhodes (cf. above), who similarly kneels, arms at her side like the ivory, and served as a support for the foot of a tripod. Most Greek ivory figures served as supports or handles for vessels, a function directly copied from Eastern types (cf. E. Schmidt, Geschichte der Karyatide, 60ff., 159f.). To be accepted, Simon's theory requires a fundamental change in how the Greeks viewed these support-figures from mere static

carriers of a vessel to the more abstract dancers captured in mid-air. Such a dramatic departure from the original function, as clearly seen in comparisons with Eastern prototypes (kneeling youths are seen on Egyptian and Phoenician ivories, e.g. the headrest from the tomb of Tutankhamun, Barnett, Ancient Ivories, pl. 7b; the youth carved in relief supporting a bowl from Nimrud, Barnett, Nimrud Ivories, 196, S72, pl. 42-43; and the youths supporting a fan handle from Nimrud, Barnett, ibid., 213, S.295, pl. 91, and Ancient Ivories, pl. 44h), seems unlikely. That the youth served as an arm for a lyre is also far from certain, and the most that can securely be said is that the figure was part of the support for a very fine object, perhaps a vessel or piece of furniture.

The carving is exceptionally fine, with carefully modelled body, details in the hair, face and belt, and skilful use of the grain of the ivory. The head is derived from Daedalic types, notably in the triangular face and hairstyle, but is considerably more progressive and lively, as can be seen in the attention given to the facial features and modelling. The body is unlike any Daedalic work, with its pinched waist and detailed chest, but it does have good parallels in post-Daedalic Cretan work, especially bronzes, as has been noted by L. Lebesi (L. Lebesi, Annuario 61, 1984, 303-322), who assigned the ivory to a Cretan workshop. There are also similarities to the earliest marble kouroi made in the Cyclades, who have pinched waists and wore belts

(cf. Boardman, Greek Sculpture. The Archaic Period, 22f.). Although the excavators Ohly and Buschor accepted the piece as local, objections were soon raised. Herrmann saw the piece as Lakonian (Germania 44, 1966, 86 n.37); I. and T. Raubitschek as Cretan (Fest. E. Homann-Wedeking, 50); and Freyer-Schauenburg, noting especially the lack of parallels in contemporary Samian terracottas, the similarity to Corinthian terracottas and Protocorinthian pottery, and a comparable although slightly earlier ivory sphinx from Perachora (Perachora 2, 403ff., pl. 171a-h, A1), proposed a Corinthian origin (Freyer-Schauenburg, op. cit., 25f.). Freyer-Schauenburg's theory is perhaps the most convincing, but in any case a Samian origin seems unlikely.

The removal from Samos of the wood and ivory carving of Daedalic style leaves a conspicuous gap in Samian work of the late seventh century. The conclusion that follows is that there was no local school of ivory carving until c. 600, which would not be too difficult to accept if it were not for another recent find on Samos. Excavations in the West Necropolis have uncovered a number of cremation and inhumation graves of the seventh and sixth centuries, including a seventh century cremation burial that included Wild Goat pottery, Island-type bronze fibulae, spiral earrings, and small ivory globular pinheads and reliefs that decorated uncertain objects (K. Tsakos, Athens Annals of Archaeology 2, 1969, 202-205, fig. 4). The ivories include four fragmentary lions, openwork double-diamond reliefs, and several examples of pairs of Daedalic heads [FIG. 191]. The

heads are in purely Daedalic style, recalling very similar pairs of embossed heads on jewelry from the contemporary Rhodian orientalizing workshop (cf. "Jewelry", below; e.g. Laffineur, no. 31), and give credence to a local workshop utilizing the style.

Other ivory and wood figures and reliefs, mostly of slightly later date than the previous examples, are more characteristically East Greek in style. They include the following examples so far published:

11. E4 (lost). Ivory statuette of a warrior with shield; height: 16 cm.; Freyer-Schauenburg, _op. cit._, 3, 18f., pl. 1b; H. Walter, _AM_ 74, 1959, 44, Beil. 94; [FIG. 192].

12. H42. Wood statuette of kore with inlaid eyes; height: 39.4 cm.; G. Kopcke, _AM_ 82, 1967, 107-109, Beil. 48-51; Herrmann, _loc. cit._, 39, pl. 4d; [FIG. 193].

13. H43(?). Wood statuette of kore; height: 25.6 cm.; Kopcke, _AM_ 82, 1967, 112-114, Beil. 55; [FIG. 194].

14. H101-105. Fragments of five male and female statuettes; H. Kyrieleis, _AM_ 95, 1980, 103-105, pl. 23-25.

15. E133. Ivory head of kouros with inlaid eyes; U. Sinn, _AM_ 97, 1982, 33-55; [FIG. 195].

16. H43(?). Wood statuette of a dwarf or "_Zwergdaemon_"; height: 21.9 cm.; Kopcke, _AM_ 82, 1967, 109-112, Beil. 52-54, 81; [FIG. 196].

17. E6. Fragmentary ivory cylindrical attachment with two females in relief; Freyer-Schauenburg, _op. cit._, 6, 45-46, pl. 10; [FIG. 197].

18. E3. Ivory attachment with male figure standing between two winged horse protomes; height: 9.7 cm.; Freyer-Schauenburg, op. cit., 4, 26-30, pl. 3, 4b; [FIG. 198].

19. E8 (only four fragments now preserved in Vathy). Ivory relief plaque with horseman facing standing man on one side, rosette on the other; height: 8.2 cm.; Freyer-Schauenburg, op. cit., 5, 42-45, pl. 9; [FIG. 201].

20. E127. Relief plaque depicting Geryon; P. Brize, AM 100, 1985, 85, pl. 22: 2; [FIG. 202].

21. H106. Wood relief with standing figure in recessed rectangle; height: 10.7 cm.; H. Kyrieleis, AM 95, 1980, 105f., pl.27: 1; [FIG. 203].

The ivory figure E4 (no. 11) has been seen by Walter and Freyer-Schauenburg as a mid-seventh century Samian work. The thin youth wears a short chiton with belt and holds a shield against his left side. His right arm is elongated and pressed to his side. The legs are also too long and without much detail. Such an elongated figure is typical for many of the ivory figures, especially at Ephesos, and may be due to their function as handles or supports. The face has rather broad, flat features with little added detail, and the facial features recall some of the ivory figures from Ephesos, as Freyer-Schauenburg noted (Freyer-Schauenburg, op. cit., 18f.). The hair, also without much added engraving, falls over the shoulders in two long strands in front and in a mass down the back. The head has little of the Daedalic in it and does seem close to some

contemporary Samian terracottas. The dress, however, is more typically Cretan, and the figurine seems particularly close to the wood figure (H100, no. 6 above) of similar size from the Heraion, which also wears Cretan costume and was viewed by Kyrieleis as a Cretan work. Both have similar crude facial features, and both have elongated limbs, especially notable in the long, tapering arms and hands, which appear nearly identical. They are close enough to be from the same workshop, probably on Samos in the late seventh century, and both appear to be copying Daedalic types without being fully in the style, as can be seen from the faces.

The human statuettes from the sixth century are more typical of East Greek work in other media. Two large (39.4 and 25.6 cm.) wood korai (no. 12-13) are especially fine. The first example has a cylindrical body, typical of most Samian korai in marble and bronze of this period (cf. "Bronzes: Korai", above), and wears a chiton with himation, also typical for sixth century Ionia. Her hair falls in six strands over the shoulders in front and in a mass down the back; her eyes are inlaid with bone. Kopcke's date of c. 580 seems slightly high in view of the similarity to marble korai of around mid-century. The other, less accomplished, kore is roughly contemporary, and also wears typically Ionian dress, here a belted chiton and epiblema veil, a costume often seen on the ivory korai from Ephesos (cf. below). The function of the statuettes is uncertain. They

do not have tangs or holes in the head and may have been free-standing votives, as many bronzes appear to have been. Several fragments of similar figures were also found (no. 14, five examples).

Another piece of exceptional quality is the recently found ivory head (no. 15), which has been discussed in detail by U. Sinn. It is composed of the face and some of the hair (just along the brow and over the ears) of a kouros which must have been a composite statuette. The rest of the hair may have been gold, in the manner of the chryselephantine heads from Delphi (cf. below), and the body in another material. Another head from Sardis (cf. below) is in the same technique. The face is carefully modelled, the eyes and eyebrows once inlaid, and the hair finely engraved. Enough of the hairstyle is preserved to see it is typically Samian, swept back from the brow and falling down the back and strands brushed back over the ears. Sinn justly compares it to bronze kouroi of the sixth century and dates it c. 530.

Another statuette is a large version (21.9 cm.) in wood of the very common East Greek terracotta figurine of a squatting "dwarf", a fat demon ultimately derived from Egyptian Ptah figures but whose significance in Greece is unknown. Herodotos (3, 37) speaks of figures he calls Pataikoi as being affixed to the fronts of Phoenician ships, evidently as magical protection, and he saw similar figures in Egyptian sanctuaries. The terracottas may be Rhodian, but they have a very wide distribution, including Samos,

Melos, Delos, Ephesos, Naukratis, Tocra, and many sites in Etruria, Southern Italy, and Sicily (cf. R. Higgins, BMC Terracottas 1, 56-57, no. 86-93; F. Lo Porto in Les ceramiques de la grece de l'est et leur diffusion en occident, 136). The wood demon holds a small figure, and this is paralleled in some terracottas (Higgins, op. cit., no. 88, 93). The terracottas date in general to the first half of the sixth century (cf. J. Boardman, Tocra 1, 153f., no. 48), and Kopcke's date of c. 600 is the earliest possible. The work is East Greek, rather closer in style to the Egyptian prototypes than the terracottas, and is perhaps local.

Other ivory and wood carvings served as attachments, but to what is now unknown. A pair of female busts in relief decorate a half-cylinder of ivory pierced by two vertical holes (no. 17), probably of late seventh century date. The technique and motif recall Phoenician ivories of the Loftus Group, but the style is Greek. A very fine attachment, c. 600 in date, is carved as two winged horse protomes between which stands a male in short chiton (no. 18). The back is circular and hollowed out, with holes drilled in it which may show how the object was attached. Freyer-Schauenburg has noted that a nearly identical object, with two winged horse protomes but no accompanying man, was found on Thasos (G. Daux, BCH 84, 1960, 862, fig. 3; Freyer-Schauenburg, op. cit., pl. 4a) [FIG. 199] and is by the same hand. Another ivory, this a single horse protome, was

found at Ephesos (Hogarth, 164f., no. 27, pl. 26: 9a-b) [FIG. 200], and although not by the same hand, it is very similar, with identical shape and drill holes in the back, and must have served the same function. They may have been attachments to some vessel, perhaps in the manner of the bronze horse protomes that decorated tripods (cf. "Bronzes", above).

Several small relief carvings were also found. One (no. 19) is a plaque carved in low relief on both sides, one with a horseman facing a standing warrior, and the other a rosette. It belongs to the late seventh century. A recently discovered engraved ivory plaque, probably of late seventh century date, depicts a triple-bodied Geryon (no. 20) and has been discussed in depth by P. Brize in connection with an outstanding Samian bronze plaque depicting Herakles and Geryon (cf. "Bronzes", above). Finally a very crude wood relief (no. 21) depicts a standing figure in a recessed rectangular area, highly reminiscent of the goddess Kybele standing in a naiskos so frequently seen on East Greek stone stelai, as has been noted by Kyrieleis. It is a simple votive, which must be of sixth century date judging from the type.

A remarkable group of wood carvings that were purely votive take the form of miniature ships (D. Ohly, AM 68, 1953, 111-118, fig. 27-31; H. Kyrieleis, AM 95, 1980, 89-94, pl. 18-20) [FIG. 204]. They vary in length from around 20 cm. to over 50 cm., and more than twenty have been found so far. Certainly votives from grateful sailors, they reflect

the famous Samian maritime tradition and recall the story of the merchant sailor Kolaios, who made a dedication (although of a krater and not a ship) in the Heraion on his safe return from Tartessos (Buschor proposed that a full size ship may have been dedicated at the Heraion in the seventh century and associated it with Kolaios, cf. B. Shefton, Phoenizer im Westen. Madrider Beitraeger 8, 1982, 344).

Also found in the Heraion were numerous vessels and pieces of furniture. Most notable is a series of wood stools, most likely locally made, with engraved subgeometric designs, including horses and maeanders (D. Ohly, AM 68, 1953, 89ff., Beil. 22ff.; H. Kyrieleis, AM 95, 1980, 107-121) [FIG. 205]. Various types of bowls, plates, and small chests of wood were also found (Ohly, loc. cit; G. Kopcke, AM 82, 1967, 115-127; Kyrieleis, loc. cit.), some of which have parallels in ivory works from Ephesos. A wood lion's foot from a large vessel or stand (Kopcke, loc. cit., 127ff., Beil. 68-70) is much like the bronze examples from Samos that ornamented tripods (cf. "Bronzes").

Chios:

Aside from the ivory seals and spectacle fibulae from Phanai and Emporio already discussed, only one important ivory carving has been found. This is a small (3.4 x 3.3 cm.) but very fine horseman carved in the round (Emporio, 242, no. 596, pl. 96) [FIG. 206]. As Boardman noted, it is from a context no later than c. 630 and thus a rare, early example of Greek ivory work. The head and most of the body of the rider are missing, making specific stylistic comparisons difficult, but the preserved lower body and arms of the rider and the well-preserved horse seem entirely Greek in style and composition, with no Eastern traits apparent. Horses and horsemen are popular in East Greece and are even seen in other ivory work (the plaque from Samos, no. 19 above, and the horse protomes from Samos and Ephesos), and this example can be seen as coming from an early East Greek, perhaps local, workshop. It is remarkable, however, that the work shows so little Eastern influence at this early date and that nothing else comparable is known.

Ephesos:

Many diverse finds in ivory were made by Hogarth's excavations in 1904-5, and additional pieces have been found by the Austrian excavations in recent years. All of the ivories were found below the Kroisos temple but few in the earliest level (the Basis), suggesting that all belong to the first half of the sixth century (on the chronology, cf.

"Coinage", below). In addition to the figural carving (statuettes, attachments, and reliefs), there is a large amount of material, much fragmentary, that includes vessels, jewelry, inlays, votives, and musical instruments. Since the time of their discovery, most of the ivories have been recognized as local works in distinctive styles that combine Eastern and Ionian elements. Several recent articles have reexamined the statuettes in attempts to further categorize the local styles (J. Carter and C. Simon in M.J. Price, ed., The Temple of Artemis at Ephesus: A Reconsideration of the Earliest Finds, forthcoming; and A. Bammer, OJh 56, 1985, 39-58), and it is these figurines that will be examined first. They are as follows:

1. Istanbul 2594. Standing woman wearing long, patterned dress and high headdress, bead-and-reel torque, bracelets and hair ornaments (?) before the ears; she holds a distaff and spindle; height: 10.5 cm.; Hogarth, 157f., no. 3, pl. 24: 1; Akurgal, Kunst Anatoliens, 195f., fig. 155-157; Akurgal, Art of Greece. Its Origins, 213, color plate 66; Anat. Civ. 2, 21, B.31 (not illustrated); [FIG. 207].

2. Istanbul 2593. Standing male figure wearing long, patterned dress with belt, high headdress, and long string of beads which he holds at his waist; above his headdress is a pierced tang for insertion into another object; height: 11 cm.; Hogarth, 160f., no. 10, pl. 21: 2; 24: 7, 11; Akurgal, Kunst Anatoliens, 198, fig. 158-159; Anat. Civ. 2, 21, B.32; Barnett, Ancient Ivories, pl. 58d; [FIG. 208].

3. Ephesos Museum, 84/K328. Standing female figure wearing long dress, high headdress, and necklace with central pendant; she holds a small, now fragmentary, animal (lion?) by the legs; a larger, double-bowl in ivory, which survives, was attached to the head of the figurine, which served as a handle; height of figure: 18 cm.; A. Bammer, OJh 56, 1985, 42, fig. 4-5, 11; Anat. Stud. 35, 1985, 107f., pl. 17b, 18; [FIG. 209].

4. Istanbul 2596. Standing kore with long hair flowing down her back and in two strands over her shoulders, wearing patterned chiton, earstuds and ear caps (cf. "Jewelry"), and holding ring-handled bowl of Phrygian type at her left side and oinochoe at her right; a hole in her head has been seen as fitting a long pole at the end of which sits a hawk; height of figure: 11 cm. (with pole, 25.5 cm.); Hogarth, 156f., no. 1, pl. 21: 6; 22; Akurgal, Kunst Anatoliens, 204ff., fig. 169-175; Anat. Civ. 2, 22, B.33 (not illustrated); Barnett, Ancient Ivories, pl. 58a-c; [FIG. 210].

5. Istanbul 2597. Standing female wearing chiton and holding two hawks at her waist; height: 8 cm.; Hogarth, 157, no. 2, pl. 24: 8; Akurgal, Kunst Anatoliens, 204, fig. 167-168; Anat. Civ. 2, 22, B.34 (not illustrated); [FIG. 211].

6. Ephesos Museum, 81/K205. Standing kore wearing chiton and epiblema veil; height: 16 cm.; A. Bammer, OJh 56, 1985, 41, fig. 3; Bammer, fig. 103, 139; [FIG. 212].

7. Ephesos Museum, 72/K63. Lower half of standing kore wearing chiton; A. Bammer, OJh 56, 1985, 41, fig. 3; Bammer,

fig. 73; [FIG. 213].

8. Istanbul. Standing kore wearing chiton with overfold at waist and epiblema veil; height: 11.8 cm.; Hogarth, 158, no. 4, pl. 24: 3; Akurgal, Kunst Anatoliens, 198f., fig. 160-161; [FIG. 214].

9. Istanbul. Upper half of standing kore wearing patterned chiton with overfold; a pale gold band is attached to her forehead; height as preserved: 5.5 cm.; Hogarth, 158f., pl. 24: 10; Akurgal, Kunst Anatoliens, 203, fig. 165-166; [FIG. 215].

10. Cambridge, Fitzwilliam Museum, purchased in Smyrna and almost certainly from the Artemision (cf. Hogarth, 159). Standing kore wearing belted chiton, earstuds, and hair bound up in a cap; height: 6.3 cm.; Hogarth, 160, no. 10, pl. 24: 9; Barnett, Ancient Ivories, pl. 57c-d; E. Homann-Wedeking, Archaic Greece, color plate p. 67; C. Simon, forthcoming; [FIG. 216].

11. London, British Museum (provenience as last). Standing kore wearing chiton and epiblema veil, small and crude work; height: 3 cm.; Hogarth, 160, no. 9, pl. 24: 5; [FIG. 217].

12. Istanbul. Standing kore, very crude with no detail in the body and poorly cut facial features; height: 9.8 cm.; Hogarth, 159, no. 6, pl. 24: 4.

13. Ephesos 81/K242. Large head of a kore, hair bound in a cap, wearing earstuds; face broken away; Bammer, fig. 103; [FIG. 212].

14. Ephesos 71/K89. Large head of a kore, fragmentary;

Bammer, fig. 70; Langlotz, Studien, pl. 29: 5; [FIG. 218].

Two basic styles are evident, as Jacobsthal (JHS 71, 1951, 93) and Akurgal noted (Kunst Anatoliens, 194ff.), the first highly orientalizing and with some Anatolian traits, as seen in the spinner woman, the so-called "eunuch priest" and now the new female holding a lion, and the other purely Ionian Greek, represented by the numerous korai. In addition to the figures found at Ephesos are two others that are likely from Ephesian workshops. The first, which was purchased by Berlin in 1964 and is without provenience (Berlin 1964.36; height: 22.5 cm.; A. Greifenhagen, Jb.Berl.Mus. 7, 1965, 125-156; Barnett, Ancient Ivories, 59, pl. 60c-d) [FIG. 219], is a large fragment with a female figure wearing a long belted chiton, high headdress, "napkin ring" earstuds (cf. "Jewelry: Earstuds"), and long braided tresses of hair down the back, standing on a very Eastern-looking sphinx or siren (fragmentary) and with a large duck head above the headdress. The now missing hands were separately made and were held out in front of the body, holding some object, perhaps an animal like the Ephesos example. Following Ohly's treatment of the Samos ivory youth, Greifenhagen suggested that the Berlin ivory was an arm of a lyre. His suggestion, however, is not entirely convincing, and it may be better viewed as a handle for a vessel, since the Ephesos example provides a parallel, as do the duck head elements commonly used as terminals or decorative element on Eastern vessel or utensil handles.

The close similarity to the Ephesian works is seen in the very distinctive round face and cheeks, smiling mouth, the treatment of the eyes, the dress and headdress, and the earstuds. Some of the Eastern traits include the long braid, often seen in Phoenician works, the Phoenician style sphinx, and the duck head element.

The second ivory belongs to the other Ephesian workshop, which produced the korai. It is a kore recently found in the excavations at Erythrai and recognized by Akurgal as being so close to the ivory korai, and especially the new gold kore, from Ephesos that it must originate there (E. Akurgal, Festschrift H. Vetters, 1985, 43-49, pl. 9) [FIG. 220]. It is comparable in size (11 cm.) to the main series and has the same cylindrical trunk and a hole in the top of the head for attachment to some object.

Unfortunately, the face is poorly preserved, but the details of the costume are clear, an Ionian belted chiton with a patterned border matched at Ephesos.

Four ivories (no. 1-3 and the Berlin piece) form a distinct orientalizing group that is especially interesting for its unusual style, details, and iconography. They all wear unusual costume, long patterned dresses unlike the usual Ionian chitons and high headdresses that recall Neo-Hittite examples (cf. Barnett, Ancient Ivories, 59; Akurgal, Art of Greece. Its Origins, 212, n. 845). The male figure too wears the long dress, but also a broad collar and belt. The patterns on his dress include a disjointed swastika, which is a distinctive design adopted from Phrygia (perhaps

from imported Phrygian textiles) and seen also on marble sculpture from the Artemision (cf. the discussion of this and other Phrygian patterns, "Jewelry", below). His unusual character led C. Smith (Hogarth, 173; followed by Akurgal, Kunst Anatoliens, 198) to identify him as the Megabyzos, the eunuch High Priest of Artemis. The spinner-woman is more difficult to identify but also may have had some cult significance. The new find from Ephesos, a female holding a lion, may be the Anatolian goddess Kybele or a syncretistic Kybele-Artemis. In addition to the Anatolian and local cult influences, the style of this group shows dependence on Syrian or Phoenician models, as can be seen in the facial details and especially the hair and sphinx on the Berlin example. Two other similar works, close in style, were found at Gordion in Phrygia (cf. below), suggesting links with related Anatolian cults, and successors in Achaemenid style are also known (cf. R. Stucky, AK 28, 1985, 7ff.).

The other major group at Ephesos is more Greek in style and iconography, although here too local cult details are evident. The finest work of the group is the so-called "hawk priestess" (here no. 4). She is beautifully detailed, with carefully carved facial features, hair, and details of dress. Her head is egg-shaped and her face broad and round, one of the characteristically sixth century Ionian styles. Her dress is an Ionian chiton with overflow at the waist and central vertical folds. She wears Ionian earstuds and ear caps (cf. "Jewelry", below). At her sides she holds an

oinochoe and a ring handled bowl of Phrygian type that was widely used in East Greece (cf. "Bronzes: Vessels", above). In all appearance she is a fine Ionian, and very likely Ephesian, of just before the middle of the century. She has a hole in her head, like most of the ivories, and has been reconstructed as supporting a long pole surmounted by a hawk, which was found detached from the figure but "almost touching its head" (Hogarth, 157). Such a reconstruction has not been universally accepted (cf. Barnett, Ancient Ivories, 59) but is possible, and there are some rather remote parallels both in Greece and the East (cf. P. Jacobsthal, JHS 71, 1951, 91f.). Other ivory hawks on poles were also found in the Artemision (cf. below), but what they were attached to cannot be determined. Like the previous group of ivories, she may have had cult significance, and hawks were birds sacred to Artemis and well attested in various media in the Artemision finds. Another ivory, no. 5, is also purely Greek in style, but she is holding a pair of hawks and surely represents a figure in the cult at the Artemision (but not necessarily an "older woman" as Akurgal states).

The other korai vary in quality but appear to all be local works in Greek style. No. 8, in typical dress, has a broad, round face and features similar to the "hawk priestess" but is not as detailed. No. 9 is similar. The Cambridge example, no. 10, is slightly different in style, with a very large head and more prominent feature, and appears slightly earlier in date. She wears "napkin ring"

earstuds, and her hair is bound in a soft cap, perhaps the Lydian mitra that Sappho speaks of (E. Lobel and D.L. Page, Poetarum Lesbiorum Fragmenta, 1955, fr. 98, 10; cf. A. Burnett, Three Archaic Poets, 1983, 213f.). The large head no. 13 also wears a cap and, although the face is missing, appears similar to the Cambridge example but better proportioned and presumably slightly later in date. Another related kore head, no. 14, is even more damaged. The kore no. 6 has features that also appear to be early. The British Museum example no. 11, on the other hand, is crude and small, but the costume is developed and need not be earlier than the "hawk priestess". Similarly, the very crude no. 4 cannot be presumed to be early and may be just a simple, cheaper copy of the main series.

Their function is again uncertain. Some have holes in the head for attachment and may have been handles like the other group, which may also explain the elongated form of some. All have holes in the base. Similar East Greek korai attachment are found in bronze (cf. "Bronzes: Sixth Century", above) but are also not complete and thus of uncertain function, while other bronze korai and kouroi appear to have been free-standing votive statuettes. The hollow gold kore recently discovered at Ephesos (A. Bammer, ÖJh 56, 1985, 39ff.; cf. "Jewelry", below) shows that the same type was made in precious metal, and although there is no hole in its head for attachment, it still may have decorated some larger object. At least some of the tiny

gold figurines of korai found in the Basis of the Artemision served as heads of pins (cf. "Jewelry: Pins"), again decorating utilitarian objects rather than being strictly votive.

Jacobsthal (JHS 71, 1951, 93) and Akurgal saw a chronological progression from the orientalizing group to the Greek group, but this theory has been justifiably challenged by J. Carter (in The Temple of Artemis at Ephesus, forthcoming; and unpublished dissertation). The orientalizing group is an isolated style that is not demonstrably earlier than the early sixth century and may be exactly contemporary with the Greek school. Carter suggested that the fragmentary kore no. 7, although in normal Ionian dress, shows some characteristics of the orientalizing group, notably in large bracelet she wears, and may be an example of the orientalizing school copying Greek types. Furthermore, the Ionian kore type, as can be seen in the small gold examples from the Basis, is known in the earliest levels of the excavations while the orientalizing works are not. Perhaps they are all best viewed as a contemporary mixture of Greek, Anatolian, and perhaps Phoenician cultures dependent on the earlier traditions of ivory carving inherited from the East.

The most highly orientalizing ivories from Ephesos, which are few in number, have little in common with the orientalizing group distinguished above but are not demonstrably earlier. A plaque carved in high relief shows a nude woman holding her breasts (Istanbul; height: 5.7 cm.;

Hogarth, 159, no. 7, pl. 24: 2), very similar to the terracotta Astarte plaques that had a long history in the East and were very influential in seventh century Greece (P. Riis, Berytus 9, 1949, 69-90; Boardman, Greeks Overseas, 76). Other Phoenician work exists at Ephesos, and the famous relief plaque depicting a siren has been called Phoenician by Bammer (A. Bammer, Anat.Stud. 35, 1985, 103-105, pl. 14, 17a. The siren plaque: Istanbul 2600; height: 4.5 cm.; Hogarth, 166, no. 34, pl. 26: 4; Akurgal, Kunst Anatoliens, 191, fig. 150; Anat. Civ. 2, 19, B.26; Land of Civilizations, no. 193, color plate), although comparison with the sphinx (or siren?) on the Berlin ivory allows a local origin. Another small ivory relief showing a winged potnia theron holding lions (Istanbul; height: 3.5 cm.; Hogarth, 166, no. 35, pl. 26:6) is entirely Greek, and, judging from the long chiton with folds (although fragmentary), probably Ionian.

The fine series of animal ivory carvings are purely Greek in style. A carefully detailed sitting sphinx (Istanbul 2599; height: 4.5 cm.; Hogarth, 163, no. 22, pl. 21: 4 and 23: 1; Akurgal, Kunst Anatoliens, 194f., fig. 153-154; Anat. Civ. 2, 20, B.29; Barnett, Ancient Ivories, pl. 60b) [FIG. 221] is an early Ionian example. Akurgal has reasonably compared the head of the sphinx with the head of an early sixth century bronze kouros from Samos (Akurgal, Kunst Anatoliens, 195 n. 49; Buschor, AS, 9, fig. 5, 7-8, cf. above [FIG. 136]). The ivory has a groove below the

plinth and was probably an attachment.

A running lion (Istanbul; height: 3.5 cm., length: 8 cm.; Hogarth, 162f., no. 21, pl. 21: 3 and 25: 12; Akurgal, Kunst Anatoliens, 194, fig. 151; Gabelmann, 36, no. 20; Barnett, Ancient Ivories, pl. 58e-f) surely served as an attachment, for it has a hole in the chest and a bronze pin in the top of the head. Its legs are in an unnatural position, and the pose is close to bronze lions that decorated the stands and handles of Peloponnesian and perhaps East Greek kraters in the first half of the sixth century (cf. the Vix krater and the Samian example, "Bronzes", above). Another roaring lion from the Artemision, this time striding, is finely modelled with careful use of the ivory's grain and elaborate stylization of the mane in a series of flame-like locks (Istanbul 2585; height: 9 cm., length: 11.5 cm.; Hogarth, 162, no. 20, pl. 21: 1 and 23: 3; Akurgal, Kunst Anatoliens, 194, fig. 152; Gabelmann, 36, 39, no. 21; Anat. Civ. 2, 19, B.27; Land of Civilizations, no. 194, color plate; Barnett, Ancient Ivories, pl. 59d). The type of lion, derived from Neo-Hittite types (cf. Akurgal and Gabelmann), became typically Ionian by the late seventh century. Another ivory lion, smaller and not as carefully carved but close in style, especially in the details of the mane and modelling of the body, was found in the temple of Athena at Old Smyrna (cf. below) [FIG. 231]. The Ephesos example is carved in the round, but the right side is not entirely finished and is slightly flat, indicating it was meant to be seen only from

the left side, probably as a high relief decoration. Other ivory lions from North Syria are known to have decorated furniture, and one example reached Greek Thasos (cf. F. Salviat, BCH 86, 1962, 95-116), perhaps the sort of object that inspired the Ionian work. One further attachment, which was discussed above with the Samian and Thasian examples, is the horse protome with circular base. A fragmentary horse head (Hogarth, 165, no. 28, pl. 26: 10) may be from a similar work.

Recently griffin head attachments in ivory have come to light, although all are somewhat different in style. One example was found at Ephesos (Bammer, fig. 99) [FIG. 222] and another at Erythrai (Izmir Museum; unpublished, but illustrated in Akurgal, Alt-Smyrna 1, pl. 124c) [FIG. 70]. A third example without provenience is in Paris (Louvre MN 1363; R. Stucky, AK 28, 1985, 31, no. 42, pl. 11) [FIG. 223]. They may have ornamented small vessels in the manner of the large bronze griffin protomes that decorated cauldrons. Several ivory duck heads (Hogarth, 164f., no. 30-32, pl. 25: 7, 10, 11), one with inlaid amber eyes, were found at Ephesos and must also have ornamented vessels or utensils.

A number of small ivory and wood (?) hawks (Hogarth, 161f., no. 12-19, pl. 25: 1-6, 8-9), including two more on poles like that attached to the kore, were discovered, again demonstrating the popularity of hawks as cult votives. Their function is unknown, and none seems to have been used

as a pendant, like the faience hawk pendants found at many sites (V. Webb, Archaic Greek Faience, 94ff., 105ff.), the silver hawk pendants (cf. "Jewelry: Pendants", below), or a Phrygian hawk-seal in ivory from Gordion (R.S. Young, AJA 59, 1955, 5, pl. 2, fig. 9, from a late sixth century context), but similar examples are also known in terracotta and bronze (cf. "Bronzes", above). Another Ionian ivory hawk much like the Ephesos examples but somewhat larger and more finely engraved was found at Old Smyrna (Akurgal, Alt-Smyrna 1, 102, pl. 135c-d) [FIG. 224]. The treatment of the feathers is the same as on the breast of the sphinx from Ephesos, and the two pieces are close enough to be from the same, probably Ephesian, workshop. An ivory hawk similar to those from Ephesos, and again not a pendant, was also found at Erythrai (Izmir Museum 5874; unpublished, but pictured in Akurgal, Alt-Smyrna 1, pl. 124c, fourth from right) [FIG. 70]. Its head is turned to the left, a pose seen on a bronze hawk clutching a hare from Ephesos (Hogarth, 146, pl. 15: 14, cf. "Bronzes", above).

There are three examples of recumbent ivory animals that served as pendants or decorative attachments. The first is a ram (Hogarth, 164, no. 25, pl. 26: 1; plate numbering incorrect in text), which has very close parallels in mid-seventh century Peloponnesian work and may very well be an import. The Peloponnesian examples, from Sparta (cf. Artemis Orthia, pl. 148), Perachora, and the Argive Heraion, as well as from other sites, have been discussed by Boardman (Island Gems, 150f.; Tocra 2, 80, 83, F 150, added to a

bronze fibula at a later date?) and Marangou (*op. cit.*, 112ff., 257 n. 672, no. 51, fig. 90a) and include various types of animals, including rams, some with seals engraved below. Most are pierced through the belly of the animal, and one from Perachora preserves its iron loop for suspension. The example from Ephesos has traces of a bronze pin or suspension loop. Its small, angular head with palmette engraved on the forehead and large hindquarters are like those of the Peloponnesian examples and uncharacteristic of other East Greek recumbent rams (in bronze and precious metal, cf. "Bronzes", above). Another smaller but very similar example, however, has now been found at Erythrai (Izmir Museum 4851; height: 1.5 cm., length: 2.7 cm.; *Anat. Civ.* 2, 27, B.57, not illustrated), but perhaps it too is an import from the Peloponnesos.

The other recumbent animals, bulls (Hogarth, 163f., no. 24, pl. 26: 5, plate numbering incorrect in text; and Ephesos Museum 80/K446, Bammer, fig. 103, missing the head [FIG. 212]), probably by the same hand, are more typical of East Greek varieties, which are best attested in a series of hollow pendants and pin heads in precious metal in the shape of rams and bulls that span the sixth century (cf. "Jewelry: Pendants"). The ivory examples do not seem to have been pendants, since there is no hole drilled through them but only below the plinth for attachment to some other object.

A further group of ivory carvings, best attested at Ephesos, are figurines that served as ornaments for horses' bridles. They have much in common with examples in bronze

widely found in Asia Minor and have already been discussed in connection with them (cf. "Bronzes: Bridle Ornaments"). They are recognizable by the back of the object where two large holes were drilled so as to cross perpendicularly, sometime on a projecting rectangular attachment, which decorated the point where two leather straps crossed. Sometimes a pair of loops are attached instead, serving the same purpose. The use of ivory for horse trappings had a long tradition in the East, and its use for this purpose in Lydia and Karia is mentioned by Homer (Iliad 4, 141-142, cf. Barnett, Ancient Ivories, 58). The ivory example in the shape of a boar found at Ephesos (Hogarth, 164, no. 26, pl. 26: 3; cf. "Bronzes: Bridle Ornaments", above) [FIG. 120] is in Animal Style and probably Scythian work. Other examples are purely East Greek and include an ibex (Hogarth, 163, no. 23, pl. 21: 5, and 176f.) with close parallels in bronze and a recently discovered ram of exceptionally fine quality (Ephesus Museum 39/120/72; height: 5 cm., length: 7 cm.; Bammer, fig. 72, 104 [back]; H. Vetters, Vorl. Grab. 1972, 183, pl. 6b; Anat. Civ. 2, 20, B.28; Land of Civilizations no. 195, color plate) [FIG. 119]. Another fine bridle ornament in bone in the shape of a ram's head was said to have been found in Lydia near present day Manisa (private collection, unpublished) [FIG. 122]. It too is entirely Greek in style, and is particularly close in to East Greek plastic vases (cf. "Bronzes: Bridle Ornaments", above, and also the ivory ram's head of uncertain function from Erythrai, below).

The vessels to which the figurines were attached were not discovered until recently when the orientalizing goddess (no. 3) was found along with its double-bodied fluted bowl. Other ivory bowls have also been found, including one decorated with carved rosettes and handles (Hogarth, 169, no. 7, pl. 27: 7; diam.: 6.8 cm.), a shallow bowl with added handle (Hogarth, 193, pl. 41: 16) [FIG. 225], a round bowl divided into four compartments with a carved rosette below and a lid with engraved patterns (Hogarth, 193, pl. 41: 18-20), and another engraved lid (Ephesos Museum 80/K448; Vorl. Grab. 1980, pl. 3; Bammer, fig. 103, 107; the shape and design of the lids recall earlier Assyrian examples from Nimrud, Barnett, Nimrud Ivories, 194f., pl. 29-31) [FIG. 212]. The vessel with divided compartments may have been for cosmetics and recalls the silver rectangular box similarly divided into four compartments that was found in a Lydian tumulus of the Achaemenid period (New York 68.11.12; D. von Bothmer, Met.Mus.Bull., Summer, 1984, 45, no. 70). Round bowls in wood generally similar to the Ephesos examples have been found at the Heraion of Samos (cf. above). What appears to be a finely carved band handle may have been part of a vessel (Hogarth, 195, pl. 37: 9-11), and crude handles with metal rivets were also found (Hogarth, 195, pl. 39: 1-5). Many appliques and plaques that may have served as inlays, some with engraved patterns, were also found (167, pl. 27: 1; 170, pl. 27: 8; 195f., pl. 40; 42: 1-3, 15, 19-20).

Various types of personal jewelry in ivory were found in large quantities at Ephesos. Spectacle fibulae are common and, with the other East Greek examples, have been discussed above in connection with the finds from Rhodes. Pins are especially well represented (Hogarth lists 160 examples) with many types of pin heads, most of which are closely paralleled in examples in precious metal from Ephesos (cf. "Jewelry: Pins", below), strongly suggesting that the ivories were locally made [FIG. 226]. Some elaborate pin heads are carved separately and added to the shaft of the pin, and others are carved together with the shaft. The pin heads may be of blossom or pomegranate shape, some with engraved patterns (Hogarth, 187, pl. 33: 1-8, 10, 11, 13, 14, 22); globular (Hogarth, 188, pl. 33: 15, 18, 27-30, 33; cf. the ivory globes, surely pin heads, from the late seventh century burial in the West Necropolis at Samos, above); conical (Hogarth, 188, pl. 33: 9, 31, 32; 34: 13-18, 20-27); cylindrical, or "basket type" (Hogarth, 188, pl. 34: 2-9); flat discs, either small and simple (Hogarth, 189, pl. 34: 33-38) or large with patterns engraved or carved in relief (Hogarth, 189, pl. 33: 16, 17, 19, 20, 23-26; Bammer, fig. 48, 67; cf. one example from Kameiros, Hogarth, 181, no. 23, pl. 31: 5, and another from Sardis, below). Larger discs with similar patterns, including rosettes, stars, palmettes and cup spirals, may have been pin heads but appear to have served another function, perhaps simply as spindle whorls (Hogarth, 193f., pl. 38: 1-14; 39: 10). Two examples of ivories in the shape of

double-axes (Hogarth, 170, no. 48-49, fig. 31-32) may also be pin heads in view of the gold example from Ephesos (Hogarth, 103, pl. 5: 34), and ivory pins of similar shape were found at the Artemis Orthia sanctuary at Sparta (Artemis Orthia, 238, pl. 163: 6).

The other most numerous item of jewelry, with over 100 examples found, is the so-called astragal (Hogarth, 190ff., pl. 36: 1-32, 35-39) [FIG. 227]. It is composed of two joined spool-like cylinders with concave faces, one side of which is often engraved with simple florals or sometimes inlaid with amber. Sometimes there is a moulding between the two spools decorated with an engraved palmette. No comparable examples in precious metal, and only one in bronze, were found at Ephesos, although a pair in gold which appear closely linked stylistically to Ephesian work, is in a private collection. They are most likely earstuds, or alternatively hair ornaments (cf. the discussion in "Jewelry: Earstuds"). Other varieties of earstuds in ivory were also found at Ephesos. They include "napkin ring" types (Hogarth, 189, pl. 35: 1-5) and concave discs with engraved rosette and maeander patterns or inlays (Hogarth, 192, pl. 35: 15-20, 22, 23), both types with parallels in metal or rock crystal. A single ivory knob with relief rosette (196, pl. 42: 7) is probably also an earstud.

Ivory pendants are also represented, although they are not plentiful. The most distinctive type in ivory (Hogarth lists 31 examples), which is not matched in precious metal,

is relatively large (c. 5-6 cm.) and club-shaped, decorated with turned, moulded rings (Hogarth, 189, pl. 35: 6-14) [FIG. 228]. There are several pendants that have a peculiar vase-like shape, also not seen in precious metal examples (Hogarth, 189, pl. 37: 13-15). One example of a foot pendant was also found (Hogarth, 196, pl. 42: 10-11; cf. the examples in precious metal, "Jewelry", below). Recent excavations have found a large ivory pendant shaped like a pomegranate (Bammer, fig. 100, 103) and another in the shape of a frontally viewed lion's head (Bammer, fig. 71, 103; OJh 56, 1985, 44, fig. 9) [FIG. 212]. Bammer compared the lion's head pendant to one worn by an Achaemenid ivory male figure (cf. R. Stucky, AK 28, 1985, 8ff., no. 2, pl. 1: 2), and an Eastern parallel is found at Nimrud (Barnett, Nimrud Ivories, 189, L2, pl. 14). The closest comparable example is a pale gold bead in the shape of a lion's head on a unique East Greek bracelet from an unknown site in Asia Minor (cf. "Jewelry: Bracelets", below). Frontal lion's head pendants were also among Archaic jewelry group found at Delphi, which are probably of East Greek manufacture (cf. ECH 63, 1939, pl. 33) [FIG. 239]. No simple ivory beads for necklaces were found at Ephesos, and the only example of round ivory beads from East Greece are on the same East Greek bracelet just cited. A single ivory comb with simple engraved decoration was found (Hogarth, 169, no. 47, pl. 27: 10) but no further types of jewelry.

Little else in ivory is known, or at least identifiable, except for two types of objects. The first

are musical instruments, of which only flutes are identifiable (Hogarth, 194, pl. 37: 12, 16; cf. the examples from Lindos, above). The second are small wheels, three of which were found, although only one is intact (Hogarth, 168, no. 42-44, pl. 27: 2, 9, 11). One has eight spokes and the other seven, and the diameter of the intact specimen is 5 cm. They are probably strictly votive, and votive wheels in bronze are well known in East Greece (cf. "Bronzes: Votives", above), as they are elsewhere in Greece.

Erythrai:

The recent Turkish excavations at Erythrai, which have not yet been published in much detail, have produced a surprising amount of fine quality votive material from the temple of Athena Polias dating from the seventh and sixth centuries. A number of ivories were found, including the Ephesian kore, hawk, and griffin head, all mentioned above, a ram's head attachment (Izmir Museum; unpublished, but pictured in Akurgal, Alt-Smyrna 1, pl. 124c, second from right) [FIG. 70], and the recumbent ram pendant, which is perhaps Peloponnesian, also discussed above. Except for the ram pendant, these ivories all seem to date from the first half of the sixth century. There is also a plaque with "sacred tree" motif (Izmir Museum 5869; height: 11 cm.; Anat. Civ. 2, 25, B.50; Land of Civilizations, no. 200, color plate), which is probably an earlier Phoenician import, and examples of spectacle fibulae (unpublished, but illustrated in Akurgal, Alt-Smyrna 1, pl. 124c; the design

is closest to Hogarth, 187, pl. 32: 1, from the Basis) [FIG. 70].

In addition to these finds, there are several ivories that belong to distinctive, possibly local, schools especially notable for their early date. The first example is a standing kore (Izmir Museum 5276; height: 10 cm.; Anat. Civ. 2, 25, B.53; Land of Civilizations, no. 197, color plate) [FIG. 229] with a long tenon above the head much like the tenon on the head of the "Megabyzos" from Ephesos, suggesting a similar function, perhaps as a handle. In style, however, the figure is entirely unlike the ivories from Ephesos. She seems to be copied from Daedalic works, as can be seen from the costume, a long, straight dress with belt, her triangular face with three tresses on either side, and the flat, frontal modelling. The facial features, however, are very crude, the eyes oddly shaped and the nose very broad, and there is little detailing. She may be a local work dependent on Daedalic prototypes, perhaps copied from terracotta plaques, and there is some similarity to the Daedalic wood kore (no. 6) and ivory warrior (no. 11) from Samos, which may also be local copies of the more accomplished Daedalic work from Crete and the Peloponnesos. The stratigraphy at Erythrai has not yet been published, but Akurgal's date for this work in the first quarter of the seventh century seems impossibly high. A date late in the century is more likely.

Related to this work, but of considerably more accomplished style, are three female heads, all perhaps by the same hand (Izmir Museum 5880; height: 2.5 cm.; Akurgal, Alt-Smyrna 1, pl. 124c, left head; Anat. Civ. 2, 26, B.54, not illustrated. Izmir Museum 5280; height: 3 cm.; Land of Civilizations, no. 199, color plate; Akurgal, Alt-Smyrna 1, pl. 124c, middle head; Anat. Civ. 2, 26, B.55, not illustrated. Izmir Museum no.?; Akurgal, Alt-Smyrna 1, pl. 124c, far right) [FIG. 230]. They all show a fairly well-modelled triangular face with broad, rounded chin, broad lips and nose, and outlined diamond-shaped eyes with arched eyebrows. The top of the head is flat with no hair shown but perhaps a short headdress. In two cases the side tresses of hair are shown by engraved vertical lines and in the other by horizontal divisions in the Daedalic manner. The heads are rather flat, but the hair styles on the backs are also carefully engraved. Thus they appear not to serve the same purpose as the seals carved in the shape of female heads from Kameiros and Sparta. There are holes on the top of the head and in the neck for attachment, but to what is unknown. The Erythrai heads too appear to be derived from Daedalic models, and are especially close to the heads of the Zeus and Hera wood plaque from Samos (no. 4, above), probably a Cretan or Peloponnesian work. It is difficult to localize the workshop, but they must be late seventh century works imported from a Daedalic center, which is probable in view of their accomplished style, or alternatively from a local school copying Daedalic types. Literary sources say

that the wood cult statue of Athena Polias at Erythrai was made by the Athenian sculptor Endoios, a pupil of Daidalos, who may have worked in the Daedalic style (Pausanias 1, 26, 4; 7, 5, 9; in which case he may have been the father or grandfather of the Endoios who made the seated marble Athena at Athens, Acropolis 625).

Old Smyrna:

Excavations in the temple of Athena in Old Smyrna, which was destroyed by the Lydian king Alyattes at the end of the seventh century, produced only two Ionian ivories and an ivory head of Phoenician work (Izmir Museum; Akurgal, Alt-Smyrna 1, 101f., pl. 136a-b). An ivory lion from the temple's destruction level of the late seventh century (stolen from the Izmir Museum in 1955; Akurgal, Alt-Smyrna 1, 102, pl. 133; Kunst Anatoliens, 186f., fig. 140-142; Gabelmann, 40, 58, no. 49, pl. 32: 2) [FIG. 231] is of an Assyrianizing type that is typically East Greek of the late seventh and early sixth centuries, characterized by the square head, folded ears, and flame-like stylization of the mane. It is especially notable for being so close in style to the somewhat larger and finer ivory lion from Ephesos (cf. above). Gabelmann has seen the Ephesos and Smyrna lions as being of different types, the former derived from Neo-Hittite examples and the latter from Assyrian, but despite differences in the treatment of the head, they have much in common and are both distinctively Ionian. The other Greek ivory is the fine hawk, which may be Ephesian, and is

discussed above (Akurgal, Alt-Smyrna 1, 102, pl. 135c-d) [FIG. 224]. Akurgal dated it c. 600, apparently on stylistic grounds, but does not discuss in what context it was found.

Klazomenai:

A large (29.5 cm.) wood statuette said to have been found at Klazomenai is now in Munich (Munich 15005; R. Lullies, AA 1938, 425, no. 3, fig. 3-4; Richter, Handbook, 196, fig. 274) [FIG. 232]. It is of a bearded man apparently with an Ionian hairstyle--long hair brushed back over the ears and falling down in the back in horizontally marked tresses. The piece is in poor condition, and little can be said about the style, but it should date from around the mid-sixth century.

Lydia and Phrygia:

Although these areas are not Greek, their cultures were permeated by Greek influence in the Archaic period, and several sites have produced ivories comparable to Greek examples. A tradition of ivory carving is attested by Homer (Iliad 4, 141-142; cf. Barnett, JHS 68, 1948, 18; Ancient Ivories, 58 n. 32; G.M.A. Hanfmann, Sardis from Prehistoric to Roman Times, 11f.), who speaks of Lydian and Karian women staining ivory to make horses' cheek-pieces. At Gordion the earliest ivories are Phoenician imports (R.S. Young, AJA 66, 1962, 166f., pl. 46-47, fig. 24-25), but wood carvings in a distinctive local style were being made by the beginning of

the seventh century (cf. Akurgal, Kunst Anatoliens, 103ff., fig. 66; E. Kohler in M. Mellink, ed., Dark Ages and Nomads, 1964, 58-62, pl. 17-20). Elaborate wood furniture was also made and has survived in the late eighth and seventh century tumuli, and Herodotos (1, 14) speaks of a wooden throne dedicated at Delphi by King Midas. However, except for the imported Phoenician work and a single globular pendant (R.S. Young, Gordion 1, 218, Tumulus W, mid-eighth century?), no ivory work is attested so early. Only some ivory stamp seals derived from Neo-Hittite shapes, one from Ephesos (Hogarth, 167, no. 39, pl. 27: 3; Barnett, Ancient Ivories, 58, pl. 61c) and the other from Bogazkoy (cf. R. Boehmer, ZfA 67, 1977, 78ff. and ZfA 68, 1978, 284ff.; Barnett, Ancient Ivories, 58, pl. 61a-b), appear to be Phrygian works of the late seventh century. A subsequent series of Phrygian ivories of the sixth century appears dependent on East Greek types. No ivories of earlier than sixth century date have been found in Lydia. The little that has been found dates from the the mid-sixth century and later and, with the exception of some Animal Style chapes in bone, is very Greek in style. Although now difficult to identify, Lydian ivory work continued into the Achaemenid period, as is attested by inscriptions from Susa mentioning ivory workers from Sardis (cf. Barnett, Ancient Ivories, 42), and the ivory statuettes from the orientalizing workshop at Ephesos have successors in some Achaemenid ivories of the early fifth century (cf. R. Stucky, AK 28, 1985, 7ff.), which could be Lydian.

At Gordion two examples of female statuettes very much like those from the orientalizing workshop at Ephesos were found (cf. above). One, with cylindrical trunk and wearing a long dress and headdress like the Ephesian examples, was found in fifth century fill not useful for dating (R.S. Young, AJA 70, 1966, 269, pl. 74, fig. 5) [FIG. 233]. The other, missing its head, was found in the mid-sixth century Tumulus II (G. and A. Koerte, Gordion, 1904, 117, no. 24, fig. 96), along with other ivory fragments, including the head of a bird (a hawk?; ibid., 117, no. 25) and numerous fragments of ivory appliques in the form of kymation, maeanders, and rosettes (ibid., 110ff., fig. 87-91). Similar ivory appliques were found in Tumulus V, also of mid-sixth century date (ibid., 144, no. 8). Another cremation burial of similar date contained gold jewelry, a silver mirror with traces of an ivory handle, and round ivory appliques that once had inlays in the shape of palmettes (R.S. Young, UPennMusBull 16,1, 1951, 191, pl. 9: 1-2; cf. "Jewelry", below) [FIG. 279]. Other ivories of Phrygian style, including three relief plaques (R.S. Young, AJA 64, 1960, 240, pl. 60, fig. 25; a helmeted rider, a deer, and a griffin with a fish), a comb with carved reliefs (R.S. Young, AJA 60, 1956, 257, pl. 86, fig. 23-24), a stamp seal with a lion handle (R.S. Young, AJA 70, 1966, 269, pl. 74, fig. 6), and another stamp seal in the shape of a hawk (R.S. Young, AJA 59, 1955, 5, pl. 2, fig. 9) [FIG. 234], all come from Persian period contexts of the late sixth century and show strong Greek influence.

Very little ivory was found at Sardis, even in the rich tombs of the Achaemenid period. The one important find is an exceptionally fine ivory head found in a looted chamber tomb that cannot be closely dated but is probably late sixth century (Istanbul 4657; height: 4cm.; H.C. Butler, Sardis 1, 1922, 140f., fig. 156; C.D. Curtis, Sardis 13, 1925, no. 87, pl. 8: 8-10; Akurgal, Kunst Anatoliens, 156f., color pl. 7a-b; Anat. Civ. 2, 24, B.49; Barnett, Ancient Ivories, 58, pl. 56a-c; G.M.A. Hanfmann, Sardis from Prehistoric to Roman Times, 12, viewed the work as Phoenician) [FIG. 235]. The head appears to be part of a composite statuette, where the body and hair were of a different material. Comparable works are seen in the ivory kouros head from Samos (above, no. 15) and the East Greek, perhaps Lydian, heads from Delphi (cf. below), where the hair is added in gold. The Sardis head has finely modelled, delicate feature, a long, thin nose, a pinched, smiling mouth, a dimpled chin, and elongated eyes. The facial features are best matched on the fine series of electrum coins of Phokaia of the late sixth century (discussed by Langlotz, Studien, 34ff., pl. 2: 15-16, 3: 1-9; cf. "Coinage: Phokaia", below), which reflects a style perhaps originating in North Ionia but not confined to that area. The ivory also has crescent-shaped marks engraved in her cheeks, which Barnett speculated may indicate branding in the service of a moon-god (Barnett, Ancient Ivories, 58; JHS 68, 1948, 18 n. 108), although there is nothing comparable known from Lydia. She wears

large, crescent-shaped earrings of a type that becomes popular in the Achaemenid period (cf. "Jewelry: Earrings", below). Although the style is entirely Greek, the crescent marks and earrings point to a local origin, but Greeks working in Lydia are to be expected (cf. "Jewelry", below).

Recent excavations at Sardis have uncovered a row of houses that were destroyed most likely during the Persian invasion of 547 (section MMS-I; cf. N. Ramage, AJA 90, 1986, 419-424). In one section, along with pottery and other objects, was found an ivory disc carved with a central rosette, circled by a patterned border, and pierced through the middle (BI 85.5/9134; N. Ramage, AJA 90, 1986, 421) [FIG. 118]. Its has close parallels in the ivory discs from Ephesos (Hogarth, 189, pl. 33: 16, 19, 20, 23-26; and the larger examples, 193f., pl. 38: 1-14) and is especially close to one example (Hogarth, 189, pl. 33: 26) that probably served as a pin head. The function of the other examples, especially the larger ones, is unclear. Relations between Sardis and Ephesos were very close, and this example may have been made at Ephesos. Other bits of jewelry have also been found, such as foot pendants (cf. Hanfmann, op. cit., 12; cf. the foot pendant from Ephesos). Bronze mirrors with ivory handles, now lost, were found in Achaemenid period tombs (cf. Hanfmann, op. cit., 12; and "Bronzes: Mirrors", above).

Also from Lydian contexts at Sardis are several bone chapes carved in Animal Style (A. Ramage, forthcoming) [FIG. 236]. One example is unfinished and suggests local

manufacture, perhaps by wandering Scythians who settled in Sardis in the early sixth century, as Herodotos (1, 73) relates (cf. "Bronzes: Bridle Ornaments", above). Another Animal Style work, the ivory bridle ornament in the shape of a boar, was found at Ephesos (cf. above) and could have been made in Lydia. Another bridle ornament, the bone ram's head discussed above ("Bronzes: Bridle Ornaments") [FIG. 122], is said to be from Manisa, in Lydian territory. It is Greek in style, but may have been made in Lydia.

Achaemenid period tumuli elsewhere in Lydia have not contained ivory work except in one instance. The tumuli at Ikiztepe near Usak produced four small (c. 3 cm. in length) ivory lions (Usak Museum, unpublished; two are fragmentary). They are recumbent and very elongated, and their carving is very simple, although attention is given to the heads. Three face right and one left, and they are flat on the back with holes drilled in the bottom. They clearly ornamented some vessel or box and were meant to be seen only from one side. Surprisingly, the only close parallels--and they are strikingly similar in both style and function--come from the Regolini-Galassi tomb in Cerveteri (L. Paroti, La Tomba Regolini-Galassi, 1947, 229, no. 174, pl. 19, and the two smaller examples, no. 175; Y. Huls, Ivoires d'Etrurie, 33, 137, no. 4-5, pl. 3, fig. 3-5, as early orientalizing). The Regolini-Galassi tomb contained a mid-seventh century burial rich in precious objects of gold, bronze, and ivory, much of which was imported, but it was also reused at a later date.

Neither the date of the lions nor to what they were attached can be determined with certainty. The Ikiztepe tumuli must be of late sixth or early fifth century date, but no vessels were found that the lions could have ornamented.

Delphi:

A large amount of Archaic votive material was discovered under the Sacred Way at Delphi, including many ivories, some of which have been seen as East Greek. The earliest example is a highly orientalizing work dating apparently from around the mid-seventh century and depicting a standing male figure holding a spear in his right hand and a lion clutched at his left side (Delphi Museum; height: 24 cm.; P. Amandry, Syria 24, 1947, 149-174; Akurgal, Kunst Anatoliens, 188, fig. 143-144, with newly identified base with maeander pattern, and AJA 66, 1962, 375; Barnett, JHS 68, 1948, 16f., and Ancient Ivories, 58, n. 38, pl. 57a-b, as perhaps Rhodian; H. Cahn, Mus. Helv. 4, 1952, 185ff.; K. Schefold, Festschrift G. von Luecken, 1968, 769ff., and AA 1970, 574-584, as late eighth century Ionian; H.-V. Herrmann, Festschrift E. Homann-Wedeking, 42, pl. 6, as early seventh century; Marangou, op. cit., 197f.; Gabelmann, 37f., no. 22, as third quarter of the seventh century; Boardman, Greek Sculpture. The Archaic Period, 16, fig. 52). The Eastern traits are very strong, as can be seen in the conventional Assyrian pose, the Syrian details of hairstyle and stylization of the lion, and the base derived from Loftus Group "fly-whisk" handles (cf. the fragmentary

examples with standing figure accompanied by a small lion, Barnett, Nimrud Ivories, 210, S 251-252, pl. 77), but it is most probably a Greek work. Although usually seen as Ionian or perhaps even Lydian, connections with East Greek work are not clear and appear to depend on the belief that East Greece must have acted as the intermediary between Syria and Greece, which need not have been the case. As with the Late Geometric Athenian ivories, it may be an instance of an immigrant Easterner living in Greece.

Other ivories of later date have similarly been attributed to Ionia with little justification. They include the numerous cut-out reliefs in fine early sixth century style depicting mythological scenes, which must have ornamented objects like the famous chest of Kypselos described by Pausanias (cf. P. Amandry, BCH 63, 1939, 103ff., and Marangou, op. cit., 192, both as Ionian; Barnett, Ancient Ivories, 60, pl. 63a-d, as probably Corinthian; K. Schefold, Myth and Legend in Early Greek Art, 74f., pl. 64b, as Corinthian). There is nothing in their style or costume to remind one of Ionian work, while there are good parallels in the ivory reliefs from Sparta. They are certainly Peloponnesian, most likely Corinthian, works.

A further find at Delphi, however, is almost certainly East Greek in origin. A pair of two-thirds lifesize chryselephantine statues dating from the mid-sixth century were discovered along with the gold jewelry and plaques that must have ornamented their garments (P. Amandry, BCH 63, 1939, 86-119; and Chios, 228-232, fig. 20; Boardman, Greek

Sculpture. The Archaic Period, 77, fig. 127) [FIG. 237-239, the ivories heavily restored]. The heads are fragmentary, but it is clear that the eyes, eyelashes and eyebrows were inlaid and that the hair was added in gold, much of which survives. The faces can be regarded as Ionian and are characteristically round with fleshy features and elongated, slightly slanting eyes. Smaller ivory heads in the same technique and close in style were found at Samos and Sardis (cf. above). Fragments of the arms and feet, which wear carefully carved sandals, were also found. Aside from the style of the faces, the jewelry speaks strongly for an Ionian origin. Pins and embossed garment plaques at Delphi are closely paralleled in examples from Ephesos (cf. "Jewelry", below). The group must have been of great value, and in view of the strong Ionian elements, Amandry has suggested that King Kroisos himself, well known to have been a benefactor of Delphi, was responsible for the dedication and that perhaps he and his wife are represented. The specifically Ephesian traits in the work, and the close connections between Ephesos and Lydia, speak in favor of Amandry's theory.

JEWELRY AND WORKS IN PRECIOUS METAL

Geometric Jewelry:

Nearly all known jewelry of Geometric type has come from Rhodes, Kos, and two sites in Karia, Iasos and Assarlik, which face Rhodes on the Anatolian mainland and were probably Greek settlements. Nothing of Geometric style has come from Ionia, and although a few objects from Ephesos display Geometric motifs, they are clearly of later style and are best considered with the "orientalizing" goldwork. The Geometric material is not plentiful, but there is enough to observe connections and development on Rhodes.

The earliest material, dating from the Protogeometric, Early Geometric, and Middle Geometric periods, has been found at Kos and Karia, but not yet on Rhodes. A number of Protogeometric and Early Geometric tombs in the Serraglio cemetery on Kos contained, along with other objects, bronze fibulae, pins, faience beads, and pairs of small gold spirals, apparently early examples of the spiral earrings that became very popular on Rhodes and elsewhere by the end of the eighth and throughout the seventh centuries (cf. L. Morricone, Annuario 40, 1978; Serraglio Tombs 6, 10, 22, 47, 49, and 67). Similar gold spirals were found with Protogeometric pottery in Tomb B at Assarlik (BMCJ, no. 1214-1215; JHS 8, 1887, 68, fig. 7; V.R.d'A. Desborough, Protogeometric Pottery, 220). No precious metal was found at Iasos, but elaborate bronze jewelry, notably large spiral arm bands and fibulae, were found with Protgeometric pottery (Annuario 31-32, 1969-70, 462-473, esp. 465, fig. 12a for the armbands from Tomb 1; Coldstream, Geometric Greece, 97).

Another bronze bracelet was found in a Middle Geometric tomb on Kos (Pizzoli, Tomb 6; Morricone, loc. cit., 310f, fig. 665).

Most of the later Geometric material is from Rhodes except for the signifcant finds from the Middle Geometric Tomb C at Assarlik (JHS 8, 1887, 71; Desborough, op. cit., 219; Coldstream, GGP, 268f.) [FIG. 240]. The jewelry consists of a disc pendant (BMCJ, no. 1212), a plaque with zigzag patterns (BMCJ, no. 1213)--both of which may have been derived from Cypriot types (cf. A. Pierides, Jewellery in the Cyprus Museum, pl. 3: 1-8; and R. Laffineur, AA 1975, 305-312, on the derivation from Eastern types) and continued in Late Geometric varieties on Rhodes--and a ring of twisted gold wire (BMCJ, no. 1216).

The Rhodian gold jewelry falls into the following categories: diadems and bands, disc and other pendants, earrings, finger rings, bracelets, pins (only in iron and bronze), and beads (glass). All belong to the Late Geometric period except the first diadem from Massari-Mallona. Reichel, Higgins, Coldstream, and Laffineur have discussed most of the material.

Diadems and bands:

1. Massari-Mallona. Copenhagen 7582. Fish bone pattern. Reichel, 54 and n. 51.
2. Kameiros, Tomb 82. Rhodes. Maeander and zigzag patterns, two examples. ClRh 6/7, 193, fig. 239; Reichel, no. 51-52; Coldstream, Geometric Greece, 96,

250, "c. 750"; Higgins, 112.

3. Kameiros? London, BMCJ, no. 1158. Ornate compass-drawn rosette, pricked triangles, maeanders, repeated three times. Reichel, no. 53; P. Jacobsthal, JdI 44, 1929, 214, fig. 19; Schweitzer, Geometric Greek Art, 192, n.56; Coldstream, Geometric Greece, 250f., "end of the eighth century"; [FIG. 241].

4. Kos, St. Pantaleo, Tomb I. Maeanders and pricked triangles, 15.7 x 5.3 cm. L. Morricone, Annuario 40, 1978, 355f., fig. 772f.; Coldstream, GGP, 288, pl. 63b, for the pottery; [FIG. 242].

5. Kameiros, Grave 201. Rhodes 12504 a, b. Bands for the mouth; griffins, rosettes in circles, cross-hatched dividing bands; two examples. ClRh 4, 350, fig. 388; Reichel, no. 55a-b; D. Ohly, Griechische Goldbleche, 1953, 70, n. 11, fig. 38; Coldstream, Geometric Greece, 250, "c. 680-670"; Higgins, 112.

6. Kameiros. London, BMCJ, no. 1163. Type as above. Reichel, no. 55c.

7. Kameiros. Paris, Louvre 1214, 1205, 1229. Type as above. Reichel, no. 55d-f.

8. Kameiros, "Tomb P 3". London, BMCJ, no. 1161-1162. Compass-drawn guilloche and dotted border.

9. Ialysos, Grave 98. Rhodes. Undecorated, long band with perforated ends. ClRh 3, 129, fig. 121; Laffineur, 159 n. 5.

10. Exochi, Grave Z. Copenhagen. Square plaque with applied filigree "maeander hook" pattern, perforations

in corners. Exochi, Z 47; [FIG. 243].

11. Exochi, Grave Z. Zigzags and dots. Exochi, Z 48; [FIG. 243].

12. Exochi, Grave Z. Diamonds and striated lines. Exochi, Z 49 [FIG. 244].

13. Exochi, Grave Z. Figure eight cables, central medallion, lion? Exochi, Z 50; [FIG. 244].

14. Exochi, Grave Z. Central medallion between two chariots, animals and birds in field. Exochi, Z 51; Coldstream, Geometric Greece, 251; [FIG. 245].

15. Exochi, Grave Z. Charioteer hunting rows of goats, stags, lions, and birds. Exochi, Z 52-53; Coldstream, Geometric Greece, 251f.; [FIG. 245].

16. Exochi, Grave Z. Six fragments. Exochi, Z 54.

The specimen from Massari-Mallona is different in style from the other Rhodian bands, having what Reichel described as a fish bone pattern. Perhaps it imitates an actual leaf diadem, although such types are not attested in the Geometric and Archaic periods. It was found with Middle Geometric vases (CVA Copenhagen, pl. 65, 3-8; Coldstream, GGP 267, 418; Exochi, 128, n. 193) and should date from the first half of the eighth century, thus the earliest example from Rhodes. A Middle Geometric grave on Kos was said to contain a small, rectangular band with geometric patterns, but it is not illustrated (L. Morricone, Annuario 40, 1978, 372; Ammaniu Grave A).

Coldstream has already noted the chronological boundaries for the other gold bands. Kameiros, Tomb 82 is the earliest context and is datable by pottery to the mid-eighth century. The designs on the band (no. 2) are linear but well made. Coldstream placed band no. 3 later in the century, although the designs are similar to no. 2. A very similar diadem (no. 4) was found on Kos with pottery Coldstream dated "midway through Rhodian LG". It was most likely made on Rhodes. Kameiros, Grave 201 contained late Late Geometric pottery which Coldstream dated c. 680-670. The gold band in this grave (no. 5) admits a figural type--a griffin--and is known in several extant examples, all from Kameiros (no. 6-7). Coldstream believed these to be the latest Geometric examples. Two simple bands (no. 8), one with guilloche pattern, were found by Biliotti in a cremation burial (cf. Gates, 54). There was no other associated material found except for a gold ring of Geometric type (BMCJ, no. 1199; cf. below), and it is difficult to establish a date, although a Late Geometric one is probable. No. 9, from pithos burial 98 at Ialysos, has no decoration, and the only associated finds were silver bracelets and gold spiral earrings. Any date in the seventh century is possible, and perhaps the second half of the century is preferable.

The Exochi bands are from the Late Geometric Grave Z belonging to the second quarter of the seventh century (perhaps as late as 650, cf. J. Boardman, AJA 63, 1959, 398). In addition to the usual Geometric motifs (no. 11-

12), elaborate figural scenes are admitted (no. 14-15). The band with hatched cables (no. 13) resembles a small strip from a mid-seventh century tomb on Thera (Tomb 89, AM 28, 1903, 228f., pl. 6: 13-14). The plaque with added filigree decoration (no. 10), a technique not otherwise attested on Rhodes, recalls the Attic Late Geometric jewelry from Eleusis (Coldstream, Geometric Greece, 125, fig. 39).

Discs:

Discs decorated with a star-like pattern of pricked triangles, or with similar designs, are well attested in Late Geometric contexts on Rhodes at Ialysos, Kameiros, Lindos, and Exochi [FIG. 243], and occur in gold, silver, and bronze (all examples have been recently studied by R. Laffineur, AA 1975, 305-312 and cf. Laffineur, 153f.; also Reichel, no. 57-61; Higgins, 114; and L. Weidauer, AK 27, 1984, 3-9, an unconvincing comparison to the motif on an electrum coin, cf. "Coinage", below). They were probably sewn on to garments. A prototype of the Rhodian series is the mid-eighth century gold example from Tomb C at Assarlik (cf. above), and the type appears to be derived from Cypriot and Syrian examples (cf. Laffineur, loc. cit.). The Ialysos example can be dated c. 730-710 (Grave 56, ClRh 3, 94-7, fig. 90; Coldstream, Geometric Greece, 250; GGP, 274). Exochi provides seventh century examples. A gold disc from Lindos now in Istanbul is interesting for the frieze of quadrupeds circling the central boss (Lindos 1, no. 247, not illustrated; Laffineur, loc. cit., 307), while the Berlin

example (Berlin 1, 27, pl. 7: 7) [FIG. 246] admits a frieze of birds.

Also best considered here is a gold crescent shaped pendant with punched dot decoration said to be from Kameiros and now in Berlin (Berlin 1, 27, pl. 7: 5) [FIG. 247]. The simple decoration and technique link it to the discs and diadems.

Earrings:

Spiral earrings, whose immediate precursors appear to be the simple examples from Protogeometric and Early Geometric Kos, became especially popular in the Late Geometric period and continued to be widely used throughout the seventh century. The varieties have been discussed in detail by Laffineur (Laffineur, 143f., and chart on 188-9), and will be discussed with the Archaic jewelry, below. The Late Geometric examples, a number of which are from datable contexts at Ialysos, are of gold, silver, and bronze and may have either plain or disc terminals. Graves 56, 57 and 58 at Ialysos all contained earrings and are datable by the accompanying pottery to c. 730-710 (Coldstream, Geometric Greece, 250; Higgins, 113; Grave 56, silver, found with a gold disc pendant: ClRh 3, 94ff.; Laffineur, no. 55; Grave 57, gold: ClRh 3, 97ff.; Laffineur, no. 12 and 54; Grave 58, silver with silver rings: ClRh 3, 100ff.; Laffineur, no. 15; also pithos Grave 98, gold, found with the gold diadem [no. 9, above] and large silver bracelets: ClRh 3, 129-30, fig. 121; Grave 107: silver, with bronze fibulae, early seventh

century; ClRh 3, 135f., fig. 128).

Rings:

Broad, flat rings, sometimes with central rib, were in use in Greece since the ninth century, probably copied from Cypriot types (cf. Coldstream, Geometric Greece, 64, fig. 19, from Lefkandi), and gold examples were found in Late Geometric tombs at Corinth (ibid., 174, fig. 57a; Corinth 12, no. 1802-1807). Similar examples were found in Late Geometric graves on Kos (St. Pantaleo, Tomb I; Morricone, loc. cit., 355f., with the gold diadem, above) and Rhodes (Kameiros, Grave P 3; BMCJ, no. 1199, another similar ring from Kameiros, ibid., no. 1200), and in the Middle Geometric grave at Massari-Mallona (Copenhagen 7581; Reichel, 49 n. 51).

Simple finger rings in the form of a plain band, circular in section, are also found in Late Geometric contexts. The type is so simple that it is not otherwise datable and clearly was used throughout history. Most of the examples from the Geometric and Archaic periods are of bronze. Dated finds include silver rings from Late Geometric tombs at Ialysos (Grave 58; ClRh 3, 100f.; Coldstream, Geometric Greece, 250, "c. 730-710"; GGP, 274; Laffineur, 160 n. 6), Kameiros (Macri Langoni, Grave 143, ClRh 4, 271f., fig. 301; Coldstream, GGP, 300, "no later than c. 650"), and Exochi (Grave A, A 33-36=Copenhagen 12426-9; Coldstream, GGP, 275). Bronze rings were found in Grave 40 at Kameiros (ClRh 6/7, 126-7, fig. 139, with fibulae and pins). One silver and several bronze rings were

found in the earliest seventh century levels at Emporio, Chios (Emporio, 211f., no. 242, 245). The large "Izmir region" find of over 200 Late Geometric fibulae also included about 150 bronze and two silver rings (N. Firatli, IAMY 8, 1958, 75). The ring type continued on Rhodes throughout the seventh century. A twisted wire ring of gold was found in the Middle Geometric Tomb C at Assarlik but is not necessarily a finger ring.

Bracelets:

Except for the very early bronze arm bands from Iasos and Kos (cf. above), only a single pair of silver bracelets has been found, these from Ialysos, Grave 98, the pithos burial mentioned above. They are large and form a spiral with overlapping terminals. The date is not certain since there was no associated pottery besides the pithos, but a gold diadem and gold spiral earrings were also found. A late eighth century date seems likely.

Pins:

Jacobsthal has dealt with the subject comprehensively and only the Exochi material must be added (cf. Johansen, Exochi, D23-24, N2, fig. 110). The earliest finds seem to be Late Protogeometric (Ialysos, Grave 48; Jacobsthal, Greek Pins, 3, fig. 7). Late Geometric examples are again from Ialysos, Grave 56 (ibid., 16-17) and Lindos (ibid., fig. 51-2). All specimens are of bronze or iron and none in precious metal.

Additionally, some bronze "roll pins" were found at Emporio in seventh century contexts (Emporio, 223; cf. Jacobsthal, Greek Pins, 122), as well as at Melie in Ionia (P. Hommel in G. Kleiner, Panionion und Melie, 1967, 138f., fig. 74) and Sardis (J. Waldbaum, Metalwork from Sardis, 110, no. 659-660).

Beads:

No metal beads are attested on Rhodes, but examples in glass and faience are common (e.g. the numerous specimens in Ialysos, Grave 101, with pottery and fibulae, ClRh 3, 131-2, fig. 123; flat disc beads of faience with fibulae, bronze rings, and pins: Kameiros, Grave 40, ClRh 6/7, 126f., fig. 139).

Bronze spiral beads were found at Emporio in early seventh century context, but are not attested elsewhere in East Greece (Emporio, 223, no. 376).

Conclusions:

The only jewelry from East Greece of Geometric date is from Rhodes, Kos, and the presumably Greek settlements in Karia. All of these finds are stylistically related. No other finds from Asia Minor are attested, but the lack of material is surely by chance, and perhaps the gaps will someday be filled.

Rhodes provides a good amount of Geometric material dating from the eighth to the mid-seventh century. The finest items are the gold bands which must have been exclusively for funerary use. Personal jewelry in precious

metal seems to have been confined to spiral earrings and simple rings. The bronze fibulae and pins were the most common items for personal adornment (one example of a fibula composed of ivory bound with silver bands is apparently from Kameiros [BMCJ, no. 1191, Laffineur, 163 n. 6] but is unrelated to the others from Rhodes).

The gold bands and discs show very fine work and demonstrate the change from mature Geometric patterning to early orientalizing, where friezes of animals or birds (so much liked on Rhodes) and even hunting scenes occur. As noted above, one plaque from Exochi shows a technique unique on Rhodes but very similar to Attic work, the use of added filigree to form the main pattern. However, the motif, a "maeander hook" with central lozenge, is popular on Rhodian Late Geometric pottery and is again seen on late seventh century gold plaques at Ephesos (cf. P. Jacobsthal, JHS71, 1951, 90; and below). Schweitzer proposed a Rhodian origin for this technique and for the Attic plaques, and argued for the presence of Rhodian goldsmiths in Athens in the first half of the eighth century who introduced many of the motifs on the gold bands (B. Schweitzer, Greek Geometric Art, 192-195). Although some connection between the Attic and Rhodian plaques is probable, his proposal of a Rhodian origin is not entirely convincing, and his date for the Exochi plaque is too high. Coldstream's view of a common oriental source, perhaps a school of immigrant craftsmen, seems preferable (Coldstream, Geometric Greece, 123-126; Gnomon 44, 1972, 600).

Orientalizing and Archaic Jewelry and Works in Precious Metal:

Several large finds of jewelry from sanctuary dedications, graves, and hoards, along with some smaller finds and additional material of uncertain provenience, allow a careful study with some relatively useful chronological points. The wealthy cemeteries of Rhodes have yielded much material, continuing the rich Geometric finds through the seventh and sixth centuries, especially with the plentiful seventh century "orientalizing" workshop material. The earliest levels of the Artemision at Ephesos have provided a large body of material from an Ionian site datable to the late seventh century. Tombs at Sardis and elsewhere in Lydia and Phrygia contained much jewelry and precious metal vessels that date from the mid-sixth to fifth centuries, often displaying an interesting mixture of Lydian, Greek, and Achaemenid styles. The important new Southwest Anatolia hoard, probably from Karia, contained much silver jewelry along with silver coins of Lydia and Karia that establish a burial date in the third quarter of the sixth century and helps bridge the gap in the sixth century between the Ephesos finds and the Lydian tomb groups.

Other gaps, however, are conspicuous. Very little material has come from truly Greek sites besides Rhodes and Ephesos, with only minor finds from Samos, Chios, and the Troad, and nothing from, for example, Miletos or Phokaia. Also not surviving, except perhaps at Delphi, are the

monumental works in gold and silver known from literature, and especially from Herodotos. Gold and silver vessels, tripods, armor, and statues are reported as gifts from the Lydian kings, and at least some were of Greek workmanship, made by artists such as Glaukos of Chios and Theodoros of Samos (cf. G.M.A. Hanfmann, Sculpture from Sardis, 14; and the collected literary references, J. Waldbaum, Metalwork from Sardis, 15-18).

The spectacular finds at Delphi of a life-size silver bull and several chryselephantine human statues with gold ornamented garments and jewelry are the only surviving material that reflects the grand offerings mentioned by the ancient authors. They are sixth century works and very likely of East Greek manufacture, perhaps dedicated by Kroisos of Lydia himself as Amandry speculated (BCH Supplement 4, 1977, 273-293). The finds are discussed with the sixth century material (cf. below).

The Seventh Century Orientalizing Workshop on Rhodes:

A generation or two after the last Geometric gold workers, a new workshop emerged that produced a large number of objects diverse in type and function and rich in iconography, but of uniform style and technique, close enough to indicate a single workshop and a relatively short period of production. Much of the material has been known since the 1850s and has been often discussed, but recently the workshop has been exhaustively catalogued and examined by R. Laffineur (L'orfevrerie rhodienne orientalisante,

1978). The discussion here will primarily examine the chronology and related non-Rhodian workshops.

The jewelery is divided into the following types: diadems with either embossed designs or added rosettes [FIG. 248]; ornate rosettes [FIG. 249]; plaques which were strung together and probably served as pectoral ornaments (cf. Higgins, 115ff.), perhaps the successors to the gold discs popular in the Late Geometric period [FIG. 250]; "pendants de tempe", which may have rather been endpieces to the pectoral ornaments (Higgins, 117) [FIG. 251]; pendants; spiral earrings with various degrees of ornamentation [FIG. 252]; and necklaces of biconical gold beads or loop-in-loop chains with added rosettes and other ornament. Perhaps later and not necessarily from the same workshop are "buttons", which were perhaps merely ornaments sewn to garments rather than functional buttons; plain gold rings; and silver bracelets, some with gold lion's head terminals.

The iconography is diverse and is best observed on the plaques. Types include winged goddesses (usually of potnia theron type), females with curved wings and bee bodies ("melissai"), centaurs, sphinxes, sirens, and once a nude male, all with facing heads of Daedalic style. A griffin is also seen once. Added plastic heads or figures also occur, notably decorating the elaborate rosettes, but also on earrings and "pendants de tempe". Heads of lions, bulls, and griffins are seen, as are figures of lions, birds, and bees. Various types of rosettes are the most popular non-

figural device.

Laffineur has demonstrated shared moulds and other techniques for the various types of jewelry and has convincingly argued for a single workshop on Rhodes producing two types of products, one simple and the other ornate, with soldered on figures and rich granulation (cf. Laffineur, 185f.). A bronze relief plaque with potnia theron device that appears to have served as a matrix for the manufacture of the gold plaques was dedicated in the Athena sanctuary at Lindos (Lindos 1, no. 472; Laffineur, 24), probably by the local artist [FIG. 253]. Despite Laffineur's persuasive analyses (cf. Laffineur, 94-97), Higgins proposed a Melian origin for the ornate rosettes and perhaps some earrings and pendants (Higgins, 112-113, 115), presumably based on the provenience of these pieces and others found on neighboring islands.

Five specimens of the ornate rosettes, now in Athens, were found on Melos (Laffineur, no. 117-122) as were two others (Laffineur, no. 154-155). Two simpler rosettes are from Melos as well (Laffineur, no. 126, 133), as are two ornate earrings (Laffineur, no. 203-204) and a "melissa" pendant (Laffineur, no. 192). Tomb 116 on Thera contained seven simple but still granulated rosettes (Laffineur, no. 122), three "melissa" pendants (Laffineur, no. 191), and two spherical pendants (cf. below). Delos produced one plaque (Laffineur, no. 2).

However, most examples, including ornate rosettes, come from Kameiros and Ialysos. A diadem elaborately decorated

with sphinxes and granulation comes from Kos (Laffineur, no. 159), and several pieces come from "Asia Minor or Syria" (Laffineur, no. 211; add an unpublished piece in a private collection said to be from Asia Minor: a pale gold six-petaled rosette with attached five pointed floral, with granulation; signs of attachment and traces of silver on the back; diam.: 2.12 cm. [FIG. 254]; it is similar to the group in London, Victoria and Albert Museum, Laffineur, no. 135-151). A fragmentary silver plaque with potnia theron type found at Tocra in a deposit of c. 500 may also be Rhodian (J. Boardman, Tocra 2, 76, 82, F112; fig. 32; pl. 39) and is likely considerably earlier than the context.

Although much of the material is known to have come from Rhodes, the associated finds have, unfortunately, seldom been recorded, and only the Italian excavations, which found relatively little jewelry, recorded the tomb groups. Establishing a date for the workshop has thus become difficult and previously based on stylistic analyses, especially in regard to the figural plaques. Laffineur discussed the dates for each type of jewelry and summarized previous scholarship, which generally dates the group c. 660-620 (notably Jenkins, Reichel, Becatti, and Greifenhagen; Laffineur, 75, has a convenient chart; Laffineur's discussions: esp. 74-78, 109-112, 174). Laffineur was less precise but saw the floruit in the third quarter of the century.

A large group of material in the British Museum is said

to have been found together at Kameiros (BMCJ, 85, no. 1103, 1128-1130, 1154-1155, 1190, 1209=Laffineur, no. 31, 50-58, 163-164; cf. Laffineur, 74-6; V. Webb, Archaic Greek Faience, 139) with a gold Phoenician ring (BMC Rings, no. 15) and a scarab with the name of Psammeticos I (ruled c. 664-610). The long reign of Psammeticos does not much help in fixing the date, but, more importantly, although the pieces no doubt came from Kameiros, the validity of this group as a single grave find must surely be questioned, and certain elements, such as the diadems (Laffineur, no. 163-4) are almost certainly mid-sixth century in date (cf. below).

More helpful is Grave 210 in the Checraci cemetery at Kameiros (ClRh 4, 365, figs. 409-10; Laffineur, 76f.; Gates, 5, no. 37) which contained the only other plaque with associated finds (Laffineur, no. 105) as well as a diadem (Laffineur, no. 184) and two silver bracelets (Laffineur, no. 235). The grave also contained an alabastron and Early Corinthian pottery. The pottery should date the tomb to the last quarter of the seventh century, and the jewelry may not be much earlier, if at all.

A number of other diadems and rosettes were found in recorded graves. The earliest appears to be Grave 11 at Papatislures, Kameiros (ClRh 6/7, 45-51, fig. 49-59; Higgins, 215; Laffineur, 112, 149, no. 188, 216; Webb, op. cit., 50, no. 206, who noted that the grave may have been disturbed; Kardara, 17f., 97, no. 4; Gates, 5, no. 28) which included a diadem, the earliest datable earring, Protocorinthian(?) aryballoi, a Wild Goat oinochoe (c. 640-

625), a Late Geometric skyphos, a faience pyxis, and other objects. Here a date in the third quarter of the century is indicated. Grave 13 at Papatislures, Kameiros (ClRh 6/7, 56-7, fig. 66; Laffineur, 112, no. 187; Higgins, 112, 215; Gates, 5, no. 30) is slightly later, containing Transitional Corinthian pottery and a bird bowl. Other graves point to a date in the fourth quarter of the century or later. Grave 214 (ClRh 4, 370f., fig. 418; Laffineur, 112, no. 185-6; Webb, op. cit., 14, no. 7; Gates, 5, no. 38) at Checraci, Kameiros contained a diadem with attached rosettes and Early Corinthian pottery, and pithos Grave 208 from the same site (ClRh 4, 360f., fig. 407; Laffineur, 112, no. 182-3; Gates, 6, no. 62, "600-575") contained a similar diadem and rosettes with Middle Corinthian pottery, suggesting an early sixth century date. Tomb P 11 at Papatislures, Kameiros, which was excavated by Biliotti and Salzmann in 1864, contained a diadem and rosettes as well as Corinthian, Wild Goat, and early Fikellura pottery, but since it was clearly reused several times, chronological conclusions cannot be drawn with confidence (cf. Gates, 56f.; R.M. Cook, CVA Great Britain 13, BM 8, 7; Walter-Karydi, Samos 6,1, 97).

Some other objects from datable graves are known. Two elaborate "pendants de tempe" and a plain gold ring come from Ialysos, Grave 45 (ClRh 3, 72-80, fig. 63-4, pl. 7; Laffineur, 131, no. 201-2, 236; Higgins, 215; Kardara 201ff., 205, no. 2; Schiering, 14; Gates, 6, no. 52, "600-575"). The rather large find group contained Early and

perhaps Middle Corinthian pottery, Rhodian pottery, including stemmed dishes and a Wild Goat oinochoe, and plastic vases. The Wild Goat vase was thought to be late seventh century by Kardara and early sixth by Schiering. A date for the burial in the first quarter of the sixth century is most likely. A pair of silver bracelets like those from Grave 210 at Kameiros was found in Ialysos, Grave 74 (CIRh 3, 112-3, fig. 105; Laffineur, 159, no. 234; Higgins, 130, 217; Gates, 6, no. 57) with Middle Corinthian pottery and a plastic vase. This grave too should belong to the early sixth century, as Higgins and Gates suggested.

Two graves at the Marmaro cemetery at Ialysos, however, point to a significantly later date for some of the material ascribed to the orientalizing workshop. Grave 35 (CIRh 8, 157, fig. 143; Laffineur, no. 189, 238, 249; Higgins 124, 217.) contained a diadem with embossed dot-rosettes, a plain gold ring with flattened bezel, and six "buttons", along with later sixth century terracottas. Tomb 42 (CIRh 8, 160, fig. 147; Laffineur, no. 190, 239, 240; Higgins 124, 131, 217; Webb, op. cit., 132, no. 896) contained a similar diadem, a silver ring with flattened bezel, a gilded bronze ring with bezel missing, a sixth century faience cock aryballos, and other sixth century pottery. It is clear that these finds are of sixth century date and not particularly early in that century. The diadems and "buttons" are nearly identical to the British Museum examples (Laffineur, no. 163-164, 242) [FIG. 255] that are said to be from the large single find from Kameiros

discussed above, which must be doubted as a single find group. The embossed dot-rosette diadems may then be viewed as a post-orientalizing workshop survival. The "buttons", or perhaps decorative garment plaques, may have begun earlier, but certainly also continue well into the sixth century.

Since Laffineur was certainly correct in viewing the Rhodian material as a unified group coming from a single workshop, with the few mid-sixth century exceptions just stated, a relatively short period of manufacture may be assumed. The grave finds consistently indicate a date in the last third of the seventh century. A beginning date earlier than 640 seems unlikely, and the work may continue to the end of the century or even slightly later.

A number of pendants of diverse provenience but not found on Rhodes are nonetheless related to Rhodian goldwork and likely to have been made there. These are hollow, spherical elements with two T-shaped tubes attached for suspension. They are decorated with granulation and sometimes filigree work (cf. Higgins, 115; Laffineur, 182). Grave 116 on Thera (AM 28, 1903, 227, pl. 5: 4, 7-9) contained two examples, along with three "melissa" pendants and seven simple rosettes with granulation that Laffineur considered Rhodian (Laffineur, no. 191, 122). Another similar example is from Tocra in a late seventh century deposit (Tocra 1, 156, pl. 104: 1). Two other similar pieces in London are said to come from "Syria or Asia Minor"

(in 1852 with the griffin head believed Rhodian by Laffineur, no. 211). One example (BMCJ, no. 1238) [FIG. 256], with tubular attachments and granulation, is quite similar to the Thera examples. The other (BMCJ, no. 1236) [FIG. 257] is missing the suspension attachment and adds a rosette underneath and a granulated figure of a bird above. Arc patterns in filigree and granulation are added. The bird is similar to those added to a Rhodian plaque (Laffineur, no. 35) and a "pendant de tempe" (Laffineur, no. 199). Other less similar examples of later date, continuing into the fifth century, are well attested in Northern Greece (cf. P. Amandry, Stathatos 1, 30, no. 82-3ff.).

One further object from Rhodes, not cited by Laffineur but probably from the orientalizing workshop, is a tubular bead ornamented with three added rosettes and pendant globes (BMCJ, no. 1197) [FIG. 258]. The rosettes are very much like those found on subsidiary decoration on the orientalizing plaques (cf. Laffineur, no. 2, 35, and the ornate rosettes).

Several unusual plaques, which are apparently imported and not from a Rhodian workshop, may be briefly noted. A fragmentary gold plaque from Kameiros (BMCJ, no. 1165) showing a goat rearing at a tree in orientalizing fashion is nearly identical to another better preserved example from Aegina also in London (BMCJ, no. 1218). Nothing in the style is known on Rhodes and an Aeginetan or Cycladic origin is preferable. Another gold band from Kameiros (BMCJ, no. 1164; 16.2 x 2.1 cm.) is elaborately decorated with embossed

human figures, lions, birds, a sphinx, and filling ornament, including maeanders, spirals, and rosettes. It appears to be a seventh century work but is entirely unrelated in style to any known Rhodian Geometric goldwork or the orientalizing workshop and is likely an import from elsewhere in Greece. Some small silver plaques from Lindos (Lindos 1, no. 329-330) of Egyptianizing, probably Phoenician, style are perhaps Cypriot, as Blinkenberg noted (cf. A. Pierides, Jewellery in the Cyprus Museum, pl. 13: 1-3; 14: 2), but perhaps served the same function as the Rhodian orientalizing plaques (pectoral ornaments?).

Other Seventh Century Workshops:

Similar to the Rhodian work, but certainly not from Rhodes, is the group of gold jewelry in Paris said to be from the vicinity of Aydin (ancient Tralles) in 1878 (A. Dumont, BCH 3, 1879, 129-30, pl. 4-5; Higgins, 115; Laffineur, 102, 184; Boardman, Cretan Collection, 155; and Greeks Overseas, 99; Akurgal, Kunst Anatoliens, 216, fig. 186, as Rhodian, early sixth century) [FIG. 259]. All the elements were perhaps once strung together as a necklace or a pectoral ornament like the Rhodian plaques. The most complicated piece is a semi-circular element with a tube for suspension running through the top, above which are six discs. A Daedalic style figure of a woman, very similar to those on Rhodian examples, stands in the center, and plastic griffin's, bull's, and ram's heads are added in the fashion of the figures on elaborate Rhodian rosettes, earrings, and

"pendants de tempe". There is some openwork with six-petaled, compass-drawn rosettes within circles, and granulation decorates the figure and forms zigzag patterns above and below. There are small loops attached below for the suspension of now missing ornaments, again in the manner of some Rhodian plaques. The other similar object in the find is a smaller rectangular plaque decorated with two facing Daedalic heads with granulation, a filigree floral in a circle between, a suspension tube with three discs above, and again loops for suspending missing ornaments. It is especially reminiscent of a small Rhodian plaque (Laffineur, no. 31). Other plaques in the find are in the shape of "Dipylon" shields with a suspension tube running through the middle. The motif is a Geometric one (cf. the Late Geometric Eleusis plaques). There is also a ribbed half cylinder with small holes for attachment of uncertain function. A similar piece was in the Artemision find (as Hogarth noted, Hogarth, 115, pl.9: 17; P. Jacobsthal, Greek Pins, 45, fig. 196).

The semi-circular plaque has a number of antecedents. Coche de la Ferte saw as a related piece an early first millennium bronze from the Caucasus (Les bijoux antique, 30, 44, 56, 113, pl. 6: 1). Higgins suggested that an eighth century Boeotian terracotta figurine wears a similarly shaped pendant. Closer in influence is the Cretan gold pendant from Tomb 2, Tekke, of the late ninth century (Coldstream, Geometric Greece, 100, fig. 32a; Higgins, 109, pl. 17c; J. Boardman, BSA 62, 1967, 57ff.) and the jewelry

from the Idaean cave (D. Levi, AJA 49, 1945, 313-29; Higgins, 109, pl. 17a). Also comparable, and closer in date, is an ornament from the Basis at Ephesos (Hogarth, 114, pl. 4: 34), a gold plated silver plaque with two holes in the upper corners and traces of attachment on the back. The incised design is simple zigzags and crosses in circles. The piece puzzled Jacobsthal who saw it as recalling Late Geometric motifs and as the only item of possible eighth century date in the Basis (P. Jacobsthal, JHS 71, 1951, 85). The incised patterns, however, do parallel the Aydin example, where the zigzags are in the same location but granulated, and the circles with Geometric patterns are done in openwork. Another similarly shaped pendant with zigzag decoration is from Delos (Delos 18, 303-4, fig. 371, pl. 88, fig. 766, no. A 785).

Little is known of Tralles in this period, but a Greek settlement seems more likely than the Lydian one often proposed. Although Lydian tumuli may be in the area (A. and N. Ramage, Studies Presented to G.M.A. Hanfmann, 145 n. 6), the site is very far south and in an area as likely Karian or Ionian, in the Maeander River valley close to Greek Magnesia (cf. G. Bean, Turkey Beyond the Maeander, 177; Strabo 14, 648; there was a tradition that Tralles was founded by Argives and Thracians). The jewelry from Aydin is clearly in the Dorian tradition of Rhodes, the Islands, and Crete, and a Greek workshop in Karia is entirely possible.

Another object that is technically comparable to the Dorian material, especially from Rhodes, is the gold hawk with filigree and granulated decoration from the Heraion at Samos, but the type may be better compared to the hawks from Ephesos (cf. below). The relatively early date should be noted, however. Although the Samos stratification has not been fully published, a date c. 660 has been proposed (E. Buschor, Festschrift Rumpf, 36; Reichel, no. 62) [FIG. 260]. A Samian origin seems unlikely since no other comparable jewelry is known from that site.

Several groups of gold jewelry evidently from graves and said to be from Mylasa in Karia were on the art market in the early 1970s (Laffineur, 184; Muenzen und Medaillen AG, Basel, Sonderliste M, September 1970, no. 125-126 [FIG. 261]; Sotheby, 3 December 1973, lots 66-67; Christies, 10 July 1974, lot 250) and some are now in Brooklyn (P. Davidson and A. Oliver, Ancient Greek and Roman Gold Jewelry in the Brooklyn Museum, 1984, 22-23, 31, no. 20-21, 30-32, "fourth century"). They consisted of a number of gold rosettes, some with punched decoration, buttons similar to those from Rhodes, and a few other pieces. A local workshop influenced by Rhodes seems probable, although the date is not certain.

The influence of the Rhodian style, through some uncertain East Greek intermediary, can be seen in some sixth century goldwork from Greek colonies on the Black Sea. Earrings with projecting lion's heads, reminiscent of the Rhodian "pendants de tempe", were found in graves at Olbia

(AA 28, 1913, 203, fig. 45; AA 29, 1914, 242, fig. 61; M.I. Artamonov, Treasures from Scythian Tombs, 1969, 38, pl. 84), and elaborate diadems with rosettes and one with a projecting griffin head were found at Kelermes (AA 1905, 59, fig. 4; Artamonov, op. cit., 25, pl. 25-28; Boardman, Greeks Overseas, 261).

Rhodian Jewelry, Sixth Century:

Nearly all of the extant Rhodian jewelry datable to the second half of the seventh century was made by the local orientalizing workshop, which appears not to have survived long, if at all, into the sixth century. However, goldwork continued to be deposited in Rhodian graves throughout the sixth and fifth centuries, and although no cohesive workshops like the earlier orientalizing one can now be identified, the jewelry continues the earlier traditions and is most likely to have been made locally. Diadems and rosettes of various styles continued, and garment discs, rings, bracelets, and a unique plaque have been found in datable tombs. Other pieces of jewelry, such as pendants and elaborate bracelets, are without associated finds but certainly from Rhodes. Earrings are conspicuously absent, except for the gold reel-type ear studs from very late contexts, but probably were used in view of their popularity elsewhere in Greece (cf. a spiral earring with pyramidal terminals in the fifth century Grave 189, Ialysos, ClRh 3, 198ff., fig. 195). A distinctive ring type with unengraved flattened bezel, which was found in a number of tombs with

other jewelry, anticipates engraved examples of the later sixth century (cf. "Engraved Rings", below).

As already noted, some diadems decorated with simple repousse dot-rosettes (as Laffineur, no. 163-166, 189-190) [FIG. 255] should be removed from the orientalizing workshop since their only datable contexts are two mid-sixth century graves at Ialysos (Marmaro, Graves 35 and 42, cf. above). Late sixth or early fifth century graves at Ialysos included long, undecorated diadems (Marmaro, Grave 31, CIRh 8, 153f., fig. 139; Grave 32, ibid., 154f., fig. 140; Grave 60, ibid., 179), and a grave which appears to be of fifth century date included a diadem with embossed jugs and two embossed rosettes of unusual type (Grave 52, ibid., 173f., fig. 162). An unusual gold piece is slightly earlier in date, probably from the second quarter of the sixth century judging from the Middle Corinthian pottery found in the same grave (Ialysos, Zambico, Grave 53, CIRh 3, 89, fig. 82; Reichel, no. 56, pl. 15, as Geometric; Gates, 7, no. 73, "575-550") [FIG. 262]. It is apparently a diadem of some sort and takes the form of a band with three prongs, decorated with embossed designs of circles, pricked triangles and zigzags. The patterns are subgeometric, but the context is sixth century.

In addition to the plain diadem, Grave 32 at Ialysos contained a number of other unusual types of jewelry. Nothing is closely datable, but the advanced style and technique of a number of pieces suggests a fifth century

date. Five gold acorns, twelve pendant beads, and cylindrical spacers may have decorated the diadem, or else formed a necklace, for which there are other beads preserved. Two other gold plaques have embossed palmettes, and a gold plated bronze bracelet, a bronze mirror, an alabastron, and blue glass beads were also present in the grave.

Rosettes were found in a number of sixth century graves at Ialysos but not always with diadems. It is unclear to what they were attached, but like the seventh century examples they may have been joined to the diadem or sewn to garments, perhaps having served as elaborately decorated buttons (Higgins, 134). The sixth century examples take the form of ornate gold florals made of several embossed parts, sometimes over a silver or bronze core. Examples were found at Ialysos in the mid-sixth century Graves 5 and 10 (Marmaro, ClRh 8, 105f., fig. 93; ibid., 111ff., fig. 100) [FIG. 263] and in the late sixth or early fifth century Graves 32 (ibid., 154f., fig. 140) and 68 (A. Maiuri, Annuario 6-7, 1923-4, 324, no. 13).

Also in similar sixth century graves were small embossed discs that probably served as garment ornaments or, less likely, buttons. They all have a large central boss surrounded by a border of punched dots and are pierced twice (as Laffineur, no. 242, 244, 245, 248-250) [FIG. 264]. They have been found at both Kameiros and Ialysos, but the only datable examples are the six found in the mid-sixth Grave 35 at Marmaro, Ialysos, with the dot-rosette diadem (cf.

above), a ring, and terracottas. They appear to continue an earlier tradition represented by discs with star-patterns from the orientalizing workshop (as Laffineur, no. 241), but none of the star-pattern discs is from a datable context and even they may be later than presumed.

A unique gold plaque was also found in the mid-sixth century Marmaro Grave 10 at Ialysos (CIRh 8, 111ff., fig. 101; Gates, 8, no. 122) [FIG. 265] along with the rosettes cited above, a gold ring set with an engraved Greek scarab, and a quantity of Fikellura and Attic black figure pottery. The plaque, which is c. 22 cm. in length, has an embossed frieze depicting pygmies and cranes fighting within a bead and reel border. It clearly was not a diadem and probably ornamented a chest or some other object made of perishable material. The geranomachy scene was popular throughout Greece by the mid-sixth century, but the plaque, along with the slightly earlier Francois vase, are among the earliest extant representations (cf. B. Freyer-Schauenburg, Festschrift E. Homann-Wedeking, 76-83). A contemporary Fikellura vase also depicts the scene (Walter-Karydi, Samos 6,1, pl. 84: 613), as do some later Pontic cups. The pygmies on the plaque are dwarf-like rather than normally shaped, which is unusual at this early date (cf. J.D. Beazley, The Development of Attic Black-Figure, 109 n. 33) but is apparently not distinctively East Greek since it is different from the depiction on the near-contemporary Fikellura vase. A similar plaque with embossed figures of a

seated monkey and cranes was found in the sixth century Melgunov's barrow in South Russia (M.I. Artamonov, Treasures from Scythian Tombs, 1969, 22, fig. 6; length: 11 cm.), which may be an East Greek work.

Bracelets in precious metal were used in the seventh century, but they continued in the sixth century in more elaborate varieties. One pair of silver bracelets, in the form of open-ended hoops with moulded terminals, was found in the late seventh century Grave 210 at Kameiros with jewelry from the orientalizing workshop (Laffineur, no. 235; cf. above). Another silver example with moulded terminals from Kameiros is in London but without associated finds, although Laffineur pointed out the similarity of the moulded terminals to those on earrings from the orientalizing workshop (Laffineur, no. 231=BMCJ, no. 1201). Other silver bracelets listed by Laffineur as belonging to the same workshop are more likely of sixth century date. A pair in silver (Laffineur, no. 234) was found in Ialysos Grave 74, which is datable to the second quarter of the sixth century (ClRh 3, 112f., fig. 105; Gates, 6, no. 57). A simple example in bronze with knob terminals was in another mid-sixth century grave at Ialysos (Marmaro, Grave 48, ClRh 8, 166f., fig. 155; Gates, 8, no. 124). The gold plated bronze example in Ialysos Grave 32 (cf. above) is probably of fifth century date.

Also during the sixth century, bracelets in silver or silver plated bronze with attached lion's head terminals in gold were introduced (BMCJ, no. 1204-1207; the two silver

hoops with crude animal's head terminals from Kameiros and now in London, Laffineur, no. 232-233=BMCJ, no. 1202-1203, also probably once had gold lion's head terminals) [FIG. 266]. The lion's head terminals were made in repousse with added granulation and filigree work. The type of bracelet became popular in Greece around the middle of the sixth century and remained so for several centuries. Similar examples from East Greece were found in Lydian tombs and at Gordion (cf. "Bracelets", below).

Two gold pendants from Rhodes now in London have been noted by Higgins as being of "seventh century style" (Higgins, 115), but need not be so early. One, a bull's head (BMCJ, no. 1198) [FIG. 267] on a loop, is decorated with filigree and granulation and, in view of the technique, has the best claim for an early date. An early sixth century plastic aryballos from Rhodes in the shape of a female bust wears a necklace with central bull's head pendant (Higgins, BMC Terracottas 2, no. 1610; I. Blanck, Studien zum griechishcen Halsschumuck der archaischen und klassischen Zeit, Diss. Mainz, 1974, 73). The other pendant is in the form of a lion's head (BMCJ, no. 1208) [FIG. 267], a type popular throughout the sixth and fifth centuries. It appears to be technically and stylistically later in date than the bull pendant but probably belongs to the sixth century.

Silver Plate:

Spectacular vessels in precious metal were popular votive gifts from Lydian kings to Greek sanctuaries, but nothing has survived (cf. "Bronzes: Vessels", above). Even modest examples of silver plate are very rare, but they may be examined here briefly. Most are linked to Rhodes and may have been made in the post-orientalizing jewelry workshops. Highly distinctive silver vessels of Lydian manufacture from tombs of the Achaemenid period are well represented in a number of recent finds, but except for one silver oinochoe in purely Greek style (with kouros-handle, cf. "Bronzes: Sixth Century Vessels", above), they fall outside the scope of this study and will not be discussed (cf. the so-called "East Greek" treasure from Lydian tombs now in New York, D. von Bothmer, Met.Mus.Bull., Summer, 1984, 24-45).

The earliest extant example of a precious metal vessel is a simple shallow dish of silver from the Late Geometric Grave Z at Exochi dating from the first half of the seventh century (Copenhagen 12461; Exochi, Z42, fig. 173). It is only 9 cm. in diameter and 1.2 cm. in height. No other silver bowls from Rhodes are found before the late seventh century. A very unusual deep silver bowl with its wall decorated with stylized lotus patterns was found at Ialysos in the late seventh century (?) Grave 67 (ClRh 3, 110, fig. 103; D. Strong, Greek and Roman Gold and Silver Plate, 1966, 56, fig. 12), but it does not appear to be Greek and may be Phoenician or Egyptian.

Phialai in bronze, closely modelled on Eastern types, were already used in Greece by the late eighth century (cf. "Bronzes: Vessels", above), but silver examples are rare before the late sixth century, when many Achaemenid varieties became widespread. Two silver examples from the Macri Langoni cemetery at Kameiros are the earliest datable examples, having been found in a late seventh century grave (Grave 3, ClRh 4, 43ff., no. 1, fig. 13; Gates, 5, no. 25; Strong, op. cit., 57). Another early silver phiale, probably of late seventh or early sixth century date, is in New York (New York 1981.11.13; D. von Bothmer, Met.Mus.Bull., Summer, 1984, 21, no. 12) [FIG. 268]. The wall of the phiale is decorated with embossed lotus patterns, and the large omphalos is covered by a separately worked gilt element with a surrounding frieze of embossed animals, including a bull, lion, boar, bird, panther, and two sphinxes. The provenience is not mentioned, but the embossed animals are East Greek in style and especially similar to those on an engraved bronze bowl in Paris from an Etruscan tomb, which was seen by Villard as a late seventh century East Greek work (cf. "Bronzes: Vessels", above). Rhodes has been suggested as the place of origin, but other sites in East Greece are possible as well.

Two highly distinctive silver phialai mesomphaloi were found in two separate tombs at Ialysos, which unfortunately are not closely datable but appear to be c. 500 (Grave 61, ClRh 8, 179f., fig. 168-169, with an unengraved gold ring of late sixth century type; Grave 72, ibid., 183, fig. 168; cf.

P. Jacobsthal, Celtic Art, 1944, 53f., pl. 234a) [FIG. 269]. The phialai are identical and have a pattern of double-swans' heads and palmettes. A third identical example was found at Kazbek in the Caucasus region of Russia (Moscow Historial Museum; H. Luschey, Die Phiale, 1939, 61; R. Ghirshman, Persia from the Origins to Alexander the Great, 1964, 439, fig. 544). The type was surely influenced by Achaemenid designs, but it is not found among the numerous varieties from Lydian tombs and may be from an East Greek workshop, although not on Rhodes.

A remarkable silver kantharos, an entirely Greek rather than Eastern shape, was found at Kameiros in an unknown context and is now in Paris (Louvre S 1211; Aegean Island Cat., 152, no. 99, with literature; Strong, op. cit., 58, pl. 8 B-C; P. Jacobsthal, JdI 44, 1929, 214, fig. 16-18) [FIG. 270]. Two band handles with central ridge are riveted to the bowl (now slightly crushed), which is decorated below the high shoulder with a double row of tongues and rests on a low conical foot, also decorated with a band of tongues. Two gold plaques with hatched maeander, diamond, and triangle patterns are attached to the handles where they join the lip, and a circular gold plaque with ornate embossed rosette is placed in the center of the bowl. It is difficult to date the kantharos with precision, and any time in the second half of the seventh or early in the sixth century is possible. The shape is closest to Etruscan bucchero of the late seventh and early sixth centuries. The

gold plaques on the handles have subgeometric designs, but such patterns survived for a long time and are not so close in style to the Geometric diadems from Rhodian tombs (cf. Jacobsthal, loc. cit., who proposed an early sixth century date for the cup). The central rosette, composed of five rays interspersed with palmette-like elements, recalls some jewelry of the orientalizing workshop but is not closely matched there. However, very similar rosette plaques were among the Delphi find of jewelry, from an uncertain East Greek workshop of the mid-sixth century. The disparate elements make the attribution difficult, although it appears to be an East Greek work. The provenience and general similarities to Rhodian jewelry suggest a local origin, but it shares no common elements with the jewelry from the orientalizing workshop and perhaps should be dated slightly later, c. 600 or early in the sixth century, as Jacobsthal suggested.

An unpublished group of three silver cups in Malibu are without provenience but were likely to have been found together (further inquiry may be productive) and are of East Greek shape. They are of a shape that corresponds to East Greek black-glazed cups of the first half of the sixth century found at many Greek sites (cf. J. Hayes in Tocra 1, 111-116, esp. Type VIII-IX; H.P. Isler in Les ceramiques de la grece de l'est et leur diffusion en occident, 1978, 77ff., for Samian examples). Two are quite similar and have a deep bowl with separately worked handles and low conical foot (J. Paul Getty Museum 77.AM.68, diam.: 10.65 cm., h.:

10 cm.; 77.AM.69, diam.: 10.75 cm., h.: 7.5 cm.) [FIG. 271-272]. The third is more shallow, with a sharply set off lip (perhaps because of being crushed?), and the handles are missing (77.AM.70, diam.: 10.8 cm., h.: 4.8 cm.) [FIG. 273]. In the center of the bowl is an embossed pale gold sixteen-petalled rosette with an inner and outer band of dots [FIG. 274], reminiscent of the more ornate central disc in the Rhodian kantharos. Comparisons to specific varieties of East Greek ceramic cups are not especially productive, but Samian and Rhodian are the closest and most numerous types. The similarities in manufacture and date to the Rhodian kantharos suggest a related, perhaps Rhodian, workshop of the first half of the sixth century. No similar cups have been found among the numerous silver vessels in later sixth century Lydian tombs.

The Goldwork from Ephesos and Related Material:

Hogarth's excavations in the Artemision at Ephesos in 1904-5 uncovered large amounts of jewelry of a great variety of types. The numerous gold and silver objects were votive offerings from the earliest levels of the Artemision, and although the chronology remains controversial (cf. "Coinage", below), a date late in the seventh century is highly probable. Most of the jewelry found outside the Basis (the earliest structure) is identical to that in the Basis, but some examples may be of later date, as are the ivories and bronzes, perhaps as late as the mid-sixth century. Other finds, such as those in Berlin said to be from the Ephesos area, the Burton Berry group of silver jewelry (Berry Jewelry, 32ff., no. 35) [FIG. 275-277], and the jewelry found in a mid-sixth century cremation burial at Gordion (R.S. Young, UPennMusBull 16,1, 1951, 3-19; ibid. 17,4, 1953, 31-32; Archaeology 3, 1950, 199; Anat. Stud. 1, 1951, 11) [FIG. 278-279], offer comparable material. An important recent hoard, the so-called Southwest Anatolia hoard, contained a quantity of silver jewelry which has much in common with the Ephesos finds [FIG. 280-289], along with coins of Lydia and Karia datable to c. 530. Large amounts of jewelry from Lydian tombs (at Sardis, Usak, etc.) are mostly late sixth and fifth century in date and provide less similar material with many new varieties. A few stray finds from unknown sites in Asia Minor also provide good parallels.

The finds from Ephesos have little in common with the

orientalizing material from Rhodes, either stylistically or functionally. There are no pectoral plaques or diadems, which are the best represented items from Rhodes, and the beads and pendants are quite different. Only the spiral earrings are similar, but these are common in East Greece and are a minority type at Ephesos. Although a few strictly votive objects may occur, the material is almost entirely composed of objects of personal adornment, probably of women who dedicated them to Artemis. The jewelry is composed of pins, fibulae and brooches, pendants and beads from necklaces, earrings, chains, and plaques probably once sewn on to garments. Rings and bracelets in precious metal are not represented. A few small figurines and an inscribed silver plaque with temple accounts (Hogarth, 46, 120-144, pl. 13) were strictly votive rather than functional. The material from the British Museum excavations was carefully listed by Hogarth (gold and electrum: Hogarth, 94-115; silver: Hogarth, 116-119).

Votives:

The extensive literary tradition citing votive offerings from Lydian kings of large statues and vessels in precious metal has already been mentioned. Nothing has survived with the possible exception of the extraordinary life-size silver and gold bull and chryselephantine statues from Delphi which appear to be East Greek works (cf. P. Amandry, BCH Supplement 4, 1977, 273-293; Chios, 228, fig. 17, colourplate IVa; where the bull is described as perhaps

the work of a Chian artist) [FIG. 237-239]. Other evidence for precious metal votive objects is given in a dedicatory inscription of the later sixth century from the Heraion at Samos. Two Perinthians, probably second generation Samian colonists, dedicated four objects, a gold gorgyre (Gorgon? Perirrhanterion?), a silver seren (Male siren? Bee or wasp?), a silver phiale, and a bronze lampstand together worth 212 Samian staters (SEG 12, 391; G. Klaffenbach, MDAI 6, 1953, 15-20; L.H. Jeffery, LSAG, 365, no. 35, pl. 71; J.P. Barron, The Silver Coinage of Samos, 8 n. 7, 18). The meaning of the first two objects is not clear, but some sort of figural work seems likely.

Small figurines at Ephesos may have had a strictly votive function. Most notable are the figurines of females made of gold or silver foil in sphyrelaton technique. Some figures, and perhaps all from the Basis, served as terminals for pins rather than votives, but the larger figures (Hogarth, 95, pl. 4: 1-3, 6, West area in gold; 116, pl. 11: 11, East area, in silver) probably were small statuettes. The recent discovery of an intact gold kore statuette of larger size at Ephesos supports this conclusion (Ephesos Museum 2/59/80; 9 cm.; H. Vetters, Vorl. Grab. 1980, 139f., pl. 1: 1-2; Bammer, fig. 60-62, 86; Anat. Civ., B.30; Land of Civilizations, no. 196) [FIG. 290], as does comparison with the bronze sphyrelaton kore from Samos (cf. "Bronzes", above). A hollow silver fragment of a hand holding a hawk from the East area may have been part of a statuette (Hogarth, 116, pl. 11: 1). Whether some were cult images or

merely dedications is not clear. All appear to be of sixth century date. A crude solid silver figurine of an ithyphallic man also is presumably votive (Hogarth, 116, pl. 11: 23; BMCJ, no. 1090). A fine silver figurine of a warrior from Chios (H.L. Lorimer, BSA 42, 1947, 88 fig. 5, 89, 110) must have also served as a votive statuette, and although comparable with bronze statuettes, it is unparalleled in precious metal.

Figurines of animals also are known from Ephesos. Hawks are especially common and do occur in the Basis. These are popular as fibulae and pendants, but a number show no signs of attachment and are presumably votive. Some are solid and stand on a plinth or perch (Hogarth, 96, pl. 4: 36 and 6: 62=BMCJ, no. 1042, gold, from the Basis; 116, pl. 11: 4-6 silver, from the Basis and East area; and cf. the bronze examples, none from the Basis, pl. 15: 14-16.). Others are of hollow gold or silver (Hogarth, 95f., pl. 4: 8-9, 11-12, 18, 20, Basis and West area; 116f., pl. 11: 2, 3, 8, Basis and East area; BMCJ, no. 1039, 1043-4), and the rest are flat or mere silhouettes (Hogarth, 96, pl. 4: 16; 7: 19, gold, Basis and West area; BMCJ, no. 1041; 116, pl. 11: 9, silver, East area) in the manner of flat bronze animal votives at Olympia and Samos (cf. "Bronzes: Votives", above). The large number of votive hawks in many materials (gold, silver, bronze, ivory, and terracotta) demonstrates the cult importance of the bird, as is also seen in figurines in ivory and silver of females holding the birds

(Hogarth, pl. 24: 8; 11: 1). Finds elsewhere in East Greece and the East, such as the gold hawk from Samos, ivories from Old Smyrna and Gordion, and earlier objects in Egypt and Luristan (cf. the discussion in P. Jacobsthal, JHS 71, 1951, 91f.) show a similar usage, but the meaning is unclear.

There are some other animals of uncertain function, including a gold snake (Hogarth, 115, pl. 7: 16, East area) and a frog (Hogarth, 96, pl. 4: 17, Basis) that probably served as an attachment (cf. "Bronzes", above). There are also gold lion's head terminals on tubes that are square in section (Hogarth, 114, pl. 7: 29; 9: 1, Basis; similar tubes without lion's heads found in the Austrian excavations) which are of uncertain function (cf. P. Jacobsthal, JHS 71, 1951, 89).

Also votive are numerous small repousee gold plaques representing eyes and ears (Hogarth, 108, pl. 7: 35, 36, 39-42, 44, 47-48, some from Basis, 25 examples in all are mentioned; BMCJ, no. 917-925; newly found examples: Bammer, fig. 101) [FIG. 291]. Plaques of this sort are popular in many periods and places, offered by those seeking healing. Small gold hands and feet offered as votives were also found (Hogarth, 107, pl. 7: 21-24; BMCJ, no. 915-916), although some are better considered pendants (e.g. Hogarth, pl. 12: 11). A human tooth bound with thin gold wire (Hogarth, 198, pl. 39: 7) demonstrates the votive use of precious metal in thanks for the relief of a toothache.

Miniature votive objects such as shields, helmets, and vessels are not found at Ephesos, but are known at other

sites in East Greece, although generally in bronze or terracotta. Extraordinary is what appears to be a miniature silver tripod from Phanai, Chios (W. Lamb, BSA 35, 1934/5, 149, pl. 32: 2, 5, 6) [FIG. 292]. Miniature gilt silver horse trappings (blinders) were found in the votive deposits at Lindos (Lindos 1, no. 1567-1568) [FIG. 293].

Pins:

Jacobsthal (JHS 71, 1951, 90) discussed the possibility that some tiny gold female figurines from the Basis made as hollow shells over a core could have been terminals for dress pins (Hogarth, 95, pl. 4: 4=BMCJ, no. 1040, who holds a jug and bowl at her sides [FIG. 294]; Hogarth, pl. 4: 13-15, the last with silver core, all from the Basis). He noted that at least two (Hogarth, pl. 4: 13 and 14) show traces of a pin (the other two may also), but if dress pins "they would be the only examples of the type from archaic Greece". An unpublished example from Asia Minor in a private collection confirms the existence of this class of objects in East Greece (and cf. the Etruscan bronze example, J. Szilagyi, Bull. de Musee Hong. des Beaux-Arts 54, 1980, 13-27). The pin is silver and surmounted by a hollow silver figurine of a kore of exceptionally fine and detailed work (c. 3 cm.) [FIG. 295]. There is some damage where the shell has corroded away, and there are traces of a resinous core. The kore wears a sleeved chiton and himation of typically Ionian style with carefully detailed folds and some punched decoration noticeable on the back of the himation. She

holds her left arm at her side and her right hand is held to her breast, but it is unclear whether she holds anything. Her face is damaged but is clearly very round, and the head in profile is somewhat egg-shaped. Her hair is wig-like with stippling, swept back from the forehead and falling over her back. Stylistically she has little in common with the Ephesos figurines, although the technique of manufacture is similar, nor with two kore pendants (cf. below). She is later in date than the examples from the Basis, perhaps mid-sixth century, and is closest in style to korai in marble and terracotta from Miletos and Samos.

The only other figural pin head is the finely granulated bee from the Basis (Hogarth, 102f., pl. 3: 5a,b; 4: 32; P. Jacobsthal, Greek Pins, 63). Comparisons can be made with the very similar insects on the Rhodian rosettes (Laffineu, no. 120-121; also cf. the granulated bee on a pendant from Arsos, Cyprus, probably of late seventh century date, A. Pierides, Jewellery in the Cyprus Museum, pl. 15) and with two other objects also from the Basis at Ephesos, the bee pendant (Hogarth, 107, pl. 3: 1; 7: 45) and the cicada brooch (Hogarth, 98, pl. 3: 3; 4: 33). A class of sixth century pins with figures of recumbent rams is discussed below (cf. "Pendants").

Another pin head, from the West area, combines figural motifs with Ephesian ornament (Hogarth, 102, pl. 3: 8=BMCJ, no. 963; P. Jacobsthal, Greek Pins, 64, fig. 268). A square box with four embossed facing heads reminiscent of Daedalic

examples has a semicircular cap with beading, in the manner of the "rush work cista" pin heads (Hogarth, 99f.). This example and possibly a small pendant (Hogarth, 106, pl. 3: 9, also West area) are the only examples of goldwork in a style close to Daedalic, although they are still somewhat removed. Like the granulated insects just discussed, the influence of Rhodes or some related workshop seems likely, but the shape of the ornament suggests local Ephesian work.

Quite a variety of finely worked pin heads were found at Ephesos in and around the Basis, most of gold and few of silver. Hogarth (Hogarth, 100ff.) has carefully described them, and further observations on these distinctively Ephesian pins were made by Jacobsthal (Greek Pins, 33-39) [FIG. 296]. Some are of floral shape, either ornate (e.g. Hogarth, pl. 5, 36; 6: 33, 39) or simple blossoms. Similar elaborate floral pins were found at Delphi and are likely of East Greek work or based on East Greek models (P. Amandry, BCH 63, 1939, pl. 34). A number of other pin heads at Ephesos are pomegranate- or apple-shaped. Many are spherical or melon-shaped with various degrees of beaded decoration. There are also clusters of small granules (e.g. Hogarth, pl. 5: 9) or large globes (e.g. Hogarth, pl. 6: 13-4). The "double-axe" elements (cf. below) may have also served as pin heads (Hogarth, 101, pl. 6: 15, 29; 10: 47, Basis). Distinct from the "double-axe" elements are pin heads that more closely resemble double axes. An example in gold was found at Ephesos (Hogarth, 103, pl. 5: 34) and may be compared to ivory examples also found there (cf.

"Ivories: Ephesos", above). A bronze example from the early seventh century was found at Emporio (Emporio, 227, no. 407) and another at Phanai (W. Lamb, BSA 35, 1934-5, 149). Many pin heads are identical to beads, and Hogarth's list of pin heads certainly includes many beads from necklaces. Melons (e.g. Hogarth, pl. 5: 26; 6: 5-6, 36), elongated spheres with beading (e.g. Hogarth, pl. 6: 26), and the small granule clusters (e.g. Hogarth, pl. 6: 18-20, 22-23) may be either pin heads or beads.

Some pin heads in materials other than precious metal use the same shapes. For example, both the pomegranate and "rush work cista" shapes occur in ivory at Ephesos, both in and outside the Basis in large numbers (Hogarth, 187f., pl. 33: 1-14; 34: 2-9). The conical spheroids, often with knob finials, also occur in ivory (Hogarth, 188, pl. 34: 13-18, 20-21, 24-27) as well as in amber (Hogarth, 216, pl. 48: 12, 15-19, 22-25). Globular ivory pin heads were also found in late seventh century graves in the West Necropolis on Samos (K. Tsakos, AAA 2, 1969, 202ff.) [FIG. 191]. Globular, melon, and elongated-ridged shapes in rock crystal also served as pin heads, some of which preserve traces of the lost bronze or silver pins (Hogarth, 212, pl. 46: 12, 15, 17, 19, 24, 26, 33-34, 36, 38, etc.). A further group of ivory pin heads takes the form of flat, engraved discs (Hogarth, 189, pl. 33: 16-26; Jacobsthal, Greek Pins, 35), but they are not known in metal examples at Ephesos. Both ivory and metal disc-pin heads were found in Peloponnesian

sanctuaries, and although Jacobsthal saw an Ionian origin, the Peloponnesian examples appear to be more widespread and earlier in date than the Ephesian ones.

Of uncertain purpose but perhaps also pin heads are some gold caps, which are mushroom-shaped with wide bases to take a much thicker pin than usual (Hogarth, 102, esp. pl. 5: 21). Other examples include three of pale gold with rosette ornamented heads in the Southwest Anatolia hoard and several others of pale gold on the London market said to be from Asia Minor (and cf. the similar items from a grave at Olbia, AA 29, 1914, 242, fig. 62-63).

There are few examples of East Greek pins except for those from Ephesos. The Berry group of silver jewelry included two silver pin heads very close in style to some found at Ephesos (Berry Jewelry, 32ff., no. 35c-d) [FIG. 276]. Both are faceted spheroids with knob finial and beaded disc base. No. 35d has cross-hatching in alternate facets. They are not exactly paralleled at Ephesos, but the spheroid shape is well attested there, especially in silver (Hogarth, 118). At least six examples of simple spheroid pin heads similar to Ephesian types were found at Larisa (Larisa am Hermos 3, 50, pl. 10: 9). Of later date, near the end of the sixth century, are some elaborately constructed pins from Lydian tombs, now in New York (D. von Bothmer, CRAI 1981, 205f.). One has a silver shank surmounted by a gold base and pomegranate. Another is gold and silver with a gold Ionic column base and pearls supporting a gold pomegranate. They remain unpublished.

A group of long, simple pins in bronze were discovered at both Samos (more than fifty examples) and Olympia. All appear to have been made at the same workshop, along with a group of simple, semicircular bronze earrings with terminals (cf. below), which lead Philipp to name it the "olympisch-samische Werkstatt" (H. Philipp, Ol. Forsch. 13, 1981, 16f., 71ff., 125ff.). The location of the workshop is uncertain.

Fibulae and brooches:

Fibulae in bronze of Asia Minor type have been discussed (cf. "Bronzes: Fibulae", above), but a number of examples in precious metal are also known and may be considered briefly here. The Basis at Ephesos had three examples in pale gold of a ribbed bow fibula (Hogarth, 98, pl. 5: 1-2), and outside the Basis were examples in silver (Hogarth, 117, pl. 11: 29, perhaps 12: 28) and bronze (Hogarth, 148, pl. 17: 26). Somewhat similar is the twisted silver bow (Hogarth, 117, pl. 12: 27=Blink. II, 8). Also in the Basis was a pale gold ribbed example with three moulded elements (Hogarth, 98, pl. 5: 5). Two recently found examples join one found in the Basis (Hogarth, 98, pl. 5: 3; H. Vetters, Vorl. Grab. 1980, 139f., pl. 2; Bammer, fig. 106; Anat. Civ. 2, B.46; Land of Civilizations, no. 201, colorplate) [FIG. 297] and another in a private collection from an unknown site in Asia Minor [FIG. 298], all of which have five moulded elements with beading. A similar fibula with three elements had been straightened before being deposited in the Basis (Hogarth, 98, pl. 6: 70). Other

types, without beading, may be plain or with three or five moulded elements (Hogarth, 98, pl. 5: 4, gold, Basis; 117, pl. 11: 7, 16, 22, silver, East area; many in bronze; a new example, Bammer, fig. 101).

Outside Ephesos precious metal fibulae are rare, but they are attested at several sites. The Berry group contained five silver fibulae with three moulded reels and slightly squared bows (Berry Jewelry, 32ff., no. 35a) [FIG. 275], and Phanai (Chios) yielded two silver examples (W. Lamb, BSA 35, 1934-5, 152, pl. 31: 18, 28), the first much like the Berry examples and the second with five reels and a bronze pin (O.W. Muscarella, Phrygian Fibulae from Gordion, 24f., Type XII, 14). The Southwest Anatolia hoard contained a few of this latter type, two fragmentary examples with five moulded reels and one with three [FIG. 281]. A series of electrum coins, probably from a north Ionian mint and of mid-sixth century date, depict a fibula of Asia Minor type as their obverse device (cf. "Coinage", below; Boardman, Greeks Overseas, 88).

A number of stone moulds for making fibulae of Asia Minor type have come to light (cf. "Bronzes: Fibulae", above). Muscarella published examples from Old Smyrna (Muscarella, op. cit., 23, 40, pl. 16, fig. 83-84) [FIG. 21]. A fragmentary mould from a mixed context at Sardis is two sided, one for making fibulae and the other for leech-type earrings (J. Waldbaum, Metalwork from Sardis, 143, no. 950) [FIG. 22]. Several other examples from unknown sites

in Asia Minor are in Istanbul (Muscarella, op. cit., 49) and in private collections (ibid., 49, pl. 16, fig. 85 [FIG. 23]; and R. Toelle, Antike und Abendland 12, 1966, 91-94, fig. 1 [FIG. 24]). It is not clear whether the moulds were used for bronze or precious metal fibulae, but the Sardis and Istanbul examples and the example published by Toelle demonstrate the connection between fibulae and jewelry production, since the same moulds were used for making pins, earrings and plaques. The mould published by Toelle especially does seem to have been used for precious metal. The fibula here is very close in type to an Ephesian gold example (Hogarth, pl. 5: 5), and the other objects on the mould include small rosettes of a widespread type usually in gold used for dress ornaments and a gorgon head plaque which also may have served as a dress ornament.

Another fibula type with flattened bow, a very simple crescent-shaped piece of metal with pin twisted at the end, was found in five examples from the Basis, four gold (Hogarth, 98, pl. 5: 6) and one silver (Hogarth, 117, pl. 11: 12). These examples are small (listed as miniature by Blinkenberg, Type X, who saw them as very early), but larger examples also exist, including a silver specimen from Ephesos (Hogarth, 117, pl. 11: 14) and at least fifty silver examples, although many fragmentary, in all sizes ranging from miniature to c. 8 cm. in the Southwest Anatolia hoard [FIG. 281] . A few of these examples have designs of punched dots. A gold crescent with wire added in a snake-like pattern found at Phanai (Chios) may have been a fibula

(W. Lamb, BSA 35, 1934-5, 147, fig. 6: 1), although it was perhaps merely a pendant (cf. below).

More elaborate brooches are known from Ephesos. The fine bow fibula terminating in two lions' heads with added florals is from the Basis and was discussed by Jacobsthal (Hogarth, 97, pl. 3: 2; 4: 35; P. Jacobsthal, JHS 71, 1951, 88f.). Similarly ornate is a circular brooch decorated with blossoms (Hogarth, 98, pl. 4: 30=BMCJ, no. 1035), and two other brooches composed of three or four beaded cup spirals with added rosettes (Hogarth, 98, pl. 4: 26, 31; 10: 34). As Hogarth noted, these patterns occur again on dress ornaments. Also unusual is the small cicada brooch with single pin (Hogarth, 98, pl. 3: 3; 4: 33), mentioned above in connection with the bee pin and pendant.

A fibula type showing an embossed displayed hawk is well represented at Ephesos [FIG. 299]. Seven examples in pale gold were found (Hogarth, 97, pl. 4: 21; 4: 28=10: 40; 4: 22=10: 35; 4: 27; 4: 23; 4: 24=10: 41; 4: 29), six from the Basis and one in silver from the East area (Hogarth, 117, pl. 11: 10). They are of various sizes and the ornamented details also vary. One (Hogarth, pl. 4: 23) wears a collar; one (Hogarth, pl. 4: 27) has granulated designs. Another specimen with granulation, very similar to the last, is in Berlin from a grave find said to be from near Ephesos (Berlin 1, 27, pl. 8: 5; A. Greifenhagen, AK 8, 1965, 13f.) [FIG. 300]. Seven other specimens in silver, all from the same mould, were in the Berry group (Berry

Jewelry, 32ff., no. 35a) [FIG. 277]. Another small example in gold is also quite similar and said to be from the vicinity of Ephesos (H: 1.84 cm.; private collection, unpublished) [FIG. 301]. Two pendants from Ephesos are also very close in style (Hogarth, pl. 7: 27-28). The Samos hawk (cf. above) [FIG. 260], whose function is unclear, must also be derived from the same prototypes but is somewhat earlier and not so close in style. The granulation and filigree have more in common with Cretan and Rhodian work but is not exactly matched in any known work. A small bronze example, perhaps a pendant, was found in the stipe votiva at Kameiros and may be a related type (ClRh 6/7, 345, no. 12, fig. 80, top row, third from left) [FIG. 4].

Two very large figural fibulae, neither from Ephesos, may be mentioned here. On both a recumbent lion rests in a square frame decorated with beaded wire with catch pin underneath (Boston MFA 1974.411, and Muscarella, Schimmel Cat., no. 134 [FIG. 302]). Both are of pale gold. They appear to be of later seventh or sixth century date but are highly stylized, with typically Eastern palmette-like cheeks and incised mane and collars, which led Muscarella to suggest a Lydian or East Greek origin, although no close parallels exist. Unusual bronze fibulae depicting a pair of recumbent lions were found at Erythrai (cf. "Bronzes: Orientalizing", above) [FIG. 43] and may be derived from the same source. A non-Greek origin is more likely in view of the unusual stylization. Four small recumbent lions on beaded bases, which probably served as dress ornaments, were

found in a late sixth or early fifth century tomb at Sardis (Sardis 13, no. 86; J. Waldbaum, Metalwork from Sardis, no. 989); similar Achaemenid examples are in London (British Museum WA 132117 and 132118), and another from Asia Minor was once in the Nelidow collection (L. Pollak, Sammlung Nelidow, 1903, 108, no. 313, pl. 13; L: 2.5 cm.; said to be from Izmit).

A unique gold brooch in the form of a hippocamp with pendant ornaments was found in a late sixth or early fifth century Lydian tomb and is now in New York (D. von Bothmer, CRAI, 1981, 205; K. Meyer, The Plundered Past, 1973, pl. between pp. 100-101) [FIG. 303]. The pendant ornaments are composed of three sets each of three short strands of loop-in-loop chain (cf. Higgins, 16f., on loop-in-loop chains) terminating in a floral bead set with glass paste. The type of brooch is not otherwise known, but the style is purely Greek. However, the technical details, especially the shape of the floral beads which are matched by examples from an early fifth century Sardis tomb (Sardis 13, no. 51), as well as the provenience, indicate an origin in the Lydian jewelry workshops, probably at Sardis.

Belt handles:

Belt handles of seventh and sixth century date have been known only in bronze (J. Boardman, Anatolia 6, 1962, 179-189; cf. "Bronzes: Belt Handles", above) until a new example constructed of bronze and silver elements surfaced in a private collection (unpublished; L: c. 6 cm.) [FIG.

304]. No specific find site is known, but it is certainly from Asia Minor. The bow is a hollow silver tube with the seam showing on the back. There are five silver reels, including two as terminals, interspersed with four four-sided bronze beads made up of "double-axe" elements with silver studs on each face except the back. The cross plate is solid silver with a moulded bead and reel pattern. The back shows traces of corroded iron, perhaps indicating that the belt was iron. One long silver pin for attachment is preserved. The closest published parallels are from Samos (B 614-5; Boardman, loc. cit., 183, Type F, pl. 21 a; B 116, Jantzen, Samos 8, 49, 151f., as Phrygian), which have similar reels and the same shaped cross plate. No other examples, however, have the "dcuble-axe" elements.

Pendants on Chains:

Pendants suspended from chains were found at Ephesos and in the Southwest Anatolia hoard. Examples from Ephesos (Hogarth, 108, pl. 7: 33-4) show that the other end of the chain had a ring for attachment, although to what is unclear. The most likely possibility is attachment to fibulae holding the garment, a practice attested in both Greece from Geometric times through the Classical period and in the East on fibulae from Phrygia. The Ephesos examples are all of gold and are from the Basis (Hogarth, 108, pl. 7: 30, 32-4). The pendants vary, five being small globes (Hogarth, pl. 7: 32) and one a large ornament similar to some elaborate pin heads (Hogarth, pl. 7: 30 and cf. pl. 5:

41; 6: 41). The chains are of the loop-in-loop type, except for a fragmentary example with oblong links from the West area (Hogarth, pl. 7: 31). The Southwest Anatolia hoard contained a number of short, fragmentary silver chains of the loop-in-loop variety, not all necessarily for pendants [FIG. 282]. The pendants, showing traces of the attachment to chains, are made of either two or three four-sided "double-axe" elements between bands of "woven" pattern, occasionally with beading, with hemi-spherical terminals [FIG. 282, 287]. Three intact specimens and several fragmentary ones were found. Two rings with fragmentary chains remaining were also found, evidently the ends for attachment.

Fragments of gold chain were found in the mid-sixth century cremation burial at Gordion (R.S. Young, UPennMusBull 16,1, 1951, 17-19), but no pendants were found (although an earring identical to the "double-axe" examples was found, cf. below). Bell-shaped gold caps, a type found in Lydian-Achaemenid tombs (cf. below), were sometimes suspended from chains. They are of Achaemenid date and were found in the Oxus Treasure (Oxus, no. 151-155) and at Pasargadae (British Museum WA 135081; D. Stronach, Pasargadae, 170 no. 10, 207, fig. 88: 21-23, pl. 153a-b). Rather than being bells, they appear to have once been set with a stone or paste.

Pendants and Amulets:

The non-figural examples listed here have been

distinguished from pendant elements that were clearly parts of necklaces composed of numerous pieces (cf. "Necklaces", below). It is not clear how the following pendants were worn--whether they were parts of a necklace, the central element of a necklace, or worn singly.

Crescent shaped pendants have a long history and are common in Greek and Roman contexts as well as in the Near East. The Late Geometric example from Kameiros [FIG. 247] has already been mentioned, and a silver example, probably of later date, was found at Lindos (Lindos 1, no. 241). A number of gold examples were found at Ephesos in and around the Basis. All are flat crescents with either loops or holes for suspension. One has a row of embossed concentric circles and a linear border (Hogarth, 106, pl. 7: 6, from the Basis). Seven others of slightly varying shapes are plain (Hogarth, pl. 7: 1-3). Silver crescent pendants were quite common in the Southwest Anatolia hoard with at least ten examples [FIG. 280, 282]. Some are similar to the Ephesos examples, being flat and having either loops or holes for suspension. At least one example, however, is thicker and rounded in section. A small silver example was recently found at Sardis in a context associated with the Persian destruction of 547 (M85.15/9135, found with two fragments of silver ornament; unpublished) [FIG. 118]. A possible gold example was found at Phanai, although it rather may be a part of a fibula (W. Lamb, BSA 35, 1934/5, 147), and a gold example from Tocra is from a context of c. 600 but need not be East Greek (J. Boardman, Tocra 1, 156,

no. 3, fig. 71, pl. 104: 3).

A less common pendant is a simple, circular ring with attached pierced "handle". Two examples are from Ephesos, one gold (Hogarth, 107, pl. 7: 13) and the other silver (Hogarth, 118, pl. 12: 34, neither from the Basis). They continued a Geometric tradition of bronze pendants (J. Bouzek, Pamatky Arch. 65, 1974, 321), several of which were found at Samos (Gehrig, no. 59-62).

An unusual pendant is thought to be from Ephesos but was acquired in 1883, before the Hogarth excavations (BMCJ, no. 1048; c. 8 cm.). Two gold horn-shaped terminals enclose a piece of ivory, pierced for suspension. Four other examples of the gold elements were found in the Basis, one with a suspension ring (Hogarth, 115, pl. 9: 15).

Other pendants were in the Southwest Anatolia hoard. One type is a slightly flattened globe of silver with silver studs around the edge and in the center; in one case a gold stud is in the center [FIG. 280, 286]. Comparable is a gold pendant of similar shape from Sardis (J. Waldbaum, Metalwork from Sardis, no. 884 [FIG. 305]; the new hoard material supports the Lydian date for the Sardis example, but Byzantine pendants of similar shape are also known, perhaps including the example no. 885). Another silver globular pendant has a T-shaped suspension tube [FIG. 280], a type also found at Sardis (Sardis 13, no. 84). Other globular pendants are smaller and made of two hemispherical halves, occasionally with added granule clusters below. A pendant

in silver is rectangular with granulated triangles and two pendant globes with granulation [FIG. 280]. The back is looped over for suspension. It is reminiscent of an earlier Rhodian gold plaque (Laffineur, no. 114), but any connection appears to be remote.

Pendants that held precious stones, engraved gems, pastes, or other objects became popular by the second half of the sixth century, and some types have much in common with ring mounts, which also came into vogue at that time. The mounts usually consisted of a wire clasping or passing through a hole drilled through the mounted object and then usually tightly wound at the terminal points of the hoop, allowing the mounted object to swivel; the hoop was usually pinched to form a loop for suspension. Sometimes the mounted object was enclosed by a separate metal band or frame. The same technique was used for mounting scarabs in early rings (cf. "Rings", below). The practice of mounting objects, especially scarabs, in this manner was originally Egyptian but probably transmitted to the Greeks by Phoenicians via Cyprus in the late seventh century, although the fashion did not become very popular until later. Scarabs mounted in this fashion are worn by a Cypriot terracotta statuette found at Samos (G. Schmidt, Samos 7, 87, pl. 75, T 301). Imported scarabs in fragmentary silver mounts were found at Ephesos (Hogarth, 235, fig. 43: no. 17) and in the Southwest Anatolia hoard.

An example of a gold mount from Ephesos comes from the West area and must be relatively early, although perhaps not

as early as the material in the Basis (Hogarth, 107, pl. 7: 9). It is composed of a beaded circular rim with a serrated upper edge and central wire to hold the missing stone or paste. A pinched wire that swivels serves for suspension. In later sixth century Sardis tombs, round banded agates are set in similar mounts with serrated edges decorated with granulation (Sardis 13, no. 38-39). A similar pinched wire holding an agate bead is from a relatively early Sardis tomb (J. Waldbaum, Metalwork from Sardis, no. 883, "c. 575-540") [FIG. 306]. A large (c. 5 cm.) silver example missing whatever was held on the wire was in the Southwest Anatolia hoard, this with the wire wound around the ends in the Phoenician manner [FIG. 284]. A pale gold pinched wire clasping an oval frame ornamented with beading and a "woven" pattern but now missing whatever was once held, is said to be from Asia Minor and is now in a private collection (unpublished) [FIG. 307]; fragmentary silver beaded band from Larisa may also be a mount (Larisa am Hermos 3, 49, pl. 10: 28). Another pinched wire pendant in the Southwest Anatolia hoard holds a hollow silver ram's head with resinous core, which has a crudely incised lion's head on the base [FIG. 280, top]. The ram's head type is best known from the fine gold example from Cyprus that Boardman attributed to an East Greek workshop and compared to the earlier faience ram's head seals from Greek Naukratis (AGG, 161, no. 589; cf. "Engraved Gems", below).

A variety of new pendant types were found in Lydian

graves of the later sixth and fifth centuries, but here the mixture of Greek, Lydian, and Achaemenid influences makes distinguishing Greek work difficult. Hemispherical caps with granulation in the manner of the precious stone mounts mentioned above are well represented in the Lydian tombs from Sardis and elsewhere. They usually enclose an oval or "adze-shaped" blue paste (Sardis 13, no. 37; others in New York, unpublished) or precious stone (Sardis 13, no. 36, a cornelian intaglio). Achaemenid examples suspended from chains, although without whatever was held in the cap, were found in the Oxus treasure and Pasargadae (cf. above). Two examples of rock crystal pendants with gold lion's head terminals are also from Sardis (Sardis 13, no. 49-50). A gold pendant in the form of a miniature amphora (Sardis 13, no. 48) is a type more typical of the fifth century and is likely Greek. Other pendant mounts either for cylinder seals (Sardis 13, no. 34, 104) or in the form of duck heads for pyramidal or weight seals are best viewed as Lydian under Achaemenid influence, as should many of these other mounts. A 24 gram ingot of gold on a wire loop was found in a Lydian tomb (New York 68.11.21; D. von Bothmer, CRAI 1981, 207, fig. 12) [FIG. 308] and perhaps suggests ostentatious Lydian wealth, although similar examples have been found in Greece as well (P. Amandry, Stathatos 1, no. 104 and 215).

Two pendant of mid-seventh century date from Emporio (Chios) are of lead and appear to imitate examples in precious metal (Emporio, 202, no. 158f., fig. 134, pl. 85). One example has a pattern of cup spirals, much like examples

from Ephesos (cf. below), but such lead pendants are best attested at Sparta. Another group of lead pendants, apparently sixth century in date, depict a goddess standing on a lion's back accompanied by another figure, a type which is certainly derived from Anatolian and Assyrian prototypes. Examples have been found at Samos, Ephesos, Chios, and Delos, as well as at uncertain sites in Asia Minor, but are probably not made by Greeks (H. Moebius, AA 1941, 1-26; Boardman, Greeks Overseas, 76, 271 n. 159, fig. 70-71; W. Andrae, ZfN 34, 1924, 2-6).

Figural Pendants:

Figural pendants also were used, including anthropomorphic examples. A small (1.3 cm.) solid gold figure of a female was found at Ephesos in the West area (Hogarth, 106, pl. 3: 11; 4: 25). She wears a chiton and himation with drapery carefully detailed, her feet protruding from under the garment, and holds what Hogarth described as a "tortoise-shell lyre of primitive form" in her left hand while her other arm is at her side. The suspension ring is on her back. The head is large with almond shaped eyes, slightly pointed nose and chin, and hair swept behind the ears and over the back. A larger (3.7 cm.) figurine of a kore in the Ortiz collection is of solid silver [FIG. 309]. She wears a chiton which has carefully depicted folds below the waist but no detail above, where the breasts are shown. The feet again protrude. Both arms are bent at the elbows and the hands held before her. Her

left hand holds a pale gold bowl, but the right hand is missing. The suspension ring is on her head above a serrated, crown-like piece that appears to be a headdress. The head is quite large and crude, with overly large elongated eyes with outlined border, and a large nose and chin. The hair is shown as a ring around the head with cross-hatched incised lines. Both these figures are similar to other Ephesian korai, such as the gold figurines in the Basis, the large bronze statuette (Hogarth, pl. 14), and some of the ivory statuettes (e.g. Hogarth, pl. 24: 5-9), in that the heads and features are overly large and the noses prominent. A date in the first half of the sixth century is likely. A tiny pendant in the shape of a human head from the West area (Hogarth, 106, pl. 3: 9) recalls objects in Daedalic style, but perhaps only because it is facing. The work is very simple.

Some pendants in the shape of hands or feet are probably not purely votive like the examples discussed above. Hogarth (Hogarth, 107) has cited the popularity of the leg pendant in Egypt and an example from the Dictaean Cave (BSA 6, 112, fig. 46, bronze). The gold leg and foot from the West area (Hogarth, pl. 7: 21) is pierced for suspension but resembles more the other fragile votives. A silver leg and foot with suspension ring from the East area (Hogarth, 118, pl. 12: 11) is more suitable for wearing and similar to a finely carved ivory example (Hogarth, 196, pl. 42: 10-1). A silver arm and hand pierced for suspension was among the objects in the Southwest Anatolia hoard and thus

presumably not votive.

Non-human figural pendants from Ephesos include the small but fine granulated insect, probably a bee, with socket and suspension ring from the Basis (Hogarth, 107, pl. 3: 1; 7: 45; "fly"). As noted above, the workmanship is much like the granulated bee pin and cicada brooch. A pale gold head of a lion with protruding tongue comes from the West area (Hogarth, 107f., pl. 3: 7; 7: 18). It is decorated with beaded wire imitating granulation, and the back has two loops. The lion's head may have been a central element of a necklace, as the Rhodian example (BMCJ, no. 1208; cf. above) probably was, a style increasingly popular in the fifth century.

Hawks are again popular at Ephesos as pendants. Two pale gold displayed hawks (Hogarth, 106, pl. 7: 27-28; Basis and West area) are identical to the brooches but instead have a suspension loop on the head. In addition, a flat silhouette hawk with incised detail (Hogarth, 106 pl. 7: 20; Basis), much like the votive types, has a ring for suspension through the shoulder.

A few other hawk pendants have been found in Asia Minor, usually linked to Lydian contexts. From Tomb 61.2 in the Inderese Cemetery at Sardis is a silver hawk standing on a rectangular base with its wings swept back and attached to the base and a suspension ring attached to the back (J. Waldbaum, Metalwork from Sardis, no. 882; "c. 575-540") [FIG. 310]. The silver chloride crust has not been cleaned,

and incised details are not visible, but the eyes clearly bulge. Another silver hawk was in the Lydian-Achaemenid burial at Nymphaion, just east of Smyrna (cf. G. Tigrel, Festschrift H. Vetters, 1985, 50f., not illustrated). A bronze pendant in Oxford in the shape of three hawks standing on a rectangular base was purchased in Izmir and is said to come from Sardis (Oxford 1892.892; J. Waldbaum, Metalwork from Sardis, no. 992) [FIG. 311]. There is a suspension loop on the back of the middle bird; the eyes bulge; and there is no incised detail. Hawk pendants in faience were widespread in the late seventh and sixth centuries (V. Webb, Archaic Greek Faience, 94ff., 105ff.), and a new example was recently found at Sardis in a level associated with the Persian destruction of 547 (G85.9/9136; unpublished) [FIG. 118].

An exceptionally fine silver hawk pendant-seal was said to have been found in Asia Minor with a silver ram pendant (cf. below) and is now in a private collection (H: 2.4 cm.; unpublished) [FIG. 312]. The solid silver hawk, whose head is gilt, clutches a hare in its talons and stands, wings folded, on a T-shaped plinth, under which is engraved an intaglio design. The device is a combined cock, boar forepart right, and dog(?) forepart left in good Greek style of the later sixth century. Such mixed animal devices are seen on engraved gems of the period, although none exactly corresponds to the silver hawk seal (cf. AGG, 128, no. 404-405 and esp. 135, no. 459, and GGFR, pl. 298, for conjoined animal foreparts; also, J.D. Beazley, AK 4, 1961, 60ff. and

notes for mixed animals and whirligigs and their Eastern models; a whirligig of griffins is already seen on a Phrygian ivory seal from Ephesos, Hogarth, 167, pl. 27: 3). A suspension loop with beaded edges is on the hawk's back. The features and feathers are finely engraved, and the hawk wears a beaded wire necklace with central circular element. Jacobsthal (JHS 71, 1951, 91) noted that hawks from Ephesos often wear necklaces (a displayed hawk fibula, Hogarth, pl. 4: 23; a silver hawk with gold beaded necklace, Hogarth, pl. 11: 5; and a bronze hawk figurine, Hogarth, pl. 15: 16, now in London) and suggested that such birds may have been kept in an aviary as sacred to Artemis. However, the ram pendant probably found with the hawk also wears a similar necklace (as do some other figurines of this type, cf. below). An ivory hawk from Gordion not only once wore a necklace, but also served as a seal, although the style is quite different from the silver example (R.S. Young, AJA 59, 1955, 5, pl. 2, fig. 9; from a context "after 525" and described as an owl) [FIG. 234], and another Phrygian hawk in alabaster wears a bronze collar (R.S. Young, AJA 68, 1964, 280, pl. 86, fig. 6; an earlier Phrygian hawk from Gordion in silver, R.S. Young, AJA 66, 1962, 166, pl. 48, fig. 22). Like the silver pendant, a bronze hawk from Ephesos (Hogarth, pl. 15: 14) clutches a hare, and the same motif is seen in East Greek marble sculpture in examples from Sardis and Samos (G.M.A. Hanfmann, Sculpture from Sardis, 160, no. 238; B. Freyer-Schauenburg in Archaische und klassische griechische Plastik

1, 1986, 67-71), and on an ivory inlay from Gordion (R.S. Young, AJA 68, 1964, 283, pl. 84, fig. 14).

Perhaps also best mentioned here, although of uncertain date, is a small silver cock with gold plated tail and comb that is stylistically close to the hawk pendant and also from Asia Minor (H: 2.16 cm.; private collection; unpublished) [FIG. 313]. Again the engraved detail is very fine. The function of this piece is uncertain since it does not show signs of a loop for suspension. The feet stand on a small rectangular plinth, and perhaps it surmounted an object in the manner of the larger silver cock on the incense burner from a Lydian tomb now in New York (D. von Bothmer, Met.Mus.Bull. 42,1, 1984, no. 68) from a Lydian tomb. The two pieces are stylistically similar. Other cock attachments in bronze are also known (cf. "Bronzes", above).

The recumbent ram pendant is one of a class of precious metal objects that has only come to light recently. Recumbent animals in this pose, namely with legs tucked under and head turned toward the viewer, in various materials have a long history in the Near East and are popular in early Archaic Greek art, most notably in ivory examples from Ephesos and the Peloponnesos (cf. "Ivories: Ephesos", above; Hogarth, 163f., pl. 26: 1 and 5, descriptions in text reversed; also the seventh century ivory seals from Perachora, Argos, and Sparta, Boardman, Island Gems, 150f.; and in bronze, the recumbent cow from Samos [FIG. 100], which wears a necklace, and the rams from a vessel in New York, cf. "Bronzes", above). The precious

metal examples are all closely related in style and technique, and all are from East Greece or Lydia. All are recumbent rams; some are pendants, others pins, and others perhaps earrings. Most are constructed the same way, two hollow halves, front and back, joined with the seam often visible. The animal is usually stippled. The pendant already mentioned (L: 3.3 cm.; private collection) [FIG. 314] has a loop with beaded edges on the back of the neck. The ram's face is somewhat damaged, but the features are clear enough. The eyes are outlined; the horns are small; the ears are added and stick out perpendicularly from the head; and there is a small knob on the forehead. As mentioned before, a beaded necklace is worn. The ram is hollow, but may have had a resinous core. An example of similar size is in Boston (MFA 1972.72; C. Vermeule, Sculpture in Gold and Silver, 2, no. 2; "540-525") [FIG. 315], which is said to have come from a Lydian tomb with other examples of Lydian-Achaemenid metalwork. This example sits on an oval base with beaded border. The underside is now hollow, and Vermeule speculated that a seal may have been placed there, which seems unlikely. It was probably the head of a pin, much like the example in the Mildenberg collection (Mildenberg Cat., no. 24) [FIG. 316], which has a beaded oval base with part of the pin preserved. Another example was in the Velay collection in New York (C. Vermeule, op. cit., 2, no. 3; D. von Bothmer, Ancient Art in New York Collections, 71, no. 280, pl. 10). Perhaps also

related is a cast bronze (?) specimen of uncertain function in the Stathatos collection (Stathatos 4, 32, pl. 3).

The earliest example of this class of objects is a tiny specimen from the Basis at Ephesos, which must date c. 600 (Hogarth, 107, pl. 3: 4; 7: 4). It is of pale gold and hollow with a hole bored so that either a pin or pendant is a possible function. The features are difficult to distinguish, but a perpendicular ear is preserved, and the pose of the body is typical. A solid electrum example was found at Sardis (J. Waldbaum, Metalwork from Sardis, no. 719; BASOR, 191, 1968, 13) [FIG. 317] in a sixth century context near the gold refineries and Lydian altar. Again, the ears protrude and there is stippling. In this case, a wire is attached to the back which has led the excavators to identify the example as an earring. However, no other figural earrings of this period are known (cf. below), and this interpretation is not certain. Most recently the Southwest Anatolia hoard has added several more examples in both silver and pale gold, all small (slightly over 1 cm.) [FIG. 280, top right, three in silver]. The gold examples have loops on the neck and are clearly pendants, but the silver examples have fragmentary twisted wires attached to the back, somewhat like the Sardis example, that make the function unclear. All are hollow and made of two joined halves. They are stippled, and several sit on oval bases, like the Boston example.

A final figural pendant from the Southwest Anatolia hoard may be noted. It is a small, nearly flat silver

pendant with suspension ring in the shape of an animal with a long tail [FIG. 280].

Necklaces:

Many beads and pendants that were once strung as necklaces have survived, especially in large quantities at Ephesos, but cohesive finds that allow reconstruction of the necklaces are rare. Only the few grave finds, mostly of the later sixth century from Lydian tombs, present complete examples, and even these show surprisingly varied elements. Representations of necklaces on other works, such as sculpture, terracottas or painted vases, are infrequent, but there are a few good examples, including seventh century Samian terracottas (cf. the study of representations on vases and terracottas, I. Blanck, Studien zum griechishen Halsschmuck der archaischen und klassischen Zeit, Diss. Mainz, 1974, esp. 55f., 59-62, 67f., 71-78). Usually simple, round bead necklaces are depicted (ibid., 71-78, "Perlenketten"), sometimes with larger central elements. Other times a row of pendant elements are shown, and occasionally a single pendant or amulet. Several strands of necklaces were also worn. Some of the ivory figures from Ephesos wear necklaces, including a long strand of large spherical beads (Hogarth, pl. 24: 7), a single large circular pendant (Hogarth, pl. 24: 10; A. Bammer, OJh 56, 1985, 42, fig. 4-5), and a solid torque (Hogarth, pl. 24: 1). Actual finds indicate that typically the necklaces were composed of either all round beads or alternating beads and

pendant elements of various shapes, occasionally with a larger central piece, although not necessarily in a symmetrical order. Other more unusual elements are also known. Beads of precious stones, glass, and faience are also popular at this time.

Hogarth listed several varieties of pierced beads from Ephesos (Hogarth, 113-114). These include plain globular beads of gold and silver (the most common type with nearly 200 found in the Basis and West area); globular ribbed or fluted "melon" beads in both gold and silver, sometimes with granulation; elongated "barley-corns" in gold, sometimes two or three together (Hogarth, pl. 9: 22; 10: 45, 66-7); elongated beads with granulated ribbing (Hogarth, pl. 9:21; like the pin heads, cf. pl. 5: 20 and 6: 26); cylindrical and ribbed beads in both gold and silver (Hogarth, pl. 10: 61, 68, 70; 12: 1-2); a few beads, flat and rectangular with embossed "fringe" pattern (Hogarth, pl. 9: 27=BMCJ, no. 984 [FIG. 318]; which has a parallel in the Boston necklace, below); and biconical beads with sharp central ridge or of elaborate elongated form (Hogarth, pl. 10: 54, 80-1, 84-5; 9: 24; BMCJ, no. 1007).

An elongated biconical bead in gold (Hogarth, pl. 9: 24) is also seen in large bronze examples (Hogarth, 151, pl. 18: 42, 44, 45) and may be related to northern Greek examples in bronze (cf. N.K. Sandars in Tocra 2, 77-80) which continued in ornamented gold examples through the sixth and fifth centuries (cf. P. Amandry Stathatos 1, 47f.,

no. 95-101).

As noted above, some objects listed as pin heads by Hogarth must also have been used as beads, including some large melon beads (e.g. Hogarth, pl. 5: 26; 6: 6, 36) and the cylindrical beads made of clusters of small granules (Hogarth, 102, pl. 6: 18-20, 22-23). Composite beads for multiple strands are also known, including the double and triple "barleycorns" mentioned above, a triple cylinder decorated with double-axe elements (Hogarth, 114, pl. 7: 37=BMCJ, no. 983; West area) [FIG. 318], and rows of spherical beads (Hogarth, 114, pl. 9: 19; six rows each containing three spheres, from the Basis).

Pendant elements, those beads suspended from loops, are usually bud- or pomegranate-shaped (as on the early Samian terracotta T 387, Blanck, op. cit., 55; and cf. the pendant beads suspended from plaques and earrings from the Rhodian orientalizing workshop, Laffineur, no. 91, 198-199, 204). The buds may vary in size and thickness, being either very thin or large and approaching the shape of a biconical globe. Most are hollow, and sometimes granules are added to the tip. At Ephesos over 200 gold specimens of various types were found, with over 100 from the Basis (Hogarth, 105f., for list; pl. 10), as well as a lesser number in silver (Hogarth, 118, pl. 12: 6-9). Sometimes the buds are ribbed (Hogarth, pl. 10: 74-5) and other times take the form of pomegranates or fruits (Hogarth, pl. 10: 43, 57, 86, 88; 6: 61) or even an open blossom (Hogarth, 106, pl. 10: 71). The cluster bead can also occur as a pendant variety

(Hogarth, pl. 7: 5; cf. a very similar example suspended from a spherical bead from a Sardis tomb, Sardis 13, no. 26e). A bud shaped element suspended from a ribbed cylinder of silver is attested in only one example at Ephesos (Hogarth, 118, pl. 12: 10=BMCJ, no. 1081) but becomes more common later in similar Lydian examples. Other larger pendants are discussed below.

A recent find at the Artemision adds some more bud examples but also suggests a possible reconstruction. Eight plain bud pendants appear to have been placed on either side of a slightly larger central bud pendant with added beading at the tip and around the upper rim (cf. Bammer, fig. 101, top row; arranged as a necklace in the Ephesos Museum).

Beads in precious stone, glass, and amber do not closely parallel the gold examples. Closest are the rock crystal beads that are carefully worked, corresponding to the ribbed melon beads, but these are not common and perhaps are more often pin heads since they usually show traces of metal (cf. Hogarth, 212). Only a few cornelian beads were found (Hogarth, 213, pl. 46: 4). The glass beads are numerous, usually spheres or whorls in various colors but some elongated (Hogarth, 209, pl. 45: 29). Faience biconical, fluted, and three-cornered beads were also found (Hogarth, 203f.). Amber beads are well attested in several varieties, including ribbed cylinders and biconical beads (Hogarth, 216, pl. 48: 5-7, 10, 26).

There are only sporadic finds outside Ephesos except

for the large quantities of jewelry from Lydian tombs of the late sixth and fifth centuries. However, the Southwest Anatolia hoard, which contained nearly 100 beads, provides a number of close parallels, as well as other types, all except one being silver [FIG. 280]. Sharply divided biconical beads with beaded end discs are the most common type composing at least half of the material. Biconical beads are known at Ephesos, but not with beaded ends. Also represented are the plain biconical beads, and there are numerous examples of ribbed cylinders and granulated cylinders. Several bud pendants are represented, including a large, globular example like the large gold example from the Basis (Hogarth, 105, pl. 10: 69; 9.2 grams), each of which must have served as the central element of a necklace. Also in the hoard was a single pale gold bud with flat back. Only one small ribbed melon bead was in the hoard.

Tomb 36 in the West Necropolis at Samos contained bronze biconical beads with ribbing of a type not common at Ephesos (cf. the more elaborate BMCJ, no. 1008, and similar examples in faience, Hogarth, pl. 44: 5, 8, 9) but close to the gold examples from the Rhodian orientalizing workshop (e.g. Laffineur, 219-223), although probably of later date (Boehlau, 42, 162; now in Kassel, F. Naumann, Antiker Schmuck, 1980, 21, no. 7, pl. 2). Eight similar beads were also found in a Sardis tomb of the late sixth or early fifth century (Sardis 13, no. 42). Another necklace in Kassel (Naumann, op. cit., 22, no. 8, pl. 4), of unknown provenience but East Greek in style, combines similar ribbed

biconical beads in pale gold with buds, ribbed melon beads, and cluster beads. At least twenty gold melon beads of various sizes said to be from Asia Minor are now in Brooklyn (Davidson and Oliver, op. cit., 21, no. 17-18, "fourth century"), and others periodically appear on the market.

An unpublished necklace in Boston said to be from Asia Minor (MFA 1982.413, called "Lydian") [FIG. 319] is composed of thirty elements of gold and cornelian. A pierced rectangular gold bead with embossed "tassels", much like examples from Ephesos (Hogarth,114, pl. 9: 27; BMCJ, no. 984; [FIG. 318]), has a pendant sphere with ornament below resembling a pomegranate. The beads alternate spheres of gold with spheres of cornelian.

Another find of very finely made gold jewelry said to be from Asia Minor is in the Ortiz collection (unpublished) [FIG. 320]. Two large gold astragal ornaments (cf. below), which have much in common with examples in Berlin said to be from near Ephesos, were found with thirty-nine elements of a necklace, twenty beads and nineteen bud pendants. The necklace is most likely intact, and clearly the elements were meant to alternate (cf. the necklace worn by the kore from Delos, Athens NM inv. 22; Richter, Korai, 88f., no. 148, fig. 472-475). The beads are like slightly flattened "barleycorns" with the short sides having the "barleycorn" ribbing and the flat sides with a hatched row; the ends are beaded. The shape is very close to one example from Ephesos (BMCJ, no. 981) [FIG. 318], which only differs in not having

the hatched row on the flat sides. The buds are hollow but finely moulded with globular suspension loops and ribbed necks. The finely moulded work is not typical of the Ephesos finds, although the basic shape is common (closest is the silver example, Hogarth, pl. 12: 6), and such work perhaps speaks for a date slightly later than the Ephesos material.

Lydian tombs at Sardis, almost all dating from the late sixth and fifth centuries, contained much jewelry and many varieties of beads, some close to Ephesian types and others entirely new. The relatively early Grave 61.2 in the Inderese Cemetery of the mid-sixth century contained one gold granulated melon bead (J. Waldbaum, Metalwork from Sardis, no. 760) [FIG. 321] of a type with a very close parallel from Ephesos (BMCJ, no. 1001) [FIG. 318]. Finely worked melon beads composed of cornelian or glass paste spheres with added gold beading and end pieces were in the later Tomb 213 (Sardis 13, no. 52). Granulated cylinders were found in several Sardis tombs (Sardis 13, no. 22, 25, 26d), as were ribbed cylinders (Sardis 13, no. 42, 51; the latter with jewelry of Achaemenid style). The gold ribbed cylinder with pendant sphere, which is first seen in a related type in silver at Ephesos, becomes more common (Sardis 13, no. 31, with rosettes under the sphere, and no. 44; others said to be from Asia Minor are in Brooklyn, Davidson and Oliver, op. cit., 20f., no. 16; and similar examples with pendant discs hanging from the spheres on a necklace from Asia Minor, London market, 1985). Plain

spheres are also well represented (Sardis 13, no. 22, 25, 28, 33, 43, 52).

New varieties at Sardis include a distinctive biconical bead with beaded ends (Sardis 13, no. 21, 22, 24, 27, 31, 41, 42); "aryballos" elements with short neck and open mouth, sometimes with added rosette under the base (Sardis 13, no. 24, 29, 30, 31, 44); spheres, sometimes granulated, with pendant discs hanging from short chains (Sardis 13, no. 25, 33, 41, 52; perhaps the Ephesos specimens, Hogarth, pl. 10: 48 and BMCJ, no. 1030, are of this type, missing the pendants); and plain rectangular (Sardis 13, no. 52) and cylindrical (Sardis 13, no. 31, 52) gold beads. Flat pyramidal clusters of ten small spheres are also seen (Sardis 13, no. 41, 45), and some hollow floral elements composed of two embossed halves are also introduced (Sardis 13, no. 32, 33, 41).

A small but very finely worked gold pendant in the shape of an amphora (Sardis 13, no. 48), adapted from bud types, anticipates the amphora-pendants that became popular in Classical and Hellenistic times.

Nineteen gold astragals of realistic shape, hollow and made in two halves, were evidently strung on a necklace with other beads found in Tomb 75 at Sardis, along with other beads, earrings, a ring, and the four gold lions once sewn to a garment (Sardis 13, no. 44). Such astragals appear to have been purely decorative and without ritual significance (on astragals, cf. below), and similar examples in gold and

stone for jewelry became popular in the fifth and fourth centuries (cf. three gold examples said to be from Asia Minor in Brooklyn, Davidson and Oliver, _op. cit._, 18f., no. 14; others from Greece now in Hamburg, Hoffmann and von Claer, no. 46; fourth century examples mounted in rings from Pella and in the Canellopoulos collection, R. Laffineur, _BCH_ 104, 1980, 390f., no. 73, fig. 78; and in cornelian from Kerch, _Berlin_ 1, pl. 25: 1-2, and Taranto, _Gli Ori di Taranto in Eta Ellenistica_, 1984, 282, no. 189).

A number of larger pendant elements are known from Ephesos, the Southwest Anatolia hoard, and elsewhere. One example is a splaying cylinder, a loop at the top, and wider at the bottom where there is a beaded rim and often an added sphere or hemisphere with granule knob. Six gold examples were found at Ephesos (Hogarth, 106, pl. 7: 17; 10: 51; West area) and one silver (Hogarth, 118, pl. 12: 5). None is from the Basis, and they could belong to the first half of the sixth century rather than earlier. However, a similar example in bronze was found in a late seventh century level at Emporio, Chios (_Emporio_, 227, no. 408). The type in silver is common in the Southwest Anatolia hoard, which contained at least five examples [FIG. 282]. Two somewhat similar examples in gold with granulation were in a Sardis tomb (_Sardis_ 13, no. 47), and another said to be from Asia Minor is in Brooklyn (Davidson and Oliver, _op. cit._, 15, no. 6, "fourth century or earlier"). Another type of pendant well represented at both Ephesos and in the Southwest Anatolia hoard is a flat, leaf-shaped ("lance-head") pendant

with loop formed by curling the top over. Hogarth reported twelve pale gold examples from both the Basis and the West area (Hogarth, 106, pl. 7: 11, 12, 25; BMCJ, no. 1012) and two examples in silver (Hogarth, 118, pl. 12: 3-4). The Southwest Anatolia hoard had several examples, including some that are smaller but thicker and sometimes round or square in section [FIG. 280]. Similar, with the loop made the same way, are solid, elongated, biconical beads. One pale gold example was found in the West area at Ephesos (Hogarth, 107, pl. 7: 46=BMCJ, no. 1033), and at least a dozen silver examples of various sizes in silver were in the Southwest Anatolia hoard [FIG. 285]. Somewhat similar is a type known only from several examples in the Southwest Anatolia hoard, which is a solid stick, slightly thicker at the bottom, with the top loop formed by curling over and winding the metal several times around the neck [FIG. 281].

Two types of necklaces popular in the fifth century may have been anticipated in some sixth century examples. In the first, embossed gold foil elements of identical pattern are strung together. Late sixth, or more likely early fifth, century examples are seen on complete necklaces from Sardis (Sardis 13, no. 23) and Ialysos (Grave 32, ClRh 8, 154f., fig. 140). A similar technique is found in two ornaments from Ephesos composed of double palmettes (Hogarth, 115, pl. 9: 18, 20; Basis and West area respectively; "bow-ties"). Hogarth already recognized they could be parts of necklaces, and Blanck thought the type

could be recognized on the necklace represented on a Caeretan hydria (Blanck, op. cit., n. 277-278; and cf. J.M. Hemelrijk, Caeretan Hydriae, 171 n. 627), but this is unconvincing.

The other necklace type is composed of pendants in the shape of acorns. It became very popular in the fifth century (cf. Higgins, 129; and at Ialysos, Marmaro, Tomb 32, ClRh 8, 154f., fig. 140), but the earliest known examples, somewhat surprisingly, come from a mid-sixth century burial at Gordion (R.S. Young, Archaeology 3, 1950, 199, fig. 5; UPennMusBull 16,1, 1951, 17ff., fig. 3) [FIG. 278] and a late sixth century Lydian tomb (now in New York; D. von Bothmer, CRAI 1981, 205; gold caps with alternating gold and blue glass fruit). An acorn necklace may be worn by a limestone kore from Sardis, but it is unclear (G.M.A. Hanfmann, Sculpture from Sardis, 52, no. 9).

A few figural beads may have been used as elements of necklaces. One lion head bead with the hole passing through the mouth and out through the neck is on a bracelet (cf. below), and a similar bead is in Munich (Antikensammlung 11080B; unpublished). A crouching lion, again with the hole passing lengthwise from front to back, comes from Smyrna and is in Berlin (Berlin 1, 29-30, pl. 10: 4; "Kettenglied", second half of the sixth century?) [FIG. 322]. The embossed plaque in Berlin depicting a winged female (cf. "Plaques", below) probably served as an element on a necklace rather than a garment. Facing lion's heads suspended from cylindrical beads, in a manner not unlike the spheres joined

to cylindrical beads mentioned above, were found at Delphi and were presumably worn by the chryselephantine statues, all of which are likely of East Greek work (P. Amandry, BCH 63, 1939, pl. 33; Higgins, 129; cf. the ivory example with facing lion's head from Ephesos, "Ivories: Ephesos", above) [FIG. 239].

A solid torque-like necklace of bronze with bead and reel moulding was found in Grave 21, a woman's burial of the mid-sixth century, at the West Necropolis on Samos and is now in Kassel (Boehlau, 38, 162, no. 13, pl. 15: 6; Naumann, op. cit., 21, no. 6, pl. 2). Naumann noted that the ivory spinner woman from Ephesos (Hogarth, pl. 24: 1) wears a similar example. Another torque, this of twisted bronze was found at Ephesos (Diam.: 16.8 cm.; Hogarth, 149, pl. 15: 11), and at least two plain bronze examples were found in the recent excavations at Erythrai (Izmir Museum, unpublished).

Earrings:

Earrings were the most popular form of jewelry in the Archaic period, and many varieties exist. The most widespread type is the spiral earring already met on Rhodes in the Geometric period and which continued with more elaborate varieties in all areas of Greece throughout the Classical period. Leech-shaped and the related boat-shaped earrings are best represented in Asia Minor, but they also continued in various forms elsewhere in Greece until well after the Archaic period. Some other more unusual varieties are unique to Asia Minor, and several types of Persian earrings were introduced toward the end of the sixth century. In addition, ear studs of various types are attested at a number of East Greek sites.

Spiral earrings have been mentioned above as occurring on Rhodes in Late Geometric graves (having developed from earlier prototypes), but the type is widespread and long lived. They were manufactured by the Rhodian orientalizing workshop, both in elaborate examples with granulated discs and added griffin heads and in simpler varieties with pyramidal globes (Laffineur, no. 217) [FIG. 252] or ridged knobs (Laffineur, no. 209, 213) as terminals, and some may have continued into the sixth century. Laffineur discussed in detail not only the examples from Rhodes but the varieties and distribution of spiral earrings at all Island and East Greek sites and provided a comprehensive chart (Laffineur, 142-146, 187-189; cf. Higgins, 113, 119, 126). He divided the spirals into four basic groups: tight

spirals, often with moulded terminals (A); similar examples but with double loops (B); "false" spirals where the profile is W-shaped but with the middle rising well above the terminals which are most often discs (C); and again a type similar to (C) but with a double spiral (D). Types A and C are the most common.

Both types are best represented on the Islands, most coming from Rhodes, with others from Samos, Chios, Thera, Paros, Aegina, and Crete. Most examples are bronze, but some Rhodian examples are of gold, silver, and gold plated silver or bronze. Several gold plated silver examples were found in the West Necropolis at Samos, and several silver examples are from Crete. At Emporio (Chios) both types were found in levels spanning the seventh century, including a silver example from a late seventh century level (Laffineur, 143). In Asia Minor, Ephesos has yielded over thirty examples in gold, silver, gold plated silver, bronze, and lead of types A, B, and C, with both types A and C occurring in the Basis. Another single gold example of Type C with discs ornamented with a single globe is said to be from Asia Minor (London market, 1986) [FIG. 323]. Not listed by Laffineur is an odd variety of silver spiral earring from Ephesos, which has an ornate diamond-shaped frontal plate added (Hogarth, 117, pl. 11: 30, one from the Basis; BMCJ, no. 1070), a type that recalls the ring with diamond-shaped bezel from the seventh century Grave 23 at Ialysos (CIRh 3, 50ff., fig. 44; cf. above) and a silver diamond-shaped

ornament with granulation in the sixth century Southwest Anatolia hoard, which is of uncertain function but possibly also an earring.

Only a few other examples, none from excavations, are from sites in Asia Minor. One earring in gold is said to be from Myndos in Karia (BMCJ, no. 1245; Higgins, 119; Laffineur, 188, A1, no. 3). The terminals are splayed and decorated with incised zigzags and circles, patterns which suggested a Geometric date to Marshall and Higgins. However, such decoration is not exclusively Geometric, and closer parallels are seen in the decoration on the terminals of silver bracelets in the Southwest Anatolia hoard (cf. below) and in the Vouni (Cyprus) treasure of the mid-fifth century (SCE 3, pl. 89: 17; A. Pierides, Jewellery in the Cyprus Museum, pl. 25: 5; cf. also a silver bracelet of unknown provenience in Baltimore, Walters Art Gallery 54.601, Jewelry, Ancient to Modern, 1979, 89, no. 266, and a gold pair from Asia Minor, New York market, 1984). Similar earrings with incised zigzags and splaying terminals are said to be from Ephesos (Schimmel Cat., no. 69d; Laffineur, 188, A2, no. 13), although none of that type was found in the excavations. A pair of gold plated silver earrings said to be from Asia Minor (private collection, unpublished) [FIG. 324] also has incised zigzags and circles on the terminals, as well as caps with incised rosette pattern (cf. the Vouni bracelet, SCE 3, pl. 89: 15; Pierides, op. cit., pl. 25: 4; and the Southwest Anatolia hoard bracelet). These earrings, the Myndos example, and the Schimmel piece

must belong to the main series of the seventh century, or possibly slightly later.

The Southwest Anatolia hoard contained a variety of spirals, all of A type. Some are quite simple, including a pair made of thin, pale gold wire and a simple, small gold plated spiral. Undecorated examples occur in various sizes, and similar examples have simply incised terminals. Other silver examples in the hoard have either moulded terminals or terminals with added globes, including many examples of an otherwise unattested variety having a beaded rim surmounted by a tapering collar of wound wire crowned with a pyramid of four large globes decorated with pyramids of small granules, like on Rhodian examples [FIG. 285].

Moulded terminals on spirals are found on pale gold examples from Rhodes (Laffineur, 155, no. 209, A type, and no. 213, C type, from Kameiros; no. 209=BMCJ, no. 1173=Higgins, pl. 18A), a gold example from the West area at Ephesos (Hogarth, 99, pl. 7: 49=BMCJ, no. 948=Higgins, pl. 21D), and a number of examples from the Southwest Anatolia hoard. Bronze earrings with moulded terminals occur in quantity at Emporio (Chios) from early in the seventh century, and a silver example was found in a later seventh century level (Emporio, 221f., no. 350-374). The Rhodian examples are not from any recorded context but were thought by Laffineur to be products of the seventh century Rhodian orientalizing workshop. The Ephesos examples were not found in the Basis and are likely early sixth century in

date rather than earlier. The type is well represented in the Southwest Anatolia hoard of shortly after the middle of the sixth century.

The spiral developed into a type with terminals formed by pyramids of globes. Clusters of globes with smaller granules first appeared on the disc terminals of earrings from the Rhodian orientalizing workshop (e.g. Laffineur, no. 207-209, 214), and eventually the disc was reduced in size (Laffineur, no. 217). The type continued on Rhodes after the orientalizing workshop (Laffineur, 155; BMCJ, no. 1174-1175, Higgins, 113, pl. 18B) and into the fifth century (Grave 189, Ialysos, ClRh 3, 198ff., fig. 194-195; Higgins, 126, where he also discusses the development in the fifth century of the terminals into compact pyramids of many small granules; such types are known from mid-fifth century Lykian coins and an example found at Xanthos, Xanthos 1, pl. 9, no. 2102; further, T. Hackens, RISD Jewelry, 58-60, no. 18). The unusual examples from the Southwest Anatolia hoard have already been mentioned. Another variety with a compact pyramid of small granules is represented by a single silver specimen in the Schimmel collection (Schimmel Cat., no. 69c) said to be from Asia Minor; the date is uncertain. No examples with globes on the terminals were found at Ephesos.

A distinctive related variety of earring takes the form of an open-ended ring, rather than a spiral, with pyramidal terminals. All known examples are of bronze and found at Samos (at least 26 examples) and Olympia. Their place of origin is uncertain and has been named the "olympisch-

samische Werkstatt" by Philipp (H. Philipp, Ol. Forsch. 13, 1981, 16f., 125ff., along with a series of pins; cf. above).

The most common earring types in Asia Minor were leech-shaped and the related but more elaborate boat-shaped, which Higgins and others do not always distinguish (Higgins, 119, 127). The leech-type had a very long history in the Near East, Anatolia, and Cyprus (Higgins, 119; K. Maxwell-Hyslop, Western Asiatic Jewellery, 1971, 238-240), and in the Archaic period took the form of a tapered hoop, usually thickest and slightly bulging in the middle and circular in section, with the size and thickness varying considerably. Usually there is no added decoration, but occasionally there are vertical bands, sometimes beaded, around the middle and the ends where the pin fastens.

They are very common at Ephesos in and around the Basis in many varieties, both plain and with various types of decoration (Hogarth, 103, "about 100 specimens", e.g. in gold and gilt silver: pl. 6: 43-46, 53, 55, 65-66, 68; silver: pl. 12: 13, 16, 19-23; bronze: pl. 18: 3-19, 26-33; four more silver examples, F. Brein, Festschrift Doerner, 1978, 130, pl. 44: 26). Two pairs of gold earrings were in a grave group from the vicinity of Ephesos and now in Berlin (A. Greifenhagen, AK 8, 1965, 13ff.; Berlin 1, 28, pl. 8: 9), and also in Berlin and said to be from Ephesos is a single gold example ornamented with beaded bands and three double-axe elements (Berlin 1, pl. 8: 3) [FIG. 325]. The Southwest Anatolia hoard contained more than fifty examples,

all in silver, both plain and decorated [FIG. 283]. From later sixth century tombs at Sardis come several gold examples (Sardis 13, no. 57-60). The new excavations at Sardis produced only two bronze examples from Lydian contexts (J. Waldbaum, Metalwork from Sardis, no. 720-721), but also two stone moulds for their production (ibid., no. 950-951). Other Lydian tombs of the late sixth century also contained gold examples (in New York, unpublished). A cremation burial at Gordion of mid-sixth century date had a gold pair decorated with beaded belts, small knobs, and filigree spirals (R.S. Young, UPennMusBull 16,1, 1951, 17ff., fig. 2) [FIG. 278]. The type is clearly widespread in Asia Minor, and other examples without more precise provenience have appeared in various collection, including two similar pairs, one gold and one silver, in the Schimmel collection (Schimmel Cat., no. 69a,b); four examples in Kassel (Naumann, op. cit., no. 35-36, in gold, and no. 37-38, in silver, the latter with added granulation and spiral filigree), and another gold plated example on the New York market (in 1985; there are no doubt more in private hands). Outside Asia Minor, only the West Necropolis at Samos has produced examples, all of silver without decoration, in a tomb of mid-sixth century date (Grave 45; Boehlau, 46, 162, pl. 15: 13; Naumann, op. cit., 30, no. 32; Higgins, 127, "tapered hoop"; colorplate of the grave group: P. Gerke, Antiken in Kassel, 27f., pl. 29).

A simple variant of the leech-shape has a thin tapered hoop with a small cluster of granules at the bottom. They

have a long history in Phoenicia and Cyprus and are known from seventh and sixth century Sicilian graves (Higgins, 120, 127, fig. 18) but are rare on East Greek sites. One example in silver was in the Southwest Anatolia hoard [FIG. 283, second row, fourth from right]. Another in gold, now in London, was purchased in Smyrna (BMCJ, no. 1593*), and another example in gold was found at Naukratis (Naukratis 2, pl. 19: 10, as Higgins has noted).

More elaborately decorated leech earrings were found in later Lydian tombs at Sardis. These are of gold and have granulation and loops with suspended pendants (Sardis 13, no. 61, 65). At Ephesos, a single gold example of a small tapered hoop with a loop at the bottom may have had a pendant element, as Hogarth suggested (Hogarth, 103, pl. 6: 40), but it is the only example of its type.

Boat-shaped earrings are of similar arched shape and are perhaps derived from leech types, but they are more elaborately moulded and decorated. Their method of manufacture is also different, and they are often hollow and made from ornamented sheets of gold or silver (cf. the notes on Persian varieties, P.R.S. Moorey, Deve Huyuk, 80f., no. 298-299). The bottom becomes broader, and the inside of the hoop becomes flattened or even concave.

Many varieties of this type of earring were found at Ephesos, which Hogarth carefully detailed (Hogarth, 104f., e.g. in gold: pl. 6: 50-52, 58-60, 64, 67, 71-75; 10: 36-39, 46; silver: pl. 12: 14-15; bronze: pl. 18: 4?), some

with beaded borders and bands, "quilted" or "rush work" belts, and even with double-axe elements added (Hogarth, pl. 6: 58-59; 10: 38, 46; and the stylized version, pl. 10: 37). Closely related, but not exactly matched at Ephesos, are the five silver examples in the Berry find (Berry Jewelry, 32ff., no. 35e) [FIG. 276], which have a broad, arched hoop with beaded borders and concave top (cf. Hogarth, pl. 12: 18). Only three silver examples (and perhaps some fragments) were in the Southwest Anatolia hoard [FIG. 282, second row]. These have beaded borders and ribbing (closest to Hogarth, pl. 6: 72, but not identical). In the mid-sixth century cremation burial at Gordion were a pair of gold boat-shaped earrings with added small loops as decoration (R.S. Young, UPennMusBull 17,4, 1953, 31f., fig. 25). The boat shape spread to other Greek areas outside East Greece (e.g. the sixth century examples at Olbia, AA 26, 1911, 221f., fig. 27) and became very popular in highly ornamented varieties in the fifth and fourth centuries (cf. Higgins, 125f.). A silver earring in Hamburg attributed as Ionian (Hoffmann and von Claer, 93f., no. 61) is quite different in design and technique and is more likely Eastern than Greek.

Two examples of a very distinctive type of earring are known. The shape and manufacture are identical to the pendants on chains from the Southwest Anatolia hoard (cf. above) [FIG. 287], composed of three four-sided double-axe elements with added knobs, spaced with beaded and "woven" bands, and with hemispherical terminals at either end. Wire is added at each end to form the loop. An example in silver

was in the Berry group (Berry Jewelry, 32f., no. 35b; without the "woven" bands) [FIG. 276], and one in gold was in the Gordion cremation burial (R.S. Young, UPennMusBull 16,1, 1951, 17ff., fig. 4; missing one end wire and thus described as a pendant) [FIG. 278].

If actually an earring, the single electrum recumbent ram from a sixth century Lydian context at Sardis is unique as a figural earring (J. Waldbaum, Metalwork from Sardis, no. 719; discussed above with pendants) [FIG. 317]. A wire is soldered to the back, but it is not clearly a loop for suspension from the ear.

Also rare but known from Asia Minor are earrings of "Assyrian" style--simple, thick loops with long pyramidal clusters hanging down. An example in the Louvre is said to be from Mylasa (E. Coche de la Ferte, Les bijoux antiques, pl. 15: 3), and another from Asia Minor is in the Berry collection (Berry Jewelry, 226, no. 178). Dating is uncertain, and neither need be Greek.

By the later sixth century several distinctively Persian forms were introduced that are best known from examples in tombs at Sardis and also in many examples from unspecified sites in Asia Minor. Most are circular or crescentic in shape and usually have a hinged element for attachment. One form is a flat crescentic shape (Sardis 13, no. 63; cf. Maxwell-Hyslop, op. cit., 261, pl. 256; and P.R.S. Moorey, Deve Huyuk, 82, no. 300). A thicker crescentic type with ribbed decoration was also in a Sardis

tomb (Sardis 13, no. 64), and Curtis compared it to those earrings worn by the ivory head found at Sardis, probably of late sixth century date (Sardis 13, 29f., pl. 8: 87; cf. "Ivories: Sardis", above; the head apparently also wears an ear stud to which the earring may have been attached; cf. also the comments by Barnett, Ancient Ivories, 58). A common Persian variety has a loop composed of hollow spherical beads, made in two halves with a visible seam, with beaded spacers between each sphere (cf. P.R.S. Moorey, Deve Huyuk, 83, no. 305; C. Vermeule, Burlington Magazine, 1970, 821, Boston MFA 68.151a,b; Berry Jewelry, 224, no. 176; Naumann, op. cit., no. 47, in Kassel from the Teheran market; Muenzen und Medaillen, Basel, Sonderliste M, 1970, no. 7; many others on the art market), and at Sardis two examples of this type have fine lion's head terminals (Sardis 13, no. 67-68). Another crescentic variety at Sardis is covered with small granules (Sardis 13, no. 70). A pair of earrings made of circular, ribbed tubes with hinged fastening elements were in Tomb 75 at Sardis with the gold astragal necklace and the small gold lions once sewn to a garment (Sardis 13, no. 69). A very similar pair in Oxford comes from a Scythian grave at Nymphaeum of the later fifth century with other Graeco-Persian material (M. Vickers, Scythian Treasures in Oxford, 38, pl. 6d, as "dress fasteners"). Simple wire hoops are also well attested at Sardis (Sardis 13, no. 62, 71-74, 82).

Ear studs:

It has long been realized that the disc earrings so frequently represented on sculpture and vase painting from all parts of the Greek world have not been identified in surviving material (Higgins, 127, citing Hadaczek, 10). Higgins has pointed out that these discs are better called ear studs since they appear to have been passed through the ear lobe rather than suspended from wire. He cited a silver example decorated with a rosette from a sixth century context at Lindos (Lindos 1, no. 277, now in Copenhagen; Higgins, 113, 127) and fifth century gold reels from Ialysos (cf. below). Recently Brein (F. Brein, Anat. Stud. 32, 1982, 89-92) has discussed the subject, primarily dealing with the rock crystal examples found in quantity at Ephesos (Hogarth, 210, pl. 46), as well as at other sites, including Samos (Boehlau, pl. 15: 14), Chios, Paros, Thasos, Dikaia (Thrace), Brauron, and Herakleia/Latmos (reported by Brein, loc. cit., 91; and add: Ialysos, Tomb 68, Annuario 6-7, 1923-4, 323, no. 12, sixth century; Stathatos 4, no. 197; Boston MFA 01.7610-12, 13.177-8, five examples, some "from Greece"). The shape corresponds with the representations of discs in sculpture, with slightly concave surfaces often with central holes for insertion of amber or gold ornaments. Ivory and wood probably were the most common materials used, but they seldom survive, with the exception being the large number from Ephesos. The ivory examples from Ephesos with concave outer surface are decorated with engraved rosette, floral, lotus, maeander, and other patterns and have holes

for the added studs (esp. Hogarth, 192, pl. 35: 15-23; also cf. 196, pl. 42: 7, with rosette in relief; the example from Kameiros, Hogarth, 181, pl. 31: 53; and his remarks on the similarity to natural fish vertebrae which were found in the Basis, 192, pl. 36: 33-34, 40). There are also similarities to ivory pin heads from Ephesos (cf. above).

Brein also cited a bronze "napkin ring" type that once contained a wooden core (Brein, loc. cit., 91f.), and Hogarth mentioned more than twenty-nine other examples of the shape (Hogarth, 149). Other examples in ivory, including one with concentric circles as decoration which recalls the design of the gold reels (cf. below), were found at Ephesos (Hogarth, 189, pl. 35: 2-5). Brein also reported a gold pair from the "Alyattes" tumulus at Bin Tepe near Sardis (Manisa Museum; Brein, loc. cit., 91). Other examples in gold were found on Cyprus (Ohnefalsch-Richter, 368, pl. 182: 49-51). Ear studs of this type are apparently worn by the ivory figures in Cambridge (Hogarth, pl. 24: 9) and Berlin (cf. "Ivories", above), which both may be Ephesian works, and by an East Greek stone sphinx head in Geneva (Ortiz collection, unpublished).

Similar types in gold that take the form of a cylindrical wound reel have been found in Lydia, Rhodes, Iasos, and Cyprus. They are made in several parts, with two flat, circular end pieces made of wires wound in concentric circles joined to outer and inner sheets of gold formed so that there is a small inner cylinder and a slightly concave outer wall. The inside is hollow, and pellets were often

placed inside so that the objects rattled. The example found at Sardis (Tomb 213; Sardis 13, no. 85; diam.: 5.3 cm.) contained twenty-seven small gold pellets, each c. 2 mm. in diameter. Another unpublished pair from Asia Minor similarly contains the tiny gold pellets (private collection, diam.: 2.85 cm.) [FIG. 326]. Besides these examples, at least three other pairs come from Lydian tombs (New York 66.11.29-30, 66.11.21-22, 81.11.11-12; D. von Bothmer, CRAI 1981, 207). Cyprus also has yielded several examples, including a pair from Marion (Ohnefalsch-Richter, 368, pl. 33: 10-11=De Clercq, no. 1504-5; diam.: 2.5 cm.) and a gilt silver pair now in New York (ex-Cesnola, 1874.51.3589-90; J.L. Myres, Cesnola Collection, no. 3589-90). A number of other examples are without exact provenience, but most appear to be from Asia Minor, and they continue to appear on the market (some examples: BMCJ, no. 2065-6, diam.: 2.2 cm.; Indiana University 76.80.5 and 76.80.6, W. Rudolph, Highlights of the Burton Y. Berry Collection, 1979, 15, no. 13-14, two pairs [FIG. 327]; Ars Antiqua, Lucerne, Auction 4, 1962, lot 162, diam.: 1.7 cm.; Summa Galleries, Beverly Hills, Auction 1, 1981, lot 97, diam.: 2.4 cm.; three pairs, Munich market, 1986). Slightly later examples, dating from the late fifth and fourth centuries, were found at Iasos (Tomb X; D. Levi, Boll. d'Arte 49, 1964, pl. 1: 5-6 and fig. 16; now in Izmir) and Ialysos (Graves 153 and 155, ClRh 3, 155ff.), and examples from Kameiros decorated with a Helios head and rosette and with Thetis and Eros are also late (BMCJ, no. 2068-9, 2067).

The fashion for large earstuds for women was particularly popular in East Greece and Lydia well into the fifth century, and the large number of earstuds from Sardis and Ephesos provide ample evidence of their use. Men, at least in Lydia, wore them as well, as attested by Xenophon (Anabasis 3, 1, 31-32), who speaks of a man with "both ears bored like a Lydian's".

Returning again to Ephesos, Brein has also observed that there are cylindrical objects in rock crystal very much like the ear studs but with one end flattened and with a hole drilled for a connection, presumably to another object of identical shape, to form an astragal-like ornament (cf. Hogarth, 211, pl. 46: 7-10, 13, 16). Citing a verse of Anacreon (Athenaeus 12, 533) mentioning the wearing of wooden astragals in the ears, Brein proposed that these "astragals" were worn in the same manner as the rock crystal ear studs and showed one apparent representation in sculpture from the South Frieze of the Siphnian Treasury (Brein, loc. cit., pl. 24 a). Another possible representation can be seen on a North Ionian vase fragment depicting a sphinx wearing double discs ornamented with crosses (in London; cf. B. Deppert-Lippitz, Griechischer Goldschmuck, 60f., fig. 27, as an example of a spiral earring).

"Astragals" of the same shape in ivory are well represented at Ephesos with over 100 specimens both in and around the Basis (Hogarth, 190-192, pl. 36; cf. "Ivories",

above) [FIG. 227]. The ivory examples are carved from a single piece of ivory or bone but appear as two joined spools. They can be plain, but are usually decorated with incised designs, including crosses, concentric circles, and compass drawn rosettes, or inlayed amber or gold studs, or both. The incised designs may occur on both front and back, but the studs are only on the front. Occasionally there is a moulding between the two spools in the form of palmettes, darts, or circles. Hogarth noted that there is always a small hole drilled between the spools for suspension in some manner. The one bronze example from Ephesos is plain (Hogarth, 153, pl. 18: 37).

A pair of similarly shaped "astragals" in pale gold is from the sixth century grave group from the vicinity of Ephesos now in Berlin (A. Greifenhagen, AK 8, 1965, 13, pl. 6: 5; Berlin 1, pl. 8: 8; L: 3.2 cm.) [FIG. 328]. This pair has concave faces with no added decoration. A second gold pair is in the Ortiz collection, and was found with the gold necklace discussed above said to be from Asia Minor [FIG. 320]. They are almost identical in shape to the Berlin examples (slightly larger at 4.1 cm. in length) but have an added moulding between the spools on both faces in the form of a flat plate with rounded edge, decorated with six pellets surrounded by beaded wire on the edge, two wire spirals with pellets in the center, a dart shaped element at the base, and beaded wire all along the edge. The moulding is paralleled on ivory examples from Ephesos, and the technique of adding pellets and beaded wire filigree,

although not found at Ephesos, is seen on the related but slightly later leech-earrings from the mid-sixth century cremation burial at Gordion (cf. above) [FIG. 278]. Another pair of gold "astragals" is in Rhode Island, but the provenience is not known (T. Hackens, RISD Jewelry, 57f., no. 17, with further comments; L: 2.88-2.92 cm.). They are similar to the others in shape, but have bead and reel borders around the concave faces and no moulding between the spools.

The function of these "astragals" is not clear. Hogarth has observed that natural astragals also were found in the Basis and may have served the same purpose as these "artificial astragals", since many have a drilled hole in the same manner and one a gold stud (Hogarth, pl. 36: 42). He suggested a use in some cult practice, such as divination, and was followed by Greifenhagen in this belief. Hackens also mentioned this possibility but expressed uncertainty and suggested that they could have been votive offerings or even simple toys (Hackens, op. cit., 57 and n. 1, citing the material collected by R. Hampe, Die Stele aus Pharsalos im Louvre. 107 Winckelmannsprogramm, 1951, 9-22). However, although resembling astragals, they are not realistically rendered in the manner of the votive bronze types often found (cf. "Bronzes: Votives", above) or the gold beads from a Sardis tomb that were most likely merely decorative (Sardis 13, no. 44; cf. above). They seem to occur only in pairs and have been found with other jewelry, strongly suggesting that they were objects of personal

adornment. Brein's proposal of ear studs is certainly possible, especially in view of their similarity to the single spool ear studs, but the holes between the spools are not explained.

An alternate possibility is that they were ornaments to be worn in the hair, as Ortiz has suggested for the example in his collection (by correspondance). Various hair ornaments were worn, including the golden tettix mentioned by a number of writers as belonging to the late Archaic period (e.g. Athenaeus 12, 512c, 525f; Thuc. 1, 6, 3; and Aristophanes; cf. E. Schuppe, RE, q.v. tettix; Hogarth, 156, 160). Gold ornaments were said to have been worn in the hair of the decadent citizens of Kolophon who took the fashion from the Lydians (Athenaeus 12, 526a; cf. "Engraved Gems", gem no. 47, below). Representations of some sort of ornament worn in a lock of hair hanging before the ear are seen on several East Greek works, including the bronze kore-attachment from Olympia (cf. "Bronzes", above) [FIG. 130], the facing korai on marble column drums from Didyma now in Berlin (Akurgal, Kunst Anatoliens, fig. 223-224), and the "Megabyzos" ivory figure from Ephesos (cf. Hogarth, 160; the best photo of the profile, Akurgal, Kunst Anatoliens, fig. 158) [FIG. 208]. However, the most interesting representation is on the spinning woman from Ephesos (Hogarth, 157f., no. 3; the best profile photo, Akurgal, Kunst Anatoliens, fig. 156-157) [FIG. 207], who wears two spiral locks before each ear apparently wound around an object that could be an "astragal".

Ear Caps:

Ear caps were sometimes worn on the tops of the ear, either piercing or covering the upper ear. Hemelrijk has identified various forms of ornaments of this type from sculpture and painting, but no examples have survived, perhaps because of their perishable composition (J.M. Hemelrijk, BABesch 38, 1963, 28-51; Caeretan Hydriae, 141, 172f., n. 467). He viewed the fashion as exclusively East Greek (and Cypriot) and used its appearance to identify East Greek workmanship outside of Asia Minor in Athens (architectural terracottas), Delphi (Siphnian Treasury frieze), France (coins of the Auriol hoard), and Italy (Caeretan hydriae). Examples cited in East Greece, aside from Cypriot sculpture, include Fikellura, Chian, and Clazomenian painted pottery and sarcophagi; the fresco from Gordion; and coins of the later sixth and fifth centuries from Phokaia, Kebren, and Lampsakos. Also mentioned and deserving special notice is the ivory "hawk-priestess" from Ephesos who apparently wears cylindrical ear caps (Hogarth, pl. 22; cf. "Ivories: Ephesos", above; Hemelrijk, loc. cit., 38-41) [FIG. 210].

Gold and Silver Plaques:

The use of gold garment plaques is derived from Eastern sources, most notably from Babylonia and Assyria (cf. P.R.S. Moorey, Iran 23, 1985, 24). In the late seventh and sixth centuries, the fashion appears to have spread to Lydia and

East Greece, but the patterns represented there are distinctive and perhaps based on local traditions, both Greek and Anatolian. Small plaques, mostly of gold, have been found in quantity at Ephesos and in Lydian-Achaemenid tombs, and there have been further stray finds said to be from Asia Minor. Their use elsewhere in Greece was limited, although they became very popular in the Persian Empire and in areas of Greece where Achaemenid influence was strong, especially around the Black Sea, throughout the fifth and fourth centuries.

Most appear to have been sewn to garments since they are usually perforated and occur in large numbers of identical type, although some may have decorated other objects that have not survived (cf. the sixth century geranomachy plaque from Rhodes, above). Examples can be rectangular or disc-shaped with embossed designs, either patterned or figural, or cut out into other shapes, such as stars and rosettes. Strips and odd shapes of uncertain function are also known, some of which may have been worn in the hair (cf. the fifth century "Tomb of the Bride" at Sardis, Sardis 1, 144).

Early examples are not well attested but possibly include two undecorated trapezoidal gold plaques from an early seventh century level at Emporio (Emporio, 202, no. 157), some simple rosettes and "buttons" from the orientalizing workshop on Rhodes (cf. above; also perhaps simple strips of gold from graves, e.g. Grave 112, Ialysos, ClRh 3, 138f.), and ten gold discs with punched dots and

figure-eight cable pattern from a "Geometric" deposit at Perachora (Perachora 1, 74, pl. 18: 1-3, 5-7, 25-26). The discs from Perachora, which are otherwise unknown at Mainland Greek sanctuaries, were called East Greek imports by Kilian-Dirlmeier (I. Kilian-Dirlmeier, JRGZM 32, 1985, 245), but the unusual cable pattern is closest to that found on gold plaques from Late Geometric Exochi (cf. above) and Thera (Tomb 89; AM 28, 1903, 228f., pl. 5: 13-14), which perhaps suggests a Cycladic or Cretan rather than East Greek origin.

There are seven figural types on plaques from Ephesos, which offer a variety of styles, all rather crude and apparently early Archaic. Two or three examples of a plaque showing a small man between two standing lions were found in the Basis (Hogarth, 110, pl. 3: 10; 8: 4; who reported two examples; BMCJ, no. 908, the second, fragmentary specimen; P. Jacobsthal, JHS 71, 1951, 87, reported three examples; B. Schweitzer, Greek Geometric Art, 208, as Phrygian, which is highly unlikely). There is a row of three stylized florals above the scene, and all is surrounded by a border of dots. There were holes in the corners for attachment. Jacobsthal has discussed the scene and suggested that the man is a victim of the lions, a popular Geometric motif which is seen on Late Geometric Attic gold bands, pottery, and a Boeotian fibula. The motif of the the hunter (or victim) of lions was well established in Greece by the Geometric period, having continued from a much earlier tradition (cf. J.N.

Coldstream in Chios, 184f.). The florals, in a row above the main scene, which Hogarth called "degraded lotus?" and Jacobsthal "two-leaved plants with a bud in the axil of the leaves" seem particularly close to the stylized palm trees derived from oriental sources that otherwise occur in Greek art solely on the Late Geometric pottery of Rhodes and Kos (Coldstream, GGP, 285, 288; Schweitzer, op. cit., 87). The plaque may have been influenced by Rhodian work, but no goldwork of this type from Rhodes is known. The iconography belongs to the Geometric period but the style is more advanced, and although Jacobsthal's date in the second quarter of the seventh century is possible, it could be slightly later.

Also of the same date, according to Jacobsthal, are the three circular discs from the Basis showing a griffin with head turned back, the fields full of cross-hatching and other filling decoration (Hogarth, 110, pl. 8: 3; BMCJ, no. 904; Jacobsthal, loc. cit., 86f.) [FIG. 329]. As Jacobsthal noted, the style is indeed difficult to place. The cross-hatched filling ornament does recall some electrum coins from Ephesos (cf. "Coinage", below), but the style does not. Jacobsthal believed the piece was not Ephesian and compared it to Protoattic objects, but the latter comparison is not convincing and seems unlikely. He also groups a third plaque, which shows a sphinx (?) with large features (Hogarth, 110, pl. 3: 6; 8: 9; from the West area; BMCJ, no. 907, fig. 12, where a fragment is added), with these first two as having a "strange, provincial look" (Jacobsthal, loc.

cit., 87). The primitive style is most typical of orientalizing, early Archaic painting (like that on Subgeometric East Greek vases, or even the unrelated Protoattic vases), but precise localization is difficult.

There are other examples of clearer, but still stylistically early, representations. A single example of a standing griffin with straight wings (Hogarth, 110, pl. 8: 7=BMCJ, no. 909; from the West area) has an Eastern look. Also from the West area is a lion walking left (Hogarth, 109, pl. 8: 1) which does look Greek. Three examples of a standing sphinx with spiral tendril trailing from the head were found in the Basis (Hogarth, 109, pl. 8: 2; BMCJ, no. 905) [FIG. 330]. They have the "rush work" borders found on other jewelry at Ephesos and are thus perhaps locally made. Rather than holes for attachment, the foil was folded over at the corners to form tubes, perhaps to be strung. Weidauer compared the style of the sphinx on these plaques to that on an electrum coin, attempting to demonstrate an early date for the coin (L. Weidauer, Tainia. Festschrift R. Hampe, 1980, 75-80). The comparison is valid, although not particularly close, but the dates proposed are surely too early and are better determined by comparison to the earliest silver coinage of Chios, which is quite close stylistically to the electrum coin cited by Weidauer and datable to the third quarter of the sixth century at the earliest (cf. Kraay, ACGC, no. 91; and "Coinage", below). A date for the plaque any time in the late seventh and until

the mid-sixth century is possible. The final figural plaque from Ephesos is from the West area (Hogarth, 110, pl. 8: 8), but it stands apart from the others, for rather than an embossed design, there is a crudely incised horse (?) and a single large perforation, perhaps for suspension. It may have been a votive rather than a decorative plaque (cf. the many incised gold plaques of the Achaemenid period in the Oxus treasure, Oxus, no. 99-100).

A group of seventy-three square gold plaques said to be from Anatolia were once in the Leigh Ashton collection in London (J. Chittenden and C. Seltman, Greek Art, 1947, 43, no. 277, pl. 73; C. Seltman, Approach to Greek Art, pl. 22; sold at Parke Bernet, New York in 1954, and subsequently in Hamburg?) [FIG. 331]. Thirty-one examples of identical type, either from the Leigh Ashton group or the same find, are now in the Canellopoulos collection (R. Laffineur, BCH 104, 1980, 372f, fig. 44-45, as "Ionian, c. 550"). Of the Leigh Ashton group, seventeen are eight-petalled rosettes; thirty-five are floral-stars; and the other twenty-one are figural in the following five varieties: cocks (5), stags (3), sphinxes (5), griffins (4), and sirens either holding a lyre or playing a double flute (4). Each variety contains some examples facing left and some right (the flute playing siren faces right, the lyre player left), and perhaps they were arranged on the garment antithetically. They recall the two large (35 x 15 cm.) gold plaques from Delphi, probably East Greek work of the second half of the sixth century which each show eight creatures (winged horse, goat,

griffin, panther, lion, bull, sphinx, and stag) in two registers, each animal framed by a border, and with rosettes at top and bottom (P. Amandry, BCH 63, 1939, pl. 24-28; AM 77, 1962, Beil. 6-9; also another plaque with single griffin and two with running winged gorgons holding snakes, BCH 63, pl. 23) [FIG. 238]. On one plaque the creatures face left and on the other right. They probably decorated the garments of the chryselephantine statues found with them in the same manner as the small plaques in the Leigh Ashton collection once decorated garments.

The style of the Leigh Ashton pieces is East Greek of the late sixth century, but further localization is difficult, and they are not especially close in style to the Delphi examples. The floral designs are nearly identical to some examples from Ephesos and later Lydian tombs (cf. below). The figural work is similar to that on gems and rings of the same date, especially Boardman's first "sphinx-and-youth group", where sphinxes and sirens are popular and which appears to have an Ionian origin (AGG, 65-71, esp. 70 for East Greek origins; cf. "Engraved Gems", below).

The only other figural types on plaques are from Lydian tombs of the late sixth century or later. From the tombs in the Usak area comes a find of 109 plaques of four different types, only one of which is figural, all now in New York (NY 66.11.38; D. von Bothmer, CRAI 1981, 207, fig. 11) [FIG. 332]. A hare fills most of the scene, but a tiny eagle swoops down on it, and there are oddly arranged rows of

pellets in the fields. Hares and birds hunting are common enough in East Greek art, but the tiny eagle is very unusual (cf. the discussion of scenes of birds hunting hares and other animals and their possible Anatolian origins, J.M. Hemelrijk, Caeretan Hydriae, 182, where an unpublished Karian vase with tiny eagles and a large hare is mentioned).

Probably also from a Lydian tomb, although of slightly later date, probably well in the fifth century, is a group of plaques, one square and sixteen round, in Boston (MFA 1970.364a-p, and the square "star" plaque, 1970.365; C. Vermeule, Burlington Magazine, Dec. 1970, 818-821, fig. 41; said to have come from the lower Hermos Valley) [FIG. 333]. The round plaques show a bearded deity with four wings and wearing a polos. He is facing frontally and is placed within a circular border with a thicker crescent at the bottom which hides his feet. The figure is probably meant to represent the Persian god Ahuramazda (or alternatively the personification of kingly glory, Khvarenah, cf. P. Jamzadeh, Iranica Antiqua 17, 1982, 91-99), but the style does not match the typical Achaemenid representations (e.g. on the Persepolis reliefs; on gems and cylinder seals both Achaemenid and Graeco-Persian, including the cylinder, Oxus, no. 114, and seal impressions, Persepolis 2, pl. 6, 15-17; and on other gold plaques, including the circular examples, Oxus, no. 35, and British Museum WA 132105). The Boston examples are Greek renderings of the Persian god, as were done on the Hellenizing fourth century coins of the Cilician satraps, and probably come from a later fifth or even fourth

century Lydian workshop.

Probably not an ornament for clothing, but of similar manufacture, is a cut out, embossed plaque showing a facing female with four wings (Berlin 1, 30, pl. 10: 6-7; said to be from Asia Minor) [FIG. 334]. She is in a pose typical for a kore, her right hand held to the breast and the left holding a fold of the skirt. The function of the object is unclear, but there is a broad horizontal loop in the center of the back, and perhaps the plaque served as an element of a necklace (cf. the discussion of a later but similarly manufactured ornament in the form of a double-bodied sphinx, T. Hackens, RISD Jewelry, 60f., no. 19). The four wings are typically East Greek (cf. AGG, 32), and a very similar bronze figure forms part of an incense burner of East Greek manufacture (cf. "Bronzes: Kore-attachments", above).

A mould for making fibulae of Asia Minor type (R. Toelle, Antike und Abendland 12, 1966, 91-94; cf. above) [FIG. 24] also was used for making a round plaque with gorgon head design, possibly of gold. Such ornaments have not been found in Asia Minor, but a pendant from Cyprus is similar (Ohnefalsch-Richter, 319, pl. 33: 17; 67: 12), and large circular embossed plaques are found in the Achaemenid period (cf. Oxus, pl. 12).

The non-figural embossed plaques from Ephesos may be round, square or rectangular, and of various sizes. Most are perforated for attachment, presumably but not necessarily to garments. They occur both in and around the

Basis. Other plaques are known from Lydian tombs and the Delphi find. The most popular types at Ephesos are floral stars, cup spirals, St. Andrew's crosses, and rosettes, although other varieties were also present. They often have linear, beaded, or bead and reel borders.

The floral stars may have four (Hogarth, pl. 8: 18, 20-1) or eight points, sometimes rounded (Hogarth, 111, pl. 8: 6, 13-4, 16; "bee-stars") and sometimes dart-shaped (e.g. Hogarth, pl. 8: 15). Very similar examples of the rounded, eight point examples were in the Leigh Ashton group (Chittenden and Seltman, op. cit., pl. 73, no. 277; thirty-five specimens) and in two varieties in the late sixth or early fifth century Lydian tomb find now in New York (D. von Bothmer, CRAI 1981, 207, fig. 11; many specimens in two varieties). A single more stylized example was among the group of plaques in Boston (MFA 1970.365; C. Vermeule, Burlington Magazine, Dec. 1970, 818ff., fig. 41). Stylized, pointed examples are on plaques from Delphi (P. Amandry, BCH 63, 1939, pl. 32; either in a row or alternating with cup spirals) [FIG. 238].

The floral star motif, in various degrees of stylization, was popular throughout the sixth and into the fifth centuries and is found decorating a variety of objects, including mid-sixth century architectural terracottas from Sardis and Gordion (A. Ramage, Lydian Houses and Architectural Terracottas, 1978, 26, no. 42, who has proposed a pre-550 date; A. Akerstrom, Die architektonischen Terrakotten Kleinasiens, 1966, 91f., pl.

44-45 and 69: 1-6, for Sardis; pl. 83: 3, for Gordion), the interior of a Samian little master cup (E. Homann-Wedeking, Archaische Vasenornamentik, 1938, 26, fig. 5; Walter-Karydi, Samos 6,1, no. 440), and a late sixth century Lydian silver skyphos in New York (D. von Bothmer, Met.Mus.Bull., Summer, 1984, 37, no. 49; engraved under the handles and not visible in the illustration). The motif was not confined to East Greece, however, and is also found on sixth century Attic gravestones (G.M.A. Richter, The Archaic Gravestones of Attica, 1961, no. 20, fig. 68-69; no. 38, fig. 110-114), Argive shieldbands (E. Kunze, Ol. Forsch. 2, Beil. 16: 1-2; Perachora 1, pl. 47: 5), and engraved on the bottom of the fifth century Thracian silver beakers in Oxford (Strong, op. cit., 85, pl. 18). The stylized version found on the Boston and New York examples was also a popular motif on coins of the later sixth and early fifth centuries, most notably on the coinage of Miletos, where it was adopted as a reverse type at the end of the sixth century and remained as one of the civic emblems for several hundred years (cf. "Coinage", below). The four pointed star, like that found on some gold plaques from Ephesos, is also seen on an early silver coin of Miletos (cf. Boston, no. 2312). Other early mints that used the floral star device c. 500 include Korkyra (Traite 1, pl. 40: 14, 16-18), Kyrene (ibid., pl. 64: 8-10), Macedonia (ibid., pl. 59: 8-9), and an uncertain mint in Karia (ibid., pl. 19: 14).

Cup spirals are especially well represented at Ephesos (Hogarth, 110f., pl. 8: 11, 23-24, 26-29, and 25, the last with fifteen specimens) and were also found at Delphi. Jacobsthal discussed the motif in detail, including its distribution and origins, and emphasized its prominence in the Islands and Ionia (P. Jacobsthal, _loc. cit._, 89-90, 93-95). Similar examples from Scythian tombs date from the fifth century or later (_ibid._, 95).

A distinctive type of plaque at Ephesos was described by Hogarth as a "St. Andrew's Cross with diamond-shaped terminals, and dots or circlets between the limbs" (Hogarth, 112, pl. 10: 6, 9, 32, all from the West area with ten specimens of the double plaque; several more were recently found). A similar type from the Basis has a St. Andrew's cross with bead and reel three-quarter circles between the limbs and a square dotted or bead and reel border (Hogarth, 112f., pl. 10: 1, 4, and an additional newly found specimen; also perhaps an example in silver, cf. Hogarth, 119) [FIG. 335]. This type is especially important in view of the discovery of a bronze mould for its manufacture at Sardis in a sixth century context (J. Waldbaum, _Metalwork from Sardis_, no. 948) [FIG. 336], and it is noteworthy that a very similar type is present in the New York group from a later Lydian tomb of the Achaemenid period (D. von Bothmer, _CRAI_ 1981, fig. 11) [FIG. 332]. The ultimate source of the motif may be eighth century Phrygia (cf. below).

Another distinctive plaque, although only one example from the Basis was mentioned (Hogarth, 112, pl. 10: 5=_BMCJ_,

no. 884), has a four-sided cable pattern. The pattern is frequently seen on late seventh century Wild Goat pottery (cf. Kardara, 39, fig. 10; 59, fig. 32; 123, no. 2, fig. 77; 173 d, fig. 146: 8; 281, fig. 279; 287=ClRh 4, 367ff., no. 4, fig. 417; also Walter-Karydi, Samos 6,1, pl. 2: 14) and again on an early Fikellura oinochoe of the first half of the sixth century (R.M. Cook, CVA Great Britain 13. British Museum 8, 7, pl. 6: 4). The origin again may be Phrygian.

Although common as cut out elements (cf. below), rosettes as plaques are not well attested at Ephesos except in a round example (Hogarth, 113, pl. 10: 23; BMCJ no. 873). However, the Leigh Ashton group contained seventeen examples of a rosette embossed on a square plaque, and the Delphi find included several round, elaborately patterned rosettes. One example of uncertain function and date was found in the stipe votiva at Kameiros (ClRh 6/7, 343, no. 1, fig. 75).

Other patterns at Ephesos are simpler and less numerous (Hogarth, pl. 10: 2-3, 7-8, 10-15, 19-22, 25; BMCJ, no. 875, 886-887). They include ribbed squares, dotted concentric circles, cross-hatched lines, and patterns of punched dots. Not all are perforated. Similarly ornamented strips, some perforated, were found in and around the Basis (Hogarth, 109). Hogarth called these diadems, but this seems unlikely judging from the sizes and shapes, although a miniature gold diadem is worn by one ivory figurine (Hogarth, pl. 24: 10). Jacobsthal discussed the pretzel ornament on one strip (Jacobsthal loc. cit., 90; Hogarth, pl. 9: 50). Gold

strips, usually not decorated, were also found in some Sardis tombs (Sardis 13, no. 13-20). Distinctive, large kite-shaped plaques with perforations around the edge and embossed complex palmettes and other patterns are known from Lydian tombs (Sardis 13, no. 10-11; and similar, unpublished, in New York), and three examples of a lotus-shaped plaque with Achaemenid-style lotus and palmette design was also found at Sardis (Sardis 13, no. 12).

More numerous than the round and square plaques are the cut out elements. Aside from this difference in manufacture, many have beaded wire added to form the design rather than having the design embossed. Exceptions are the embossed but cut out floral stars of various sizes that are not perforated (Hogarth, 113, pl. 8: 17; 10: 27, 29, 30) and a number of elaborately designed embossed florals with perforations (Hogarth, 112, pl. 8: 22; from the Basis and West area; and five more, BMCJ, no. 892-896, from before the Hogarth excavations but "doubtless from excavations at Ephesos"). A four pointed star with perforations is especially well represented with at least 132 examples found together just east of the Basis, evidently from a single garment (Hogarth, 112, pl. 9: 39-40=BMCJ, no. 841-863; and six more, BMCJ, no. 864-869, again from before the Hogarth excavations). Another embossed cut out plaque with perforations has a pattern of a "maeander hook" with central lozenge (Hogarth, pl. 8: 3; 10: 16; and in silver, pl. 12: 26; BMCJ, no. 1049). Jacobsthal discussed this motif with the closely related cup spirals and noted the analogies on

Late Geometric Rhodian and Parian vases (Jacobsthal, loc. cit., 89f., 94). For this reason he suggested that the "maeander hook" elements from Ephesos are earlier than the cup spirals, but this distinction in date seems unnecessary.

The perforated cut out elements with beaded wire added to form the design occur in two common types, cup spirals and floral stars, with the first type more numerous (Hogarth, 112f., pl. 8: 12; 9: 33-36, 38, 41-48; Hogarth reported twenty-eight examples of 9: 41-42 found together east of the Basis; BMCJ, no. 827-840). The floral stars are all from the Basis (Hogarth, 113, pl. 9: 37, eight specimens, pl. 9: 49, four specimens; BMCJ, no. 870). Two examples of a five pointed star without perforations were found in the Basis (Hogarth, 112, pl. 10: 25).

Cut out rosettes are distinctive for their wide distribution. They had a long history in the Near East, Persia, and Anatolia, and continued in the Achaemenid period (including at Sardis; gold rosettes with loops on the back found with other gold work of purely Achaemenid style, Sardis 13, no. 3-4). They were popular on Rhodes in the seventh century as attachments to diadems, other jewelry, and perhaps garments as well, and may have lasted into the sixth century. At Ephesos they are not especially common. A few that apparently served as garment plaques are mentioned above, and some that have added beaded wire as decoration may also have had the same function, since they are perforated (Hogarth, pl. 10: 28). Others with beaded

wire have a central stud and no perforation, and their function is unclear (Hogarth, pl. 10: 26; buttons?). At Ephesos and elsewhere the rosettes often have a single perforation in the center (BMCJ, no. 871). A single gold embossed rosette with two perforations was found at Phanai, Chios (W. Lamb, BSA 35, 1934-5, 197, fig. 6: 3). More embossed gold rosettes were in the mid-sixth century cremation burial at Gordion (R.S. Young, UPennMusBull 17,4, 1953, fig. 24) and a later sixth century tomb at Sardis (Sardis 13, no. 5; two specimens). A bronze example with central perforation was discovered in a sixth century context at Sardis (J. Waldbaum, Metalwork from Sardis, no. 872). Another bronze rosette was found at Tocra (J. Boardman, Tocra 1, 158f., pl. 104: 51). Several beaded wire rosettes with central studs and no perforation in silver were in the Southwest Anatolia hoard [FIG. 280]. The Delphi gold animal plaques have separately attached six-petalled wire rosettes with perforated centers bordering the figural scenes. Ivory bands from Delphi are covered with rows of embossed gold rosettes (not cut out) attached through a central perforation [FIG. 238]. They may be diadems, or perhaps borders of garments.

The Troad Group:

A distinctive group of embossed gold plaques with perforations is known from a number of examples, all from the Troad. They too were probably sewn to garments, but they are larger than most of the plaques from Ephesos. The

largest is a circular example in Boston (MFA 01.8179; diam.: 16.7 cm.) decorated with palmettes and guilloche in concentric bands [FIG. 337]. Two other smaller round plaques decorated with rosettes and guilloche are also in Boston (MFA 01.8180-8181; diam.: 7.5 cm.). All three are said to come from Neandria. Two other examples said to come from the Troad are in Oxford (1931.545 a,b; ex-Nelidow collection, L. Pollack, Sammlung Nelidow, 1903, 186, no. 532, pl. 20) [FIG. 338]. They are square plaques (L: 5 cm.) decorated with lions and rosettes arranged in panels. Three more are in the Canakkale Musuem (inv. no. 1880, 1881, and 1882; unpublished), which are semi-circular in shape and arranged in four panels containing lions and chariots, surrounded by rosettes and guilloche patterns. All are clearly from the same workshop and of sixth century date.

Gold Fringe:

A long gold chain with pendant glass beads was found in a Lydian tomb (probably with the gold plaques) and is now in New York. It has been plausibly identified by Bothmer as the fringe of a garment, as represented on sixth century Attic red figure vases (D. von Bothmer, CRAI 1981, 207).

Bracelets:

Bracelets and armbands, the difference only determined by their size, are rare in both the Geometric and Archaic periods in any material, and especially so in precious metal. However, simple, undecorated bronze examples, either in the shape of open-ended hoops or spirals, were used in all periods. The earliest examples are the massive bronze spiral arm bands from Iasos found with Protogeometric pottery and the bronze bracelet from a Middle Geometric tomb on Kos (cf. above). Others were found in Late Geometric graves on Rhodes. A few other bracelets datable to the early seventh century with Geometric decoration, including bosses and punched semicircles and triangles, were found at Emporio (Chios) and are most closely related to types known from Mainland Greek sites (Emporio, 212, no. 261-266, and notes 6-7).

Simple bronze bracelets, again either open-ended hoops or spirals, usually with knob or moulded terminals, continued through the seventh and sixth centuries. Examples are known from Emporio (Emporio, 212, no. 270-274, note 5) and Phanai (W. Lamb, BSA 35, 1934-5, 149, pl. 31: 32, 41) on Chios, Ephesos (Hogarth, 150, pl. 15: 1-12 in bronze; pl. 20: 1-2 in iron; pl. 20: 7, 12 in lead; all probably date in the first half of the sixth century; another bronze example, 7.6 cm. in diameter, with conical terminals, F. Brein, Festschrift Doerner, 1978, 130, pl. 44: 25), Larisa (6.7 cm., with knob terminals; Larisa am Hermos 3, 50, pl. 10: 11); "vicinity of Izmir" (one bronze bracelet among the

arge find of fibulae; N. Firatli, IAMY 8, 1958, 75), and hodes, including an open-ended example with knob terminals rom a mid-sixth century grave at Ialysos (Grave 48; ClRh 8, 66f., fig. 155; cf. above). Six examples of open-ended oop bracelets without moulded terminals but with incised igzag decoration are said to be from Asia Minor but are ithout more precise provenience (Geneva, Ortiz collection, npublished). Women on a fragmentary relief from Ephesos in he British Museum wear spiral, open ended bracelets with nob terminals (cf. C. Picon, forthcoming), and ivory igurines also wear simple bracelets (cf. the spinner woman, ogarth, pl. 24: 1, and the fragmentary kore, Bammer, fig. 3) [FIG. 213]. This shape of bracelet, however, is biquitous, and the precise dating of examples out of ontext is most difficult.

Precious metal examples are rare. None is demonstrably f Geometric date, except a pair of large silver spiral racelets that were found in Grave 98 at Ialysos, a pithos urial that contained no pottery but gold spiral earrings nd a diadem that may be of early seventh century date (ClRh , 129, fig. 121; Laffineur, 159 note 5). Other simple ilver bracelets from Rhodes are associated with the :ientalizing workshop of the later seventh century, and :milar types continued into the sixth century (cf. above).

A few examples of simple bracelets in precious metal of xth century date are known from Ephesos and the Southwest atolia hoard. It is significant that such finds are rare, pecially at Ephesos where no bracelets were found in the

Basis, and only one example in silver was found at all; that with simple knob terminals (Hogarth, pl. 11: 3, like the bronze example also found). The Southwest Anatolia group contained several examples. There are some fragmentary silver plated bronze specimens of open-ended type. Other silver examples are single spirals or open-ended with ribbed terminals. Three other silver bracelets are heavier and more carefully moulded and decorated. Two form a matching pair and have terminals elaborately moulded with alternating torques and beaded rings, the base of the terminal decorated with incised zigzags and circles [FIG. 288]. The other bracelet has no moulded terminals, merely a knob and incised bands, but also has incised zigzags, circles and dots; the heads of the terminals have incised star patterns with dots between the rays [FIG. 289]. The hoop of this bracelet is shallowly faceted lengthwise. Silver bracelets with similar decoration--incised zigzags and ribbed terminals--are known from Cyprus, including one in London (BMCJ, no. 607) and one from the fifth century Vouni treasure (SCE 3, pl. 89: 17; A. Pierides, Jewellery in the Cyprus Museum, 37, pl. 25: 5). A pair of gold bracelets with incised zigzags and circles on the New York art market (unpublished) is said to be from Asia Minor, and a similarly decorated silver specimen without known provenience is in Baltimore (Walters Art Gallery 54.601; Jewelry, Ancient to Modern, 1979, 89, no. 266). The frequently used decoration of zigzags recalls that on spiral earrings of similar date (cf. above) and although originally a Geometric design clearly continued

well into the fifth century.

The chryselephantine statues from Delphi (cf. above), which are most likely East Greek works of the mid-sixth century once ornamented with jewelry, wore gold foil bracelets in the form of a joined pair of plain bands [FIG. 237]. Nothing else like this shape survives, and rather than being an actual piece of jewelry, it may have been meant to represent a pair of solid bracelets.

A new type of bracelet in the form of an open-ended hoop with animal head terminals, a type derived from Eastern models, became popular in Greece by the mid-sixth century. Several examples from Rhodes with silver or silver plated bronze hoops and gold lion's head terminals are known (cf. above). A solid gold example was found in the mid-sixth century cremation burial at Gordion (R.S. Young, UPennMusBull 16,1, 1951, 3ff., pl. 8, fig. 1) [FIG. 278], and a remarkable example which was found with other jewelry in late sixth or early fifth century Lydian tombs and is now in New York (unpublished) has a hoop of blue glass and gold lion's head terminals. A very similar example also with blue glass hoop and gold lion's head terminals was found in an Etruscan tomb (M. Pallottino, Il Museo Nazionale Etrusco di Villa Giulia, 1980, 52f., no. 43-44). Bracelets with gold lion's head terminals were popular in the Achaemenid period and many may be of Lydian manufacture, found in unrecorded Lydian-Achaemenid tombs (cf. Hoffmann and von Claer, 89f., no. 57; P. Amandry, AK 1, 1958, 9). Another bracelet with silver hoop and gold lion's head terminals was

found in a tomb at Olbia, which may have been influenced by East Greek types (AA 29, 1914, 246). A pair of silver bracelets with ram's head terminals is said to have been found at Amastris on the Black Sea, but they may be of fifth century date (Muenzen und Medaillen, Basel, Auction 16, 1956, lot 31; diam.: 6.3 cm.). Spiral bracelets with snake's head terminals, a very popular type throughout the Greek and Roman periods, were used in Greece by the late seventh century (cf. the bronze examples from Olympia, H. Philipp, Ol. Forsch. 13, 1983, 222ff.), but no example from East Greece have yet been found.

A final bracelet of unique type is said to be from Asia Minor and is now in a private collection (unpublished) [FIG. 340]. It is composed of a thin but firm pale gold wire hoop (c. 6.5 cm. in diameter) with the ends rolled back to form the terminals. The hoop is set with five (surviving) round ivory beads interspersed with ten pale gold cylindrical beads with added central and end ring-collars and one pale gold bead in the shape of a lion's head pierced lengthwise through the mouth. No other known bracelet of this period is set with beads, but the size is only appropriate for a bracelet. Nor do the cylindrical gold and round ivory beads have close parallels. However, the lion's head appears to be entirely Ionian in style and is strikingly similar to an ivory pendant, pierced in the same manner, from Ephesos (Bammer, fig. 71; and cf. "Ivories: Ephesos", above) [FIG. 212]. Another similar gold bead is in Munich but without provenience (unpublished; Munich Antikensammlung 11080 B),

and a third gold bead in the form of a crouching lion, from Smyrna and now in Berlin, is similarly pierced lengthwise (Berlin 1, 29f., pl. 10: 4; cf. "Necklaces", above) [FIG. 322]. The general technique and the use of pale gold also suggest an Ionian origin and a date early in the sixth century.

Buttons:

The use of buttons, notably on the shoulders and sleeves of the chiton or fastening a garment at the neck, are known from representations in sculpture and vase painting but are difficult to identify in extant material (cf. K. Elderkin, AJA 32, 1928, 333-345; Higgins, 133f.). The most plausible candidates are among the numerous gold rosette plaques of the type found at Rhodes (cf. above), but most must rather have been non-functional garment decorations in view of their flimsy construction and the large quantities found. The pairs of elaborate rosettes found in sixth century Rhodian tombs are more likely parts of buttons, as Higgins has suggested (Higgins, 134; cf. above). A bronze object of hemispherical shape with a horizontal bar on the back for attachment was found in an early seventh century context at Sardis and has been identified as a button (J. Waldbaum, Metalwork from Sardis, no. 871), and it does appear to have been more functional. An early fifth century tomb from Sardis contained a type of button with embossed facing head (Sardis 13, no. 7), which is best known from Classical Greek examples (Higgins, 133f., 168f.).

Conclusions:

That the surviving material presents a misleading picture is always a risk in considering the finds from East Greece, and certainly possible in regard to the jewelry. The tremendous finds from Ephesos and Lydia far surpass the meager finds elsewhere, and most major Ionian sites have yielded nothing. Since Ionian graves seem not to have included luxurious offerings, significant future finds are not anticipated. However, it is also possible that the finds actually do reflect the situation that existed and that the jewelry was of a uniform East Greek koine style. There are reasons to accept this latter theory. Nearly all the finds, even stray objects from uncertain sites, are linked in some way, either stylistically or technically, and often very closely. Even the goldwork from Delphi found with the chryselephantine statues, which is far from simple jewelry and later in date than the Ephesos material, has close stylistic affinities.

The common thread is certainly Lydia. Although little early sixth century material has been found in Lydia, a few finds and the vast literary tradition demonstrate that Lydia was the center, if not of production, at least of patronage. The dedications of Alyattes and Kroisos, often the works of Greek artists such as Glaukos of Chios (Herodotos 1, 25) or Theodoros of Samos (Herodotos 1, 51), were extensive at a number of Greek sanctuaries including Delphi, Ephesos and Didyma (Herodotos 1, 92). The influence on gold work, especially in East Greece, must have been considerable. In

addition, it was Lydia that supplied much of the Greek world's gold, as is demonstrated by the story of the Spartans going to Kroisos to buy gold for their statue of Apollo (Herodotos 1, 69; Pausanias 3, 10, 6). The large numbers of surviving Lydian coins help substantiate the reputation of Lydian wealth, as does the discovery of sixth century gold refineries at Sardis (cf. most recently G.M.A. Hanfmann, Sardis from Prehistoric to Roman Times, 34-41). Of the early sixth century material from Sardis, the electrum ram earring is an example of a widespread type also represented at Ephesos, and a bronze mould that matches gold plaques from Ephesos provides proof that goldwork typical of Ephesos was produced in Lydia (cf. J. Waldbaum, Metalwork from Sardis, 7, no. 948) [FIG. 336].

This is not to say that the style of the jewelry at Ephesos is not Greek. The material culture of Sardis was under heavy Greek influence and may be regarded as a provincial East Greek center. There is every reason to believe that Greeks were instrumental in developing the East Greek koine style in goldwork under Lydian patronage in Sardis, Ephesos, and perhaps elsewhere. It is only after the Persian conquest of Lydia that the Lydian styles started to diverge from the Greek in favor of Eastern fashions, and even then a distinctive mixture was created.

The inspiration for many of the jewelry types, such as fibulae, belts, garment plaques, and earrings, was ultimately from Eastern and Anatolian sources, and

connections to Phrygia are especially apparent. Phrygian production of luxury goods, as attested by the spectacular finds in bronze and wood from the late eighth century tumuli at Gordion, appears to have been highly influential in western Asia Minor. That sumptuous textiles were manufactured and admired in East Greece is also highly likely (cf. R.M. Boehmer, AA 1973, 149ff.). However, the Phrygian finds are primarily of the late eighth century and significantly earlier than the Ephesos jewelry of c. 600, and the Phrygian empire collapsed in the first half of the seventh century. During the seventh century Phrygia became part of the Lydian empire, and evidently traditional patterns and fashions survived and were transmitted to Sardis and East Greece.

Aside from the copying of bronze fibulae, belts, and vessels by the Greeks, a number of decorative patterns can be traced back tc Phrygian and Anatolian sources. The distinctive "St. Andrew's Cross" pattern seen on gold garment plaques from Ephesos and Lydia is inlaid on a wooden screen from Gordion Tumulus P of c. 700 (R.S. Young, Gordion 1, 62f., fig. 33, pl. 29: B), and a slightly earlier representation is seen on a garment depicted on a Neo-Hittite rock relief at Bor (cf. Boehmer, loc. cit., fig. 4). Another unusual pattern, a disjointed swastika, which is seen as a design on the garment worn by the ivory "Megabyzos" figure from Ephesos and again on a garment represented on a fragment of a carved column drum (Hogarth, 298, no. 45, 12, fig. 84; F.N. Pryce, BMC Sculpture 1, Part

1, 1928, 57f., B 117, fig. 58-59), occurs on another wood screen from the late eighth century Tumulus MM at Gordion (Young, op. cit., 176f., fig. 104, pl. 44, colorplate II) and on an eighth century Neo-Hittite relief at Ivriz (E. Akurgal, The Art of Greece. Its Origins, 214, pl. 30). The four-sided double-cable pattern frequently seen on Wild Goat pottery and on another gold plaque from Ephesos is found on a second wood screen from Gordion Tumulus MM (Young, op. cit., 183, fig. 110, pl. 45: B).

Especially obvious at Ephesos, and remarkably consistent with finds from other sites, is the sharing of patterns and elements among different types of jewelry. As has been noted above, beads and pin heads are often indistinguishable; objects such as the hawk fibulae may also serve as pendants; and some gold plaques may be used as garment attachments or made into brooches. Various materials may also be used, with similar objects occuring in gold, silver, and bronze, and jewelry designs may even be paralleled in ivory or precious stone. These links speak for closely related jewelry workshops, perhaps at various sites in Ionia and Lydia but of the same school.

A specific example of a pattern and technique that links several finds and objects of different function may serve as an example. The "double-axe" elements are usually found on four-sided beads constructed so that a square piece with circular interior is formed. This piece was adapted to a number of different types of jewelry. At Ephesos they are

of gold and apparently served as pin heads (although this function is not certain; Hogarth, 101, pl. 6: 15, 29; 10: 47), beads (Hogarth, 114, pl. 7: 37) [FIG. 318], and earrings (Hogarth, 104, pl. 6: 51, 58-59; 10: 38, 46; and the stylized 10: 37). Another earring type with this element said to be from Ephesos is in Berlin (Berlin 1, pl. 8: 3) [FIG. 325]. Another, probably slightly later, type of earring made of three "double-axe" beads with beaded or "woven" dividers and hemispherical terminals is known in two examples, the silver example in the Berry collection [FIG. 276] and the gold example from the Gordion cremation burial [FIG. 278]. Silver examples of nearly identically construction were used as pendants on chains instead of earrings in the Southwest Anatolia hoard datable to c. 530 [FIG. 282, 287]. Finally, a belt handle of silver and bronze uses the same four-sided "double-axe" elements, a variety not known in solely bronze examples [FIG. 304]. Thus many types of jewelry and different find sites are closely connected over a period of more than fifty years.

The various find groups and possible workshops may be briefly summarized here. The major finds are from the Artemision at Ephesos. A date late in the seventh century is likely for most of the material (cf. "Coinage", below, on the chronology), and a terminus ante quem for the rest is provided by the foundations of the Kroisos temple in the mid-sixth century. The large amount of material, almost all of uniform style and sharing designs and technique, suggests a local workshop with close ties to Sardis in view of the

matrix found there. Sardis certainly produced similar jewelry, and the Ephesos material could have been made there.

Other finds similar to the Ephesos material and likely from the area, although probably slightly later in date and belonging to the first half of the sixth century, are in Berlin and in the Berry and Ortiz collections. The Berlin group (A. Greifenhagen, AK 8, 1965, 13-19) is especially important since it is a grave find with Greek pottery and datable to the first half of the sixth century. The earrings and hawk fibula link it to Ephesos. The gold "astragals", a type not found at Ephesos (at least in precious metal), are close to the pair in the Ortiz collection, which was said to have been found with a necklace of beads similar to examples from Ephesos. The Berry group consists of silver jewelry without associated finds and includes five Asia Minor type fibulae, one earring with "double-axe" elements, two pin heads, five boat-type earrings, and seven hawk fibulae made from the same mould. All this material is closely linked in type, style, or technique to the Artemision finds, but parallels are not always exact. The workmanship is so close that an Ephesian workshop is likely, but they may be of slightly later date, closer to the middle of the century.

The Gordion cremation burial contained a quantity of gold jewelry, including leech- and boat-type earrings, an earring of form identical to the Berry example, a gold lion

head bracelet, and an acorn necklace. The date, according to the excavators who judged from Greek pottery, is c. 560-550. The "double-axe" earring connects the find to the Berry group and to Ephesos as well as to the Southwest Anatolia hoard, and the filigree spirals on the earrings, a technique not found at Ephesos and probably indicative of a slightly later date, is also found on the Ortiz "astragals". Young's suggestion that the jewelry is imported from a Greek workshop seems the best explanation, although connections with Sardis must also be considered (Gordion was in Lydian territory, and cf. the hoard of Lydian electrum coins from the site, A. Bellinger, Studies Presented to Stanley Robinson, 1ff.; and "Coinage", below).

The Southwest Anatolia hoard, most likely from the Karian/Lydian border and roughly datable by the accompanying Karian and Lydian coins, provides another good body of material. Although an Achaemenid date has recently been proposed for the so-called "Kroiseid" coins, the type found in the hoard (cf. "Coinage", below), they must still belong to the third quarter of the sixth century at the latest. They date the hoard most likely to c. 530. The jewelry, especially the beads and pendants, including those with the "double-axe" elements, provides many links to Ephesos. Other objects, notably the recumbent ram pendants, provide links to Lydia, but some of the material, such as the distinctive spiral earrings, is unparalleled. The mixture of types suggests a Karian or south Lydian workshop, influenced by the major workshops at Ephesos or Sardis.

That other centers of production existed is demonstrated by the finds of jewelry moulds from Old Smyrna and other sites. Although the moulds have been mostly for simple jewelry of widespread type, such as leech earrings and fibulae, and perhaps only in base metal, they may be seen as further evidence for a koine style of jewelry in East Greece.

The Lydian tomb finds are mostly of later date, and the connections with Ephesos are fewer. Some earrings and necklaces are similar. More surprising is the survival of the "St. Andrew's cross" design on a gold plaque in New York from a Lydian tomb of c. 500, a type matched at Ephesos. A very similar type is found on the bronze mould from Sardis, which again provides the Lydian connection. Although much of the other material displays Achaemenid influence, purely Greek designs such as the pins, the hippocamp brooch, and the acorn necklace (also found at Gordion) indicate the continued Greek presence, but from what Greek centers is unknown.

Other East Greek jewelry workshops had less connection to Lydia. The Leigh Ashton plaques, with their unusual figural representations, have more in common with gem and ring engraving, but the non-figural, floral plaques are close in style to Lydian and Ephesian types, and the fashion for garment plaques is best attested at Ephesos and Lydia. Engraved rings are significantly absent from Ephesos, but probably because the fashion did not become popular until a

later date. However, they are more closely related to examples in other areas of Greece and appear to have developed in workshops independent from the Ephesos-style schools (cf. "Rings", below). The Delphi finds are also stylistically different from the Ephesos school, but they still display much of the same pattern and function and are likely East Greek work influenced by the Ephesos material. The Troad Group of garment plaques is distinctive, but of little accomplishment. Rhodes also has little connection with Lydia, and the finds display the influence of earlier traditions there, but even here the gold reel earstuds first encountered in Lydian and Cypriot tombs were discovered.

RINGS

Unengraved Rings:

Rings from the Geometric period have already been discussed (cf. "Jewelry: Geometric", above). They are all simple and are either flat gold bands, a type better known in Mainland Greece, or tubular rings in gold, silver, and bronze. The latter type of ring continued throughout the Archaic period, and, indeed, were so simple that they are known in most periods. A number of later seventh and sixth century examples are from Rhodes, including examples from a mid-seventh century tomb at Ialysos (Grave 23, ClRh 3, 50ff.; one bronze and six silver rings with two elaborate, imported examples, cf. below), a later grave at Ialysos of c. 600 along with an early example of a ring with engraved bezel (Grave 33, ClRh 3, 58ff., a plain silver ring, with no. 1, below; Gates, 6, no. 50), two early sixth century graves at Ialysos (Grave 45, two gold rings, ClRh 3, 73, no. 3, and Laffineur, 160f., 239, no. 236; Grave 46, one gold ring, ClRh 3, 81, no. 16, fig. 70, and Laffineur, 239, no. 237; on the date of the tombs, cf. Gates, 6, no. 52-53; and "Jewelry: Orientalizing", above), and the votive deposits at Lindos (Lindos 1, no. 284, silver, and no. 285, twenty-seven specimens in bronze; the dating is uncertain) and Kameiros (ClRh 6/7, 350, no. 52, fig. 82, two in silver and five in bronze). At Emporio (Chios) the plain rings, mostly in bronze with some variation in shape, continued throughout the seventh century (Emporio, 212; cf. above), and some examples in silver were found at Phanai (W. Lamb, BSA 35,

1934-5, 150f.). At Ephesos rings of any kind are notably rare, and not all those found are necessarily finger rings (in gold: Hogarth, 105, pl. 9: 4, 8, 9, 26, "about a dozen", but none appears to be a finger ring; silver: Hogarth, 118, pl. 11: 15, 19, eleven examples and some fragments, most too small for the finger; bronze: Hogarth, 149, eleven examples). More elaborate rings have been found on Rhodes, but they are most likely imports (cf. below).

A distinctive group of unengraved rings from Rhodes is significant for its close relation to engraved rings of the second half of the sixth century. These rings were formed by hammering the center of a tubular bar to form a flat, diamond-shaped bezel and then bending the bar into a circle and joining the ends. The shape corresponds to Boardman's Group F and N (Boardman, AK 10, 1967, 18 and 25; cf. below). Although only two examples of Group F and N rings with engraved bezel have been found in Rhodian grave (cf. no. 20 and 20bis, below), a number of unengraved examples have been found, almost all in tombs at Ialysos (another gold example is said to be from Asia Minor and is in a private collection [FIG. 341]; perhaps also the encrusted silver ring from Vroulia, Kinch, Vroulia, 26, pl. 18: 6). Laffineur cited three rings from two graves found with gold diadems which he associated with his orientalizing workshop. One is gold (Marmaro, Grave 35, ClRh 8, 157, no. 6, fig. 143; Laffineur, 161, 239, no. 238; found with the diadem, Laffineur, no. 189) and one silver (Marmaro, Grave 42, ClRh 8, 160, no. 3, fig. 147; Laffineur, 161, 239, no. 239; found with a diadem

similar to the last, Laffineur, no. 190), while the third is gold-plated bronze with the bezel missing (grave as last, ClRh 8, 160, no. 2, fig. 147; Laffineur, 239, no. 240). As noted above (cf. "Jewelry: Orientalizing"), the associated ceramic finds in the two graves date them to the mid-sixth century, removing them from the rest of the orientalizing workshop's material datable to the second half of the seventh century. The other rings of this type were also found in graves datable to the second half of the sixth century. These include at least two in gold (Marmaro, Grave 31, ClRh 8, 153f., fig. 139; and Grave 61, ClRh 8, 179f., with a silver phiale, cf. "Silver Plate", above; a third may be Ialysos, Grave 73, Annuario 6-7, 1923-4, 324ff., no. 5) and two in silver (Marmaro, Grave 38, ClRh 8, 157; and Grave 48, ClRh 8, 166ff., with Attic pottery; Gates, 8, no. 124). It may be significant that at least some of these rings are as early as any engraved examples of Group F and N, suggesting Rhodes as a possible site for a ring engraving workshop in the second half of the sixth century.

Ring Mounts for Engraved Gems:

In addition to simple solid rings and rings with engraved bezels (cf. below), rings which were set with engraved gems were also used. Both types of ring were derived from Eastern, probably Phoenician, sources, and both types were popular throughout the Archaic and Classical period. Gems, primarily scarabs and scaraboids of precious stone or glass which were almost always pierced lengthwise,

were mounted by passing a wire through the hole and winding it around the terminals of a simple hoop, which is sometimes tapered, so that the mount may swivel (cf. some East Greek pendants, also of Phoenician derivation, "Jewelry: Pendants", above; and on Archaic ring mounts in general, BMC Rings, xxxviii-xxxix, "Phoenician i-v"; P. Zazoff, Die antiken Gemmen, 1983, 123f.). Alternatively, the gem could be surrounded by a metal band, which was sometimes decorated with filigree or granulation, and then joined to the penannular hoop, again allowing it to swivel.

Although Greek scarabs were not manufactured until the mid-sixth century, rings set with Egyptian (or Egyptianizing of uncertain manufacture) faience scarabs were already fashionable by the late seventh century. The earliest datable example, of c. 625, is a silver ring from Grave 3 in the Macri Langoni cemetery at Kameiros (ClRh 4, 50; Gates, 5, no. 25). An example in gold of the third quarter of the sixth century was found at Ialysos in Grave 48 (ClRh 8, 166ff.; Gates, 8, no. 124). In another tomb at Ialysos of the same date was found a heavy gold ring with a Phoenician carnelian scarab set in a swivel-bezel decorated with "woven" filigree decoration and added granulation; it was most likely an import from Phoenicia or Cyprus (Grave 254; ClRh 3, 270f., fig. 267; Gates, 8, no. 112). Other examples of rings with Egyptian scarabs were found at Lindos (Lindos 1, no. 1364-1368). Mounted Egyptian scarabs, although not necessarily from rings, were found at Ephesos and in the Southwest Anatolia hoard (cf. "Jewelry: Pendants", above).

Rings mounted with Greek gems from East Greece are not well attested. Most are from Lydian tombs and usually have a distinctive, heavy mount of Lydian-Achaemenid style (cf. "Engraved Gems", no. 15, 26, 49, 50, and 52, below; the important examples in New York remain unpublished). Only four other examples have come to light. One is a gold ring with a cornelian scarab set in a gold frame with filigree work and wire wound around the terminals from Grave 10 at Marmaro, Ialysos (ClRh 8, 111ff., fig. 99; cf. "Engraved Gems", no. 33, below). A gem from the Southwest Anatolia hoard ("Engraved Gems", no. 1, below) is in a pale gold frame with woven filigree decoration, but the hoop of the ring is missing. A late Archaic (early fifth century?) cornelian scaraboid depicting Eros said to be from Karia and now in Boston ("Engraved Gems", no. 13, below) is mounted in a gold ring by the usual means of passing a wire through the gem and winding it around the ends of the hoop; the terminals are covered by four-pointed stars. The fourth is a gold ring of thin wire with disc-shaped terminals set with a scaraboid attached with wire in the usual manner ("Engraved Gems", no. 37bis, below; no photo is available).

Engraved and Ornamented Rings:

Archaic Greek rings with engraved bezels have been carefully categorized and studied by Boardman (Boardman, AK 10, 1967, 3-28), and although there is a large variety of ring types, they do fall rather neatly into groups [FIG. 342]. However, there is a wide distribution throughout

Greece of seemingly identical types, and attribution to specific workshops is very difficult. There must have been many. Although East Greek traits are often seen in the devices, rings with East Greek provenience are rare. Only ten examples were listed by Boardman as coming from East Greece, but some recent discoveries may be added, and no doubt there are others in private collections that have not been recorded.

An updated list follows:

Group A

1. Ialysos Gr. 33, silver, inscribed Elephantidos emi; Boardman, AK 10, 1967, A9.
2. Lindos, silver, winged beetle or disc; Lindos 1, no. 280; Boardman, AK 10, 1967, A 10.
3. Lindos, silver, similar to no. 2?; Lindos 1, no. 281.
4. London, WA 120265, "from Egypt", silver, Karian inscription; Boardman, AK 10, 1967, A 14.
5. London, WA 132266, ex-Guilhou, pl. 9: 542, "S.W. Asia Minor" (suspect provenience), silver, lizard; Boardman, AK 10, 1967, A 15.
6. Private collection, "Asia Minor", silver bezel (13.4 x 10.8 mm.), hoop missing, double register; on one are two lions with rayed pellet between; the other, two birds with large circle with rays between, smaller rayed pellets in field; hatched borders; [FIG. 343].
7. Private collection, "Asia Minor" with previous, silver bezel (15.6 x 11.7 mm.), double register; on one two

lions, small stick-figure warrior with shield and spear between; below, two birds, horse protome between, divided into panels by vertical lines, pellets in field; hatched borders; [FIG. 344].

8. Private collection, "Asia Minor" with previous, silver bezel (14.3 x 10.5 mm.), double register; on one two birds with winged scarab between; below two cocks with sphinx between; hatched borders; [FIG. 345].

Group C

9. Private collection, "Asia Minor" with no. 6-8, silver bezel (19.6 x 9.0 mm.); two cocks with stylized palm tree between, four pellets with rays in field; hatched border; [FIG. 346].

10. Munich A 2477, from Rhodes, gold ring, bird; Boardman, AK 10, 1967, C 1.

11. Phanai, Chios, silver bezel on bronze hoop, forepart of horse joined to human leg; Boardman, AK 10, 1967, C 2.

Group F

12. Private collection, from Asia Minor, Southwest Anatolia hoard with silver coins of Lydia and Karia and silver jewelry (cf. "Coinage", below) including ring no. 19 below, silver ring, winged ketos.

13. Private collection, from Salihli (near Sardis) with no. 14 below, silver ring (diam.: 24.2 mm), two cocks; [FIG. 347].

Group J

14. Private collection, from Salihli (near Sardis) with no. 13, silver ring (diam.: 27.3 mm.; bezel: 16.1 x 11.1),

gorgon head in one end, lotus in the other; hatched border; [FIG. 347].

Group K

15. Geneva 207, from Rhodes, gold ring, bird with spread rings, Boardman, AK 10, 1967, K 3; [FIG. 348].

16. London 1023, Smyrna market, silver ring, palmettes; Boardman, AK 10, 1967, K 2.

17. London 1024, Smyrna market, silver ring, hoop with snake-head terminals holding bezel with gorgon head in relief with gold inlaid eyes; BMC Rings, no. 1024.

18. New York 67.11.12, from a Lydian tumulus (at Usak?), gold ring, flat oval bezel with beaded rim (11.6 x 10.0 x 1.0 mm.), hoop with lion's head terminals (diam.: 23.5 mm.), lion walking, dotted groundline; unpublished.

Group M

19. Private collection, from Asia Minor, Southwest Anatolia hoard with no. 12, silver ring, small oval bezel attached to tapering hoop, lion.

Group N

20. Ialysos, Marmaro Gr. 41, gold ring, lion, ClRh 8, 159f., fig. 146; Boardman, AK 10, 1967, N 16.

20bis. Ialysos, Grave 68, gold ring, fish, Annuario 6-7, 1923-4, 324, no. 14; not illustrated.

21. Casullis collection, "Rhodes", gold ring, youth with staff; S. Zervos, Rhodes, 190, fig. 385; Boardman, GGFR, 404, as N 45, but "probably not ancient".

22. Private collection, "Asia Minor", gold ring, flying Eros; H. Luschey, Festschrift U. Hausmann, 1982, 298ff.; [FIG. 349].

23. Istanbul 4636, Sardis, Tomb 811, gold ring, bird and lion with symbol; Sardis 13, no. 90; Boardman, AK 10, 1967, N 17; Boardman, Iran 8, 1970, 45, no. 196, pl. 8.

24. Borowski collection, presumably from Asia Minor, gold ring, lion crouching, head seen frontally, symbol on shoulder; M. Poetto, La Collezione Anatolica di E. Borowski, 1981, 47, no. 46; [FIG. 350].

As Boardman observed, the inspiration for the earliest Archaic Greek rings was the Egyptian and especially Phoenician cartouche ring, probably introduced via Cyprus (Boardman, AK 10, 1967, 5). Phoenician imports have been found in seventh century Rhodian tombs (a gold cartouche ring from Kameiros, BMC Rings, no. 15; another from Ialysos, ClRh 8, 26f., fig. 9; an unusual type with mock-hieroglyphs from Ialysos, Grave 23, ClRh 3, 50ff., fig. 44; also found in this tomb was a silver ring with a large diamond-shaped bezel with granulated decoration and a flat hoop, which appears to be an import from Crete, cf. Higgins, 118, comparing the Praisos example, BSA 64, 1969, 152, fig. 2; also the gold rings from Fortetsa, A. Lebessi, BSA 70, 1975, 169ff., pl. 23a-b, and Laffineur, 160 n.6; however, also cf. the diamond-shaped attachments from Ephesos, Hogarth, pl. 11: 30, and BMCJ, no. 1070, and a similar, fragmentary example from the Southwest Anatolia hoard; "Jewelry", above), and another Phoenician cartouche ring in silver was

said to have been found in Asia Minor (Munich market, 1983). These Phoenician examples lead directly to the Greek Group A and C rings, some of which are difficult to distinguish from the imports (Boardman, AK 10, 1967, A 10, from Lindos, "possibly not Greek"; Lindos 1, no. 281, here no. 3, may be another).

Group A rings were clearly popular in Cyprus, but some were certainly manufactured in East Greece. The earliest example (earlier than the datable Cypriot rings, as Boardman noted), here no. 1, is of c. 600 from Grave 33 at Ialysos (Boardman called the context "no later than c. 600", but cf. Gates, 6, for a date in the first quarter of the sixth century) and is inscribed with the owner's name Elephantidos emi, "I am of Elephantis". The script is consistent with an Ialysan origin (L.H. Jeffery, LSAG, 346), and the ring must be presumed locally made. No. 4 has a Karian inscription and should be a product of a Karian workshop. The Egyptian provenience does not seem unusual in view of the well-attested presence of Karians there. A southwestern Anatolian provenience has been suggested for no. 5, which would not be surprising, but this information is suspect, as Boardman noted, and must be treated cautiously.

Three additional rings of Group A (no. 6-8) and a closely related one of Group C (no. 9) were acquired together and must have been found together, or at least in the same vicinity. They are reliably said to be from western Asia Minor, but no exact site is known. They are

probably all contemporary (no. 8 appears the stylistically most developed, but is not necessarily much later in date) and all may be from the same workshop, but only the first two (no. 6-7) are by the same hand. They are especially significant for their close similarities to the known Cypriot series, as well as to the Group B I rings made in Etruria, supporting the East Greek connection proposed by Boardman (AK 10, 1967, 6). The double-bezels and heraldic arrangement of the lions, sphinxes, and birds are like the Cypriot examples, and the style is similar, although not the same. The sphinx on no. 8 and the pellets with rays provide stylistic links to the Group B I series, as does the arrangement in registers. In other details, the rings are close to Phoenician types, especially in the style of the birds of no. 6-8 (cf. the Phoenician ring, BMC Rings, no. 15) and the winged scarab on no. 8 (cf. Boardman, AK 10, 1967, 8, pl. 1,d). However, on this same ring where the top register looks highly Phoenician, the lower register with cocks and sphinx is in an entirely Greek style. The cocks on ring no. 9 are more stylized. It is these rings that demonstrate the existence in East Greece of workshops in the first half of the sixth century that had close connections with Phoenicia and Cyprus, and it may have been some of these artists who emigrated to Etruria to produce the similar B I series rings.

The Group C ring no. 9 helps demonstrate the close connection to the Group A rings. The shapes are very similar. The motif of two cocks is a common one and already

seen on Ionian electrum coins of c. 600, but rings no. 8 and 9 provide relatively early examples (cf. Hogarth, pl. 1: 19-31; Weidauer, no. 15-28; on Archaic rings, Boardman, AK 10, 1967, F 12-13 and N 20-21; on the motif in general, P. Bruneau, BCH 89, 1965, 90ff.; in East Greece the motif is also seen on a Klazomenian black figure hydria of the Urla Group now in Moscow, N.A. Sidorowa, Antique Painted Pottery, 1985, 14, and on a late sixth century Lydian silver alabastron in New York, D. von Bothmer, Met.Mus.Bull., Summer, 1984, 35, no. 45). Another example is the slightly later Group F ring, no. 13 below. Two other Group C rings from East Greece are known, one from Rhodes and the other from Chios. The device on the example from Chios is distinctively East Greek (Boardman, AK 10, 1967, 16).

Group F rings were very common in the second half of the sixth century, but Boardman noted the lack of reliable proveniences and listed none from East Greece. Many more examples have since come to light, especially from Western Greece and Sicily (e.g. E. Buckley, Getty Journal 1, 1974, 27-32, thirteen silver rings said to be from Gela; and J. Boardman, Intaglios and Rings, no. 63-67, five examples of Group F along with other types all said to be from Selinus), but only two from East Greece. However, it should be noted that the Group N rings are very close in technique, and there are a number from East Greek sites, several of which approach the Group F shape. A small Group F ring (with the Group M ring, no. 18, below) was among the large group of

silver jewelry and coins in the Southwest Anatolia hoard datable to c. 530 (cf. "Coinage", below). The device, although not entirely clear because of the silver chloride deposits, is a ketos with a long, thin fish tail and a thin sickle-shaped wing; it is unclear whether there are forelegs. The ketos is seen elsewhere in East Greece in this period, most notably on Karian coins of the late sixth century (cf. "Coinage", below) and Lykian coins of the early fifth century. The sea monster is also seen on a Klazomenian sarcophagus and a Caeretan hydria (J.M. Hemelrijk, Caeretan Hydriae, 121 n. 201, 187, pl. 103-104; R.M. Cook, Clazomenian Sarcophagi, 177, G.7a; cf. Boardman, AK 10, 1967, 21 n.66 and BCH Supplement 14, 1986, 447ff. on the ketos; and K. Shepard, The Fish-Tailed Monster in Greek and Etruscan Art, 1940, 28ff.).

Another Group F ring, here no. 14, was said to have been found with a Group J ring in the vicinity of Sardis, perhaps in a Lydian tomb of the second half of the sixth century. The device is again two cocks, and the style is much like that on the examples cited by Boardman (cf. above) from Olympia and Western Greece. The Group J ring no. 14, with bezel in the shape of a "Boeotian" shield, is the first known from East Greece, although one in gold is from Cyprus, with a device of sirens in a typically East Greek style (Boardman, AK 10, 1967, 22, J 1). Others are from Perachora, Sicily, and Etruria, but, as Boardman noted, the type must be originally Greek. Other Greek examples have relief gorgoneion devices (ibid., n. 68), and they recall

another Lydian ring, where it holds a mounted Lydian-Achaemenid scaraboid (Manisa Museum 173, from Akhisar; Anat. Giv. 2, 66, B.154).

The Southwest Anatolia hoard of c. 530 also contained a small ring of Group M type, with an oval bezel attached to a tapering hoop (no. 19). The device is a rather crude crouching lion with tail curled upwards, a pose very similar to that of the lions on the Group A rings no. 6-7 above. The style is close to that of the accompanying Group F ring, no. 12, and the two are close enough to be from the same workshop.

In general Group N rings are late Archaic and some continued into the fifth century. Some examples, as Boardman noted, are close to the Group F shape and made in the same way from a bar with joined ends, and this is true with several of the East Greek examples, here no. 20, 22, and 23. As discussed above, there may be a connection with the unengraved rings of similar shape and manufacture from Rhodes, and two of the five known rings (no. 20 and 21) are from Rhodes. However, only one ring (no. 20) was found in the excavations, this in a stone sarcophagus of sixth century type but unfortunately with no accompanying material to allow precise dating. The device of a lion is in a good East Greek style, and a local origin seems probable. The style of no. 24, known only from the illustration in Zervos, is crude and rather odd and has lead Boardman to doubt its authenticity. If genuine, it would belong to the early fifth century.

A gold ring from Asia Minor with the device of a flying Eros has recently been published by Luschey (here no. 22), who saw the flying Eros type as an Ionian innovation, perhaps specifically Samian of the time of Polykrates. He especially noted a Samian cup with a frieze of flying erotes (Luschey, *loc. cit.*, 300, pl. 68: 3; Walter-Karydi, *Samos* 6, 1, no. 335, pl. 40; a Klazomenian sarcophagus in London with flying erotes may be added, *AGG*, 72 n. 43; R.M. Cook, *Clazomenian Sarcophagi*, 31ff., G. 1, pl. 40-41) and possible literary inspiration (notably Anakreon, who speaks of a winged Eros; Luschey, *loc. cit.*, 304). The motif is a popular one on rings and gems (other rings: Boardman, *AK* 10, 1967, 25, M 14 from Egypt, N 3-5 from Cyprus, and *GGFR*, 404 as N 47 from Locri; gems: *AGG*, 72, no. 169-171, the last a local work from Sardis, and 118f., no. 361, an Island Scarab, perhaps Euboean), but it is interesting to note the predominantly East Greek proveniences of the early examples. The style of ring no. 22, notably the head of Eros, and its alleged provenience speak strongly for its East Greek origin, although there is insufficient evidence to suppose it is specifically Samian.

A Lydian example of the ring type, here no. 23, probably dates from the late sixth or early fifth century and was found in a Sardis tomb with a another, later, ring of the mid-fifth century. The accompanying symbol is typical of the linear devices on the large series of Lydian-Achaemenid stamp seals probably also made at Sardis (cf.

"Engraved Gems", below). Another linear device is seen on an interesting gold ring in the Borowski collection, no. 24. Here it is placed on the shoulder of a crouching lion of fine late Archaic style. The style of the lion and the placement of the symbol are strikingly like an extensive series of silver coins struck in Karia (cf. "Coinage", below), which have an obverse type of a forepart of a lion with variable symbols placed on the shoulder; the earliest examples of the series were present in the Southwest Anatolia hoard but it continued until c. 470-460. Symbols nearly identical to that on the ring are also seen on Lykian coins of c. 480-460 (on the shoulder of a boar protome: BMC Lycia, 2, no. 6, pl. 1: 5; in the fields, obverse and reverse: Traite 2, no. 235, pl. 95: 16).

Some chronological points can be determined, with early evidence provided by a few Rhodian tombs. Ring no. 1 of Group A dates from the early sixth century and, furthermore, is clearly of local manufacture. Unengraved rings of Group F shape are attested in Rhodian tombs datable to mid-century and later, and these may even be the prototypes for the engraved series. The lack of any engraved rings among the rich deposits of jewelry in the pre-Kroisos Artemision at Ephesos is surely significant. Apparently no rings were in fashion in Ionia (and probably Lydia) until mid-century or later. The Southwest Anatolia hoard of jewelry, which displays many similarities to Ephesian jewelry but is somewhat later in date, c. 530, does contain two rings (no. 12 and 19) of Groups F and M. Other rings from Lydia

and Karia are imprecisely datable to the end of the sixth century and early fifth century. The Karian ring no. 24 is especially close to coins of c. 470.

The rings from East Greece are not numerous, and the variety of styles preserved and the uncertainty regarding exact provenience make attributions to local workshops very difficult, although a number of workshops certainly existed. There is reason to believe that East Greek workshops were instrumental in transmitting some ring shapes and styles to the rest of Greece, but this may have happened at a relatively early date, in the first half of the sixth century, and Archaic Greek rings of the second half of the century are not specifically East Greek in style (cf. Boardman, GGFR, 154f.). Rhodes appears to have been manufacturing Phoenicianizing or Phoenician-derived rings early in the sixth century and continued with purely Greek types. The Greek cities on the Karian coast may have also been producing the Group A and C rings, as well as later sixth century rings of typically Greek type, of which the two rings (no. 12 and 19) from the Southwest Anatolia hoard may be relatively early examples. In view of its similarity to local coins, the early fifth century ring no. 24 is most probably a native Karian version of a Greek type.
Similarly, rings of Greek type were popular in Lydia; at least four are from Lydian tombs and are likely local products. Ionia has produced very little, although this may be because few Ionian graves have been found, and they may

not have contained the valuable offerings typical of Dorian burials. The only ring of certain Ionian provenience is the silver example from Phanai, Chios (no. 11), which does display a motif typical of Ionian work (cf. above). The two examples from the Smyrna market may be from Lydian tombs as easily as from Ionia. The fine gold ring no. 22 with flying Eros is, like the Phanai ring, in a style that might be expected in Ionia, but precise localization is difficult without further comparable material.

Engraved Gems:

The importance of Archaic gems as high quality artistic works rich in potential art historical information has long been acknowledged, but systematic study has until recently been largely neglected. Although ancient gems were avidly collected and studied from the Renaissance through the 19th century, only Adolf Furtwaengler's, Die antiken Gemmen (1900) stands as a fundamental and insightful study of the subject from that time. This century has seen the publication of a number of museum catalogues and surveys, but a careful study of Archaic Greek gems was not made until J. Boardman's, Island Gems (1963), Archaic Greek Gems (1968), and various subsequent articles. Little has since been added except an article by E. Walter-Karydi ("Spaetarchaische Gemmenschneider", Jb.Berl.Mus 17, 1975, 5-44), which attempted to localize some gem workshops, and Boardman's response and further observations ("Greek Gem Engraving: Archaic to Classical" in CincClassStud 5, 1985, 83-95, esp. 87-90).

Hindered by the lack of find contexts and the fact that gems traveled far in antiquity, attempts to localize workshops and to establish a chronology have proven very difficult. However, Boardman has repeatedly emphasized the East Greek characteristics of a great many sixth century hard stone gems and shown that the dominant workshops must have been located in the Islands, Ionia, and Cyprus (AGG, 171f.; CincClassStud 5, 89). Various reasons are cited for

his attributions, including proveniences when known, of which nearly half are broadly East Greek with most from Cyprus; iconography and stylistic traits thought to be peculiar to East Greece; and inscriptions, which consistently display Island or Ionian characteristics, or are Cypriot. These traits will be examined in more detail below.

Prior to the introduction of hard stone scarabs and scaraboids around the middle of the sixth century, seal usage in East Greece was intermittent. Seals in purely Geometric style are not attested, except for two bronze seals which are most likely imports from the Greek Mainland (cf. "Geometric Bronzes: Seals", above). A rectangular seal impression in Geometric or Subgeometric style depicting Ajax carrying the body of Achilles is preserved on a terracotta plaque dedicated in the Heraion at Samos (D. Ohly, AM 66, 1941, 35, pl. 11; Boardman, JHS 88, 1968, 8; GGFR, 112), but the identical seal was impressed on an amphora neck found at Ischia (GGFR, 112, fig. 166; G. Buchner, Expedition 8, 1966, 11), suggesting that this seal too originated in Mainland Greece. Two classes of Subgeometric (presumably seventh century but not closely datable) seals, mostly from Rhodes and the Islands, have been discussed by Boardman. A group of crudely worked steatite and limestone seals, named "amulet seals", appear to be exclusively Rhodian (Kameiros Well, Kameiros stipe, and Lindos) of the first half of the seventh century (Island Gems, 136-142). The devices are usually simple linear patterns or circles, and the seal

shapes appear to be derived from Near Eastern types (other classes of Near Eastern and Phoenician seals that would influence Greek work include the "Lyre Player Group", G. Buchner and J. Boardman, JdI 81, 1966, 1ff., and a group of early seventh century glass scaraboids, AGG, 20-22, no. 1-19).

The other early class of seals are ivories (cf. "Ivories", above), related to the better attested and higher quality Peloponnesian types but made in East Greece, perhaps on Rhodes (Island Gems, 154f.). Examples of seals with the backs carved as recumbent lions and devices in a simple Subgeometric, figural style have been found at Kameiros, Phanai and Emporio on Chios (for the Emporio lion, cf. Emporio, 237, no. 534, pl. 95), Ithaka, Delos, Paros, and perhaps Samos (Vathy E 60; B. Freyer-Schauenburg, Elfenbeine aus dem samischen Heraion, 1966, 6 no. 10, 46-50, pl.11; Island Gems, 154, no. 8). The Samos seal, which has two lions in carved relief and a simple device depicting a winged horse or griffin, was removed from the main series by Freyer-Schauenburg, who saw it as an early Ionian work. However, Boardman, noting its affinities with North Syrian seals, has questioned whether the seal is in fact Greek and pointed out the difficulties in identifying the Eastern models for orientalizing seals of this type and how they reached the different parts of Greece (Boardman, JHS 88, 1968, 9-12). A comparable group of ivory seals is scaraboid- or disc-shaped and has similar devices as well as

a similar distribution (for the Emporio example, cf. Emporio, 237, no. 535, pl. 95), but it also includes two examples from the Artemision at Ephesos, which are not likely to be much earlier than the end of the seventh century.

A single hard stone seal was found in the pre-Kroisos Artemision at Ephesos (Hogarth, 213, pl. 46: 37; in Istanbul?), which is described as a circular cornelian stone engraved with the figure of a horseman. It is an intriguing piece, since it is an early hard stone intaglio yet apparently unrelated to the main series of scarabs which soon begins. However, it is too poorly published to allow any notable conclusions.

The second quarter of the sixth century saw the emergence of a new series of seals that would become fashionable throughout Greece--hard stone (primarily various chalcedonies) scarabs and scaraboids. Boardman has convincingly suggested that the inspiration for the gems was Phoenician works (AGG, 19-23) and that the probable pioneering workshops were located on Cyprus, where Phoenician and Greek populations mixed (AGG, 23f.). The proveniences of the early stones and their continuing popularity on the island, as well as the frequent inscriptions, support a Cypriot origin. Other workshops would soon be functioning, most notably in the Islands and Ionia but no doubt elsewhere as well, including in Italy, established by immigrant Greeks (cf. AGG, 173).

Since the majority of gems display broadly East Greek characteristics, an attempt to separate the Mainland Ionian and nearby island (i.e. Lesbos, Chios, Samos, and Rhodes) workshops from the other island and Cypriot schools, as well as from those in Ionianizing Italy, must be tentative. There are some criteria to use, however, including proveniences, inscriptions, and iconography. Boardman has grouped the known gems partially by style or artist and partially by motif (AGG, 10, 172f.), and although the variety is great--and only rarely can specific workshops be isolated--his groupings are useful and will be followed here as a guide.

The gems of East Greek provenience may first be considered and are listed as follows:

"Gorgon-Horse Group"

1. Private collection. Scaraboid, uncertain material (L: c. 8.5 mm.) in gold mount, perhaps from a ring, from the Southwest Anatolia hoard (cf. "Jewelry", above). Gorgon holding snake; small and of crude style. Unpublished.
2. New York 68.11.66. Cornelian scarab (L: 14 mm.), from a Lydian tumulus. Lion and human figure; very crude work, hatched border. Unpublished.
3. Munich, A 1375. Cornelian scarab, Smyrna market. Potnia theron. AGD Munich 1, no. 164; AGG, no. 59.

"Plump Satyr Group"

4. Paris, Louvre A 1223. Cornelian scarab, from Sardis.

Satyr, holding kantharos and jug, runs left. AGG, no. 85.

"Sphinx-and-Youth Group I"

5. Paris, Bib. Nat., Pauvert de la Chapelle no. 78. Rock crystal scaraboid (L: 20 mm.), from Samos. Archer in Scythian dress kneels, testing arrow. AG, pl. 9: 20; Richter, Engraved Gems, no. 165; Walter-Karydi, loc. cit., 18, fig. 19; not in AGG; [FIG. 351].

6. Fogg Art Museum. Rock crystal scaraboid (L: 15 mm.), "from Asia Minor". Biga, linear border. This is the gem mentioned by Boardman (as in a private collection in Switzerland) in Ashmolean Gems, 16, under entry no. 77=AGG, no. 462; as Boardman notes, the shape is the same, including the horizontal cuts at the string-holes, which are frequently seen on Archaic scaraboids (cf. ibid., 17, fig. 2); [FIG. 352].

"Sphinx-and-Youth Group II"

7. Munich A 1381. Cornelian scarab, from Asia Minor, ex-Rhousopoulos. Sphinx with youth. AGD Munich 1, no. 171; AGG, no. 160.

"Dry Style"

8. London, Mrs. Russell. Agate scarab, from Samos. Kneeling youth tests arrow. AGG, no. 182; [FIG. 353].

9. London, BMC Gems, 442. Cornelian scarab, from Samos. Youth with helmet and shield on horse, bitch below, lion mask in exergue. AGG, no. 200; [FIG. 354].

10. Private collection. Cornelian scarab, from Mersin, Cilicia. Conjoined heads of bearded man and eagle (?), hatched border. Unpublished; [FIG. 355].

"Group of the Leningrad Gorgon"

11. Munich A 1286. "Sardonyx" (chalcedony) scaraboid, from Samos. Winged Bes, frontal. AGD Munich 1, no. 215; GGFR, 403.

Semon Master

12. Berlin, AGD Berlin, no. 51. Agate scarab, "from Troy". Naked woman with hydria kneels before lion-spout of fountain; inscribed Semonos (namepiece of the Semon Master). AGG, no. 249; Walter-Karydi 12f., fig. 9.

Late Archaic Groups

13. Boston 27.767. Cornelian scaraboid in gold ring, "from Karia". Eros, holding wreath and lyre. AGG, no. 272; J.D. Beazley, Lewes House Gems, no. 33; Walter-Karydi, loc. cit., 19, fig. 20; [FIG. 356].

14. Once Evans. Chalcedony scaraboid, Smyrna market. Youth with lyre. AGG, no. 278.

15. New York 68.11.68. Cornelian scarab, carinated and carefully cut, in gold ring, from a Lydian tumulus. Triton right, holding wreath and kantharos, hatched border. Unpublished.

16. New York 68.11.69. Cornelian scarab, carinated and carefully cut, in gold pendant mount, from a Lydian tumulus. Herakles with lion over shoulder, hatched

border; symbol V added in field, partial erasure of border. Unpublished.

"Group of the Beazley Europa"

17. Paris, Bib. Nat., Pauvert de La Chapelle no. 84. Chalcedony scarab, from Asia Minor. Youth leans on staff while crouching boy adjusts sandal, framed by vine. AGG, no. 309.

Island Scarabs

18. London, BMC Gems no. 451. Green steatite scaraboid, from Asia Minor. Horse rolling. AGG, no. 357.

19. London, BMC Gems, no. 441. Pale yellow steatite scarab, from Klazomenai. Horse with rider. AGG, no. 358.

20. Copenhagen 10321. Yellow serpentine scarab, from Lindos. A dancing man. AGG, no. 364; Lindos 1, no. 540.

"Lions: Early"

21. Munich A 1281. Green jasper scarab, from Rhodes via Istanbul market. Lion protome. AGD Munich 1, no. 138; AGG, no. 375.

"Lions: The Common Style"

22. Munich A 1354. Cornelian scarab, Istanbul market. Lion attacks goat. AGD Munich 1, no. 195; AGG, no. 385; [FIG. 357].

23. Berlin, AGD Berlin, no. 101. "Sardonyx" scarab, Smyrna market. Lion attacks bull. AGG, no. 398;

Beschreibung, no. 168.

24. New York 68.11.67. Cornelian scarab, from a Lydian tumulus. Lion attacks bull, hatched border. Unpublished.

24 bis. Private collection. Cornelian scaraboid (L: 16.5 mm.), horizontal cuts at string holes, from Asia Minor. Lion, with back mane, seated left, head turned right, hatched border. Unpublished; [FIG. 358].

"Aristoteiches Group"

25. Unknown. Plasma scaraboid, from "near Pergamon". Lioness, inscribed Aristoteiches. AGG, no. 427; Walter-Karydi, loc. cit., 16, fig. 14; [FIG. 359].

"Lions: Other Types"

26. Istanbul. Cornelian scarab in gold ring, from Sardis, Tomb S.16 (fifth century). Lion. AGG, no. 454; Sardis 13, no. 94.

27. London, BMC Gems, no. 505. Cornelian scarab, from Adana. Whirligig of lion, bull and eagle or cock. AGG, no. 459; [FIG. 360].

"Flaccid Style"

28. Munich A 1470. Cornelian scarab, from Lesbos. Griffin. AGD Munich 1, no. 296; AGG, no. 465.

"Animals: The Common Style"

29. Once Southesk, O 34, pl. 17. Black jasper scaraboid, from Smyrna. Kneeling bull. AGG, no. 482; [FIG. 361].

30. Munich A 1371. Cornelian scarab, "from Samos, Chios market". Two winged bull protomes joined, one with head turned back. AGD Munich 1, no. 173; AGG, no. 491; [FIG. 362].

31. Munich A 1372. Cornelian scarab, Smyrna market. Winged bull protome. AGD Munich 1, no. 174; AGG, no. 493.

32. Istanbul. Cornelian scarab, from Sardis, Tomb 722. Boar, linear device above. AGG, no. 497; Boardman, Iran 8, 1970, no. 195; Sardis 13, no. 98.

33. Rhodes. Cornelian scarab in gold ring, from Ialysos, Marmaro, Tomb 10 (c. 525). Winged boar protome. AGG, no. 499; ClRh 8, 112, fig. 99-100; [FIG. 363].

34. Berlin, AGD Berlin, no. 103. Cornelian scarab, from Mytilene. Winged boar protome. AGG, no. 500; Beschreibung, no. 166.

35. Munich A 1359 (?). Cornelian scarab, Smyrna market. Goat, head turned back. AGD Munich 1, no. 160; AGG, no. 511.

36. Baltimore, Walters Art Gallery 42.159, ex-Robinson, 17b. Rock crystal scaraboid, from Rhodes. Frog, inscribed Nau. AGG, no. 512.

37. New York 68.11.65. Cornelian scarab, from a Lydian tumulus. Bull standing left, linear border. Unpublished.

37 bis. Munich market, 1986, from Asia Minor. Cornelian scaraboid (L: 11 mm.), horizontal cuts at string holes, in gold ring (cf. "Rings", above). Ram kneeling left,

hatched border. Unpublished.

"Animals: Fine Style"

38. Istanbul 6015. Blue chalcedony scarab, presumably from Asia Minor. Ram, in field eta-gamma monogram. AGG, no. 517; [FIG. 364].

39. Paris, Bib. Nat., Pauvert de la Chapelle, no. 69. Agate scarab, from Asia Minor. Palm tree with a serpent, inscribed Bionos. AGG, no. 574; [FIG. 365].

40. Oxford 1892.1483. Green serpentine scaraboid, from Smyrna. A sow. AGG, no. 546; Ashmolean Gems, no. 82; [FIG. 366].

41. Private collection. Agate scaraboid, horizontal cuts at string holes, from Asia Minor? A sow, linear device above. Unpublished; [FIG. 367].

"Sliced barrel"

42. Private collection. Dark green agate (13.3 mm.), horizontal cuts at string holes, from Asia Minor. Female, wearing long chiton and cap, standing left, holding a flower and a wreath. Unpublished; [FIG. 368].

Although in most cases the alleged proveniences of the gems need not be doubted, they are nearly all without precise findspot or context. The only examples with associated finds are a scarab in a ring from a tomb at Ialysos (no. 33), an Island Scarab from the votive deposit at Lindos (no. 20), a scaraboid from the Southwest Anatolia hoard (no. 1), and a number from Lydian tombs at Sardis and

elsewhere (Sardis: no. 26, 32; Usak?: no. 2, 15, 16, 24, 37). The Lindos scarab is not closely datable and is certainly an import (cf. below), but the Ialysos and Southwest Anatolia hoard examples are useful for dating, establishing that they were current by the beginning of the fourth quarter of the sixth century. Especially interesting are the unpublished gems in New York, which are from Lydian tumuli (or possibly a single large tomb), probably in the vicinity of Usak, which contained much jewelry and silverware. One engraved ring and ten gems from this find are in New York. The ring and five gems are certainly locally made (cf. below), while the other five gems are Greek of various styles, indicating the variety of types available to wealthy Lydians at the end of the sixth century. It is likely that a comparable variety also was available in contemporary Etruria.

Among the listed gems of East Greek provenience are a number that are likely not locally made and some others that are certainly imports from the Islands. Green jasper "Graeco-Phoenician" scarabs, more common on western Phoenician sites, have also been found in East Greece (e.g. no. 21), and although often imitating Greek types, they are probably not East Greek works themselves. Three examples of a clearly identifiable class named "Island Scarabs" (no. 18-20; cf. AGG, 115ff.) have been found at Klazomenai, Lindos, and "Asia Minor", but are certainly imported from a Euboean or Island workshop. The finest gems of the late Archaic

period, notably the works of Epimenes, the Semon Master, and their followers, also all appear to be from Island workshops, in view of their similar Ionian Island inscriptions (cf. AGG, 93, on Epimenes, and AGG, 95, on the Semon Master) and the well established Island tradition of manufacturing gems (cf. the Ionian Island inscriptions on AGG, no. 20, 21, 224, 326, 333, 516, as well as the so-called Island Gems of the later seventh century; also cf. AGG, 150f., on the location of late Archaic workshops). Walter-Karydi has proposed a Chian origin for Epimenes and a North Ionian home for the Semon Master (Walter-Karydi, loc. cit., 10f.; Langlotz, Studien, 29 n. 7, called on the gems "Aeolian"), but Boardman has convincingly refuted the claim about Epimenes, preferring a Parian or Euboean home (Boardman, CincClassStud 5, 87f.). The Semon Master must be associated with Epimenes for his similar style and inscription. His name piece (no. 12) is said to be from Troy, but six of his other works are from Cyprus, where other Island imports are attested. The fine scarab showing a lion with the inscription Aristoteiches, said to be from Pergamon (here no. 25), is certainly derived from East Greek types but again is most likely an Island work rather than Mainland Ionian. Boardman has noted the similarities to animals of the Semon Master and again to the distinctively Ionian Island, rather than Mainland, inscription (AGG, 133). Late Archaic gems, where the styles become more homogeneous, are difficult to localize. The "Group of the Beazley Europa" seems most likely to be Island work.

The other gems of East Greek provenience generally do not fall into groups where local workshops can be easily discerned, and it is best to consider carefully each group in turn. The first category, the orientalizing "Gorgon-Horse Group", appears to be an early, if not the earliest, gem workshop, but it is difficult to localize (AGG, 30). None of the main series (AGG. no. 31-37) has a particularly useful provenience, but the many Phoenician characteristics perhaps point to a Cypriot origin (cf. AGG, 172). The early gems do have successors, and it is among these that the three from East Greece can be placed. Gem no. 1 is exceptionally small and crude, and is only a scaraboid rather than the normal scarab. Nevertheless, it is closely related to a group of cornelian scarabs with the same device and similar crude engraving and details, such as the wings attached at the waist (AGG, no. 44-51). It was found with the Southwest Anatolia hoard of silver jewelry and Lydian and Karian coins datable to c. 530, probably from a site in Karia. Gem no. 2, from a Lydian tomb, is a proper cornelian scarab stylistically related to the first gem (cf. AGG, no. 52-56). In both cases the proveniences are not strictly Greek (one Lydian and the other Karian) and are likely not local, but they probably did not travel far, and an East Greek workshop, influenced by the early orientalizing one, is probable, although its exact location is unclear. Also related and of East Greek provenience is no. 3, a scarab with the more conventional potnia theron device.

Boardman suggested (AGG, 172) that with this early series go the "Common Style" lions and other animals (here no. 22-24 bis, 26, 29-37 bis), and the large number with East Greek proveniences in this case speaks strongly in favor of that attribution. The further finds from Lydian tombs associate the "Common Style" animals (no. 24, 32, 37) with the late "Gorgon-Horse Group" gems (no. 2). Gems in the "Common Style" are the single most common type found in East Greece, and iconographic details, such as winged animal protomes and animals comparable to coins of western Asia Minor, also point to a local origin.

Some gems of other stylistic groups are less well attested in East Greece but still show East Greek characteristics and may plausibly be attributed to East Greek (as distinct from Island) workshops. The most important of these groups has been termed the "Sphinx-and-Youth Group I" (AGG, 65-71), named for a frequent type and distinguished from a second group with similar subject matter but of contrasting style. The first group is of consistent style, and Boardman noted that several may even be by the same hand, although this is not entirely convincing (AGG, 65, no. 122-125, 130, 140, 142). He notes that the origin is likely East Greek, and although East Greek iconography is not especially prevalent, except for the sirens and perhaps the griffin protome (AGG, no. 130), the attribution is probably correct in view of the other related gems with stronger Ionian characteristics. Most of

the gems are linked by the treatment of details, especially in the stippling technique; however, certain examples, notably the pseudo-scarabs (AGG, no. 128, 136, and 143, cf. p. 68), stand apart and should probably be excluded.

The key gems in the "Sphinx-and-Youth Group I" (to which several gems are added here) are headed by the fine scarab inscribed Mandronax (probably the name of the owner, but perhaps of the artist) and are notable for their exceptionally fine and distinctive style. Although none was certainly found in East Greece, there is good reason to accept an Ionian origin. They are as follows:

43. London, BMC Gems, no. 445. Plasma scarab. Ram walking, inscribed Mandronax, cross-hatched exergue. AGG, no. 131; [FIG. 369].

44. Malibu, J. Paul Getty Museum, 85.AN.164, ex-Southesk collection. Rock crystal scarab. Youth holding branch leads horse, cross-hatched exergue, pellet border. Southesk, A 37; not in AGG; [FIG. 370].

45. Malibu, J. Paul Getty Museum, 85.AN.122. Cornelian scarab. Two rams face each other, an eagle flies overhead, cross-hatched exergue, linear border. Unpublished; [FIG. 371].

46. New York, 74.51.4173. Plasma scarab, cut down (not a scaraboid as published), in gold ring, from Cyprus. Youth with two rearing horses. AGG, no. 135; Richter, New York Gems, no. 38; Walter-Karydi, loc. cit., 16f., fig. 16; [FIG. 372].

47. Basel market, subsequently London market. Chalcedony scaraboid. Discus thrower, monogram A in field. Unpublished; [FIG. 373].

5. (Rock crystal scaraboid from Samos, described above).

48. Baltimore, Walters Art Gallery 42.860. Cornelian scaraboid. Archer in Scythian dress kneels, holding bow and testing arrow. Unpublished.

Especially important is the Mandronax ram, since its style appears to be early and the name and letter forms purely Ionian (AGG, 69, 153), one of only two gems (the other no. 39, above) with clearly Ionian inscriptions distinct from those with Island letter forms. The ram is stippled, characteristic of the group, and stands on a cross-hatched exergue, more typical of Phoenician and Graeco-Phoenician gems. The rock crystal scarab no. 44 appears to be by the same hand. Distinctive similarities can be seen in the treatment of the animals' hindlegs and in the cross-hatched exergue, and the scarabs' shape and detailing, such as the spine carination and the hatched forelegs, are identical. The use of unusual materials, plasma and rock crystal, are also notable. Its style is certainly Ionian. The youth has the fleshy body typical of bronze and stone sculpture of Samos and Miletos, and the hairstyle is also typical. His facial features, the sharply receding forehead and the slanted eye, are very much like other "Sphinx-and-Youth Group I" gems (cf. AGG, no. 122 and 126; Boardman, AGG, 69, has noted the possibility that no.

122-124 may also be by the same hand as the Mandronax gem). Two more rams are seen on the cornelian scarab no. 45, and they are very close in style to those on the Mandronax gem, although not necessarily by the same artist; again there is a cross-hatched exergue.

Another plasma scarab, no. 46, is a slightly later (end of the century) example of this style, executed in exceptionally fine, miniaturist detail. It found its way to Cyprus, where it was cut down into a scaraboid and mounted in a ring. The device is a youth holding two rearing horses, a motif by no means exclusively East Greek but popular there nonetheless. Notable examples are on Caeretan hydriae, a vase fragment from Larisa, and especially Klazomenian sarcophagi, where the style is very close to this gem (J.M. Hemelrijk, Caeretan Hydriae, 1984, 127f. and n. 245 for the literature; add the Amasis Painter aryballos in New York, D. von Bothmer, The Amasis Painter and His World, 1985, no. 52; further, cf. AGG, 69; the pseudo-scarab with this motif mentioned by Boardman is probably early Etruscan and is illustrated in P. Zazoff, Etruskische Skarabaeen, 1968, 21, pl. 8: 19). Other details of the gem are more specifically East Greek. The horses are of the same breed as that on the rock crystal scarab, no. 44 (cf. the comments by Hemelrijk, op. cit., 176, citing horses on the Siphnian Treasury, architectural terracottas from Larisa, Samian little master cups, and the signed Epimenes gem, for which cf. Beazley's comments on Ionian horses, Lewes House Gems, 23f.), although the physiques of the

youths are entirely different. The horse-tamer on no. 46 has a carefully detailed musculature rather than the fleshy body of the youth on no. 44 and may be a North Ionian work as Langlotz and Walter-Karydi have suggested (Walter-Karydi, loc. cit., 16f.; Langlotz, Studien, 29 n. 7, "Aeolian"; on the possibly North Ionian style, cf. the bronze rider from Samos, Buschor, AS, fig, 190-192, 198, 199; "Bronzes: Sixth Century", above, and conclusions, below).

The youth's hairstyle also warrants special comment, since it is relects a late sixth century East Greek fashion. It is a variety of the krobylos (cf. F. Studniczka, JdI 11, 1896, 261ff.; H. Cahn, Knidos, 1970, 102ff.; J.M. Hemelrijk, op. cit., 176 n. 702), a hairstyle where the long hair in back is tied up with a band at the back of the head. The fashion was East Greek, but it became popular in Athens at the end of the sixth century and was later identified with luxurious Ionian habits (Athenaeus 12, 512c, referring to Athens at the time of Marathon). The variety of krobylos worn by the youth on the gem, however, is a distinctive one where the hair is actually worn as a ponytail. Often the ponytail is pulled through a close-fitting cap. There are close parallels on Klazomenian sarcophagi (cf. R.M. Cook, CVA British Museum 8, 47, 50, pl. 610: 2, and especially Clazomenian Sarcophagi, 1981, 125, n. 117-118, on the ponytail hairstyle) and East Greek black figure pottery (worn by a horseman on a Klazomenian sherd, CVA British Museum 8, 21, no. 6, pl. 588: 6; and by a satyr on an East

Greek sherd from Kyme closely related to the Klazomenian sarcophagi, ibid., 27f., pl. 595: 1), and a more elaborate cap decorated with a laurel wreath, but again with the lock of hair pulled through, is worn by a fragmentary figure from the parapet of the Artemision at Ephesos (F.N. Pryce, British Museum, Cat. of Sculpture, Vol. 1, Part 1, 1928, 86, B 215).

The same hairstyle, more clearly shown, is worn by the discus thrower on the slightly earlier gem no. 47 (cf. also the youth sacrificing a bull on AGG, no. 129, and the small ponytail worn by the youth with jug and drinking horn, AGG, no. 134, who closely resembles the discus thrower in pose and treatment of the body; both of these also belong to the "Sphinx-and-Youth Group I"; the woman on the Ionian sliced barrel no. 42, below, also wears her hair pulled through a cap). In addition, rows of beads can be seen in the hair, recalling the luxurious tradition of wearing gold ornaments in the hair practised by the Kolophonians, who were said to have learned their excesses from the Lydians (Athenaeus 12, 526a). The face of the discus thrower and his receding forehead also link him to the other gems in this group. The unusual monogram in the field is reminiscent of only one other, that added to gem no. 16, a very fine late Archaic scarab found in a Lydian tomb.

Two other gems can also be included in this group. The first, no. 5, is a slightly later rock crystal scaraboid from Samos showing an archer in Scythian dress with characteristically plump body and typical facial features

and receding forehead. The detailing is exceptionally careful. The other, another scaraboid in cornelian, no. 48, depicts the same scene but is executed in a style more typical of the main series, notably in the facial detail, and is earlier than the previous example.

The "Sphinx-and-Youth Group II" comprises gems with types similar to the first group of the same name, but executed in a contrasting style. Only one, no. 7 (fittingly with sphinx and youth), is from Asia Minor, but again there are peculiarities of detail that point to an East Greek origin (AGG, 72f., 172), although not specifically Ionian like the last group. Similarly, only one example from the "Satyr Groups" is said to be from East Greece, a scarab in Paris allegedly from Sardis (but not from the excavations), here no. 4. It is grouped with a number of others which are primarily of Italian provenience, but East Greek characteristics are clear, and the workshop is likely to have been located in Ionia, at least originally (cf. AGG, 52ff., 172, group B). In contrast, the "Dry Style", although two of the group were found on Samos (no. 8 and 9; and no. 9 belongs with three others to a group by the same hand, AGG, no. 200-203), has little of Ionia in it (as Boardman noted, AGG, 79, 83, 86); some are likely to be from Cypriot workshops, and others from the Islands, with one having an Island inscription (AGG 84, no. 224).

Related to the previous groups but not belonging is a rare example of an Archaic East Greek sliced barrel, no.

42, a type of gem that is better known in mid- and late fifth century examples (cf. GGFR, 199f., 409f. no. 124-144). It was said to have been found in Asia Minor, and the type is clearly East Greek. A female holds a flower and a wreath and wears a long chiton and a turban-like headdress, perhaps the Lydian mitra, with her hair pulled through in the Ionian manner. Although the costume is clear, the work is summary. The only other published Archaic sliced barrel, said to be from Greece and now in Berlin, shows a woman drying her hair (also of agate; AGD Berlin, no. 93; AGG, no. 187, "Dry Group"). It is somewhat similar in style, although without distinctive Ionian elements.

One particular gem from the "Slim Satyr Group" is especially important for its clearly Ionian style. This is a cornelian scarab with carefully detailed back and cable border around the device, which is a finely engraved kneeling youth holding a jug and kantharos (Once Ionides; AGG, no. 97) [FIG. 374]. The hairstyle is typically Ionian as seen on most sculpture from Samos and elsewhere, swept back over the ears and falling in horizontally marked tresses in the back. It is seen on Caeretan hydriae as well and also became fashionable in Etruria (AGG, 58; J.M. Hemelrijk, Caeretan Hydriae, 175). The youth on the gem is also comparable to a bronze kouros similarly holding a jug from the Heraion at Samos (Buschor, AS, fig. 304-306; cf. "Bronzes", above; AGG, 58). No other gems from East Greece are closely comparable, although the discus thrower on no. 47 has a similar physique, and the detailing of the beetle

suggested to Boardman that the gem may be the product of an East Greek immigrant working in Etruria in the manner of the artists of the Caeretan hydriae (AGG, 59).

Late Archaic gems that may be best at home in East Greece include the "Group of the Leningrad Gorgon" and various individual works in fine style (no. 13-16, 38-39). Boardman noted the East Greek traits in the "Leningrad Gorgon" group and similarities to early Achaemenid seals of the type discussed below (AGG, 91f.). Other late Archaic examples, even with East Greek provenience, have little in them that is distinctively East Greek, but may well be local works. No. 15 and 16, from a Lydian tomb, are interesting examples, but must await publication. The device of a Triton on no. 16 is notable since it is the first Greek example to come to light of a type often copied on green jasper Graeco-Phoenician scarabs (cf. the very similar example in Paris, where too the Triton holds a wreath and kantharos, P. Zazoff, Die antiken Gemmen, pl. 22: 2, and Furtwaengler, AG, pl. 15: 37, and BMC Gems, no. 396-397, all from Tharros; and Boardman, Escarabeos, no. 85-86, from Ibiza).

The two examples no. 38-39, however, are more clearly Ionian, the first a late example of the frequent animal studies and the second notable for the Ionian inscription (cf. above). Another "Fine Style" late animal study can be added here, a "weight stamp" depicting a bull standing on a cross-hatched exergue with an Achaemenid linear device in

the field above (Munich A 1283; AGG, no. 525; AGD Munich 1, no. 307; Boardman, Iran 8, 1970, no. 189) [FIG. 375]. The shape is more typical of the Lydian-Achaemenid series, as is the linear device, but the style is very fine Greek and must be an Ionian work of the early fifth century. Other late "Fine Style" animal studies no doubt also belong to Ionian workshops (cf. AGG, 151f).

A further series of Late Archaic gems has been studied by Boardman (Iran 8, 1970, 19-45) and can be assigned to a workshop, probably at Sardis, that produced primarily pyramidal stamp seals with Achaemenid motifs, occasionally accompanied by Lydian or Aramaic inscriptions or linear devices. The local Lydian style and technique is always clear and is characterized by the frequent use of the drill to create pellet-like details, a technique used very sparingly in Greek glyptic but one which would also characterize the Graeco-Persian gems that succeeded this series and continued throughout the fifth century and into the fourth. Boardman identified a "Greek Style" among the Graeco-Persian gems, but listed only a few that belong to this early period, all of pyramidal shape (Iran 8, 1970, 26f.; GGFR, 309). Since Boardman wrote, a number of new examples have come to light, including the first of scarab and scaraboid shape, that demonstrate further links to contemporary East Greek gems. All the early "Greek Style" works, and some of the early fifth century, are listed as follows (in addition there are two cornelian scaraboids with typical Achaemenid king-sphinx and linear device, probably

early examples, in New York, 68.11.36 and .37; and there is an unengraved cornelian scarab from a Sardis tomb that could have been locally made, Sardis 13, no. 89):

49. New York 68.11.35. Cornelian scarab, carinated, in gold ring, from a Lydian tumulus. Herakles, bearded and wearing lion's skin and bow case, holding club and bow, groundline but no border. D. von Bothmer, CRAI 1981, 205, not pictured.

50. New York 68.11.34. Cornelian scarab, carinated, in gold ring, provenience as last. Standing youth, holding a wreath in his right hand and a kantharos in his left, hatched border. Ibid., 205, not pictured.

51. Private collection. Cornelian scaraboid, face slightly convex, from Asia Minor. Winged female (Nike?) holding a flower and branch, no border. Unpublished.

52. Istanbul. Cornelian scarab in gold ring, from a tomb at Sardis. Eros flying, holding wreath and branch, linear border. AGG, no. 171 (as belonging to Sphinx-and-Youth Group II); Sardis 13, no. 93.

53. Istanbul. Blue chalcedony pyramidal seal, from Sardis, Tomb 213. Eros flying, holding flower and branch. Iran 8, 1970, no. 17. Sardis 13, no. 108.

54. New York 81.6.3. Blue chalcedony pyramidal seal. Hermes with kerykeion and lotus, wearing a winged cap, a bird before him, groundline. Richter, New York Gems, no. 33; GGFR, pl. 845; Iran 8, 1970, no. 11; [FIG. 376].

55. Boston 95.80. Blue chalcedony pyramidal seal.

Herakles with club, holding lion, faces winged Gorgon with two lions. GGFR, pl. 846; Iran 8, 1970, no. 12.

56. Istanbul. Blue chalcedony pyramidal seal, from Sardis, Tomb 24. Siren holding lyre. Iran 8, 1970, no. 28; Sardis 13, no. 107.

57. Borowski collection. Agate weight stamp with silver duck-head mount. Four-winged goddess with winged heels. Boardman in Ladders to Heaven, 1981, 167, no. 140; [FIG. 377].

58. Borowski collection. Blue chalcedony weight stamp. A woman carries a smaller figure, above flies a four-winged Eros (?) with wreath, below a siren holding a branch, and a bird. Ibid., 168, no. 141; [FIG. 378].

The gems from the Lydian tomb find now in New York are especially significant in that there were no standard pyramidal stamp seals among them (only one of unconventional shape, a squat four-sided pyramid with square face, New York 68.11.33), and there were two scarabs, a rare shape for this series. This selection probably indicates a relatively early date (late sixth century), and the scarabs in the "Greek Style" display a dependence on contemporary Greek types.

The two scarabs, no. 49 and 50, are important for their stylistic and technical links to other Greek gem workshops. The fine Herakles of no. 49 has no extant parallel in Greek scarabs, but one surely existed, and a copy is seen on a green jasper scarab from Ibiza (Boardman, Escarabeos, no.

192). The youth with wreath and kantharos, no. 50, also has no close parallel, but there are a number of youths with kantharoi or drinking horns, as well as similar satyrs and a standing Dionysos holding a kantharos and vine branch, who belongs to the East Greek "Group of the Leningrad Gorgon" (AGG, no. 242). However, both scarabs find close parallels, both in style and technique, in works by the Master of the Boston Dionysos, a Greek gem engraver of unique style who appears to have been working in Etruria at the end of the sixth century (on the artist, cf. P. Zazoff, JdI 81, 1966, 63ff.; Boardman, GGFR, 153; and most recently, Boardman, Intaglios and Rings, 38f., 102f., no. 121, with a list of his seven known works and further literature; Boardman, Ashmolean Gems, 49f., is surely correct in dating his work to the late sixth century rather than Zazoff's c. 540). The Herakles on his namepiece in Boston (AGG, no. 77; GGFR, pl. 408) is very close in style to the Lydian scarab no. 49, notably in the facial features, large head, and stocky figure. Similarly, the closest parallel for the youth on no. 50 is another scarab by the Master of the Boston Dionysos (Oxford Fortnum, FR.74; Ashmolean Gems, 49f., no. 210), where a youth is standing right ("flat-footed", like the Herakles, as Boardman has noted, GGFR, 153), holding a wreath. The use of fine drilled pellets for details so favored by the Master of the Boston Dionysos closely links him to the Lydian-Achaemenid workshop. To a lesser extent the technique is seen on gems of the "Group of the Leningrad

Gorgon", and Boardman noted other similarities to Achaemenid glyptic (AGG, 91). All these groups may have a common origin in Ionia, where some engravers remained while others traveled to establish workshops in more prosperous areas, such as Sardis and Etruria.

Gems no. 52 and 53 show flying erotes close in style to Greek examples (cf. AGG, 72, and cf. "Rings", above), and no. 51 shows their sister, perhaps a Nike. No. 52 is a scarab, while no. 53 is an octagonal pyramidal stamp seal, the shape that becomes the most popular for western Achaemenid seals in the first half of the fifth century. The siren, no. 56 (and no. 58), is also derived from East Greek gem types (Iran 8, 1970, 28; cf. AGG, 69, 72, no. 140-143, 167-168) and contrasts with the usual Achaemenid king-sirens usually seen in the pyramidal series. Another pyramidal seal is no. 54 with a fine style Hermes of East Greek type (cf. the head of Hermes with winged cap on an electrum coin of Kyzikos, v. Fritze, no. 65, pl. 2: 18; Traite 2, pl. 173: 4-5). No. 55 is of slightly later date and different style (perhaps from a Cypriot workshop, as Boardman suggested, Iran 8, 1970, 26) and shows a Herakles holding a lion accompanied by a gorgon as potnia theron, both Greek types but with strong Eastern influence. The weight stamps are again Eastern shapes, but the two examples listed have types derived from East Greek models. No. 57 shows a four-winged goddess of typical East Greek type. The engraving is odd (Boardman suggested it may be unfinished) and has little in common with the Lydian-Achaemenid series

(note the lack of drillwork), and an East Greek workshop may be preferred. The other weight stamp no. 58, on the other hand, is of typically Lydian-Achaemenid style, although the complicated scene is most unusual and inexplicable, perhaps a muddled Greek mythological scene (cf. Boardman's comments).

Parallel to the main series of Archaic Greek gems are several related classes of objects. Engraved rings were certainly manufactured in East Greece, and their beginnings pre-date the introduction of gems by about fifty years (cf. "Rings", above). There are surprisingly few stylistic parallels, and one must conclude that different workshops were responsible for engraved rings and gems. However, several objects in precious metal with intaglio engraving are closer in style to the gems. A gold pendant in the shape of a ram's head from Cyprus carries the intaglio device of a dog-headed man with sword fighting a panther (London; BMCJ, no. 1599; AGG, no. 589). The iconography has close parallels on gems (AGG, 105, 154f.) and is best at home in East Greece. The shape of the seal may be derived from earlier faience examples made at Naukratis (AGG, 161). Another ram's head pendant-seal, this of hollow silver, was among the objects in the Southwest Anatolia hoard from Karia, but the device is only a very crude, lightly incised animal head (cf. "Jewelry: Pendants", above). One further remarkable pendant-seal is of solid silver with some gold plating in the form of a hawk clutching a hare (from Asia

Minor, cf, "Jewelry: Pendants", above). The intaglio underneath is a mixed creature made of a cock and the foreparts of a dog (or wolf) and boar in fine style [FIG. 312]. Devices showing combined animals are seen on gems of probable East Greek manufacture (cf. AGG, 128, 135, and the "whirligig" of lion, bull, and cock [?] on gem no. 27, from Adana).

Although a number of workshops, or at least their East Greek characteristics, have been identified here, attributions to specific cities or areas remain difficult, and it is easier to isolate workshops under East Greek influence in Etruria and Lydia. The names of only two gem engravers of the Archaic period are known from literary sources, Theodoros, who made the proverbially famous ring set with an intaglio for Polykrates of Samos (Herodotos 3, 40, 41; for the most recent and complete discussion of the literature, see H. Luschey, Festschrift U. Hausmann, 1982, 302f. and notes), and Mnesarchos, the father of Pythagoras (Diog. Laert. 8, 1, 17), both artists said to be from Samos. Samos does seem a most likely center given its artistic tradition, and the literary tradition should not be taken lightly, especially in view of the dominantly Ionian character of Archaic gem engraving. Walter-Karydi (loc. cit., 18-19) has proposed a Samian origin for the rock crystal scaraboid no. 5 and the cornelian scaraboid no. 13 depicting an Eros, and Luschey (loc. cit., 300ff.) has suggested a Samian origin for a gold ring also with the device of an Eros (cf. "Rings", above).

However, an examination of the gems found there (or allegedly found there; none is from the excavations) does not help identify a workshop. The gems from Samos include no. 5, the rock crystal scaraboid from the "Sphinx-and-Youth Group I"; no. 8 and no. 9, both of the "Dry Style"; no. 11, a scaraboid from the "Group of the Leningrad Gorgon"; and no. 30, a cornelian scarab of the "Common Style". The "Dry Style" gems seem unlikely to be Ionian (cf. above). The "Group of the Leningrad Gorgon" is certainly East Greek, but their date is relatively late and the strong Eastern traits speak against a Samian home. The fine scaraboid no. 5 is also relatively late, c. 500, and cannot be associated with the time of Polykrates (although it could be associated with the younger Mnesarchos), but it is strongly Ionian in style (best placed with the most characteristically Ionian "Sphinx-and-Youth Group I") and a local workshop is possible. The "Common Style" scarab no. 30 belongs to a large group, also of Ionian work, but difficult to localize. Scaraboid no. 13, which was said to have been found in Karia, is late Archaic and does not fall into a clear group, and Walter-Karydi's attribution to Samos needs further evidence. Although Samos is likely to have had gem workshops, there is nothing surviving to allow distinguishing its workshops from others in Ionia.

The "Sphinx-and-Youth Group I", and especially the gems in the circle of the Mandronax gem, are the clearest examples of East Greek style. They display facial

characteristics, hairstyles, and body modelling (on both humans and animals), that are typically Ionian of the last part of the sixth century. The "Common Style" is distinctively East Greek more for its iconography. The lions have bristling manes (AGG, 131, 133); boars are common and are of a type most at home in East Greece (AGG, 152); and winged bull and boar protomes are also East Greek (AGG, 146f.). The winged boar protomes are especially significant, as Boardman noted, for their popularity as an East Greek coin type, figuring prominently on the coinage of Samos, Klazomenai, Mytilene, and Ialysos. Perhaps it is no coincidence that gems with this device were found at Ialysos (no. 33) and Mytilene (no. 34).

Comparisons with coin types are instructive and are frequently cited by Boardman. The electrum coinage of Kyzikos is especially rich in iconography, since the devices were changed often, probably annually, and provides a large body of material spanning the late sixth, fifth, and into the fourth centuries (v. Fritze is the most complete study; F. Bodenstedt was preparing a new study at the time of his death; cf. "Coinage", below). Many of the motifs seen on Archaic gems can be found in the variable types of the Kyzikene coinage. Animal studies are common and boars (v. Fritze, no. 90, pl. 3: 9; Traite 2, pl. 177: 14), sows (v. Fritze, no. 45, pl. 1: 46; Traite 2, pl. 177: 11), rams (v. Fritze, no. 46-47, pl. 1: 47-48, and no. 91, pl. 3: 10; Traite 1, pl. 7: 31-32; Traite 2, pl. 177: 21-22; AGG, 151 n. 18), and lions (v. Fritze, no. 38-42, pl. 39-43; Traite

2, pl. 176: 21-28) find close parallels on gems. Mythological creatures of East Greek type are also found, including winged bull and boar protomes (v. Fritze, no. 60-61, pl. 2: 11-12; Traite 1, pl. 7: 16, 26-27), four- and two-winged sirens (v. Fritze, no. 23-25, pl. 1: 24-26, and no. 74, pl. 2: 27, 29; Traite 1, pl. 7: 20; Traite 2, pl. 176: 5; AGG, 72 n. 39), a double-bodied sphinx (v. Fritze, no. 128, pl. 4: 14; Traite 2, pl. 176: 4; AGG, 68 n. 6), and lion- and dolphin-headed men (v. Fritze, no. 79, pl. 2: 34, and no. 123, pl. 4: 9; Traite 2, pl. 175: 32-33, 37; AGG, 157 n. 53). Even Epimenes' fine gem showing a youth in three-quarter back view testing an arrow (AGG, no. 248) has a parallel in a Kyzikene stater (v. Fritze, no. 116, pl. 4: 2; Traite 2, pl. 174: 5).

Kyzikos presents the best variety of devices, but other East Greek cities also issued coins with comparable types. Winged boar protomes, bull protomes, lion's and ram's heads are seen on the late sixth and early fifth century electrum of Mytilene, and other animals, including the popular sow, were used on the series of electrum staters struck during the Ionian Revolt of 499-494 (cf. "Coinage", below). Many of the early silver coinages in East Greece, beginning late in the sixth century, also used similar devices, and some became emblems of the city. Klazomenai adopted the winged boar protome for its silver coins and for their electrum issues struck during the Ionian Revolt. Ialysos used the same device for its Archaic issues, as did Samos for its

issues of late sixth century drachms (J.P. Barron, The Coinage of Samos, 1966, Groups A and B; Traite 2, pl. 150: 4-6). Many other early fifth century coinages could be cited as well (cf. AGG, 33 n. 32-33; 61 n. 42-43 [the last coin is also from western Asia Minor rather than Phoenician], 84-85 n. 17-18; 110 n. 27; 122 n. 6; 131 n.57; 147 n. 16).

However, many of these same devices, as well as others, also appear on the significantly earlier series of Ionian electrum. The date of these coins is somewhat controversial, but those found in the Basis of the Artemision of Ephesos, and other coins related to them, probably date c. 600 (cf. "Coinage, below). The earliest coinages already show a variety of types, many simply animals' heads and protomes but others accomplished works with more complex poses. For example, the ram with head reverted, seen on a fine late Archaic gem (no. 38) and on coins of Kyzikos (v. Fritze, no. 97, pl. 1: 48; Traite 1, pl. 7: 32), is seen on a series of early electrum staters (Weidauer, no. 52-54); a rolling horse is shown on a similar series of staters and thirds (Weidauer, 135-137; cf. AGG, 147 n. 12-14, no. 502-505, and the Island Scarab no. 357) and is die-linked to a stater with a standing bull (Weidauer, no. 131-132); the winged horse on an electrum third (Weidauer, no. 147-149), although a common enough motif, is very close to one on a gem in from Sparta (AGG, no. 507); a winged beetle on small coins found in the Basis at Ephesos (Hogarth, pl. 2: 81) is seen on several scarabs

(AGG, 74 n. 46-47, no. 147, 148, 175); a winged Acheloos on an early electrum stater (Weidauer, no. 178) is similar to that on the fine gem by the Semon Master (AGG, 96 n. 16, no. 253; cf. Richter, Engraved Gems, 68, no. 184); and an electrum stater showing an unusual double gorgoneion joined at the chin (Weidauer, no. 41-42, with fractions), although not known on a Greek gem, is seen on a fine green jasper example from Tharros (AG, pl. 15: 71, and in a version where the gorgoneia are made into Bes heads, BMC Gems , no. 369), no doubt derived from a now-lost Greek example. Although not found on gems, confronted cocks frequently are represented on Archaic rings (cf. "Rings", above) and are similarly seen on a series of early electrum coins (Weidauer, no. 15-28).

Although iconographic parallels exist between coins and gems, surprisingly there is little in common technically. Coinage was a dramatic innovation in the late seventh century, and one might expect a dependence on seal engraving for the new medium, but this appears not to have been the case, unless the influence is from Near Eastern glyptic (see "Coinage"). Details of engraving do not reveal similarities in technique, and in no case is the style close enough to suggest that the same artists practiced both crafts. More importantly, Greek hard stone seal engraving appears not to have been common until the second half of the sixth century, significantly later than the beginning of coinage in Lydia and Ionia.

From its beginning, coinage was able to draw on an established repertory of devices for its obverse types, but where these devices originated and how they were transmitted to different media is unclear. This same body of material provided types for gems in the second half of the sixth and well into the fifth century. Such devices may have served as an individual's or family's personal emblem (so-called Wappen), and this is explicitly stated on several gems, where the inscriptions read kreontida emi (AGG, no. 175), ermotimo emi (AGG, no. 516), and in one case, using the word "seal" (or emblem), thersios emi sama me me anoige ("I am the seal of Thersis; do not open me"; AGG, no. 176). An early electrum coin also uses this type of inscription, the famous stater of Phanes inscribed phanos emi sema (Weidauer, 62f., no. 39), and in some cases cities clearly did adopt a device as their civic emblem, retaining it for many years. The symbols seldom appear to have any symbolic meaning (similarly with shield devices in vase painting, cf. G.H. Chase, HSCP 13, 1902, 61ff.; on the controversy regarding the possible meaning of the frequently changing coin types, cf. J. Kroll and N. Waggoner, AJA 88, 1984, 331 n. 41; A. Furtwaengler, SNR 61, 1982, 19-24), aside from the punning allusions often seen on coins (cf. Kraay, ACGC, 3f.), and may have often been chosen as arbitrary, though identifying, decorative motifs from the engraver's stock.

COINAGE

Introduction:

The earliest coins in the Greek world, in the form of small lumps of electrum (an alloy of gold and silver) with impressed designs, were first manufactured in East Greece and Lydia at the end of the seventh century. They survive in large numbers and in many varieties, and although their origin is clearly in the Ionian area, many problems arise in attempting specific attribution and categorization. Nevertheless, the value in identifying the issues is very great, since there is a potential for precision in establishing the date and place of issue which is uncommon for other objects, and the artistic quality of the coins themselves is often very high and no doubt important in view of their official civic function.

Coinage did not spread to the rest of Greece until considerably later, probably not until after the middle of the sixth century, when large silver issues started to appear. At this time, for reasons now unclear, cities in all parts of the Greek world began to coin silver, much of which appears to have been intended for the international bullion trade and eventually reached Egypt and the East, as hoard evidence demonstrates. Many new East Greek mints also began to strike in the late sixth century, and these coins are considerably easier to date and to attribute to a specific mint. Recent numismatic work has convincingly anchored most early Greek silver coinage, especially for the period 500-460, and the earlier issues are always closely related to the coins of c. 500 and probably not more than a

few decades older.

The attribution and dating of coins has naturally fallen to numismatists, and their highly specialized approach to the subject has often neglected the other arts of the period and in turn been overlooked by many art historians who have viewed numismatic conclusions with skepticism or ignored them entirely. Nevertheless, numismatic methods can be highly objective and scientific, and the conclusions can be very precise, providing a body of datable material for stylistic comparisons with other objects.

A complete study of the early East Greek coinages cannot be accomplished here and, indeed, would be a major work, involving a careful analysis of all the coins and an arrangement by dies. Few specialized works on coins of this period have been completed, and much of the material still remains entirely unpublished. However, a general survey will be attempted with special attention given to problems of attribution, chronology, and especially style. The survey will be based largely on groupings made strictly through numismatic methods, the explanation of which cannot be treated here in depth but will be summarized and referred to frequently.

Numismatic Method:

Some brief comments on numismatic method must first be made (cf. the best summary, Kraay, ACGC, xix-xxvi). Although Greek coins were collected and studied for hundreds

of years, it is only in this century that modern methods have been employed that have lead to some precision. Previously, the numismatists had only the inscriptions on the coins to guide them and had to rely on vague stylistic comparisons and especially on historical information from literary sources, which was not always applicable to the coinage. Nevertheless, much progress could be made, and the encyclopaedic handbooks by B. Head (Historia Nummorum, 1911) and E. Babelon (Traite des monnaies grecques et romaines I-IV, 1901-1933) are still useful.

Two techniques, die-linking and the careful study of hoards, were developed early in the century, and they allowed much more precise study of specific mints and in turn their relations with others. The first die study was published in 1906 by K. Regling on the mint of Terina, and a few others followed, most notably E. Boehringer's corpus of the coins of Syracuse in 1929. Die-linking establishes the order in which the coins were struck and clarifies the sequence of issues at a single mint. Although the length of time needed to strike a die-linked series of coins cannot be determined with certainty, as Kraay noted, "die-links normally confirm a close relation in both space and time between the issues so connected" (ACGC, xxii). Coin hoards, especially "mixed hoards" containing coins from various mints, provide a means of comparing coins from different mints and establishing a relative chronology. In addition to these techniques, there is a certain amount of numismatic

connoiseurship, and as Kraay wrote, "like other artifacts Greek coinage has its own pattern of development, most features of which are usually valid in all areas...these are not so much matters of style as of fabric or technique or mint-practice" (ACGC, xxv).

A further technical detail, namely the weight standards, must also be considered. Since the coins were highly valuable and traded by weight, careful attention was given during the manufacture of the coins to precision in weight. In the case of the early electrum, denominations included half- and third-staters and continued from sixth-staters (hektai) down to the tiny ninety-sixths weighing less than 0.15 grams. Despite the small size and light weights, the coins are always precisely accurate, and the small denominations are considerably more common than the large ones. Most of the coins were based on the so-called "Milesian" weight standard with a stater of just over 14 g. The other weight standard certainly in use at an early date is the slightly heavier "Phokaic" standard, so-called because the late sixth and fifth century electrum of Phokaia (as well as Mytilene and Kyzikos) used this standard, with a stater of just over 16 g. The only other electrum standards used at an early date appear to be the two Samian standards used at the same time, one with a stater of c. 17.3 grams (Attic-Euboic?, cf. Weidauer, 39-40, no. 195-203) and the other of c. 13.4 g. (Weidauer, 41, no. 204-206), which appears to correspond to the weight of the later (c. 500) silver tetradrachms. Other weight standards for gold and

silver coins would follow later in the sixth century. The weight standards can be used as a guide in attribution and in some cases may indicate the extent of trading areas and inter-city relations.

The Purpose of Early Coinage:

The question of how the early electrum coins were used has not been satisfactorily answered. Some of the theories have included government payments to mercenaries (R.M. Cook, Historia 7, 1958, 257-262), required currency for the payment of taxes and fines (C. Kraay, JHS 84, 1964, 76-91), bonus payments of some sort (M.J. Price, Studies Presented to P. Grierson, 1ff.), and profit-making by the government through the debasement of electrum (S. Bolin, State and Currency in the Roman Empire to 300 A.D., 1958, 11-37). The most recent work, which includes the best summary of previous literature, speculates that coinage was needed to stabilize the value of natural electrum bullion (R.W. Wallace, AJA 91, 1987, 385-397). Some of the problems that must be addressed include the reasons for the exclusive use of electrum (not convincingly answered by Wallace), the precision in weight of a large range of denominations, the circulation patterns, which center in Ionia and Lydia. There is also reason to believe that the function of coinage changed in the second half of the sixth century, when silver coins began to be struck in large quantities throughout the Greek world. Fortunately, these problems are beyond the scope of this study.

Early Electrum Coinage:

The first coins were of electrum and struck with a variety of obverse types and in many denominations. They were an innovation of the East Greek area and appear to have been struck and circulated at first only in Lydia and Ionia, certainly predating the first Greek silver coinages that began to appear all over the Greek world in the second half of the sixth century. Early numismatists, working from stray finds and without the benefit of significant hoards, were already able to recognize the relatively early date and probable origin of the electrum coins. They were especially looking for Lydian coins, since Herodotos (1, 94) and Pollux (3, 87; 9, 83, citing the sixth century writer Xenophanes) reported that the Lydians were the first to strike coins and that Kroisos had given two gold staters to each citizen of Delphi (1, 54), and both the early electrum issues with lion's head and the silver and gold issues of Kroisos were identified in the 19th century (the Kroisos coins by the 1830s, cf. below; the electrum lion's head series, cf. F. Lenormant, Ann.Soc.Fr.Num., 1874, 173ff.). By the beginning of this century, these early coins were comfortably placed in Lydia and Ionia in the early seventh century.

Hogarth's excavations at Ephesos in 1904-5 uncovered nearly a hundred electrum coins deposited in various parts of the pre-Kroisos Artemision, providing an archaeological context for their origin and date (cf. B. Head in Hogarth,

74-93; in addition to Head's list, all of which are in Istanbul, some coins were said to have been taken by workmen and later sold, including the half-stater with winged male now in London, Weidauer, no. 175, and five others in Berlin, according to S. Karwiese, forthcoming; another linear lion head, as Weidauer, Group XIX, was found in the recent Austrian excavations in the Artemision: H. Vetters, Vorl. Grab. 1981, 64f., 100, no. 380, pl. 21). Although other hoards have since been found, this hoard is the most important and has been the subject of much controversy in recent years (cf. below). Even at the time of the excavations, the dating of the coins was a problem. The coins themselves were not new, and Head grouped them in the then accepted manner, with the most "primitive" examples the earliest, in the early seventh century, and the lion's head Lydian coins in the reign of Alyattes. However, since the coins formed a foundation deposit, the implication of these dates, although never explicitly stated, was that the Basis could not pre-date the time of Alyattes (cf. E.S.G. Robinson, JHS 71, 1951, 157). This chronology contradicted Hogarth's view of a much earlier date for the Basis (cf. Hogarth, 239ff.), and he was compelled to propose an earlier date for the coins. The issue was not resolved (and hardly noticed) or further discussed until much later.

In 1951, E.S.G. Robinson re-examined the coins (JHS 71, 1951, 156-167) and, using his own stylistic analysis and the conclusions of P. Jacobsthal's parallel article reviewing the other small finds from Ephesos (ibid., 85-95), proposed

Breglia, AIIN 21-22, 1974-5, 223-229; G.M.A. Hanfmann, Sardis from Prehistoric to Roman Times, 77; Akurgal, Alt-Smyrna 1, 117f., refutes Weidauer's early date of 660 for the lion staters of Phokaic weight). Subsequent articles by Weidauer on other electrum coins also stressed an early date through generally unconvincing stylistic analyses (Festschrift R. Hampe, 1980, 75-80; SNR 60, 1981, 7-19; Actes...CIN 1979, 1982, 39-45; AK 27, 1984, 3-9).

D. Kagan, in an odd article notable for its claims of ignorance of numismatic method, justifiably criticized the conclusions of Jacobsthal and Robinson and reiterated Weidauer's conclusions, complaining that numismatists were ignoring them (AJA 86, 1982, 343-360). In addition, he again associated the earliest structure of the Artemision (the Basis, Temple A), where some coins were found, with the Kimmerian destruction mentioned by Kallimachos and, citing Assyrian records, moved the date of the deposit back even further, to c. 645 (ibid., 348-353). The article prompted a response by J. Kroll and N. Waggoner (AJA 88, 1984, 325-340), who, drawing primarily on the work of Kraay, discussed the date of the earliest silver coins of Athens, Corinth, and Aegina, and convincingly placed them no earlier than the second quarter of the sixth century but did not touch on the electrum coinage.

Largely because of the current controversy, the British Museum organized a colloquium in 1984 to re-examine the finds from Ephesos. Again no consensus was reached, with Weidauer finding electrum (not from Ephesos) in "Geometric"

style (the AK article, cf. above); D. Williams identifying the pot in which the Ephesos pot hoard was found and dating it c. 630; M.J. Price noting the similarity of all the electrum coins inside and outside the Basis and from other hoards and dating them all in the sixth century; and M. Vickers radically down-dating the construction of the Artemision itself (cf. his further revisions of Archaic coinage, NC 1985, 1-44, and REG 99, 1986, 239-270, which ignore numismatic method and are generally unacceptable). A subsequent article by R. Holloway (RBN 130, 1984, 5-18) presented a ballanced view of the numismatic results, generally supporting Price's views, but again did not add much new. In fact, little progress was seen at the colloquium, and the need for more careful numismatic study became clear. Only the findings of the Austrian excavators, briefly discussed at the colloquium but published elsewhere more recently, shed light on the difficult problems of chronology.

Aside from the evidence of the coins themselves, which await more careful study but will be discussed below, the chronological problems are best approached in two ways, through the archaeological context provided by the Ephesos deposit, considerably clarified by the recent excavations, and by attempting to work backward using the more securely dated Greek coins of the late sixth and early fifth centuries.

The Date of the Earliest Artemision:

The date of the pre-Kroisos Artemision, where three stages of building were distinguished by Hogarth (the so-called Temples A, B, and C; cf. Hogarth, 52-73), has been greatly disputed. Hogarth, on literary and historical grounds, saw the earliest structure as belonging to the early seventh century and destroyed by the Kimmerians in c. 660 (Hogarth, 239ff.). The two other structures followed, Temple B belonging to the second half of the seventh century and Temple C to the first half of the sixth, until the building of the Kroisos temple. Until recently, the most important examination was by E. Gjerstad (LAAA 24, 1937, 15-34), who carefully reviewed Hogarth's findings and supported the idea of three distinct building stages. Working backward from the terminus ante quem of c. 550 presented by the Kroisos temple and the "XXVI Dynasty" scarabs (presumably 660-625; H. James, 1984 Colloquium, viewed these scarabs as non-Egyptian, Greek imitations) found in the Basis, he allowed a "sufficient" time period between stages and arrived at a date of c. 650-625 for the earliest structure. His views were generally accepted, although Robinson (loc. cit., 156) wished to lower the date to just before 600 and rejected the theory that the Kimmerians destroyed the site.

Weidauer renewed the theory that an early structure on the site of the Artemision was destroyed by the Kimmerians under the rule of Lygdamis, as literary sources may suggest (Weidauer, 72-80). She argued that the destruction must

have occurred before 626, and since the earliest structure at the site is Temple A (as Hogarth made clear, Hogarth, 53), it must be the shrine that was destroyed. Kagan supported Weidauer, arguing for the reliability of the sources and slightly raising the date of the destruction to c. 645 (Kagan, AJA 86, 1982, 348-353; cf. the discussion of Lygdamis and Kimmerians in Assyrian texts, A. Kuhrt, 1984 Colloquium). In contrast, M.J. Price (Asyut, 123; 1984 Colloquium; Studies P. Grierson, 1983, 1ff.) has reasonably questioned why there must be any significant period of time between the A, B, and C structures and was even willing to place them all in the sixth century.

Actual archaeological evidence (aside from the coins) had been inconclusive in the arguments. Jacobsthal's famous article analyzing the finds from the Basis is informative but far from conclusive in establishing firm dates, and Kagan has justifiably criticized those who draw precise chronological conclusions from it (Kagan, loc.cit., 353ff.). In the 1984 colloquium, D. Williams discussed some of the overlooked pottery from the excavations and identified the pot in which some coins were found (cf. below). About 250 sherds from the Wood and Hogarth excavations are preserved in the British Museum, including a few Late Geometric, bird bowl, Protocorinthian and Early Corinthian, Lakonian, various Wild Goat, Chian, "Ephesian ware", bucchero, Cypriot, and other sherds. Few are known to be from a specific location in the Artemision, and only three can now

be identified as from the Basis, one Late Geometric and the others late seventh century East Greek. However, other locations where coins were also found include the fill of the West Basis, where an unusual East Greek plastic vase in black figure technique was found, and the foundations of Temple B, where a Protocorinthian and three Early Corinthian sherds were found, indicating a terminus as late as c. 600. The pot in which the coin hoard was found is a red clay round-mouthed jug with light white wash and two reserved bands [FIG. 379]. Very similar jugs were found at Samos in a relatively early context, Well G dated c. 710-640/30 (AM 74, 1959, 18f., Beil. 31), and Williams suggested a date no later than c. 630 for the Ephesos jug. However, Boardman has pointed out that such jugs are common in East Greece, and at Emporio (Chios) they were found only in the late seventh and sixth century deposits (Emporio, 144f.). It is difficult to date the jug with precision.

Only recently have the current Austrian excavators at Ephesos been able to shed light on the problem, notably in several articles by A. Bammer discussing the recent finds (Bammer, 165-183; Hephaistos 5-6, 1983-4, 91-108; and 1984 Colloquium). Their excavations in and around the Artemision have clarified the stratigraphy and found much new, including the western side of the Kroisos temple foundations not located by Hogarth, a Hekatompedos west of the Artemision contemporary with Temple B, and a slightly later ramp-altar. New finds, especially of Corinthian pottery, have helped date the structures. Temple B and the

Hekatompedos contained mostly Early Corinthian pottery (cf. Bammer, 186f.; Hephaistos 5-6, 1983-4, 91-108), and should have been constructed c. 620 or later. He suggested that the Hekatompedos was not in use much later than c. 580, since there is little pottery later in date than Early Corinthian, but Temple B continued in use until the time of Kroisos. The ramp-altar was begun c. 580 and continued in use until the end of the century, and Temple C was not begun until c. 560 and was in use while the Kroisos temple was being built (cf. Bammer, 174ff., fig. 83-84; and 1984 Colloquium).

Most important for the dating of the coins is Bammer's belief that the Temple A foundations were rebuilt when Temple B was begun and that the material in and around the Basis was deposited at that time (cf. Bammer, 171f.). The date of Temple A is not known but is probably little before 620, and there is no evidence of Kimmerian destruction. Even 620 may be slightly early for the foundation of Temple B in view of the Early Corinthian pottery found in the foundations (cf. D. Williams, loc. cit.), and a date of c. 600 seems as likely (cf. Bammer, 192) or even slightly later if the later chronology of Early Corinthian pottery is accepted.

The coins from the Artemision were found in several different locations. Some were found in the central Basis in what the present Austrian excavators now consider to be the rebuilt foundations of the B temple. The pot hoard, which contained nineteen coins, was found beside the A temple in a context suggesting it had been placed there no later than at the time of the Temple B foundation (Hogarth, 43, 74f.). Several other coins (Hogarth, no. 38, 57, 58, 63, and 79) were associated with the B foundations, and one coin (Hogarth, no. 52) was in fill associated with the building of Temple C but could be earlier in date. About half of the coins were not from a determinable context but must pre-date the Kroisos temple.

M.J. Price (Ephesus Colloquium, forthcoming) has noted that despite the various contexts within the Artemision most coins are similar, including die-duplicates, and no relative chronology for the Artemision can be established on the basis of context. Furthermore, most of the electrum coins from Ephesos are similar to coins found in two other hoards, one said to have been found near Kolophon in 1946 (now all in London) and the other found in the vicinity of Ephesos in 1970 (which contained eleven Lydian coins and a twelfth-stater with stag protome). These two other hoards also contained coin types not found at the Artemision but which must be contemporary. Weidauer's die studies have linked further coins, notably the larger denominations, and these too must be contemporary. As Price has noted, the die-linkage and hoard evidence suggest that the large variety of

early electrum types were struck in a very short period of time and must all be closely contemporary despite the many varieties and styles. Further stray finds (which are quite common and continue to be found frequently) very often are linked to the Artemision examples, again suggesting large but brief issues, probably from a number of mints.

The various issues of coins can be distinguished by the fabric, type of incuse, and frequently even die-links, but the attribution to specific mints is much more difficult. Only the extensive coinage of Lydia is certainly attributable, and from the Ephesos finds only two other coins can be identified with confidence, one from Miletos and the other from Phokaia. First the earliest electrum coins, which should be dated c. 600 and may have come from a variety of mints, will be considered by group (coins are on the Milesian weight standard unless otherwise indicated), followed by issues datable to the sixth century and later.

Group 1 (Weidauer, I-II, no. 1-9, who does not include the Artemision examples except for Hogarth, no. 1). The first group is composed of coins with either no obverse type or with simple obverse striations; the reverses all have one, two, or three reverse punches, depending on the denomination. The coins are probably not all from the same mint. Unstruck ingots of electrum and silver were also found in the Artemision (cf. Hogarth, 119, and coins no. 2 and 7) and in the Kolophon hoard (a pierced ingot weighing 1.44 g.) but do not correpond in weight to the coins (with

the exception of no. 7, flattened into a planchet?) and should not be regarded as such (*contra* Robinson, *JHS* 71, 1951, 164). Eight examples of both plain and striated examples were found in all parts of the Artemision (Hogarth, no. 1, 4-6, 8-11), including one striated example in the pot hoard (no. 1). Two further striated examples were present in the Kolophon hoard, and other examples, including staters and smaller denominations die-linked to those from the Artemision (Weidauer, no. 7-9), have come from uncertain sites other than Ephesos. One stater with striated obverse has puzzled numismatists because of its high silver content and low weight (10.81g), which appears to anticipate the stater of Persic weight (*BMC Ionia*, 183, Miletus no. 1; Weidauer, 14 n. 11; M.J. Price *Studies Presented to Leo Mildenberg*, 213 n. 10; Traite 1, no. 16, pl. 1: 12), but examination reveals that it is fouree, a pure silver core with electrum plating. A number of other early plated electrum coins, nearly alway light in weight, have since appeared and should be recognized as a class of coins present from the very beginning of coinage.

The typeless and striated coins have been called the earliest true coins in a progression from simple ingot to typeless stamp to obverse device (e.g. Hogarth, 88; Robinson, *loc. cit.*, 164f.; M. Balmuth, *Studies Presented to G.M.A. Hanfmann*, 1-7), although Robinson also noted that since all types were found together, the development must have occurred very quickly. There is in fact no evidence that such a progression existed, and the first coins may

have had fully developed types (for example the Lydian coins with lion's head), while the typeless coins may merely be contemporary products of another mint without the benefit of skilled engravers.

Group 2 (Weidauer, III-IV, no. 10-28). Although not linked by common dies, two series of coins, one with a goat protome as the obverse type and the other with two confronted cocks, are closely related through their similar dumpy fabric, striations used as filling ornament in the obverse field, and common findspot, the Ephesos pot hoard. The pot hoard contained a total of nineteen coins, seventeen of which were of these two types, and these coins comprise nearly all of the known examples. At least one other example, a twelfth of the two cocks type (Hogarth, no. 29=Weidauer, no. 27; Hogarth, no. 17-18, said to be of the goat type, appear to be incorrectly described), was found in the Artemision outside the pothoard. A stater of the type is now in New York (Weidauer, no. 15) but appears not to have been found in the Artemision. The coins in each series are closely die-linked, and the coins with cock type are probably all struck from the same obverse die, regardless of denomination, a practice common in early electrum and suggesting that each issue was very brief.

Because of their "primitive" appearance, most notably the striations in the field, the two issues were sometimes seen as a link between the coins with only striations as the obverse type and later coins with clearer obverse devices

(Hogarth, 89; Robinson, loc. cit., 165). As mentioned above, such a chronological conclusion is not necessary, although the similarity in technique may indicate a single mint or a close relationship between mints. A striated coin was one of the two other coins in the pot hoard (Hogarth, no. 1; Weidauer, no. 6), but it is not especially close in fabric to the goat and cock series. The other coin in the hoard, a twelfth with a facing lion's head as the type (Hogarth, no. 53; Weidauer, no. 162), is stylistically unrelated to the others in the hoard and is part of a series generally related to many other coins found throughout the Artemision (cf. Group 8, below).

Group 3 (Weidauer, XL, no. 175-177). Robinson has noted a further series which uses striations as filling devices in the field, this with the obverse type a winged, bearded male figure. A half-stater in London is likely to have come from the Artemision excavations (Robinson, loc. cit., 165 n. 61; Weidauer, 175), and others are known (Weidauer, no. 176-177), including a stater (Rosen, no. 246), another half, a third, and a sixth (Rosen, no. 263, not correctly attributed there; another in Oxford). A stater in the Gulbenkian collection shows a dolphin (and shrimp?) against a similarly striated field (E.S.G. Robinson, ANS Centennial Volume, 586, no. 2, pl. 39; fractions are also known). They need not necessarily be from the same mint or from the mint that produced the goat and cock coins.

Group 4. Weidauer has pointed out that two issues of widely divergent artistic style, both of which were represented among the Artemision finds, may well be from the same mint (Weidauer, 69ff.). One series has a very crude lion's head engraved with little modeling but with a heavy linear outline (Weidauer, XIX, no. 116-125; she does not list the example from the Artemision, Hogarth, no. 45). One twenty-fourth was found in Hogarth's exploration and another by the recent Austrian excavations (H. Vetters, Vorl. Grab. 1981, 64f., 100, no. 380, pl. 21). Many other examples are known and are still being found, including a twelfth in the Kolophon hoard and a large variety of denominations from Robinson's collection now in Oxford, including a stater that appears to have been struck from the same dies as the twenty-fourth from Ephesos (Weidauer, no. 116). Examples of a ram's head executed in the same linear style (Rosen, no. 300; another in Oxford) and with a similar incuse pattern are likely from the same mint. The crudeness of the engraving led early scholars to view the type as "barbaric" and assign the style to the barbarian Kimmerians (cf. Weidauer, 69), a romantic notion which is not supported by the numismatic evidence nor the style, which, although crude, has no Nomadic (Animal Style) or even Eastern traits.

The form of the reverse incuse, a cross-like pattern, has led Weidauer to link the linear lions' head series with another issue with nearly identical reverse punches, although no actual die-links have yet been found.

Surprisingly, the obverse type is a horse's, or winged horse's, head or protome usually of exceptionally fine style and miniature modelling (Weidauer, XXVI-XXVII, no. 141-146). Four examples were found at Ephesos (Hogarth, no. 77=Weidauer, no. 142; Hogarth, no. 78; Hogarth, no. 79=Weidauer, no. 145; Hogarth, no. 80), four others in the Kolophon hoard, one in another hoard with Lydian and other electrum coins (IGCH 1155, "Asia Minor 1935-6"; the horse head forty-eighth is now in New York), and many more continue to appear. Staters with horse protome (Weidauer, XXV, no. 138-140) are not of the same style, do not have the same incuse form, and are probably not from the same mint.

Group 5 (Weidauer, VI-IX, no. 33-46). Also on the basis of similar reverse incuses, although not actual die-links, Weidauer has associated four other series, only one of which was represented in the Artemision finds. One twelfth-stater with the protome of a stag was found at Ephesos (Hogarth, no. 74; Weidauer, no. 38) and another in a 1970 hoard said to have been found in the Ephesos area, which in addition is thought to have contained eleven Lydian electrum coins (including Weidauer, no. 98). A number of other examples, including sixths, twelfths, forty-eighths, and ninety-sixths are also known (five small denominations are in Oxford). Judging from both the style of the obverse stag and the form of the reverse incuse, the small coins appear to belong to the same issue as a famous stater with the obverse type of a grazing stag and inscription phanos emi sema (London; Weidauer, no. 39), a second example of

which has been discovered (cf. Weidauer, 63 n. 55; M. Radnoti-Alfoeldi, Festschrift P. Naster 1, 1982, 1-6; and F. Paszthory, ibid., 7-11, on the metal analysis), as well as a third-stater of the same issue inscribed phaneos (London; Weidauer, no. 40; cf. E.S.G. Robinson, ANS Centennial Volume, 1958, 586ff.; Kraay, ACGC, 23). A Phanes from Halikarnassos is mentioned by Herodotos (3, 4 and 11) as serving King Amasis of Egypt as a mercenary c. 530, but these coins are certainly too early to have been struck by this man (contra M. Vickers, NC 1985, 19), since they are so close in fabric to the example found at the Artemision which must be dated c. 600. The London stater of Phanes was purchased (not necessarily found) at Halikarnassos, but although the city may have had close relations with Ionia despite its Dorian origins, it is unlikely to have issued coins for circulation in Ionia in view of its southernly geographical position and later economic history, which places it more in the Karian community. Since the stag is a symbol of Artemis, Ephesos itself has sometimes been proposed as the mint (cf. Weidauer, 68f.), and the attribution is possible but far from certain. No Phanes, presumably the ruler who issued the coins in view of the prominent inscription, is known at Ephesos.

The other issue of coins related to the stag series by similar reverse incuse has a facing gorgon's head, although none was found at Ephesos. Two staters are known (Weidauer, no. 41-42, the latter now Rosen, no. 244), which show that

the entire device is a double-gorgoneion with two heads joined at the chin. The three other coins, third-staters, cited by Weidauer (Weidauer, no. 43-46; 43 and 44 are the same coin; 46 is plated) are from the same die as the staters.

Weidauer sees another issue as being related to the stag and gorgoneion types, these being thirds with a bee as the obverse type (Weidauer, no. 33-34, to which may be added Boston 1818 from the same dies as no. 33, and Boston 1817 and another in Oxford from the same dies as no. 34). The bee too is a symbol of the Ephesian Artemis, but there seems to be little stylistic relationship between the bee coins and the stag and gorgoneion coins, and it should be noted that all the specimens of the bee coins have an odd fabric and appear to have an unusually high silver content (further study is needed). They need not be related to the previous groups nor belong to Ephesos.

Group 6 (Weidauer, XX, XXI, XXIV, no. 126-132, 135-137). An interesting group, which includes a number of staters, has been categorized by Weidauer through both die similarities and actual die-links and has plausibly been attributed to Miletos. The attribution is based on the obverse type of a recumbent lion with head turned back, which is the emblem of Miletos on its first silver issues of the late sixth century and on subsequent coins for hundreds of years. A series of early sixth century electrum issues, including staters (Weidauer, no. 126-127), appears to link the early electrum coins (through obverse type) to the first

Milesian silver issues of the late sixth century, helping support the attribution of the earliest pieces (these are discussed below with the sixth century electrum issues). One third-stater was found in the Artemision (Hogarth, no. 52; Weidauer, no. 128), and others are known, but they appear to predate the known staters (cf. below). Staters of the earlier issue may well have existed but have not yet come to light.

The reverse punches of the recumbent lion thirds are especially close to other thirds with the obverse type of a rolling horse (Weidauer, no. 136-137; and add SNG v. Aulock 7784, now Rosen, no. 254). A stater of this same issue is also known (Weidauer, no. 135), which in turn is die-linked to two staters with the obverse type of a standing bull (Weidauer, no. 131-132). The important die-links demonstrate that the rolling horse and standing bull staters were certainly from the same mint, and the similarity of reverse incuses to the lion-type coins suggests Miletos as the likely city. If this is the case, then Miletos is seen to have issued a very fine series of variable obverse coins c. 600 before settling on a constant type with recumbent lion with head reverted.

Group 7 (Weidauer, XIII-XIV, no. 55-58; Rosen, no. 282 may be a twelfth of Weidauer, XIII). Another surprising die-link between different obverse types is seen on an interesting hekte in London with a boar's head (facing another?) accompanied by traces of an illegible inscription

(Weidauer, no. 56; cf. p. 63f. for the inscription, which could be Lydian) and two examples of a stater with lion's protome (Weidauer, no. 57-58). The lion is somewhat similar in style to those on the Lydian coinage, and the inscription between two facing boars' heads recalls the similar design of confronted lions' heads in Lydia (cf. Weidauer, 47), but an attribution to a Lydian mint is uncertain. However, the boar and lion series were certainly struck at the same mint.

Group 8. A number of issues with various obverse types are related to the "Milesian" coins by their general style, fabric, and technique. Again three incuse punches are used for the staters, two punches for most smaller denominations, and one punch for the smallest. Coins of different denominations can share both obverse and reverse dies. The issues represented at Ephesos include the facing lion's head from the pot hoard (cf. above "Group 2"; Hogarth, no. 53; Weidauer, no. 162), for which staters, thirds, sixths, and twelfths are also known (Weidauer, XXXII, no. 156-165); and ram's protomes (Hogarth, no. 51, a forty-eighth which has always been misattributed as a lion's head), for which thirds, sixths, twelfths, and twenty-fourths are known (Weidauer, XI, no. 46-51; for the two rams' heads stater, Weidauer, no. 47, see below). In addition to those types found at Ephesos, other issues appear related, including staters with kneeling rams on raised discs (Weidauer, XII, no. 52-54); a stater with the protome of an ibex (London) with an accompanying hekte (Numismatic Fine Arts, Los Angeles, Auction 16, 1985, lot 200; 2.38 g., linked to the

stater by a same reverse punch); the staters with horse's protomes mentioned above (cf. "Group 4"; Weidauer, XXV, no. 138-140); a unique stater with a winged, man-headed bull (Acheloos?; Weidauer, no. 178); two distinct series of thirds with bees, one of which was mentioned above (cf. above "Group 5", Weidauer, VI, no. 33-34) and the other (Weidauer, V, no. 29-32) of different style, which includes twenty-four specimens from a hoard (IGCH 1159, "Asia Minor before 1933"); thirds with walking winged horse (Weidauer, XXVIII, no. 147-149); a third with walking griffin (Rosen collection, unpublished); swastikas and other cross-patterns in frames in several denominations (Weidauer, XXIX-XXX, no. 150-152); a similar pattern with facing lion's heads in frames (Weidauer, XXXI, no. 153-155); another similar pattern with two rams' heads in a frame (Weidauer, X, no. 47, cf. p. 48f.); a unique third with the profile head of a bearded man (Weidauer, no. 171); and a series of twelfths (Weidauer, no. 172-173) and twenty-fourths (Rosen, no. 290) with facing human head. Other examples known only in small denominations could be cited, and no doubt more will be found. It is entirely unclear how many mints are represented, since coins with various different obverse types could have been struck at the same mint, but the similarities in style, technique, and findsite indicate that the mints should be confined to the southern Ionian area, as opposed to northern Ionia where a heavier weight standard was in use.

Group 9. A number of small denominations from the Artemision are more difficult to categorize but are noteworthy for their date and types. They include a twelfth with a patterned obverse of uncertain design but not to be confused with those with simple striations (Hogarth, no. 3); three examples, two forty-eighths (Hogarth, no. 81-82) and a ninety-sixth (Hogarth, no. 83), of a winged scarab beetle, two other examples of which were present in the Kolophon hoard and more known from other finds; several series of lion's head forty-eighths of good style not related to the Lydian issues and of uncertain mint attribution (Hogarth, no. 46-48, die-linked with another in Oxford; no. 49, a different style; no. 50, a third style); an interesting and unique twelfth with profile human head (Hogarth, no. 75; Weidauer, no. 174); a forty-eighth with bull's head (Hogarth, no. 76); and what appears to be a hawk's head twelfth (no. 84). A few more coins are probably of the same date as the Ephesos material in view of their inclusion in the contemporary Kolophon hoard. These include three forty-eighths, one with an owl as the obverse type, another with a facing bull's head (another in Oxford, also said to be from Kolophon), and a third with a dolphin head (cf. the larger denominations, Rosen, no. 274 and others in London and Oxford). A ninety-sixth with flying bird device was said to be in the 1935-6 hoard IGCH 1155 and should also be contemporary.

Group 10. The major coinage of the period can be attributed with certainty to the kingdom of Lydia, probably

struck at the captial, Sardis. Coins with lion's head obverse and two reverse incuse punches (Weidauer, XV, no. 59-85) were struck in denominations of thirds, sixths, and twelfths (with one reverse punch), and the smaller denominations, twenty-fourths and forty-eighths (as Hogarth, no. 54-70, perhaps no. 18 as well), substitute a lion's paw as the obverse type (die-links between lion's head sixths and lion's paw coins have recently been identified by S. Karwiese, forthcoming, confirming the long supposed attribution). No staters of this issue are known. Some examples have Lydian inscriptions (Weidauer, XVII-XVIII, no. 91-115), and the obverse type of these coins is usually a pair of confronted lions' heads with the inscription between, although usually only one lion's head is on the flan. A second series of lion's head thirds (Weidauer, XVI) is not represented in the Artemision finds and must belong to the early sixth century. These and other later Lydian issues are discussed below.

The inscriptions are clearly Lydian (cf. Weidauer, 59-62; R. Gusmani, Lydisches Woerterbuch, 1964, 220f.; note the digamma not used in Ionian Greek), and one inscription, which has been read walvel (a genitive form), has often been thought to be the name of Alyattes (the attribution was first made by J.P. Six, NC 1890, 207). The discovery of a second name, read kalil (again a genitive form) on coins die-linked to both the valvel and uninscribed coins has cast doubt on the reading of the first inscription as Alyattes

since kalil corresponds to no known king's name. G.M.A. Hanfmann has pointed out that the Lydian names for Alyattes and Ardys are not known and that the interpretaion cannot be dismissed (Sardis from Prehistoric to Roman Times, 1983, 78), especially since early names on royal coins should belong to the king. However, the die-linking between the inscribed coins demonstrates that they are closely contemporary and not likely to have been struck under two different kings.

Of the ninety-three coins found at Ephesos listed by Head, at least thirty-five belong to the closely-linked Lydian series, including thirds, sixths, and twelfths of the lion's head series (Weidauer, groups XV and XVII, but not XVI), some inscribed, and twenty-fourths and forty-eighths of the lion's paw type. From the evidence of the Artemision finds, there can be little doubt that the wealth of the Lydians, as demonstrated by both the coinage and the jewelry, heavily influenced Ephesos and the Ionians. The rich finds also strongly suggest that the Lydians were patrons of the Artemision well before the time of Kroisos.

In addition to the many examples from Ephesos, the Lydian coins are frequently found elsewhere and have a wide distribution in Asia Minor, again demonstrating the size and importance of the issue (cf. Robinson, JHS 71, 1951, 163 n. 48). Small hoards are frequently found, and Lydian coins were represented in the Kolophon hoard, the 1970 "Ephesos" hoard, and in others from western Asia Minor (cf. IGCH 1155, 1156, 1175; another large hoard of Lydian coins in 1981,

Coin Hoards 7, 1985, 6, no. 7). They have also been found at inland Anatolian sites, such as the Phrygian capital Gordion (cf. below), and they often display merchants' counterstamps of the sort found on the later Persian sigloi, which circulated throughout western Anatolia. One example (a third of Weidauer, XVI type) was found in the Treasury at Persepolis (E.F. Schmidt, Persepolis 2, 1957, 111, no. 10, pl. 84) and another of the same type in Bulgaria (IGCH 689, in a pot hoard with two late sixth century coins of Kyzikos).

Group 11. Three final coins from the Artemision are especially notable, since they can be attributed with some confidence to Phokaia. Two forty-eighths have a seal head as the obverse type (Hogarth, no. 86-87) and are on the Phokaic weight standard, slightly heavier than the other coins from the Artemision. They belong to a plentiful series of coins which have plausibly been attributed to Phokaia in northern Ionia on the basis of the heavier standard and the punning allusion (phoke-seal) to the city name seen in the obverse type, which becomes a constant accompanying emblem on the extensive later electrum coinage from the late sixth through the fourth centuries. A ninety-sixth with a griffin's head (Hogarth, no. 85) is probably also from the mint and is well known in other examples of various denominations. The presence of the Phokaian coins in the Artemision (the griffin coin and one seal coin were from the Basis) is especially important in that it

establishes the beginning of the series by c. 600, an early date in view of the extensive later coinage, the beginning of which is difficult to date before the second half of the sixth century.

F. Bodenstedt studied the long series of electrum coins from Phokaia and Mytilene, first in a careful, primarily technical analysis (Phokaisches Elektron-Geld von 600-326 v. Chr., 1976) and then in a near corpus (Die Elektronmuenzen von Phokaia und Mytilene, 1981). Although the early coinage of Phokaia is recognized in part (not a corpus, and only the seal and griffin staters are mentioned), it is not completely recorded (Bodenstedt's Series "E") and is regarded as uncertain in relation to the later series of variable obverse hektai with accompanying seal symbol, which began some time in the second half of the sixth century. Mytilene appears not to have issued coins until the early fifth century. The seal-type coins from Ephesos are noted (but not properly recorded, cf. Elektronmuenzen, 110, no. 5, 2.2 delta, pl. 42, as Hogarth excavations, which is certainly incorrect; the other, 112, no. 11, 2.2 theta, may be correct), but the griffin ninety-sixth is not. The latter book generally follows Weidauer's dating, but there is little discussion of chronology (cf. Elektronmuenzen, 46ff.).

Group 12. Many early coins of Phokaic weight with various obverse types are also known, but since only three were found in the Artemision and other hoard evidence is scanty, they are more difficult to date. The continued use

of electrum in north Ionia for nearly two centuries, for example at Kyzikos, Phokaia, and Mytilene, as well as at uncertain mints, also complicates the dating of the earliest examples. The early types are not found in the later hoards, suggesting that the absent coins are indeed significantly earlier, but how much earlier is difficult to determine.

The earliest examples, judging from fabric, technique, and style, include several issues of staters. The first is a rare series with variable obverse types recognizable from the fabric and the two reverse punches, one large and one small, usually placed one diagonally above the other. Three example with the obverse type of a seal (Weidauer, no. 188-189, and Elektronmuenzen, E 1.2, pl. 42, ex-Leu Auction 7, 1973, lot 228) strongly suggest that the mint is Phokaia, although the accompanying symbol, resembling a letter theta, is unlikely to be the letter phi as is often claimed and may be merely a rosette filling device. Other obverse types include a chimaera (London, Traite 1, pl. 5: 14; another ex-Pozzi collection, Naville 1, 1921, lot 2396), a bull on a raised disc (New York, ANS; H. Troxell-N. Waggoner, ANSMN 23, 1978, 3f., no. 6, pl. 1: 6), a lioness (Robinson, ANS Centennial Volume, 588f., no. 6, pl. 39; now Hunt collection, Wealth of the Ancient World, 1983, 157, no. 56), and a griffin head (Robinson, ANS Centennial Volume, 589f., no. 7, pl. 39; now Hunt collection, op. cit., 156, no. 55). Another griffin head stater with an unintelligible but

apparently Greek inscription (Weidauer, no. 179, and p. 64 for inscription) has only one small incuse punch, but it resembles the other coins in the series and may belong there. Another stater with three dolphins within a dotted circular border on the obverse and two punches on the reverse differs somewhat in fabric from the others but may also belong here (cf. hekte with flying bird, Rosen, no. 315).

Another series of staters has a fine lion's head as the obverse type (Weidauer, XLIII, no. 180-185) and a single large incuse punch on the reverse, of which six examples from three obverse dies are known. A hekte associated by Weidauer with the series of staters (Weidauer, no. 186) differs substantially in fabric and style and does not in fact appear to belong to the same issue. A hekte closer in style (Boston, no. 1795, and Leu 36, 1985, lot 154) more plausibly belongs. Weidauer assigned a very early date to the series (c. 660; cf. below), but there is no numismatic evidence for establishing a date, although the fabric (note the reverse punch) appears relatively early.

Many other Phokaic-weight coins unlike those attributable to Phokaia are also known, usually in denominations of hektai or smaller, but the fabric, notably the flatter flans and patterned incuses often quadripartite, speaks for a date well in the sixth century rather than earlier. Some may be contemporary with the Ephesos material, but in general they appear not to be. They will be considered in the next section on sixth century electrum.

Group 13. Kyzikos, a Milesian colony on the southern shore of the Propontis, issued a long series of staters and smaller denominations on the Phokaic standard from the second half of the sixth until the early fourth centuries with variable obverse types but always accompanied by the city's emblem, a tuna fish. Although some staters survive, the earliest coinage was usually of small denominations with only the fish or its head or tail. Although the early coins of Kyzikos recall the Phokaian coins, they need not be as early and are perhaps better placed around the middle of the sixth century (Bodenstedt suggested the first half of the sixth century; he was working on the mint at the time of his death, cf. Rosen, 28). They are discussed below.

Group 14. Electrum coins were also struck at Samos (cf. J.P. Barron, The Silver Coins of Samos, 1966, 15-17; Weidauer XLIX-LI, no. 195-206; Traite 1, pl. 9: 1-22, 25; Kraay, ACGC, 25f.) and can be attributed with confidence since a large hoard was found on the island in 1894 (IGCH 1158, with at least sixty examples, many of which are in London, Paris, and Oxford; cf. E. Babelon, RN 1894, 149-163; Barron suggested that it may have been a foundation deposit like at Ephesos, but nothing is known of the exact findspot), although B. Head had correctly attributed the coins to Samos by 1875 without the benefit of the large hoard (cf. B. Head, NC 1875, 273-276). The coins are of a distinctive weight standard, with a stater of c. 17.3 g. and denominations of halves, sixths, twelfths, twenty-fourths,

forty-eighths, and ninety-sixths. Other staters have since been found on the island (cf. BCH 82, 1958, 644, pl. L, 13=Weidauer, no. 196; and Robinson, ANS Centennial Volume, 590, no. 8=Weidauer, no. 195), and another hoard (IGCH 1157, before 1874, most of which is in London) was found in the vicinity of Priene, an area where Samos is known to have controlled some territory.

The various obverses usually appear to be without a deliberate device, merely a mass of incoherent grooves, but crude types are sometimes seen as well as a fine style lion's head and other animals. The staters (Weidauer, no. 195-198; four others are known, including a cut example: Frank Sternberg, Zurich, Auction 12, 1982, lot 257) have no intelligible design in the obverse, although the two reverse punches sometimes appear to have devices, but a half-stater in London (Traite 1, pl. 9: 22; from the Priene hoard) has a facing lion's head as the obverse type, and one in Paris clearly depicts a ram (Traite 1, no. 388, pl. 9: 25). The smaller denominations (sixths and smaller) have only one reverse punch, which sometimes links different obverses. The obverses are sometimes unintelligible, but often have distinguishable types set among the mass of crude pattern, including an eagle attacking a hare (Traite 1, no. 361-362, pl. 9: 8-9), a flying eagle (Traite 1, no. 375, pl. 9: 17), an owl? (London), a swan, and a tetraskeles (Traite 1, pl 9: 18). Most remarkable is a series of hektai and twelfths with a small but fine style facing lion's head set among the usual crude pattern (Weidauer, L, no. 199-203, all from the

same obverse die), which demonstrates that fine engraving was possible and that the crudeness of the series is not a reflection of a very early date.

A second series of half-staters (Weidauer, LI, no. 204-206) are on a different weight standard, with a stater of c. 13.4 g. (the weight corresponds to the first Samian silver tetradrachms, which began c. 500). They were not represented in either the Samos or Priene hoard, but the obverse pattern is so similar to that on the heavier weight staters that they are likely contemporary. One mint striking on two different standards is an attested practice at an early date (cf. Lydian gold and silver, below). Some rare late sixth century electrum staters of this weight with varying obverse types and similar rectangular double incuses are also known (cf. Traite 1, no. 78, pl. 3: 2; Rosen, no. 247-249; cf. "Coinage, 550-500", below). They too may be Samian, but the findspots of the four recorded specimens are unknown.

The evidence for dating the Samian issues is scanty. The Lydian coins said to have been found in the Priene hoard are in fact not Lydian issues (BMC Lydia no. 21, 23, 25, 26; a Milesian-weight twenty-fourth, a forty-eighth and two ninety-sixths; all are from the same uncertain mint and have a lion's protome left with head facing right on the obverse; a twelfth from the same obverse die, showing the device more clearly, is Rosen, no. 271) and cannot be closely dated, although their patterned incuse reverses speak for a date no

earlier than the early sixth century. The coins do, however, display certain early traits, such as the thick fabric and the sharing of dies among denominations. They should probably date from the first half of the sixth century, as was suggested by Barron and Kraay. An early sixth century inscription on Samos speaks of a dedication of gold and silver objects worth 212 Samian staters, but need not refer to actual coins, and Barron has argued that only the weight in silver staters is meant (Barron, op. cit., 18).

A further remarkable series of coins found on Samos consists of staters made of lead plated with electrum (cf. Barron, op. cit., 17-18, pl. 30: 10-12; Robinson, ANS Centennial Volume, 591f.). The obverses vary, including one with a pattern like the electrum staters and with two rectangular incuse punches on the reverse (in Athens, found on Samos; BCH 82, 1958, 655, pl. L, 14). The obverses with actual types include a male figure in knielauf pose (Paris; Robinson, op. cit., 591f., no. 10, pl. 39; Kraay, ACGC, no. 68), a standing lion with head reverted (Paris; Traite 1, no. 395, pl. 2: 17; Robinson, op. cit., 592, no. 11, pl. 39; Kraay, ACGC no. 69), an eagle attacking a serpent (Boston, no. 2311; Robinson, op. cit., 592, no. 12, pl. 39), and a winged lion (Vienna; unpublished, cf. Barron, op. cit., 17, and Robinson, op. cit., 592, not illustrated). Another example with the obverse type of a double-volute is made of copper with part of the electrum plating still surviving (Robinson, op. cit., 591, no. 9, pl. 39). It is possible

that they belong to the same period as the rare variable obverse electrum coins mentioned above. Herodotos (3, 56, 2) writes that Polykrates bribed the Spartans to lift their seige of Samos in 525/4 by giving them lead coins plated with gold. The story seems highly suspect, and Herodotos himself regarded it as "foolish" (a mataioteros logos), but the surviving coins, whatever their function was (emergency issues?), appear to date from this period and may well have served as the basis for Herodotos' story. Barron has suggested that the story may even be true (op. cit., 17f.).

Coinage c. 600-550:

The coins found in the Artemision demonstrate that a varied but closely related series of issues from Lydia and several mints in Ionia were current c. 600, but it is difficult to identify the succeeding issues of the first half of the sixth century. It is only in the later part of the sixth century when electrum coins resumed in quantity and began long-lived issues, for example at Phokaia, Mytilene, and Kyzikos. Nevertheless, some electrum issues of uncertain attribution survive which are probably of the first half of the century, and a few issues, notably those from Miletos and Sardis, help fill the gap between the late seventh and late sixth century coins.

Lydia:

The royal coinage of Lydia, which formed the major element in the Artemision finds, continued throughout the first half of the sixth century. Although Weidauer failed to realize the chronological implications, she was able to distinguish between the Lydian issues with lion's head present in the Artemision foundation deposit and a later series. The earlier series was carefully studied by Weidauer and numerous die-links were found between denominations and between inscribed and uninscribed coins (Weidauer, XV and XVII-XVIII). Coins from the later series (Weidauer, XVI) are more common but were not studied in depth by Weidauer. She did, however, note some of the

important stylistic changes, including the flatter, more regular flans, the smaller reverse punches, and the more detailed engraving, as well as the "multi-strand nose wart" of the lion as opposed to the earlier cross-shaped nose wart (Weidauer, 103). No inscribed coins of the later series are known, and most, if not all, appear to be third-staters (Weidauer lists a possible twelfth, no. 90, but this may belong to the earlier series). Weidauer noted that Group XVI may be slightly later than Group XV but denied that it can be significantly so and placed both groups in the third quarter of the seventh century (Weidauer, 103f., 107).

The hoard evidence, however, allows some chronological points to be established. Most important is that no coins of Weidauer Group XVI were found at Ephesos. This fact surely indicates that the Group XVI coins had not yet been struck and provides a terminus post quem of c. 600, the date of the foundation deposit, for the beginning of the series. Two other hoards demonstrate that the Group XVI coins indeed succeeded the Group XV coins, since both types--and only these types--were found together. In 1963 the American excavations at the Phrygian capital of Gordion, which was under Lydian control until the Persian invasion, discovered a hoard of forty-five Lydian electrum coins (IGCH 1176: 26 thirds, 1 sixth, and 18 twelfths; R.S. Young, AJA 68, 1964, 283, pl. 86, fig. 13; A.R. Bellinger, Essays in Greek Coinage Presented to Stanley Robinson, 1968, 10ff., which does not realize the difference between types; cf. Weidauer,

no. 71, 72, 74, 75), which included examples from both groups. A number of the coins had small counterstamps around the edge (cf. above). They were found in the debris of a burned and collapsed house (Building R) which may date from the Persian destruction, although the stratrigraphy has not yet been published. A larger hoard of at least 150 coins appeared on the market in 1981 (Coin Hoards 7, 1985, 6, no. 7), but its findspot is not known. It contained coins of both groups, and the composition was very similar to the Gordion hoard's, including thirds and twelfths but only one sixth. No smaller denominations, such as the lion's paw twenty-fourths and forty-eighths, were present, suggesting that the small fractions were confined to the early issues. In addition to these two large hoards, many other smaller, unrecorded hoards have been found, for the later series are quite common in collections and more numerous than the early series. Stray coins continue to be found regularly.

Although there must have been a pause between issues, it could not have been long in view of the stylistic similarities and the hoard evidence showing that the coins circulated together. The later series must have been struck throughout the first quarter of the sixth century and perhaps later. A die-study might show the extent of the issue, although not its precise duration. If the Gordion hoard can be dated to the Persian destruction of c. 547, it could show that the coins were circulating at that time but not necessarily that they were struck so late.

Some very rare electrum issues appear to follow the Group XVI coins. The most important are staters with lion and bull protomes joined back-to-back, the finest example being in Oxford (E.S.G. Robinson, ANS Centennial Volume, 585, no. 1, pl. 39; Weidauer, no. 133) and another in Munich from different dies (Traite 1, no. 40, pl. 2: 3). The type and style of the lion and bull, which depart from the earlier electrum issues, form a link with the extensive series of so-called "Kroiseid" silver and gold coins struck at Sardis (cf. below) and strengthen the attribution of the electrum staters to Lydia. A unique, recently discovered third-stater may also be a Lydian issue (Numismatic Fine Arts, Los Angeles, Auction 18, 1987, lot 210) [FIG. 380]. The obverse has two confronted lions' protomes in the manner of the inscribed issues (Weidauer, XVII-XVIII), and the two reverse punches are stylistically close to the earlier Lydian issues. The style of the lions' heads is very close to that on the stater in Oxford, and the two coins may be from the same issue. Another stater (London; G.F. Hill, NC 1929, 187f., no. 10, pl. 8; a third from the same obverse also exists, Egger, Vienna, Auction 46, 1914, lot 98) displays two confronted lions' heads on the obverse, but the style of this example is very crude and its Lydian origin is less certain. The coins should date from the second quarter of the sixth century and appear to be the final electrum issues at Sardis before the introduction of the gold and silver coins (cf. below).

Miletos:

An important issue of staters and accompanying fractions can be attributed to Miletos and dated to the early part of the sixth century, continuing the late seventh century issues (cf. above). The stater (e.g. Weidauer, no. 126-127; Traite 1, pl. 1: 15, 17; NC 1926, 123f., no. 10, p. 5: 10; at least twenty others are known, and more continue to be found, although none is from a recorded hoard) is of very fine style, with an obverse type of a recumbent lion with head turned back, a device which became the constant emblem of Miletos until the Roman period (cf. above). The lion is framed by a distinctive hatched rectangular border. The reverse is also distinctive, containing three incuse punches in the manner of earlier electrum staters (two small squares flanking a long rectangle) but unlike most other electrum in that the incuses contain devices or patterns. The square punches may contain the head of a goat or a stag, or a pattern of dotted cross or dotted N-shaped designs. The long rectangular punch usually contains a running fox.

Fractions of the issue are rare and poorly published, but more will certainly come to light. Denominations include half-staters (Traite 1, no. 24, pl. 1: 18; London), thirds (Traite 1, no. 20-21, pl. 1: 14; Paris and the Hague; another ex-Pozzi collection, Naville 1, 1921, lot 2464), and hektai (Hess-Leu, Auction 24, 1964, lot 208) [FIG. 381] with the same obverse type as the staters and the same patterned incuse punches on the reverse. Twelfths of the same issue have a lion's head on the obverse and a single patterned

incuse punch on the reverse (Oxford, unpublished; Rosen, no. 275; Leu, Auction 38, 1986, lot 109; Sternberg, Zurich, Auction 12, 1982, lot 225; Muenzen und Medaillen, Basel, Liste 308, 1970, no. 4), and a twenty-fourth (Weidauer, no. 169) [FIG. 381] has a lion's paw on the obverse and the same facing lion's head pattern in the incuse that appears on the hekte.

The issue, which appears to have been substantial in view of the regularity of the finds, cannot be precisely dated but probably closely followed the issue known from the single third-stater found at Ephesos (Weidauer, no. 128; cf. above). B. Pfeiler's suggesting that the issue of staters accompanied the early silver c. 550-525 and even later does not seem likely (SNR 45, 1966, 16ff.). The reclining lion on the hekte cited above is especially close in style to the example from Ephesos and provides a stylistic link. A number of developments in style have taken place on the staters, however, including a more detailed and finely modelled lion and the addition of devices to the reverse incuses, never seen on the electrum of the late seventh century. A date in the first half of the sixth century is probable, but no succeeding issues are known until late in the century (cf. below).

Southern Ionia:

Aside from the coins of Lydia, Miletos, and Samos (cf. above), the only other major coinage from the southern part of Ionia (recognizable by the Milesian weight standard) is

from Chios. A series of electrum staters of Milesian weight with a sphinx as the obverse type, which becomes the constant emblem of the island on the subsequent coinages, was begun sometime c. 550 or perhaps slightly later (cf. A. Baldwin, AJN 48, 1914, 1ff.). This brief issue was succeeded by the silver coinage, which was on a different weight standard distinctive to Chios and cannot have begun before 550 and is more likely to be slightly later in date.

No other coinages from south Ionia can be identified with confidence. Even minor coinage, such as the tiny lion's head coins from the Priene hoard (cf. above, "Samos"), are difficult to attribute to this period, most examples appearing to belong to the earlier period at the end of the seventh century. Isolated examples of odd style exist, but little can be said about them at the present time (cf. the stater, Weidauer, no. 134; and the examples in Oxford). Few later sixth century electrum issues were struck in this area, with the exception of a revival late in the century and during the Ionian revolt.

Northern Ionia:

In contrast to southern Ionia, the cities in northwest Asia Minor appear to have issued an increasing number of electrum coins during the sixth century, although most date from later in the century. They are recognizable by their Phokaian weight. Many coins are attributable to Phokaia itself, including a series of staters and many fractions, and the extensive coinage of Kyzikos probably also began

around this time, perhaps at mid-century. The series of staters with lion's head (cf. above) may also belong to the early sixth century. In addition there are a number of hektai and smaller denominations which appear to be related by fabric and stylistic details and should also be dated to the first half of the century.

Phokaia was the most important mint and evidently the earliest, since examples of both seal- and griffin-head fractions were present among the Ephesos finds (cf. above). The staters with variable obverse type (cf. above), which are likely to be from Phokaia, may belong to the late seventh and early part of the sixth centuries but could be later. The many fractional issues with seal and griffin heads appear to have continued well into the first half of the sixth century, but Bodenstedt (cf. Elektronmuenzen, Emission "E") had difficulty establishing a relative chronology. There also appears to be a gap in the coinage from the end of the seal- and griffin-head fractional issues around the mid-century (?) until the resumption of hektai issues sometime later, probably late in the third quarter of the century.

A rare series of Phokaic-weight hektai and some smaller denominations with variable obverse types have in common a certain similarity in fabric and engraving style, although they need not be from the same mint. Most notable, however, is that the obverse types are represented on raised discs, recalling shield devices (it should be noted that at

least one of the Phokaic staters, that in New York, ANS, cf. above, depicts its device, a walking bull, on a similar raised disc; the technique is wide spread in Greek coin engraving, especially in Asia Minor; cf. the early electrum stater, Weidauer, no. 52-54, Group 8 above; and the later coins of Kyzikos, Lykia, etc.). Examples include a series of coins depicting a fibula of typically Asia Minor type (hekte: Traite 1, no. 120, and Boston, no. 1791; twelfth: Oxford, ex Hess-Leu, Auction 45, 1970, lot 273; cf. Boardman, Greeks Overseas, 88, fig. 96; twenty-fourth and forty-eighth: Rosen, no. 338, 339, 345), a curled-up dog (twelfth: Traite 1, no. 226; Boston, no. 1798 and Rosen, no. 323; twenty-fourth: Oxford), a recumbent goat with head reverted (hekte: Muenzen und Medaillen, Basel, Liste 494, Nov./Dec. 1986, no. 37) [FIG. 383], a cock's head (forty-eighth: Oxford), a lion's head (hekte in London: Weidauer, no. 186), and a human head (twenty-fourth and forty-eighth: Weidauer, no. 191-194). The fibula, dog, and goat types are particularly close in style and have similar reverse incuses.

The date of the series cannot be determined with certainty. Weidauer associated the lion's head hekte with the lion's head staters and assigned a very early date (Weidauer, 98-99, 107, "c. 650"). However, there is little similarity in style and especially in fabric between the stater and hekte, and other hektai which more likely accompanied the staters are known (cf. above). The fabric of the hekte, especially the shape of the reverse incuse and

flattened flan, suggests quite a late date, perhaps even in the second half of the sixth century. Weidauer also suggested an early date for the human heads on stylistic grounds (Weidauer, 93-94), but she is not convincing (cf. below), and a date for the entire series close to mid-century appears most likely.

Several other isolated issues of Phokaic hektai can be placed around mid-century or just before. Other coins with lion's head similar to the last are known (three from the same dies?: London, Boston, no. 1796-1797; another mint: Rosen, no. 313). Another human head coin, this a twenty-fourth stater (Paris; Weidauer, no. 190), also appears to be early, although not necessarily as early as Weidauer suggested (Weidauer, 91-93). Further types include a boar head executed in linear style (hektai: Traite 1, no. 165, pl. 4: 31; Rosen, no. 316; forty-eighth: Rosen, no. 299) and other animal types. A hekte in Paris with a sphinx as the obverse type has been published by Weidauer (L. Weidauer, Festschrift R. Hampe, 1980, 75-80) and again an early date claimed (on comparison to Protocorinthian pottery), but the type is remarkably similar to the first silver coins of Chios (cf. A. Baldwin, AJN 48, 1914, 14f., pl. 1: 13-14; Kraay, ACGC, no. 91), which cannot date from before the early part of the second half of the sixth century. In view of the weight, the hekte is unlikely to be Chian and should be from north Ionia, but the Chian silver didrachm provides a useful comparison of reliable date. Other Phokaic-weight

hektai are issued during the second half of the sixth century, but they do not clearly link with any of the types discussed above.

Kyzikos:

The earliest coinage of Kyzikos appears to date from the second quarter of the sixth century, since the subsequent coinage cannot be dated before the third quarter of the century and there is no apparent break in the coinage. However, there is no hoard evidence for dating, and the similarties to early Phokaian coinage allow a slightly earlier date.

The emblem of the city was the tuna fish, and all the coins have the fish as either the main type or as a subsidiary symbol. Although full Phokaic-weight staters become common in the series late in the sixth century and throughout the rest of the coinage (cf. below), most of the surviving early issues are of small denominations. The first issues appear to be twelfths, twenty-fourths, and forty-eighths with a fish head as the obverse type and a rough incuse punch on the reverse (cf. v. Fritze, no. 3; Traite 1, pl. 6: 5-6; SNG v. Aulock 7255; Rosen, no. 411-412, 415; for a possible example from a hoard, cf. below, IGCH 1161). Other fractional issues with a fish or fish head are later in date, belonging to the third quarter of the century (cf. below).

The early examples of staters are stylistically related to the early Phokaian staters with two reverse punches. A

unique stater in London (Traite 1, pl. 6: 1; BMC Mysia, 18, no. 1) has a fish on the obverse flanked by two fillets, and the reverse has two punches, one large and one small, in a manner similar to the Phokaian coins, although the small one contains the device of a scorpion. Another early stater with two reverse punches has the obverse type of a cock with a fish head in his mouth, a hekte and twelfth of which also survive (Traite 1, pl. 6: 22; Robinson, ANS Centennial Volume, 588, no. 4-5, pl. 39). It is very close in style to another stater and twelfth (Boston, no. 1406; Traite 1, pl. 6: 23) showing a boar with a fish in its mouth. This coin has an early example of the quadripartite incuse on the reverse and cannot be earlier than the third quarter of the century (cf. also a silver coin of Kyzikos with a similar device, Rosen, no. 519, which must be of late sixth century date), which indicates that the earlier staters are not likely to date much before 550.

Electrum Coinage c. 550-500 and the Introduction of Silver Coins:

The scarcity of electrum coins that can be securely dated in the first half of the sixth century is puzzling, but it may reflect an actual cessation due to now unknown economic reasons, perhaps related to the changing function of coinage. Certainly the great variety of coins circulating in southern Ionia c. 600, as demonstrated by the Ephesos finds, are not to be seen in the next few decades. Electrum coinage did resume, however, in north Ionia, most notably at Phokaia, Kyzikos, Mytilene, and Lampsakos in the late sixth century and continued throughout the fifth and into the fourth centuries. Hoard and other evidence suggests that the electrum coins circulated in a small area, primarily along the northern Ionian coast and the Black Sea. In south Ionia, there are only a few issues, mostly in the late sixth and early fifth centuries, around the time of the Ionian Revolt.

The introduction of silver coinage in the second half of the sixth century was an event of international importance, and hundreds of cities throughout Greece, both east and west, as well as in the Persian Empire, began to strike silver coins in large quantities, especially in the early part of the fifth century. The reason for the sudden rush of coinage is unknown, but the large quantities and denominations suggest that there was an active international trade in bullion. Most archaic hoards are found in Egypt or the East, which shows to what destination much of the silver

was intended. The pattern of finds is considerably different from that of the early electrum, where coins remained close to their place of manufacture.

Although not without controversy, Greek silver coinage of the fifth century has become well understood and differs from the early electrum coinage in that it can almost always be attributed to a specific mint and given a precise date. It is beyond the scope of this study to discuss the chronology of Archaic Greek coinage in general, since the fixed points for dating rely primarily on the study of the major silver issues at Athens, Corinth, Aegina, and the cities in Sicily. However, it should be noted that the chronology followed here, derived from the pioneering work of C. Kraay (cf. the study of Athenian coinage, NC 1956, 46-68) and the downward revision of many Archaic mints, especially through the evidence provided by two important early fifth century hoards, should be considered highly reliable (cf. M. Price and N. Waggoner, Asyut; and the Decadrachm hoard from Lykia, cf. S. Fried, J. Kagan, and J. Spier, BAR International Series 343, 1987, 1-37; J. Spier, "The Early Coinage of Caria and Rhodes", NC, forthcoming; a recent summary for Athens, Corinth and Aegina, J.H. Kroll and N.M. Waggoner, AJA 88, 1984, 325-340; cf. also the good article on early Athenian coinage, J.H. Kroll, ANSMN 26, 1981, 1-32; for a higher chronology, cf. H.A. Cahn, Kleine Schriften, 1975, 81-97, and SNR 56, 1977, 279-287; D. Kagan TAPA 91, 1960, 121-136, and AJA 86, 1982, 343-360; and for a

lower chronology, M. Vickers NC 1985, 1-44, and REG 99, 1986, 239-270).

The date of the earliest silver coins at each mint is more difficult to establish, but there is little evidence for silver coinage even as early as 550. A number of hoards from Egypt, the Cyclades, Italy, and now Selinus (publication forthcoming) contained what are thought to be some of the earliest Greek silver coins, most notably the extensive issues of staters from Aegina and Corinth, but careful analysis of the hoards shows that none is much earlier than the late sixth century. The various hoards provide fixed points in the period c. 500-470, but from these points one must work backward and estimate the length of time a known number of earlier dies, which can be arranged in a relative sequence, would have been used. In the example of Corinth, an overstike on an Athenian Wappenmuenze (cf. Kroll-Waggoner, loc. cit., 333f.), which must be dated no earlier than c. 525 and perhaps later, provides a date from which to work backward. At least thirty-five earlier dies are known, but how much earlier could they be? Estimates vary considerably (cf. Kroll-Waggoner, ibid., 334), but the idea that the early silver coinage was experimental or intermittent seems highly unlikely, especially at the important and productive mints of Aegina, Corinth, and Athens, which appear to have been the pioneers in the use of large quantities of coins. If more than one die per year was used at Corinth, which seems highly probable, a starting date for the mint in the third

quarter of the sixth century seems most likely (the date of c. 560 suggested by Kroll and Waggoner, ibid., 334-335, is very conservative; cf. Asyut, 79). A similar situation existed at Athens (cf. Kroll, loc. cit.) and Aegina (cf. the Selinus hoard of c. 500, forthcoming; Kroll and Waggoner, loc. cit., 339, are again unnecessarily high in their date of 580-570), where fixed dates in the last quarter of the sixth century most probably point to a beginning date in the early part of the third quarter of the sixth century.

Lydia:

It is in Lydia during the reign of Kroisos (561-547) where the origin of silver coinage is usually sought. The extensive gold and silver coinage with confronted protomes of a lion and bull have been attributed to King Kroisos since the early part of the 19th century (cf. the summary by P. Naster, Actes...CIN 1961, 25 n. 1). There can be little doubt that the coins were indeed struck at Sardis, since it is such an extensive series, and most have been found in the vicinity of Sardis and throughout Lydia (including a pot hoard of thirty light gold staters found at Sardis in 1922, IGCH 1162, cf. Met.Mus.Bull. 1968, 197, for the pot; several examples found in the excavations, cf. M.J. Price, Festschrift L. Mildenberg, 212 n. 5; and a fragmentary gold hekte, cf. below; and from the vicinity, several hoards of silver staters, the most recent with at least ten staters in early 1987, unpublished; coins continue to be found in the area). They also appear to be related to the final issues

of Lydian electrum (cf. above), especially the electrum stater with back-to-back protomes of a lion and a bull.

The coinage is extensive (unfortunately no die-study has yet been done) and consists of both gold and silver staters and fractions, including half-staters, thirds, sixths, twelfths, and twenty-fourths [FIG. 384]. All have the same obverse type of confronted protomes of lion and bull, and the reverses have two separately applied reverse punches, except on the smallest denominations where there is only one punch. The weight standard is not the Milesian one used for electrum, but one with a stater of c. 10.7g. (a statistical study of the weights, P. Naster, 8th CIN 1973, 125-133), the same standard that is continued under the Persian Empire and is thus called "Persic" (by modern numismatists; apparently known to Herodotos as the Babylonian standard, cf. the Persian tribute list, Herodotos 3, 89-95). All the silver, as well as some of the gold, is struck on this standard, but some other gold coins are struck on a different standard with a stater of c. 8.055g., which again was continued in a slightly heavier version (c. 8.3g.) as the weight of Persian Darics (cf. E.S.G. Robinson, NC 1958, 187ff.).

In addition to these coins, there is a second series of gold staters on the lighter standard and silver half-staters (or sigloi, using the term for the subsequent Persian silver coins) on the heavier standard [FIG. 385]. There are no silver staters or accompanying fractions. The style of

these coins differs from the previous coins, being less detailed and more stylized. They have often been found in hoards with sigloi of Persian type (in the excavations at Old Smyrna, IGCH 1166 [FIG. 386], cf. E.S.G. Robinson, NC 1960, 31ff; Akurgal, Kunst Anatoliens, 155, fig. 106, and Alt-Smyrna 1, 113 n. 433; the date of c. 540-520 is too early; and the large hoard of more than 1400 Persian coins, of which about a third are of Kroiseid type and the others later Persian issues, from Cal Dag near Sardis, IGCH 1178, cf. S.P. Noe, NNM 136, 1956; eight gold staters were found in the Apadana foundation deposit at Persepolis, E.F. Schmidt, Persepolis 2, 1957, 113, no. 28-35, but silver and gold coins of the earlier series were found at Persepolis as well, cf. ibid., 111, no. 3-9) and have been recognized as being later than the previous series and struck at Sardis under Persian rule in the later part of the sixth century. In addition, I. Carradice (BAR International Series 343, 1987, 75, 81) has pointed out that coins from the later series are never found in hoards with coins of the earlier series, indicating that a significant period of time must have passed between the two issues. The date of the later series depends on the date of the beginning of the sigloi of Achaemenid type showing the Persian king (on Persian coinage, cf. E.S.G. Robinson, NC 1958, 187ff.; Kraay, ACGC, 32f.; Asyut, 97f.; Carradice, loc. cit., 73-95). On the basis of the early sigloi hoards, a date c. 500 for the first Persian-type coins (half length figure of the king) is most likely (cf. Asyut, 135 n. 170, and Carradice, loc.

cit.,), and the later Kroiseids must just precede them, probably all belonging to the late sixth century and perhaps as late as c. 500.

The earlier issue of gold and silver "Kroiseids" is closely interrelated, and dies are shared between denominations and between gold and silver coins. Although a complete die-study has not yet been done, an important article by P. Naster has pointed out some remarkable links (Actes...CIN 1961, 25-36). He noted reverse die-links between gold staters of heavy weight, gold staters of light weight, and silver staters (ibid., 29), and obverse die-links between gold staters of heavy weight and silver half-staters and between gold staters of light weight and silver half-staters (ibid., 30). More die-linking between denominations will no doubt be found. Such linking demonstrates the close contemporaneity of the various denominations within the issue, although the implications were not fully recognized by Naster, who proposed that the light staters followed the heavy ones (followed by Kraay, ACGC, 31, and M.J. Price, Festschrift L. Mildenberg, 213f.). However, in view of the die-links it is more likely that both weights were at first used simultaneously. Why this was done is now unclear, although not unparalleled (cf. the near-contemporary multiple standards in Samos, Lykia, Rhodes, and Macedonia, often in use at the same mint), but may have something to do with the exchange rates for the earlier electrum (cf. Kraay, ACGC, 31).

One further issue of gold staters and fractions on the heavy standard has been identified by Naster (BSFN 19, 1964, 364-365; at least two more staters have since come to light). Their fabric is similar, but the obverse lion and bull differ slightly in style from the other coins, which are more consistent in style. The lion's foreleg is raised, recalling the unique Lydian electrum third (cf. above), and he has a nose wart, which is not seen on the other dies (but is seen, oddly enough, on the revived Persian issues of the later part of the century). The stylization of the bull's neck is treated more like the lion's mane and is unlike that of the other bulls. The issue no doubt belongs with the others, and it may represent either the earliest dies of the issue or else merely the work of another die engraver.

M.J. Price has published another unusual group of silver staters and half-staters, including a stater with back-to-back lion- and bull-protomes, which purports to be a hoard (Festschrift L. Mildenberg, 1984, 211-221). However, there can be no doubt that the entire group is false, a product of forgers in Athens working from the early 1960s to the present day. A number of further forgeries from the same workshop, including die-duplicates, could be added (e.g. SNG Delepierre 2793-2794; and Rosen, no. 660, a gold stater), and some are still to be seen in the tourist shops in Athens.

Nevertheless, Price, and before him L. Breglia (Annali della Scuola Normale Superiore di Pisa 4.3, 1974, 659-685), raised some important questions in regard to the chronology

of the so-called Kroiseids and questioned whether they need to belong to the Lydian king rather than the Persian Empire. A significant gap must have existed between the earlier series of Kroiseids and the later ones, since they are not found together in hoards, but can it have been the thirty years or more necessary to bring them into the reign of Kroisos? Since the date of other Greek silver coinage is convincingly being lowered past 550, can the Lydian coins remain in the period 561-547?

The literary evidence supports an attribution to the reign of Kroisos but is not compelling. The famous passage in Herodotos (1, 94) that speaks of the Lydians as the first people to coin "in gold and silver" cannot be interpreted as proof of the earliest use of a bi-metallic coinage but only as evidence that Herodotos believed that the Lydians invented coinage, as is clear from the context (*contra* M. Balmuth, *Studies Presented to G.M.A. Hanfmann*, 1971, 3). Herodotos, writing in the mid-fifth century, would not have been aware of the earlier electrum coins, which had been discontinued generations before (although some tradition of the wealth of Sardis in electrum must have survived, cf. Sophocles, *Antigone* 1037-1039).

However, several references to *kroiseioi stateres* of gold in Herodotos and elsewhere demonstrate that coins of that name were known in the mid-fifth century. Herodotos (1, 54) relates a story that Kroisos gave two gold staters to each citizen of Delphi. Pollux, who cites the Lydians as

one of the possible inventors of coinage, also refers to staters of Kroisos (Onomasticon 3, 87 and 9, 84), as do Plutarch (Moralia 823A) and Hesychios (Lexicon, s.v.). Most importantly, the building accounts of the Parthenon for 439/8 list coins called Kroiseid staters (IG^3, 458: 29-30; cf. A.M. Woodward JHS 34, 1914, 282-285). These coins are distinct from the gold coins of Persian type, which were called Darics (cf. Herodotos 7, 28; Pollux 9, 84; and the Parthenon accounts for 429/8, IG^3, 383, which also cite Kyzikene and Phokaian hektai, Aeginetan staters, etc.) and must have had a different appearance. They could not have been the Lydian lion's head electrum coins, since those were third-staters, and the full electrum staters from Lydia (cf. above) are very rare and unlikely to have survived in quantity into the fifth century. The lion- and bull-protome coins are the most likely candidate for the coins known as "Kroiseid staters", especially in view of their certain Lydian origin and relatively early date, but they still need not have been struck as early as the reign of Kroisos. By the mid-fifth century, the origins of coinage had already been lost to the Greek historians, and many various explanations were current (cf. Pollux, 9, 83, who in addition to the Lydians credits the invention of coinage to Pheidon of Argos, Demodike the wife of King Midas, the Athenians, and the Naxians). That the Lydians, especially under the proverbially wealthy Kroisos, struck staters that were still in circulation had considerable appeal and credibility and was in any event not far from the truth.

The few coins found in the excavations at Sardis unfortunately have not been in datable contexts. A gold ingot which has been plausibly identified as a fragment cut from a hekte of the earlier Kroiseid series was found among the scraps of gold left in the sophisticated Lydian gold refineries in the Pactolus North section (a piece weighing 0.18 g.: G.M.A. Hanfmann, Sardis from Prehistoric to Roman Times, 40, 77, fig. 59-60; S.M. Goldstein, BASOR 228, 1977, 54ff., fig. 8). The refineries were in use by the early sixth century, but it is not known whether they were used in the Persian period (cf. A. Ramage in Sardis from Prehistoric to Roman Times, 37).

On numismatic grounds, the placing of the early series in the reign of Kroisos appears less likely but not impossible. In favor of the early attribution, it can be noted that the series is closely die-linked but very large, which suggests the brief but important issue one might expect for the royal coinage of Kroisos. Similarities to the preceding Lydian electrum coinage in obverse type and the technique of the double-punch on the reverse also speak for a continuity between Lydian royal issues. In addition, the innovation of a bimetallic system does not appear to suit the Achaemenid rulers who had no experience with coinage of their own.

The hoard evidence is not conclusive in establishing an absolute date but suggests sometime in the third quarter of the sixth century for the early issue. As discussed above,

the later series of Kroiseids, which were certainly struck by the Persians, provides a terminus ante quem of c. 510-500. A significant gap in time must be allowed between them and the earlier series, but this can only be roughly estimated and could be as brief as only ten years. For the earlier series of coins to belong to the reign of Kroisos, this gap must have been at least thirty to forty years, which seems quite long at a time when silver coinage was so important elsewhere. Naster's assertion that some of the earlier series of Kroiseids could fill the gap (P. Naster, Actes...CIN 1961, 32) is unlikely in view of the close die-linking, and they should be closely contemporary with the other early examples, as noted above.

The absence of early Kroiseids from mixed hoards is notable (only one silver half-stater, in the Demanhur hoard of c. 500, IGCH 1637), but the recent "Southwest Anatolia" hoard thought to have been found in Karia is of great importance in establishing a chronology (cf. Carradice, loc. cit., 79, no. 1; it appeared on the market in 1982 and is to be published by M.J. Price). It contained a large number of silver Kroiseids in all denominations from stater down to twenty-fourth along with a series of silver staters and fractions of identical denominations from an uncertain Karian mint, all with a lion's protome obverse and incuse reverse. In addition, there was a large quantity of primarily silver jewelry of distinctively East Greek type, including pieces stylistically very close to finds from Ephesos and Lydia, as well as rings and a Greek scaraboid

(cf. above, "Jewelry", "Rings", and "Gems"). The jewelry types had a long life and are not precisely datable, but the latest elements, especially the rings and the scaraboid, point to a date in the third quarter of the sixth century.

The Karian coins are the first issue of an unknown dynast at an uncertain city, and successive issues from the same mint, which survive in quantity and are attested in later hoards, were struck in the late sixth century and down to c. 470-460 (cf. below). The dating of these later issues is secure and strongly suggests that the date of the earliest issue cannot be before c. 530-520. They were surely meant to circulate in the same general area as the Lydian coins since they are on the same weight standard and use the same fractional denominations, and the two issues must be closely contemporary. If the two issues were exactly contemporary, the Kroiseids are unlikely to have been struck before c. 530-520. An alternative interpretation, although less likely, is that the Karian coins replaced the discontinued (presumably because of the Persian conquest) Lydian royal issue, accounting for their presence in the hoard along with Kroiseids, their similarity of denomination, and their success as a coinage for at least fifty years.

North Ionia, 550-500:

Phokaia:

Phokaia resumed coinage sometime in the third quarter of the sixth century with a large issue of hektai and some smaller denominations on a slightly reduced Phokaic weight standard (with a stater of just under 16 g.). The obverse types changed regularly, perhaps annually, but are always accompanied by a tiny seal, the emblem of the city. The reverses are square incuses, which can be rough but are divided into four parts by perpendicular lines. The reverse field around the incuse is flattened, and the flans are rounder, flatter, and more regular than those of the earlier electrum coins. The quadripartite incuse reverse is characteristic of many issues of Greek coinage but is not found until the second half of the sixth century.

F. Bodenstedt completed a near-corpus of the electrum coinage of Phokaia and attempted to arrange the issues in a relative sequence (cf. above). His work included the discovery that the gold content of the electrum was lowered after the first 28 emissions, and on this basis the first series was convincingly grouped. However, the sequence of issues within each broad group is not firmly established, since reverse die-links between obverse types have not been found. The changing obverse types of the first group include the heads of lions, bulls, rams, boars, calves, and griffins, as well as a negro, a helmeted warrior, and two fine-style females; the protomes of a winged horse, a bull, and a sphinx; a recumbent goat; and, of course, seals .

Devices were sometimes reused at a later date. In the fifth century, new obverse types were introduced, and human heads were preferred.

The date of the earliest issues of the revived series of hektai is difficult to determine with certainty. There is also a possibility that some of the small griffin-head fractions of Bodenstedt's Group 1, Emissions 1-2 (cf. Traite 1, pl. 4: 7-13), in view of their developed reverse types, may just precede the series of hektai early in the third quarter of the sixth century, although some others of Group 1 are certainly considerably earlier (cf. above). Bodenstedt dated Group 1 (excluding the earlier and unconnected Emissions 1-2) to c. 560-522 and Group 2 to c. 521-478. His criteria for dating are not clear and appear to rely mostly on the similarities of the early bull's protome hektai (Traite 1, pl. 4: 26) to the coins of Kroisos (Elektronmuenzen, 48), but such a comparison is far from precise, especially since Kroiseid types continued to be struck by the Persians until near the end of the sixth century.

Early hoard evidence is lacking, but later hoards provide a terminus from which to work backward. The Cesme hoard of c. 490 (IGCH 1184; Healy's date of c. 455 is too late; it was not discussed at all by Bodenstedt) contained at least eleven hektai of Phokaia and fifty-seven of Mytilene, as well as electrum half-staters of an uncertain Ionian mint (cf. below), silver drachms of Chios, and silver

didrachms of Klazomenai and Erythrai of the type associated with the coinage of the Ionian Revolt (cf. below), which help date the hoard.

The c. 490 terminus is useful in attempting to date the early Phokaian issues. The Phokaian coins in the hoard (Jameson Collection, no. 2276-2284; G.F. Hill, NC 1925, 12f., no. 4; types as Bodenstedt, Elektronmuenzen, Em 29-33, 35, 39, 45, and 46) [FIG. 387] span Bodenstedt's Group 2, with the latest falling near the end of the group (Bodenstedt, Elektronmuenzen, Em. 46: Jameson Collection, no. 2282). Before the latest coin in the hoard (Em 46) there were seventeen earlier emissions in Group 2 (if Bodenstedt's relative chronology is correct; there could be fewer) and twenty-six in group 1. If the latest elements of Group 2 are to be placed c. 490, than the beginning cannot be much earlier than c. 510 if the sixteen previous emissions are to be accommodated, perhaps as annual issues. Group 1 (except for the unconnected Emissions 1-2) probably belongs entirely in the sixth century but is not likely to have begun before c. 540 in view of the twenty-six emissions, their close stylistic relations, and the apparent continuity with Group 2. One of the best works of the early group, a finely detailed kore head (Em. 23) [FIG. 388], recurs in Group 2 (Em. 33, including Jameson no. 2276 from the Cesme hoard) but differs little in style. The same artist may have engraved some silver coins for Phokaia c. 500 (cf. below; the artist was discussed by Langlotz, Studien, 34f., pl. 3: 4-9, where a date c. 550 for the

earliest electrum coin and later for the silver coin is suggested). Bodenstedt (Elektronmuenzen, 53) dated the earlier example c. 532 and the later c. 512, but such a long gap between issues seems most unlikely. A date c. 520-515 is best for the earlier example, and the others can be only a few years later.

Several series of silver fractions were struck at Phokaia late in the sixth century. The earliest series depicts a seal (at c. 4g., probably drachms on the Phokaic weight standard; Traite 1, no. 512, pl. 13: 12; BMC Phocaea, 214, no. 78; one from the Taranto hoard of c. 490, IGCH 1874: E. Babelon, RN 1912, 20, no. 42-43, pl. 3: 9-11) or seal's head (fractions, cf. BMC Phocaea, 214, no. 79) on the obverse and a divided incuse on the reverse. Another series uses a griffin's head facing left as the obverse type (cf. Traite 1, no. 523, pl. 13: 14 and 523bis, pl. 13: 15; BMC Phocaea, 215, no. 82-83; SNG v. Aulock 2116-2117). They appear to be hemidrachms (c. 1.7g.) on a different weight standard, perhaps the same one used at Ephesos and Samos late in the sixth century. A slightly later silver issue has a griffin head with accompanying seal device and is stylistically closer to the electrum issues (Traite 1, no. 530).

Another series of silver coins is probably from Phokaia, but the attribution is not certain. The obverse shows a female head in a tight-fitting cap and the reverse a divided incuse (cf. Traite 1, no. 531, pl. 13: 18, and pl.

28: 16; no. 532, from the Sakha hoard of c. 500-490, IGCH 1639: ZfN 22, 1900, 246, no. 55, pl. 8: 4; SNG v. Aulock 1813-1818; SNG Copenhagen, Uncertain, 389-394; cf. also references below). They are most likely Phokaic-weight diobols (at c. 1.35g). A lydion containing a hoard of small silver coins of this type, as well as late Kroiseids and Persian sigloi, was found in the excavations at Old Smyrna in 1951 (IGCH 1166; E.S.G. Robinson, NC 1958, 187, pl. 15: 1-3, and NC 1960, 30, pl. 2: 6-14; Akurgal, Kunst Anatoliens, 155, fig. 106, for the pot and coins, and Alt-Smyrna 1, 113; H.A. Cahn, Knidos, 75, pl. 19: 2-3; Langlotz, Studien, 32, 35, pl. 2: 14, which is not from the Auriol hoard as stated) [FIG. 386]. The date of the context cannot be precisely determined but appears to be c. 500 or slightly later in view of the Persian sigloi in the hoard (J.M. Cook, JHS 72, 1952, 106; Akurgal's date of c. 540-520 is surely too early). The earliest examples, such as those in the hoard, are in extraordinarily fine style, but later issues are somewhat cruder (poorly published, but cf. Rosen, no. 596-597; smaller denominations have also come to light, cf. Muenzen und Medaillen, Basel, Liste 114, Jan. 1952, no. 29, 0.48g; and Rosen, no. 598, 0.111g.).

Robinson assigned the coins to Smyrna on the basis of the findsite of the hoard, but the close similarity in style to the electrum issue from Phokaia (Bodenstedt, Elektronmuenzen, 129, Ph 31; his date is c. 520, which may be slightly high)--probably engraved by the same artist (as demonstrated by Langlotz, cf. above)--may speak for a

Phokaian origin (J.M. Hemelrijk, BABesch 38, 1963, 43, noted that the example SNG Copenhagen, Uncertain, 393, is counterstamped with the letters pho and attributed the series to Phokaia). Furthermore, the same type of female head with cap, along with a number of other types, is seen on the small silver fractions struck by the Phokaian colonists at Massalia (A. Furtwaengler, Monnaies grecques en Gaule, 1978, 150-152; he also assigned the coins in question to Phokaia).

Mytilene:

A series of hektai related to those from Phokaia and on the same Phokaic weight standard were issued at Mytilene on Lesbos, but it began later than at Phokaia and probably not much before 500. The corpus was compiled by Bodenstedt along with the Phokaian coins. Later in the fifth century there was a monetary alliance between the two cities (cf. Bodenstedt, Elektronmuenzen, 29-31), but it is not known if the agreement was in effect at the beginning of the century. The coins from Mytilene also have variable obverse types, but unlike the Phokaian coins, the reverses also have types. The earliest issues are executed in an unusual technique which has the reverse type in intaglio rather than in relief. Examples of the early issues include obverse types of a bull's protome, lion's head, ram's head, winged boar protome, winged lion's protome, horse's protome, and gorgoneion. The reverse incuse types include a lion's head, cock's head, calf's head, bull's head, and head of Herakles

Traite 2, pl. 159: 3-26). The Cesme hoard (cf. above) contained only these early varieties, indicating the relatively late start of the series.

A series of billon (debased silver) coins in many denominations and with various obverse types were struck in conjunction with the electrum (cf. Traite 1, pl. 14-15, for the variety). Apparently at least two different weight standards were used (including staters of 15.74, 14.5, and 11g., some die-linked, probably the Phokaic and Persic standards; cf. Kraay, ACGC, no. 107-108; Asyut, 85, no. 614). Types include heads of a lion, gorgon, and two calves on staters, and similar types on the fractions. The series did not start until c. 500 and continued well into the fifth century in various issues.

Kyzikos:

Kyzikos struck another series of variable obverse coins, following their early series with fish types (cf. above). Full staters were regularly issued, always with accompanying hektai and occasionally smaller denominations (twelfths and twenty-fourths). The first few issues (cf. above) had two incuse punches on the reverse in the manner of the early series of Phokaian staters, but the reverse quickly changed to the single, quadripartite incuse. The incuses were first very rough and divided by two perpendicular lines but then became the quadripartite "windmill-sail" pattern used for the rest of the series.

The earliest issues of the third quarter of the century

continued the obverse fish types, but the more developed reverse patterns indicate the later date. Devices include the whole fish, just the fish's head or tail, or various combinations. The coins continue to be mostly small denominations (cf. v. Fritze no. 6-17; Traite 1, pl. 6: 7-16; Boston, no. 1387, 1390-1392; Rosen, no. 413, 416, 417-422, 424-426), but there are also staters (cf. Boston, no. 1393, two fish heads above a whole fish).

Although the fish devices probably survived until the end of the century, they were generally replaced in the last quarter of the century by a wide variety of changing obverse types, which are remarkably rich in style and iconography. Like at Phokaia and Mytilene, animal types were the most popular, but there is a considerably range of poses. Heads and protomes may be depicted in profile or frontally, and the animals may be seated, recumbent, or running. Fantastic animals and monsters are also common, including winged boars, bulls, stags, and even dogs, as well as chimaeras, griffins, sphinxes, sirens, and animal-headed men. Mythological types are also seen, such as Tritons, gorgons, satyrs, and Herakles. Human heads in fine style are also represented, including a fine bearded head, a janiform head, and several Athena heads. In the fifth century the types became even more diverse and eclectic.

In addition to the electrum coins there is a small issue of silver fractions (cf. H. von Fritze, Nomisma 9, 1914, 34-56). They are in small, uncertain denominations

(obols and smaller) and resemble the early electrum fractions in that a fish or fish head are again the usual types (cf. SNG v. Aulock 7323-7328; Rosen, no. 514-518, 520-521). Another example (Rosen, no. 519) shows a boar's head with a fish in its mouth, a type known on an early stater (cf. above). The coins need not, however, be contemporary with the earliest electrum and are more likely to be a stylistically conservative issue solely for local use dating from the end the sixth century. A large issue of silver fractions with the new types of a boar's protome obverse and lion's head reverse began c. 500 or slightly later and continued into the first half of the fifth century (cf. Asyut, 83, no. 610; the fish head staters from the Santorini hoard, IGCH 7, are probably Cycladic and certainly not from Kyzikos).

Lampsakos:

Lampsakos issued a series of electrum staters late in the sixth century (A. Baldwin, The Electrum Coinage of Lampsakos, 1914). They are slightly lighter than Phokaiac weight staters (c. 15.3g.) and appear to correspond to the unusual standard used at Chios (cf. J.P. Barron in Chios, 100). The obverse always has the protome of a winged horse. The reverse quadripartite incuse often has a distinctive pattern where only two of the four compartments, non-adjacent, are deeply incuse; the technique is seen on later silver coinage in northwest Asia Minor and Thrace.

The sixth century electrum issue is very short-lived.

Staters with the same obverse type are included among the Ionian Revolt coinage (cf. below) and are likely to represent Lampsakos, although they were probably not struck there. Silver coins with a similar obverse type were also struck, which probably began late in the sixth century, but there is no hoard evidence for dating. Later silver issues, beginning early in the fifth century, used a different device, a distinctive janiform female head (cf. Asyut, no. 611). The electrum staters were revived in the mid-fifth century with the same emblem somewhat modernized.

Uncertain Electrum Issues:

A number of electrum issues of Phokaic weight can be confidently assigned to northwest Asia Minor in the second half of the sixth century, although the specific mints in the area remain uncertain. Several hoards provide a variety of contemporary types, and some distinctive issues are represented by many known examples in different denominations. Most of the obverse types are crude or indistinguishable, but there are also a few issues in fine style.

One of the best attested issues has a distinctive, non-figural device. The reverse incuse is of the "windmill-sail" variety similar to the incuses found on the coinage of Kyzikos although somewhat deeper. The obverse is the same pattern but shown in relief, as if struck from the coin's own reverse. These coins are known in denominations from hektai (Traite 1, pl. 4: 1, 5: 34-36; Boston, no. 1781;

Rosen; no. 314, 319, 365-366; Oxford;) down to ninety-sixths (others in Oxford, including one plated with a silver core) and survive in large numbers. They continue to be found, usually in the vicinity of Canakkale in northwest Asia Minor and on the Thracian side of the Hellespont.

Several hoards from this vicinity have been found, including at least two said to be from the Hellespont in 1969 which are now in Athens (IGCH 1161, but more likely two separate hoards; Coin Hoards 1, no. 2; M. Karamesini-Oikonomidou, AAA 5, 1972, 176-180, fig. 1-2; ADelt. Chron. 26, 1971, 10-11, pl. 9; BCH 97, 1973, 253-255, fig. 5; also "some or all" of Muenzen und Medaillen, Basel, Liste 308, Jan. 1970; cf. Rosen, no. 308, 352, 359). One of the hoards in Athens (AAA 5, "B"), which contained at least twenty-seven coins mostly in small denominations with indistinguishable types, contained one hekte of the "windmill-sail" variety and perhaps an early fish-type coin of Kyzikos (AAA 5, fig. 2, upper right). The other hoard in Athens (AAA 5, "A"; described in detail in ADelt, but the attributions to mints, e.g. Miletos, Kos, and Ephesos, are certainly incorrect) contained twenty-two coins of small denominations with types that included lions' and other animals' heads in crude style as well as what appear to be crabs.

An especially important hoard from Anafartalar, on the Thracian peninsula just across the Dardanelles from Canakkale, contained thirty-eight electrum coins of various types and in denominations of hektai and smaller (Coin

Hoards 7, 1985, no. 6). It is in the Canakkale Museum and remains unpublished but includes examples of the "windmill-sail" variety, star patterns, and others (perhaps also the fibula variety, cf. above). The coins in this hoard, as well those in Athens, display developed characteristics and probably date no earlier than 550.

Another well attested series of Phokaic-weight hektai, without accompanying smaller denominations, has as the obverse type a head of Herakles in exceptionally fine style (cf. Boston, no. 1804-1807; Traite 1, pl. 5: 18; SNG v. Aulock 1942). They have been given to Erythrai on the basis of the obverse type, which is used at the city at a later date, but the attribution is highly unlikely in view of the known silver coins from Erythrai of the period (cf. below) and the Phokaic weight. The reverse began as a rough incuse but quickly became the quadripartite pattern with alternate raised and sunken compartments which is seen at Lampsakos (cf. above) and is typical for the Troad and Thrace. The mint should be located in that area and date in the last quarter of the sixth century. One example of the coin was overstruck on a hekte of the "windmill-sail" variety (Muenzen und Medaillen, Basel, Auction 41, 1970, lot 193, 2.54g.; a rare example of an electrum overstrike, a practice common in silver coins), suggesting a close proximity in origin and date between the two electrum issues.

A rare issue of small Phokaic-weight electrum coins with a male head with long hair on the obverse and a

quadripartite reverse incuse probably also belongs to this period, judging from the developed reverse pattern (twenty-fourth: SNG v. Aulock 7791=Rosen, no. 337). Both the style of the male head and the reverse pattern are closely paralleled on a series of small silver coins (SNG v. Aulock 1808-1812; SNG Berry 1039-1044; Rosen, no. 386-387; and an unpublished hoard of several hundred pieces in Oxford). The silver coins, however, are not of Phokaic weight and appear to be Persic (denominations of c. 0.89, 0.44, and 0.22--obol, hemiobol, and quarter-obol). Nevertheless, the electrum and silver coins may be from the same mint and are both likely to date c. 500.

Several unusual large denominations on the Phokaic standard dating to the late sixth century are known, and their origin appears to be in northwest Asia Minor or even Thrace. A unique stater in London (Traite 1, pl. 5: 17; BMC Ionia, 9, no. 42, pl. 2: 3; M.J. Price, Coins of the Macedonians, 1974, 3, pl. 1: 2), which has a centaur carrying off a female on the obverse and a quadripartite incuse on the reverse, was said to be from Lysimacheia in Thrace. Price suggested a local origin and is supported by the frequency of the type on Thraco-Macedonian silver coins, but the attribution is far from certain (the other electrum coin he cites, pl. 1: 1, is on the Milesian standard and unlikely to be Macedonian).

Several half-staters are also known, the fabric of which points to a late date in the sixth century. At least three examples of a half-stater with a gorgon obverse and

unusual patterned reverse in the form of a cross-shaped incuse are known (Traite 1, pl. 5: 20, Waddington collection; Boston, no. 1802; BMC Ionia, 13, no. 58, pl. 2: 14, and BMC Mysia, 94 note). The Waddington example is said to be "from the Dardanelles". Half-staters were also popular in southern Ionian around 500 (cf. below).

South Ionia, Karia, and Lykia:

Silver coinage became well established in south Ionia, Karia, and Lykia by the end of the sixth century, but the diversity of late electrum issues seen in north Ionia is not found. There was only a brief flurry of electrum coinage at the end of the sixth century and during the Ionian Revolt, the purpose of which is unknown. In most cases, the silver and electrum coinages were linked and probably contemporary.

A few isolated electrum issues on the Milesian weight standard resemble the issues of c. 600 but most likely belong to the late sixth century. A series of small electrum coins, mostly Milesian-weight forty-eighths are included in Weidauer's catalogue (Weidauer, no. 166-170; Rosen, no. 302-303), and although they are not discussed there, an early date is implied. They have obverse types of either a frontal or profile lion's head or a lion's paw and reverse types of a scorpion or facing lion's head in an incuse. The reverse technique speaks for a later date (cf. the scorpion in the reverse incuse of a Kyzikos stater, above), but more important are the close similarities to a

series of fractions in silver, which appear to be Milesian twelfths and smaller denominations (cf. Rosen, no. 402-404). They cannot be much earlier than the very late sixth century.

There are also some rare issues of hektai which resemble those in north Ionia but are struck on the Milesian standard. Examples include obverse types of a horse's protome (Boston, no. 1772; another in Oxford, ex Naville 4, lot 837), a running horse (Boston, no. 1773), and a seated lion (Boston, no. 1774). The fabric and quadripartite reverse incuses on all three types are similar and suggest a date late in the sixth century. The mint or mints are not known.

Miletos:

The Milesian lion-staters and accompanying fractions (cf. above) probably belong to the first half of the sixth century. Despite the importance of the city, subsequent issues cannot be found until the end of the sixth century, and these are primarily small silver coins. However, the Milesian silver diobols are among the most common and widespread Archaic Greek silver coins (Traite 1, pl. 11: 2-8; cf. B. Pfeiler, SNR 1966, 5-25; her relative sequence has been questioned by both Cahn and Price-Waggoner, cf. Asyut, 86, no. 616-620). The obverse shows the protome of a lion with its head turned back, the recurrent emblem of the city, and the reverse displays a distinctive floral-star pattern (on the motif, cf. "Jewelry", above); an apparently unique

larger denomination with a standing bull with head reverted is in Oxford (unpublished; 2.01g.) The diobols have been found in many hoards dating from c. 500-460 from Asia Minor, Egypt, and the Middle East (cf. Asyut, 86 n. 132; and add Coin Hoards 7, 1985, no. 15, 250+ examples, the Decadrachm hoard of c. 460 from Lykia, and a 1987 hoard of at least 600 examples), and they continue to be found frequently in Asia Minor. The earliest hoards indicate that they were struck before the Ionian Revolt, after which, in 494, the city was destroyed. As Price and Waggoner pointed out, all the issues are closely related, and the period of striking from 550-494 proposed by Pfeiler is surely too long. The date Price and Waggoner proposed, c. 510-494, is probably correct, although the coinage was revived shortly thereafter.

In addition to the silver coins, there is a rare parallel series of electrum coins, only a few of which have come to light (Boston, no. 1883; Rosen, no. 581; another in Istanbul?; an electrum-plated lead example in Paris, 1.20g., Traite 1, no. 63, pl. 2: 16; another is false: Archaic Coins. An Exhibition at the J. Paul Getty Museum from the Collection of Jonathan Rosen, 14, no. 16). The types and weight are identical to the silver diobols. The issue is an example of the revival of electrum coinage struck around the time of the Ionian Revolt and perhaps for the revolt. However, no electrum staters associated with the revolt (cf. below) can confidently be assigned to Miletos.

The Coinage of the Ionian Revolt:

A series of electrum staters of Milesian weight with various obverse types and quadripartite reverse incuses was convincingly assigned to the Ionian Revolt of 499-494 by P. Gardner (JHS 31, 1911, 151-160). The coins are generally of consistent fabric and style, but an attribution to a single mint, which is often suggested, is uncertain. The only certain mint presently known is Klazomenai (cf. below). The nine known obverse types include a winged horse's protome, a standing eagle, a cock, a sow, a horse, a winged boar's protome, a bull's protome, a sphinx, and an Athena head (cf. Traite 1, pl. 8: 10-12, 14, 16, 18; BMC Ionia, 7f., no. 32-38; Boston, no. 1809-1815; and Kraay, ACGC, no. 77, for the Athena head, formerly Jameson and now Gulbenkian collection, Lisbon); there is often an accompanying palmette or lotus symbol (cf. a new variety with lotus accompanying a winged boar's protome: Leu, Zurich, Auction 38, 1986, lot 110). The various types have been seen as the emblems of the cities in revolt, and attempts have been made to assign them to their respective cities. In certain cases, the attributions are convincing, notably the sphinx for Chios and the winged horse's protome for Lampsakos, since both cities struck their own electrum staters with the same device before the revolt. Most of the other attributions are less convincing--the eagle for Abydos, the cock for Dardanos, the horse for Kyme, the sow for Methymna, the bull

for Samos, and the Athena head for Priene. Abydos may have struck small silver issues before the revolt with an eagle as the obverse type (cf. Asyut, 84, no. 613), but no early coinage is known for Dardanos, Kyme, or Priene. The early fifth century coins of Methymna show a boar rather than a sow. Samos had an extensive early silver coinage (cf. below), and two of the Ionian revolt electrum staters with the bull's protome were said to have been found on the island (Kraay, ACGC, 30), but the device is unlike the contemporary silver issues.

The stater with the winged boar's protome obverse was plausibly given to Klazomenai since the same type was used on that city's early silver coinage, and the discovery of a die-link between a silver drachm and an electrum stater confirms the attribution (J.A. Dengate, AJA 72, 1968, 164; type as Traite 1, pl. 12: 10-12). In addition, the Vourla hoard of 1911 (IGCH 1167; R. Jameson, RN 1911, 60-68, pl. 1-2), which contained five Ionian Revolt staters, also contained twelve Milesian-weight silver drachms of Klazomenai (cf. Jameson Collection, no. 1491; SNG Delepierre 2578), and Vourla (present day Urla) is adjacent to the site of Klazomenai. The attribution of the silver to Klazomenai was not in doubt anyway, since the series continued after the Revolt and some issues are inscribed. Silver drachms of the same type were also present in the Cesme hoard (IGCH 1184; cf. above), the Asyut hoard (Asyut, 85, no. 615), and the Sakha hoard (ZfN 22, 1900, no. 26). The last hoard, datable to c. 500-490, confirms the early date of the silver

issue, which probably began just before or during the Revolt.

Also present in the Vourla hoard were twenty-one examples of an electrum hekte of Milesian weight with a bull's head as the obverse type (SNG von Aulock 7799; Rosen, no. 266). It is clear from their inclusion in the hoard that they are contemporary with the Ionian Revolt staters and were probably struck by one of the cities in revolt. Samos and Klazomenai have been suggested as mints but neither is a convincing attribution. A series of Milesian weight twelfths and forty-eighths with a calf's head may be from the same mint, but they were not present in the Vourla hoard (cf. Bodenstedt Elektronmuenzen, 183, E2, pl. 50; SNG v. Aulock 1784; Rosen, no. 277; Bodenstedt's attribution to Mytilene is highly unlikely in view of the weight and fabric).

Other Electrum Issues of c. 500:

A number of other Milesian-weight staters appear to be related to the Ionian Revolt coins, but their attribution is controversial. Until a recent hoard, only a few examples were known, including a stater with a pair of lions standing antithetically over a lotus blossom (London; Traite 1, no. 76; W. Wroth, NC 1896, 99, no. 22, pl. 7: 15, as "Asia Minor") and another with a cow and calf, again accompanied by a lotus (Munich; Traite 1, no. 77, pl. 3: 1). A hoard of electrum coins was found in 1974 in the vicinity of Abdera in Thrace (M.J. Price, Coin Hoards 2, 7f.), which contained

another example of the stater with the pair of standing lions (Price, ibid., no. 5=Rosen, no. 149) as well as a number of new types, including a kneeling bull with palmette (?) above (Price, loc. cit., no. 4=Rosen, no. 148) and a lioness (Numismatic Fine Arts, Los Angeles, Auction 18, 1987, lot 95) [FIG. 389]. The kneeling bull, lioness, and cow and calf staters all have two long, rectangular incuse punches on the reverse and may be from the same mint, but the stater with a pair of lions has a rough, square incuse. Smaller denominations of different types (unpublished) were also present in the hoard.

Early in the century Svoronos suggested a Thraco-Macedonian origin for many electrum issues (J. Svoronos, "L'Hellenisme primitif de la Macedoine", JIAN 19, 1919, 232), and although his views were colored by strong nationalism, he is at least partially supported by Price in his publicaton of the new hoard from Thrace. Florals similar to those accompanying the main devices on the electrum staters are seen on Macedonian silver issues, but they are also seen on the Ionian Revolt coins and are not distinctive enough to be specific to Thrace or Macedonia (cf. the interpretation of florals and rosettes as roses and solar symbols appropriate to Macedonia, M.J. Price, Coins of the Macedonians, 1974, 6, which is generally unconvincing). It is possible that electrum coins were issued in Thrace in view of the proximity to the cities in northwest Asia Minor, which were striking electrum coins in quantity, but it is

peculiar that the Milesian rather than the Phokaic weight standard was used. The previously known stater with antithetical lions in London appears to be from Asia Minor, and the series is perhaps better placed in Ionia late in the sixth century, where various electrum issues were current. Nevertheless, examples have found their way to Thrace.

Several issues of electrum half-staters on the Milesian standard--an unusual denomination--were also struck around 500. They are distinctive for having floral or patterned obverses rather than figural devices, but the variety in types and fabric indicate that several mints were active. The Cesme hoard (cf. above) offers the only clue to the date and origin of some of them. It contained at least eleven examples of three different types (Traite 1, pl. 3: 4-5; Jameson Collection, 2292, 2293, and 2589; SNG Delepierre 2605-2606; BMC Ionia, 2, no. 2; Rosen, no. 250), all of which are based on careful patterns of florals, rosettes, or cup-spirals. The fabric is also skilfully made, notably in the high relief of the obverse device, the flattened reverse side of the flan, and the very round flan. The hoard demonstrates that the types were current in Ionia around the time of the Ionian Revolt. Accompanying smaller denominations, not present in the Cesme hoard, were also struck (cf. Traite 1, pl. 3: 6-7; BMC Ionia, 4, no. 11).

Other Milesian-weight half-staters are similar in that they have patterned rather than figural devices, but the execution is much cruder, as is the technique (cf. Traite 1, pl. 1: 1, 5, 6; London, PCG, I.A.2 and I.B.1, the latter

unconvincingly attributed to Macedonia, M.J. Price, Coins of the Macedonians, 3, pl. 1: 1; Rosen, no. 251-252, the former attributed to Macedonia by Svoronos, loc. cit., pl. 16: 1, and D. Raymond, NNM 126, 1953, pl. 1h). The fabric, notably the flattened reverse flan with patterned incuse, suggests a relatively late date of issue, and the denomination and devices link the coins to the Ionian issues of c. 500 present in the Cesme hoard. Smaller denominations are also known (Traite 1, pl. 5: 31-32). A further unique example has a crude star-pattern as the obverse device and a reverse incuse made by a long, rectangular punch applied twice to make a cross-pattern (London; Traite 1, pl. 5: 30). Weidauer has seen the obverse device as stylistically closest to Late Geometric patterns on vases and jewelry (AK 27, 1984, 3-9, cf. "Jewelry: Geometric", above) and placed the coin c. 700, but the very advanced fabric of the coin and the similarity to the other coins in design and denomination speak for a date of c. 500.

Samian-weight electrum:

Some rare electrum staters are known which at c. 13.5g. are too light to be Milesian and coincide with a weight standard best attested at Samos. Two examples have a turtle on the obverse and two long, rectangular punches on the reverse (Paris, Traite 1, no. 78, pl. 3: 2; Rosen, no. 247). Another shows a boar on the obverse (Rosen, no. 248), and the third has merely a rough rectangular pattern (Rosen, no. 249; Hess-Leu, Auction 31, 1966, 444). All are likely to be

from the same mint in view of the similarity in fabric and reverse incuses. They are also likely to be relatively late in date, certainly in the second half of the sixth century, since the turtle appears to copy an Aeginetan silver stater. They may be related to the series of electrum-plated lead coins found on Samos and perhaps stuck by Polykrates (cf. above). Otherwise they should be located at another mint in southern Ionia.

Other Silver Coinage:

Many cities in Ionia were striking silver coins by the end of the sixth century, although not demonstrably before c. 530. However, silver coinage was relatively limited until the first quarter of the fifth century, when minting became very active. In addition to the northern Ionian mints discussed above, mints such as Miletos (cf. above), Ephesos, Teos, Klazomenai, Erythrai, Chios, and Samos, as well as some mints in Karia and Rhodes, were issuing coins. Denominations varied, although small coins were preferred at first, and several weight standards were used, reflecting either local traditions or trade routes. Unlike the electrum issues, the obverse types on the silver coins usually remained constant and were the emblems of their respective cities.

Samos:

One of the earliest mints producing silver coins was on Samos (J.P. Barron, The Silver Coins of Samos, 1966; Kraay,

ACGC, 36f.). At first the Milesian weight standard was used, and tetrobols with a lion's scalp on the obverse and incuse on the reverse appear to be the earliest issues. The lion's scalp, along with the ox, are both associated with Hera and became constant emblems on the city's coinage. Other early denominations include drachms and smaller coins, and in addition to the lion's scalp, devices include a winged boar's protome, a lion's head, and a ram's head.

The first issues appear to date around 530 during the reign of Polykrates, but shortly afterward the weight standard was changed to the local Samian one (with a tetradrachm of c. 13.5 g.). More small denominations were produced in the last quarter of the century, and the tetradrachms with lion's scalp on the obverse and ox's head within an incuse on the reverse were introduced either c. 499 to correspond with the Ionian Revolt (Barron) or after the return of the Samians from exile at Zankle c. 488 (Asyut, 90). Coins were struck by the Samians at Zankle in the years c. 494-490 (cf. Barron, op. cit.; Asyut, 27-28; W. Schwabacher, Wandlungen. Festschrift E. Homann-Wedeking, 1970, 107-111) with the obverse type of a lion's scalp on a raised disc or shield (a variety sometimes seen on the early Samian tetradrachms as well) and the reverse type a ship's prow. The use of tetradrachms at Zankle suggests that they were previously struck at Samos, as Barron believed, and the hoard evidence cited by Price and Waggoner does not speak for the later beginning date (c. 489/8). However, they are probably correct in eliminating the thirteen year break

between the issues of Barron's Group I and II tetradrachms. The tetradrachms more likely began during the Ionian Revolt and continued straight through the fifth century, despite some Samians fleeing to Zankle.

Chios:

Chios also issued an extensive and relatively early series of silver coins following their mid-century electrum issues (A. Baldwin, AJN 48, 1914; Asyut, 87-88, and note 139 for the early hoard evidence). The electrum staters are of Milesian weight, but the silver didrachms are on a distinctively Chian standard at just over 8g. (not the c. 7.8 as often cited, cf. Kraay, ACGC, 35). The hoard evidence places a number of issues before 500, but they need not begin before c. 530. The seated sphinx is always the obverse type and remained the emblem of the island for centuries.

Teos:

There is an extensive issue of coins from Teos which is distinctive for being struck on the Aeginetan weight standard, otherwise not used in Ionia (J.M. Balcer, SNR 47, 1968, 5-50; Asyut, 86-87). The standard was frequently employed in Karia, Rhodes, and the Cycladic islands and suggests that the coins of Teos were meant to circulate along the same trade routes. The obverse type is always a seated griffin facing right, while the coins of Abdera in Thrace, founded by Teos in the sixth century, have a griffin

facing left. The earliest issues were drachms, hemidrachms, and quarter drachms, and slightly later--around 500--staters were introduced. The hoard evidence has been scanty (two major hoards from Ionia containing only coins from Teos have been found in recent years but are poorly recorded; the first contained only the earliest series of drachms and smaller denominations and the second staters of the mid-fifth century), but one drachm present in the Demanhur hoard (ZfN 37, 1927, no. 104=Balcer, loc. cit., XX, 42) assures a beginning date before 500 for the issue. Balcer's date of c. 540 for the earliest issues is too early, and Price and Waggoner suggested a date of c. 530.

Ephesos:

The early coinage of Ephesos is confined to small issues of drachms (cf. B. Head, On the Chronological Sequences of the Coins of Ephesus, 1880; now out-dated). They were first on the Milesian standard (drachms of 3.5g.) and then changed to what appears to be the Samian weight standard at the beginning of the fifth century (drachms of c. 3.3 g., as Traite 1, no. 439, pl. 11: 16). The obverse shows a bee, first in profile (Traite 1, no. 435-436, pl. 11: 13-14, and no. 436bis, from the Sakha hoard, ZfN 22, 1900, 249, no. 65, and another from the Mit Rahineh hoard; Head, op. cit., pl. 1: 5; BMC Ionia, 48, no. 5) and then viewed from above (Traite 1, no. 437-438, pl. 11: 15). Their presence in two Egyptian hoards of c. 500 provides a terminus ante quem, but they are not likely to be much

earlier. The bee, an attribute of the Ephesian Artemis, remained a constant symbol on the coins of Ephesos.

Erythrai:

Erythrai issued Milesian-weight drachms and accompanying fractions with a horse and rider as the obverse type and a reverse incuse (Traite 1, no. 480-481, pl. 12: 10-11; BMC Ionia, 119, no. 15-17; Boston, no. 1834 and Rosen, no. 574-575 for diobols). They are very similar in weight and fabric to the coins of Klazomenai struck c. 500, and the two types were found together in the Cesme hoard (cf. above), demonstrating their contemporaneity. A fifth century issue of coins from Erythrai revives the obverse type but adds a rosette and inscription to the reverse, confirming the attribution of the earlier series.

Rhodes and the Islands:

The three major cities on Rhodes--Lindos, Kameiros, and Ialysos--all struck coins very late in the sixth century and throughout the first half of the fifth (for the revised chronology, cf. Asyut, 93-96, and J. Spier, "The Early Coinage of Karia and Rhodes", NC, forthcoming). Kameiros was the most prolific, striking a series of Aeginetan-weight staters with the fig leaf as the constant emblem and an incuse on the reverse (Traite 1, pl. 20: 1-4). Lindos struck Milesian-weight staters with a lion's head as the obverse type, which hoard evidence shows were contemporary with the Kameiros coins (Traite 1, pl. 20: 16; cf. J. Spier, loc. cit.). The staters from Ialysos differ from the other

issues in that they have both obverse and reverse types and were first struck on a local weight standard with a stater of c. 15g., although then replaced by Milesian-weight coins. The obverse type is always a winged boar's protome and the reverse an eagle's head (Traite 1, pl. 20: 14). The hoard evidence is lacking, but the coins are probably contemporary with the others from Rhodes, spanning the period c. 510-460.

The nearby islands of Kos and Karpathos also issued coins, but the dates are less secure. Karpathos struck staters, thirds, and sixths on the Milesian standard (Traite 1, pl. 19: 8-10; cf. Asyut, 93, no. 689-692), which are very similar in fabric to the coins of Kameiros and Lindos. The issue was briefer, however, and confined to the years c. 500-480. The famous issue of discus-thrower triple-sigloi from Kos did not begin until c. 480 (cf. J.P. Barron, Essays Presented to Stanley Robinson, 75-89; Asyut, 93f.), but a series of small coins with crabs on the obverse and reverse incuse are probably from Kos and date to the late sixth and early fifth centuries (cf. J. Spier, loc.cit.).

Karia:

The earliest coins in Karia appear to be the Persic-weight staters with a lion's protome on the obverse that were found together with silver Kroiseids and jewelry in the recent Southwest Anatolia hoard (cf. above; for the style, Traite 1, pl. 19: 22). The beginning of the series is not likely to be later than c. 530. The mint is uncertain, and

Robinson's suggestion of Mylasa remains only tentative (E.S.G. Robinson, NC 1961, 114, no. 37). A Karian city under a local dynast with links to Lydia and the Persian Empire seems assured, however, from the evidence of the new hoard and the style of the lions, which has a non-Greek appearance. The lengthy series continued to c. 470-460, and the last issues copy the style of local Greek coins (cf. J. Spier, loc. cit.).

Most other Karian mints struck coins on the Aeginetan standard. Examples of issues with variable obverse types imitating contemporary Greek coins, along with others with the ubiquitous lion's protome, were found in Cycladic hoards of c. 500 or slightly earlier (IGCH 6-8; cf. J. Spier, loc.cit.), demonstrating how the coins may have traveled on their way to Egypt or the East. These issues date little before 500, and most others begin early in the fifth century.

One other Karian coin is frequently found in hoards in Egypt as well as in Karia and must date from just before 500. It is a small coin weighing about 2g. (probably an Aeginetan diobol) with a ketos as the obverse type and an unusual circular incuse with incurving hatched border on the reverse (Traite 1, pl. 28: 23, 25; cf. Asyut, 92, no. 687-688, and notes; usually incorrectly identified as a griffin head, cf. J. Boardman, AK 10, 1967, 21 n. 66, for the correct attribution). Larger denominations have recently come to light, and a partial inscription suggests that Kindya

under a local dynast was the mint (cf. J. Spier, loc.cit.).

Of the Greek cities in Karia, only Knidos, nearby Chersonesos, and perhaps Iasos were striking coins in the Archaic period (H.A. Cahn, Knidos, 1970). Knidos struck a series of small Milesian (?) weight fractions (Traite 1, pl. 18: 12) and then a long series of Aeginetan drachms. The types were always a lion's head or protome on the obverse and the head of Aphrodite on the reverse. The design for the coin appears to have been inspired by the first Athena head coins of Corinth, which are now thought to have been struck c. 500 (cf. Cahn, op. cit., 74; Asyut, 91; J. Spier, loc.cit.), and Cahn's starting date of c. 530 for the series must be too early. The coinage of Chersonesos closely paralleled the coinage of Knidos but ended by the mid-fifth century (Traite 1, pl. 18: 18-19). The obverse type is again the lion's head or protome, but the reverse shows the head of an ox. A brief issue of Aeginetan-weight drachms depicting a boy riding a dolphin may be from Iasos (Traite 1, pl. 18: 1-2; cf. Spier, loc. cit.), since the Hellenistic coinage of the city uses the same type.

Lykia:

The Lykian dynasts issued an extraordinarily extensive series of coins during the fifth century, notable for its diversity of types and eccentric minting techniques (cf. O. Morkholm, JNG 14, 1964, 65-76; J. Spier, BAR International Series 343, 1987, 29-37). Boars were especially popular as an obverse type early in the series. The series belongs

entirely to the fifth and fourth centuries except for one unusual issue which may belong to the late sixth century. Two varieties were struck, one with a lion's head copied from a Lydian electrum third-stater (cf. Traite 1, pl. 28: 19; SNG von Aulock 4041; Rosen no. 681) and the other with a crude boar's head (cf. Rosen, no. 682). Third staters with a bull's head may also belong to this series (Traite 1, pl. 28: 22). A recent hoard contained both varieties (cf. Leu, Zurich, Auction 38, 1986, lot 125-126).

Conclusions: Coins and Regional Styles:

The attributions and chronology of the early East Greek coinage established through reasonably secure numismatic methods allow a re-examination of the style and iconography of the various issues. The most significant aspects that emerge are the diversity of types and styles present on the earliest electrum coins; the recurrence of some of these types on other coins throughout the sixth and into the fifth century; the new variety of types and styles introduced on the electrum coins of the late sixth and fifth centuries; and the stylistically conservative nature of some devices, especially on silver coins.

The coins found at Ephesos and the others related to them, all minted in Ionia and Lydia c.600, present a variety of types unparalleled in the other East Greek arts of the period. Although technical developments in the early electrum series can be noted, the often proposed belief that

the devices display a stylistic progression (cf. E.S.G. Robinson, JHS 71, 1951, 164ff.; Kraay, ACGC, 21f.) is not supported by the numismatic evidence. The many devices, although not always skilfully engraved, are all closely contemporary and must have been drawn from an already established repertory of emblems. Some of the earliest coins were already of fine, accomplished style, and others were merely marked by striations or were even typeless (cf. Group 1, above), reflecting the abilities of the engravers or sophistication of the mint. The difficulties in mastering the entirely new medium of die engraving should be taken into account in any analysis of style.

Emblems identical to those on the coins are later seen on engraved gems and rings serving as personal signets (cf. above, "Engraved Gems", for a discussion of the types), and the similarity in function between personal seals and coin devices has often been noted (cf. M. Balmuth, Actes...CIN 1973, 27-30). The emblems on the coins denoted the official nature of the issues and indicated under whose authority, whether of the government or of a specific official or "moneyer", the coin was struck (the significance of the changing types, such as those on the early electrum coins, later Phokaian and Kyzikene coins, and the Athenian Wappenmuenzen, as well as the accompanying symbols frequently found on various Archaic silver issues, has been debated; cf. A. Furtwaengler, SNR 61, 1982, 19-24; and J. Kroll and N. Waggoner, AJA 88, 1984, 331 n. 41, for a discussion and summary of the literature). The inscription

on the famous coin of Phanes (above, Group 5; Weidauer, no. 39) reads phanes emi sema, specifically referring to the device as a sema, or personal sign, and making clear that the coin was struck on the authority of Phanes, whoever he was. The formula recurs on early hard stone gems of the mid-sixth century (cf. "Engraved Gems", above).

Although there appears to be a close functional connection between coins and seals, the use of engraved gems and rings in Greece did not become widespread until the second half of the sixth century, well after the introduction of coinage (cf. above, "Engraved Gems"), and even then there is little evidence to demonstrate the sharing of techniques or artists between the two media. Seal usage in East Greece was very rare before the mid-sixth century, and there are no seals known from that area that could have inspired the coin types. The only two major series of seventh century seals were the Peloponnesian ivories found at Sparta, Perachora, and the Argive Heraion and the Island Gems probably made on Melos or Paros, neither of which was common in East Greece (cf. Boardman, Island Gems, 102). However, the rich iconography of these gems again demonstrates the existence of a wide range of emblems already well established at a relatively early date.

It is unclear, however, from where these emblems were derived. The earliest examples of similar emblems are found on Protocorinthian pottery, but there is little that is comparable in East Greece, since the Wild Goat style pottery

in use at the time seldom admitted such types, and so little other figural material survives. Shield devices may have served a similar function, that of personal identification, and they are perhaps the best example of that usage at an early date. A range of shield devices is seen already on Protocorinthian vases (for example the Chigi vase) of the mid-seventh century. East Greek representations are rare, but devices on votive shields in bronze and terracotta are known (cf. "Bronzes: Votives", above). A further connection is demonstrated by some early electrum coins with their obverse type on a raised disc, which may represent a shield (cf. above).

The royal Lydian coins, however, may have been inspired directly by Near Eastern glyptic. Robinson (JHS 71, 1951, 159-161) noted the close stylistic similiarities of the lions' heads on the Lydian coins with Near Eastern types, especially those from near-contemporary Assyria (cf. Akurgal, Alt-Smyrna 1, 114ff. and notes for the Near Eastern prototypes). The lions' heads on the coins have a square shape, a mane stylized in a chevron or "herring-bone" pattern, a triangular eye, and the distinctive "nose wart" with radiating strands of hair (cf. also H. Cahn, Knidos, 90; Weidauer, 99-104). The similarities in the details of stylization to lions on Neo-Assyrian cylinder seals (cf. Robinson, loc.cit., 161 n. 42) is especially striking.

Relations between Lydia and Assyria in the seventh century are well attested, and there are several notable similarities between the Lydian coins and the Assyrian royal

seal, which would have been familiar to the Lydian kings through official correspondence. The late Assyrian royal seal was in use for several generations, with extant impressions dating from the ninth to the late seventh century, and although the inscription naming the king was changed, the type remained the same--the king fighting a standing lion (A.J. Sachs, Iraq 15, 1953, 167-170). The constant lion's head on Lydian coins was surely an official emblem of the king and may well have been inspired by the lion on the Assyrian seal. Furthermore, the Assyrian seal was always a circular stamp, rather than the more common cylinder seal, which in itself anticipates the technique of coinage. It should be noted, however, that although the derivation of the Lydian coin type from Assyrian seals is plausible, if not probable, the same lion's head type was already well established in Greece by the last quarter of the seventh century and is seen not only in Corinthian vase painting (cf. H. Payne, Necrocorinthia, Chapter 7; Boardman, Greeks Overseas, 78 and n. 176) but on East Greek Wild Goat pottery as well (cf. the particularly similar lion on a late seventh century oinochoe from Old Smyrna, Akurgal, Alt-Smyrna 1, 116, pl. 38; H. Walter, Samos 5, 76f., no. 612, pl. 124; Weidauer, 102, cites the oinochoe as evidence for the early date of the Lydian coins).

In most cases, the style of the devices on the earliest Greek electrum coins of c. 600 is not distinctively East Greek. Most typically East Greek traits, such as unusual

iconography, or distinctive facial types or representations of animals, are not seen until the end of the sixth century. The more accomplished devices on the early coins, such as the two confronted cocks, various animals' protomes, winged horses, rolling horses, and facing lions' heads, display no special East Greek characteristics and are found in similar style in other parts of Greece, for example in vase painting from Corinth and Athens. Some unusual types, such as the double-gorgoneion, which reappear on late Archaic gems (cf. "Engraved Gems", above), may be East Greek inventions but are merely varieties of established types. Only a few devices appear to be derived from contemporary East Greek art in other media, for example the frequent griffins' heads or the grazing stags of the Phanes-series and the walking griffin with X-shaped filling ornament in the field (Rosen collection, unpublished), both of which look as if they could have come from a Wild Goat style frieze.

Human heads are rarely represented in early East Greek art, but several early coins of c. 600 provide examples securely attributable to Ionia. Unfortunately they are quite rare, highly diverse in style, and not easily classified. A unique third-stater (Weidauer, no. 171) shows the large, oval-shaped head of a bearded man with outlined eye, bulbous nose, small, straight mouth, and hair falling in three long tresses in back; he may be holding his hand to his forehead. The style of the head is very crude and extremely difficult to classify. Weidauer had to resort to comparisons to figures on a Protoattic vase (Weidauer, 80-

83, pl. 25), but any connections between Protoattic style and East Greece are remote, if they exist at all. Comparisons between coin types and larger media such as vase painting and sculpture is hazardous, especially in the early stages of coin engraving, and features such as eyes, noses, and chins are likely to have been accentuated in the small area of a die (cf. J. Boardman, CincClassStud 5, 1985, 93). The coin is more likely a primitive attempt to depict a human figure without the benefit of well established prototypes of the sort that clearly did exist for animal types. Similar difficulties in finding parallels apply to the other coins as well. Male heads on other coins (Weidauer, no. 190 and 191-194; another in the Rosen collection, unpublished) also have large eyes, noses, and chins, and Weidauer's comparisons to ivories and vase painting (Weidauer, 91-94) again appear fortuitous, more likely reflecting the primitive stage of development of the medium than an established style.

Another series of coins, which was probably represented in the Ephesos deposit (cf. above, Group 3; Weidauer, no. 175-177), depicts a winged and bearded male figure. A recently discovered stater of the type (Rosen, no. 246) shows that the figure holds nothing in his hands and is thus not a posis theron, as Weidauer suggested (Weidauer, 89-90). Although Weidauer's comparisons to seventh century Peloponnesian ivories and Protocorinthian vase painting are not compelling, a further comparison can be made to a

seventh century Peloponnesian ivory seal from Perachora with a very similar winged figure (Perachora 2, 416, A32, pl. 176; G.M.A. Richter, Engraved Gems, no. 76). Winged figures of this sort maintained their popularity for a considerable period of time, and no firm chronological conclusions should be drawn. The coin should be dated c. 600 on the basis of its fabric and inclusion among the Ephesos finds. Significantly, the iconography is not distinctively East Greek and may have been derived from Peloponnesian models.

Two final series of coins with human heads belong to more clearly definable styles. The first (Weidauer, no. 172-173) includes twelfth-staters with facing head in Daedalic style, with triangular face and wig-like hair. Weidauer's analysis and classification of the two coins in this group (Weidauer, 84-86), neither of which is more than 7 mm. in diameter, are clearly too precise, as is Jenkins's classification of the stages of Daedalic style (as already noted by B. Ashmole in his review, CR 50, 1936, 233ff.). It should be sufficient to note that the coins do indeed belong to the Daedalic style and are rare examples of the style's existence in Ionia. Although objects in Daedalic style were produced on Rhodes, including gold jewelry from the Orientalizing workshop (cf. "Jewelry"), objects in the style are not well attested in Ionia (for a discussion of Daedalic style in East Greece, cf. "Summary", below). However, it is likely that the style continued until the end of the seventh century, from which time these coins must date.

The other coin type is known only from the unique

twelfth-stater found at Ephesos (Weidauer, no. 174; Hogarth, 86, no. 75, pl. 2). The profile head has a long, sharp nose, a large, elongated eye, a distinctively shaped ear which is distended by an earstud, and a row of curls across the forehead. Weidauer's comparisons to Oriental prototypes, and especially to the ivories from Ephesos (Weidauer, 86-88), are in this case generally convincing. The observation that the shape of the ear is paralleled on ivories is significant and was followed by Akurgal (Alt-Smyrna 1, 118). Precise dating on stylistic grounds is not possible, but its presence at Ephesos establishes a date of c. 600. The style can be viewed as local Ionian.

Various representations of lions are especially distinctive of East Greece, and they are the most popular type found on coins. The Greek preoccupation with lions, inspired by their own earlier traditions and their renewed contact with the East, is also encountered among the Lydians, whose frequent references to lions in their legends and depiction of lions in their art lead Hanfmann to coin the word "leontomania" (cf. G.M.A. Hanfmann and N. Ramage, Sculpture from Sardis, 1978, 15, 20-23). Lions are the main device on the coins of Lydia, Karia, Miletos, Samos, Lindos, and Knidos, as well as on a number of early electrum coins from uncertain Ionian mints. They also appear frequently on the coins of Phokaia, Mytilene, Kyzikos, and Lykia.

The popularity of lions as decorative or emblematic devices lead to a great diversity of varieties in Greece.

Neo-Hittite, Assyrian, and Egyptian lions have been cited--no doubt correctly--as prototypes for the various Greek examples, but there are so many interrelated varieties in Greece, even as early as the mid-seventh century, that the immediate means of transmission are very seldom apparent. Chronological deductions based on the various "styles", frequently made in reference to the coins, are difficult to substantiate, especially in view of the demonstrable contemporaneity of different lion types on coins and the long life of some types. Nevertheless, it is among the lion types that several distinctively East Greek styles can be found.

A careful classification of the different varieties of lions (cf. the brief summary of the literature, Gabelmann, 7-9) would be useful but difficult in view of the many variations. Some studies of lion types, most notably by Akurgal (cf. Alt-Smyrna 1, 114ff. and notes), have demonstrated links to Oriental prototypes, including Neo-Hittite, Assyrian, and Egyptian. Fundamental studies that considered East Greek lions include W.L. Brown, The Etruscan Lion (1960), which isolated an "Ionian" type of lion in the sixth century, and especially Gabelmann (op. cit.), which proposed some chronological and geographical classifications for Archaic lions based on sculptural types and their Oriental forerunners. However, the many variations of lion types in vase painting, glyptic arts, and especially coins demonstrate that the problems in classification are very complex.

The style of the lions represented on coins has drawn a considerable amount of critical attention. Robinson (JHS 71, 1951, 159-163), Akurgal (esp. Alt-Smyrna 1, 113-119), Cahn (cf. especially Knidos, 89-96, also 108-112, 130-135), Weidauer (Weidauer, 94-107), and others all have cited representations of lions in other media, including vase painting, sculpture, ivory, and metalwork, both Greek and Eastern, as comparisons to the coins in attempts to classify and date the styles. The results have been remarkably divergent, with dates ranging throughout the seventh and sixth centuries, and the Oriental influences have been more apparent than the local Greek styles.

Certain characteristics have been singled out as indicative of a specific date or style. One example is the "nose wart" on the lion, for which much significance has been claimed. Robinson (JHS 71, 1951, 159-161) discussed the "nose-wart" in depth, especially its Eastern origins, stating that the feature was "particularly important for the chronology", although it is difficult to see how any precise chronological conclusions could be drawn. Following Robinson, both Weidauer (Weidauer, 100ff.) and Akurgal (Alt-Smyrna 1, 114f.) saw this stylization as important in determining the chronology and accept an early date. However, the numismatic evidence makes it clear that this particular stylization was used throughout the sixth and well into the fifth century. The Lydian coins of the first half of the sixth century continue the late seventh century

style. The lions on the early silver and gold Kroiseids do not have the "nose wart", but the later Achaemenid issues of the late sixth century do. The lions' heads on the silver coins of Lindos have this characteristic, which helped prompt Cahn to propose the very early date of c. 560 (Charites. Festschrift E. Langlotz, 1957, 22; an early date on stylistic grounds was proposed also by Akurgal, Alt-Smyrna 1, 118), but numismatic evidence demonstrates that the coinage of Lindos did not begin much before 500 and continued in an unchanging style until c. 460 (cf. above).

A good example of the problems faced in classification is seen in the often discussed lion's head of fine style on a series of Phokaic-weight staters (Group 12, above; Weidauer, no. 180-185) [FIG. 390]. The lion has jaws gaping in a U-shape, with bared teeth and lolling tongue; the ruff is wulst-like around the front of the neck; the head, nose, and eye are all rounded and large, almost bulbous; and the ear is folded. Weidauer cited Neo-Hittite and Assyrian influences and stressed the comparison of this lion's head to the aryballos in the shape of a lion from Sparta (Weidauer, 94-97; pl. 29: 2 for the aryballos=Payne, Necrocorinthia, 170f., fig. 72=Gabelmann, no. 7, pl. 2: 3-6; Weidauer also cited the lion's head on a hekte, which although somewhat similar in style does not in fact belong to the series of staters, and entirely unconvincingly compared the profile to a lion on a Protoattic vase, cf. 98f., pl. 29: 3-4; the coin probably belongs well in the sixth century, cf. above). She concluded that since the

Spartan aryballos is datable to c. 660, the coin cannot be any later. Oddly, she saw stater no. 185 as of slightly different style, although again with strong Neo-Hittite characteristics (Weidauer, 97). The head and features are slightly less rounded, giving the animal a somewhat fiercer look, and the treatment of the mane is different, utilizing the herring-bone pattern seen on Lydian and other coins. However, the style is very close to the others, and there can be no doubt that this stater belongs with the others, as she acknowledged. The coin is from the same mint and of the same date, and any stylistic differences must be ascribed to a different engraver's hand.

Akurgal reasonably rejected Weidauer's comparison with the Spartan aryballos on the grounds that the aryballos is entirely Neo-Hittite in conception and does not admit the Assyrian elements (notably the folded ear and stylization of the eye) found on the coin (Alt-Smyrna 1, 117f.), and he saw a later date, c. 630 (however, in Kunst Anatoliens, 278, fig. 241, he dated the stater to the first quarter of the sixth century and saw "Hittite-Aramaean" influence). However, in another work (Ancient Civilizations and Ruins of Turkey, 1983, pl. 43) Akurgal juxtaposed pictures of the stater and a marble lion from the vicinity of Smyrna dating from the third-quarter of the sixth century (Izmir Museum 5258, almost identical to the less well preserved lion, Izmir Museum 328=Kunst Anatoliens, 279, fig. 246-247=Gablemann, no. 126, pl. 25: 1) [FIG. 391]. Although the

comparison is not explicitly made in the text, the comparison is very good, since the same nose, eye, folded ear, gaping jaw, and mane are seen. Gabelmann saw the Smyrna lion as an early example of his Ionian late-Archaic type (Gabelmann, 91ff.). An early sixth century date for the coins and a localization in North Ionia are strongly suggested on numismatic grounds (the fabric and weight), and these conclusions agree with Gabelmann's classification of the marble lions. Both lions were found in the vicinity of Smyrna, and fragments of large limestone lions in a very similar style datable to c. 600 have been found in the excavations of the Athena temple at Old Smyrna (cf. Akurgal, Alt-Smyrna 1, 100f., pl. 127-130). Rarely do coin types accord so well with sculpture.

Another example of a local lion type is found at Miletos, where the attribution of the coins is reasonably secure (cf. Group 6 and "Coinage c. 600-550: Miletos", above). By c. 600 a recumbent lion with its head reverted is adopted as the constant emblem of the city. The earliest examples (Weidauer, no. 128-130) are summary in style, and only the gaping jaw and bristling mane on the back of the neck are distinctive characteristics. In the first half of the sixth century, a more detailed series of staters are issued (Weidauer, no. 126-127), on which the lion, in the same pose, now is more finely modelled and is most notable for its heavy, round mane. The forepart of a lion in very similar style is employed on the extensive series of Milesian silver diobols of the late sixth and fifth

centuries. The heavy, round mane and the shape of the face are reminiscent of a distinctive class of marble lions found at Miletos and Didyma, which are classified as Egyptianizing by Gabelmann (Gabelmann, 84-90) and date from the second quarter to the end of the sixth century. The Egyptianizing pose of the lion, who lies on his side, is not seen on the coins, but the head of the lion is similar and remarkably unlike the other Orientalizing varieties usually seen in Ionia. The similarities probably reflect the popularity of a local lion type that served as an official symbol of the city.

In the mid-sixth century, the Lydian lion type was revised for the new series of silver and gold Kroiseids, on which a lion's protome faces a bull's protome. The rare electrum staters with lion and bull back-to-back (Weidauer, no. 133) show a lion with transitional traits, still having the herring-bone ruff and nose wart, which are abandoned on the Kroiseids (except for the brief first issue, cf. above), but with a rounder, more modelled head than on the previous series of electrum thirds.

A cruder version of the Lydian lion was employed on the early silver staters of an uncertain but important Karian mint, depicting a lion's protome, usually with a linear device engraved on the shoulder in a non-Greek, Anatolian fashion (cf. above). Soon afterwards, late in the sixth century, the design was changed, and the lion's protome was given a distinctive linear stylization in the face and

shoulder-joint typical of Eastern work; again the linear devices are found on the shoulder. The last issues of the mint, c. 470, discontinued the Eastern style lion and adopted an entirely Greek type copied from the coins of nearby Knidos and Chersonesos.

The new, purely Greek-style lions' heads seen on many coins of the late sixth and fifth centuries, as Cahn has noted, developed by the end of the sixth century and were current throughout East Greece in many different media, including sculpture, vase painting, gem engraving, and coins (H.A. Cahn, Knidos, 93-96; Charites. Festschrift E. Langlotz, 22-23). The lions on coins of Lindos, Knidos, Samos, Phokaia, Mytilene, and Kyzikos are all examples of the new style, derived from earlier Ionian types. There are in fact a number of new, interrelated varieties introduced late in the sixth and early in the fifth centuries, but their precise place of origin and pattern of development are entirely unclear. Cahn's view of a chronological progression among the coin types (for example the influence of Lindos on the coins of Knidos and Cyprus) is not supported by the numismatic evidence, and the great variety of closely contemporary (as shown by the die-links) lions' heads on the coinage of Knidos demonstrates the difficulty in isolating the different types of the early fifth century. While the coinage of Knidos shows the variety of styles possible, the coinages of Miletos and Lindos illustrate how a city could select a distinctive, perhaps even idiosyncratic, style to represent the official local emblem.

The tendency of most Archaic Greek silver coinage was to unchanging, conservative types, probably for a variety of reasons, including the reflection in a civic emblem of some aspect of the city's tradition and, perhaps most importantly, the guaranteeing of the quality of the city's currency through stable, unchanging coin types. The coinage of Athens best exemplifies these traits. The tetradrachms depicting the city's patron goddess Athena and her symbol, the owl, deliberately maintained the Archaic style from their introduction in the last quarter of the sixth century until late in the fifth century and achieved an international reputation for quality. In East Greece, nearly all silver coinages introduced in the late Archaic period maintained unchanging types.

Only the frequently changing obverse types on the electrum coinage of the late sixth and fifth centuries admit new and distinctively East Greek devices. In most cases, as with the coins of Kyzikos in the north and the the Ionian Revolt in the south, the devices appear to have been drawn from an already existing repertory of emblems and are comparable to contemporary gem types (cf. "Engraved Gems"). Animals are the most popular type, although Kyzikos provides a wider iconographical range in the early fifth century.

The series of electrum coins from Phokaia and Kyzikos are especially notable for the distinctive style of the human heads, whose facial shape and features can be recognized as purely East Greek. They all display simlar

highly stylized facial characteristics, notably the sharply receding forehead, the elongated and slightly slanted eye, the long nose and chin, the small, pinched mouth, and the high cheekbone. Similar faces are common in Ionia, and especially North Ionia, where the style is seen in vase painting, Klazomenian sarcophagi, terracottas, ivories (cf. "Ivories: Lydia", above) and some bronzes of the second half of the sixth century. The style generally falls into a group of North Ionian facial types classified by F. Croissant as Group E, "Phocee", although neither the localization nor the homogeneity of the group is entirely convincing (Croissant, 125-140, pl. 38-44; cf. J.P. Helerijk, Caeretan Hydriae, 1984, 200). The stylizations may reflect sculptural prototypes, distinctive to East Greece and probably North Ionian, and the coin types appear to be original adaptations of the current style (cf. "Summary", below).

At Kyzikos, coins depict heads of Athena (in two varieties: v. Fritze, no. 63-64 and no. 67; Traite 1, pl. 6: 26, 28), a male head with winged cap, probably Hermes (v. Fritze, no. 65; Traite 2, pl. 173: 4), a bearded male head with long hair falling straight back (v. Fritze, no. 66; Traite 1, pl. 6: 33), and an unbearded male head (v. Fritze, no. 62; Traite 2, pl. 173: 1); similar heads are seen on a running satyr (v. Fritze, no. 122; Traite 2, pl. 175: 25) and a triton (v. Fritze, no. 126; Traite 1, pl. 6: 31-32). All of these heads display very similar facial characteristics, and a number may have been engraved by the

same artist (on the style at Kyzikos, cf. Langlotz, Studien, 41-42). They all date from the years around 500, and an instructive contrast in style can be made between the Kyzikene stater with the head of Athena in a crested helmet (cf. above) and contemporary Athenian tetradrachms with the same obverse type.

The same facial stylizations are seen on the late sixth century electrum hektai of Phokaia, but the style there is more delicate. The earliest examples, showing the heads of a kore with long hair [FIG. 388] and another female (Aphrodite?) wearing a cap (perhaps the Lydian mitra, cf. above), are exceptionally fine and detailed works by a master engraver, who greatly influenced the following issues at Phokaia and perhaps elsewhere. E. Langlotz (Studien, 34ff.; Hellenisierung, 22ff.) has critically analyzed the master's work and distinguished other examples (e.g. the Phokaian electrum with negro head and helmeted head), some of which are later, including the Phokaian hekte with an Athena head (Langlotz, Studien, pl. 3: 2) and the earliest examples of an extensive series of small silver coins, probably also from Phokaia (cf. above). Langlotz also attributed to the "Aphrodite-Master" the unique Ionian Revolt stater from the Urla hoard (now Lisbon, Gulbenkian; cf. above) which depicts an Athena head wearing a winged helmet. This attribution is less convincing, since the face of Athena is considerably rounder and less angular than the other works.

Copies of the "Aphrodite" head are seen on other East Greek coins and may be due to the influence of the fine Phokaian issues, although the type itself is likely to have been current in various media by the late sixth century. At Phokaia, copies of the type not by the hand of the "Aphrodite Master" are seen in electrum and silver, and Phokaian colonists brought the type, although more crudely executed, to Massalia (cf. above). The early coins of Knidos, dating from c. 500 and slightly later, often depict a female head with the same cap and similar facial features who must be identified as their patron goddess Aphrodite (cf. H.A. Cahn, Knidos, Series 1 trihemiobols, no. 7ff., pl. 75, 99). The head may well have been influenced by the Phokaian coins, although other Aphrodite types were also employed within the same issue. The general "Phokaian" style continued to be seen on a number of North Ionian silver issues of the early fifth century (cf. Langlotz, Studien 39ff.).

SUMMARY

The recognition of the Ionian character through its artistic expression is difficult to demonstrate, although some observations ring true. G.M.A. Hanfmann noted that the mature Ionian art of the later sixth century combined individualistic traits and a love of decorative pattern with the more structural approach of Mainland Greek art (G.M.A. Hanfmann, HSCP 61, 1953, 22). The love of decorative pattern and stylization in preference to iconographical representations or the modelling that lead to realism elsewhere in Greece is indeed apparent even as early as the Geometric period. However, the following observations are more concerned with demonstrating the development of certain styles within each medium, the extent of koine styles between media, and the existence of certain conscious stylizations and artistic objectives that can be localized.

The arts in various media developed in different ways. The minor arts--the material considered here--were usually luxury arts and the products of small and distinctive workshops. Often their oriental sources can be directly traced, while other times their dependence on the more developed schools located elsewhere in Greece, especially in the Peloponnesos, can be seen. The oriental influences, which provided much of the impetus for the development of Greek art in this period, did not come in sudden waves, but at different times. In East Greece, some orientalizing schools, such as those producing bronze and gold work, began as early as the eighth century, but others, such as those of

the sculptors in stone and the ivory carvers, appear not to have become established until the beginning of the sixth century, and gem engraving did not reach Greece until the middle of the sixth century. Stylistic coherence between media (a koine) is seldom seen until the late Archaic period, and even then certain classes of objects maintained their own distinctive style. Jewelry, for example, which was almost always confined to decorative pattern, cannot be compared with sculptural representations. However, its own style of patterns can be recognized and may have been influential on the aesthetic expression of the period.

East Greece, and especially Ionia, was the birthplace of Homer, as well as many other poets, philosophers, and historians, and the intellectual leader of Greece, but the presumption that the arts were just as influential, which was made by many of the art historians of the last century, cannot be supported by the archaeological evidence and is in fact refuted by it (cf. "Introduction", p. i-iii). East Greece seems to have been conservative and even backward in the Late Geometric period, and the arts were especially dependent on Mainland Greece. The pottery, which was ultimately derived from Attic Geometric, did not admit the orientalizing and figural representations of other Late Geometric pottery, and was "conservative" and "unadventurous" (Coldstream, Geometric Greece, 267; cf. Hanfmann, loc. cit., 12ff.). The Geometric style in bronzework, so accomplished on the Mainland, was apparently

not practised in East Greece, despite the existence of a major bronzeworking school on Samos that produced griffin heads by c. 700 and established a continuing tradition. The few fine Geometric figures from the Heraion at Samos have been seen to be imported from the Peloponnesos (cf. above p. 5), and Sparta especially had traditional links with Samos that continued into the sixth century (cf. Marangou, op. cit., 196f.; and on Lakonian pottery at Samos, E. Lane, BSA 34, 1933-4, 178f.). Only Rhodes, where oriental influence seems to have been stronger than elsewhere in East Greece, produced its own distinctive bronzework based on Eastern (Causcasian?) models (cf. p. 10ff.), but these are stylistically simple compared to the Mainland examples. Ivory carving too is minimal in this period and dependent on the orientalizing works from Sparta and Corinth (cf. p. 156ff.).

Only Geometric jewelry, so far found only on Rhodes, Kos, and in Karia, displays a local style, but even this is derivative of standard Geometric pattern. Other forms of jewelry are either simple types with parallels on the Mainland, or the more accomplished works, such as the Exochi filigree plaques, which find parallels in the Eleusis jewelry, or figural gold bands also related to Attic examples, both types appearing to derive from a common oriental source (cf. p. 212). Crete, where the finest jewelry workshops of the period were located, may have been the source and continued to be influential throughout the seventh century. Direct copies of highly orientalizing

Cypriot works are also seen in Karia and Rhodes (cf. the discs, p. 207).

The Geometric style lasted well into the seventh century, but around mid-century a dramatic "surge" in orientalizing art took place (cf. Hanfmann, loc. cit., 18f.). Nevertheless, East Greece should not be viewed as the intermediary between the East and the rest of Greece, for orientalizing styles had long before reached Mainland Greece, and East Greece was a relatively late recipient. Nor was the rapid development of East Greek art in the later seventh and sixth century solely orientalizing, for it continued to draw heavily on Mainland and other Greek sources, which were stylistically more advanced. The various sources for the post-Geometric arts of the seventh century can usually be identified, but the resulting local schools show little evidence of an East Greek koine style. Only the Wild Goat style painted pottery of the second half of the seventh century appears to have been made at a number of East Greek sites, but many questions of where the workshops were located and why the style became so widespread remain to be answered. Workshops for bronzes, jewelry, and ivories were established at various sites and can be distinguished, but relations between them appear to have been minimal.

One of the most remarkable workshops of the period was that producing the large and valuable griffin heads (and presumably cauldrons and tripods) on Samos (cf. p. 27ff.).

It appears to have been operating as early as 700, at a time when few other accomplished works of any type were attempted, and displays a very advanced level of technical achievement. However, identical finds at Olympia suggest that the workshop originated there and that some of the artists from Olympia, whose identity remains unknown, settled at the prospering sanctuary of Hera at Samos. The griffin heads maintained their popularity in East Greece well into the sixth century and became typically Ionian, but they appear not to have been an East Greek innovation. The technical expertise of this early Samian workshop may well have contributed to the success of the important sixth century workshops there, as well as to the tradition that the Samians Rhoikos and Theodoros invented bronze casting, but there appear to be no stylistic links between the early and later workshops. Orientalizing bronzes in a lively style of the late seventh century from Rhodes were probably locally made but are rare and have no known successors (cf. p. 34ff.). Other bronzes of c. 600, such as the kouros from Old Smyrna (cf. p. 40), are crude and experimental and display no obvious stylistic traits that recur in developed Archaic pieces.

Jewelry in the seventh century developed along clear lines. The "orientalizing workshop" on Rhodes produced a series of closely related objects during the second half of the seventh century that was especially popular locally but reached the Cycladic Islands and the coast of Asia Minor as well. The embossed figures represented on the jewelry are

in an accomplished Daedalic style and are often decorated with elaborate granulation. Both the style and technique point to Crete as the direct influence. The find from Tralles and the hawk from Samos (p. 223ff.) appear to be from other workshops but are very closely related.

The other major jewelry producing center was probably located at Ephesos but had close ties to the Lydian capital, Sardis, where gold was being mined, refined, and worked (cf. p. 322f.). Although it was only slightly later in date than the Rhodian orientalizing workshop and perhaps in part contemporary, there are few similarities in technique, pattern, or even function. The Ephesos jewelry displays many patterns influenced by earlier Anatolian traditions, only traces of which are seen in other Ionian arts (cf. p. 324f.), but a number of new and distinctive patterns and jewelry types were also created, many of which continued throughout the sixth century. A koine style of jewelry manufacture based around the Ephesos-Sardis workshops in the first half of the sixth century is apparent, no doubt dependent on wealthy Lydian patronage. It serves as an example of a distinctive East Greek style with broader social and economic implications, but no connection with the other arts can be demonstrated. It is only the exceptional piece of jewelry, such as the figural garment plaques (cf. p. 304ff.) or the silver kore-pin (cf. p. 243f.), that can be compared to the style of other types of objects.

Coinage was an innovation of the Ionian-Lydian area c.

600 and again reflects the wealth of the Lydian empire. The extensive issue of Lydian coins with lion's head as the obverse type may well have been the first coins, and the type is not Greek but rather derived from Eastern glyptic (cf. p. 482f.). However, closely contemporary Ionian coins were able to draw on an already existing repertory of emblems of considerable variety and artistic quality. It is unclear where and how these emblems were created, but they recall early ivory seals and shield devices already established by the third quarter of the seventh century in the Peloponnesos (cf. p. 385, 480ff.). A distinctive East Greek style is difficult to discern among the early coin types, and again Mainland Greece appears to have provided the artistic models, although the medium was entirely new.

The related field of ring and gem engraving was a relatively late orientalizing art. Although both seals and rings had early stages dating back to the seventh century, they did not become well established until the middle of the sixth century. Cyprus, perhaps through the influence of the Phoenicians living there, appears to have transmitted the technique of engraving hardstone scarabs to East Greece at that time. At first the repertory of types demonstrates the Phoenician influence, but Greek workshops quickly utilized their own repertory of emblems, which often dated back to the late seventh century as attested by the coins. It is difficult to localize the workshops, but peculiarities in the treatment of the devices demonstrate an Ionian origin, although the Islands, notably Euboea, Paros, and Melos, had

a longer seal engraving tradition and produced the finest works throughout the sixth century. The Ionian characteristics are only clear in the later part of the sixth century, when a koine style is evident (cf. p. 380f.).

Ivory was an especially exotic and valued luxury object, which was reaching Mainland Greece by the Late Geometric period. Direct contact with oriental ivory workers fleeing North Syria is highly likely. It is again the Peloponnesos and perhaps Crete, however, that had the earliest schools working in Greek style. Exceptionally accomplished seals, reliefs, and small sculpture were found in mid-seventh century contexts at Perachora and Sparta. Rhodes did produce ivories in the seventh century, but they are entirely dependent on North Syrian and Phoenician examples. The fine works in Daedalic style from Samos, such as the Perseus relief, the "Zeus and Hera" wood plaque, and the wood "Hera" statuette, are probably Peloponnesian imports (cf. p. 155ff.), and the fine post-Daedalic ivory "lyre arm" in the shape of a kneeling youth is most likely a Corinthian work (cf. p. 160f.). Local works in Daedalic style probably were made in the seventh century, including some at Samos and Erythrai, and there is evidence that foreign artists trained in the Daedalic style, such as Smilis of Aegina and the Athenian Endoios, worked in East Greece and perhaps left schools behind (cf. p. 157, 192). Most of these works, however, were rough imitations of the imported Daedalic ivories, and only the later ivories of the sixth century

display the local Ionian style. The rich finds at Ephesos certainly are of purely local style, but these too are late in date. Only an intriguing horseman from Chios of the third quarter of the seventh century offers a unique and accomplished style that could be local and early in date (cf. p. 169).

The distinctive ivory carving workshop at Ephesos is another example of a relatively late orientalizing school, and the earliest works do not appear to date before c. 600, with most belonging to the first half of the sixth century. It is clear that Eastern immigrants were highly influential and probably working there (p. 146f., 178). In addition to the manufacture of ivory ornaments, often related to the local jewelry, two types of figural work can be distinguished. The first is very oriental in its style. The figures are similar to North Syrian examples, with highly stylized faces, hairstyles, and clothes. The other school is more Greek and produced korai in Ionian dress and animal figurines. Although different types of figurines were produced, the stylistic differences between the schools are not so great, and they appear to have been contemporary, reflecting the mixture of cultures present in Ephesos at the time. It is just such a mixture between Greek and Anatolian culture that contributed to the formation of the local style during the sixth century.

In general, the arts of East Greece in the seventh century appear to have been based in small and relatively isolated workshops. They clearly learned their crafts from

more accomplished foreign workshops, but they lagged behind Mainland Greece and seldom displayed innovative stylistic traits. It was during this period, often called "orientalizing" but in fact relying just as heavily on other Greek works, that the pursuit for individual expression began. The results were often tentative, and it is difficult to see links between the primitive local styles of the late seventh century and the accomplished Ionian styles of the sixth century (cf. p. 23f.). The evidence, however, is meager, and no doubt much of the material that would fill some of the gaps is missing and may yet be found. Exceptional examples of innovative styles in the seventh century are the Wild Goat style pottery, which was extremely popular and characteristically East Greek but whose origin cannot always be determined, and Rhodian (?) plastic vases, which display a remarkable range of sculptural types, often with distinctive East Greek stylizations, and were already manufactured by the end of the seventh century, a relatively early date.

It is likely that artists consciously sought new styles to work in and that changes need not have been gradual, but the Ionian artists seem to have been slow in choosing their path. In contrast, the emergence of the highly stylized Daedalic school in the mid-seventh century was sudden and quickly embraced at several Dorian centers, primarily in Crete, the Cyclades, and the Peloponnesos. East Greece, however, was not very interested in the style, except on

Dorian Rhodes, where it was frequently utilized for terracottas and on the jewelry of the orientalizing workshop. Daedalic terracottas, the most common medium in that style, do not appear to have been manufactured in East Greece outside Rhodes. There is no evidence for Samos being a center (cf. p. 23, 157ff.; H. Kyrieleis, AM 95, 1980, 97ff.), and the few plaques from Ephesos depicting a standing woman in typically Daedalic style all appear to be from a single mould (cf. Hogarth, 199, fig. 34; R. Higgins, BMC Terracottas 1, 145f.; Bammer, fig. 115), which even if locally made, hardly demonstrates a significant presence. Other signs of the Daedalic style in Ionia are rare--a single electrum coin (Weidauer, no. 172-173; cf. p. 486), hardly a trace among the Ephesian jewelry, and only briefly in ivory, imitating the finer Peloponnesian works. Even marble sculpture, the techniques of which must have been directly transmitted to East Greece by Island artists, only briefly displays a Daedalic phase before quickly becoming entirely East Greek in style (Samos: Freyer-Schauenburg, Samos 11, 13-18, no. 1-3; Richter, Korai, 33, no. 21; Lindos: Istanbul 2357; Mendel, no. 1396; and the odd kore from Klaros, which already is removed from the Daedalic and displays central folds in the garment, Izmir Museum 3708; Richter, Korai, 26, no. 1A; L. Robert, Anat. Stud. 10, 1960, 22; Tuchelt, 130).

It is only during the sixth century that several Ionian styles reached their mature form. The sixth century artists accomplished this by both drawing on earlier East Greek arts

and by creating new, and probably conscious, stylizations. Most characteristic of the major style that was known throughout Ionia is the careful attention given to surface pattern and decoration in preference to sculptural modelling, narrative composition, and iconographical representations. The extensive series of sculpture in bronze and stone from Samos, Miletos, Ephesos, and elsewhere in Ionia nearly always shows bodies of fleshy, non-muscular men, and women cloaked in cylinders of Ionian costume. The bodies are fluid masses with no internal stucture showing through. The heads are also highly mannered, very round with smiling mouths, and elongated, slanting eyes, recalling Eastern ivory work but significantly transformed. The care is given to the surface patterns, especially the elaborate hairstyles of the men and costumes of the women.

The effect of such works has been described in modern times as refined and exotic, but it is difficult to say how they were viewed in their own time. There can be little doubt that such stylizations were deliberate, especially when one views a seated marble figure from Didyma with his head, carefully detailed and patterned, rising from the solid mass of unarticulated body and throne, or the series of bronzes and marble from Samos with beautiful but unrealistically elongated and boneless bodies and carefully worked heads with mannered features and elaborate hairstyles. The Berlin Opfertraeger is the final stage of the style and extraordinarily mannered, combining a long,

sleek body, showing no musculature or even surface detail, and a face with carefully worked features already far removed from the typical Archaic style and a mass of hair in the best Samian tradition (cf. p. 120f.).

Other styles displaying different characteristics also existed in the sixth century but are not as well attested. The extraordinary bronze rider from Samos shares some of the same characteristics as Samian kouroi, notably the facial features and hair, but the body is entirely different, exceptionally muscular and wiry and realistically modelled. Another trace of the style can be found on some engraved gems (cf. p. 367f.), which at their best approach sculptural reliefs in miniature. The style may have developed in North Ionia.

Several distinctive facial types are also characteristic of East Greece. These too may have been deliberate stylizations and were probably also derived from sculptural models but were adapted to two-dimensional and low relief representations of profiles as well. The Samos rider is the best sculptural example. His forehead recedes sharply, straight back from a long, thin nose; the eyes are narrow and elegantly elongated; and the chin protrudes slightly. Such features are already seen on the Samian relief plaques as early as 600 (cf. p. 47) and perhaps on plastic vases, but most other examples are considerably later in date. The features appear on a late sixth century ivory head from Sardis (cf. p. 196) and on gems of similar date. The most highly stylized example of the profile is seen on coins

(which also can be considered as low reliefs) of Phokaia of c. 520, which depict heads of Aphrodite, Athena, and others (cf. p. 497f.). Similar profiles are seen on coins of Kyzikos of the same period and later. Langlotz frequently saw East Greek influence in profiles of this type in a variety of media, including coins and vase painting (cf. Studien, 178ff., pl. 62-63, 69), and Croissant has recently attempted to localize the different varieties of female profiles, although not entirely convincingly.

Aside from the aesthetic elements of East Greek style, details of pattern and fashion and choice of subject matter are distinctive. Ionian dress, hairstyles, and jewelry are original and were highly influential in Athens in the later sixth century, when Ionian dress became fashionable, and in Etruria, probably by way of Ionian traders and immigrants. Indeed it is often easier to discover East Greek traits in the West than in East Greece itself, although the genius for creating sculptural works appears not to have survived the journey.

The subject matter of East Greek art both in the sixth century and before tended to disregard myth and narrative at a time when other centers, especially in Mainland Greece, were emphasizing them. Late Geometric pottery seldom attempted any figural work at all. Wild Goat pottery never showed mythological scenes with the exception of the unique Euphorbos plate of c. 600 in London, but it appears to have closely copied an Argive model, including the inscription.

Later painted pottery was also reluctant to admit significant mythological scenes. The relatively early Samian bronze relief plaques do present a range of mythological scenes, but these too appear to be derived from Peloponnesian models (cf. p. 48f.). It is unfortunate that representations of the local mythology do not survive, and such works as the Caeretan hydriae and the Cesme bronzes, which seem to portray elaborate scenes that are no longer intelligible, are tantalizing survivals.

The favorite figural subjects were animals and monsters. They are seen in bronze, marble, and ivory sculpture, and on vase painting, gems, and coins. Certain animals, such as lions, bulls, and boars, were especially popular, and fantastic creatures, including winged animals, sirens, and sphinxes also had a special appeal. Details of their design are often distinctively East Greek, but they do not represent major innovations in style.

If one is to generalize about the artistic objectives in East Greece, the emphasis must be on the concern for beautiful pattern, elegance, and perhaps luxury, which in later times was interpreted as Ionian decadence and condemned. There was a taste for jewelry, probably learned from the Lydians, as literary sources frequently point out, as well as for precious ivories, textiles, perfumes, music, and lyric poetry. Generous patronage was provided by the Lydian (and Achaemenid?) kings, the Greek tyrants (especially Polykrates of Samos), and perhaps by successful traders, most notably in the flourishing cities of Samos

(Kolaios already in the seventh century), Miletos and Phokaia. The rich dedications found at Delphi especially reflect the Ionian tastes. Statues in gold and ivory which once wore jewelry and exotic robes decorated with gold plaques have typically Ionian faces. A life-size votive bull is made of silver and gold. Objects of these types have never been found elsewhere, but they can only be Ionian works, although perhaps the gifts of a Lydian king. The sculpture, however, remains the finest aesthetic expression, and at a time when elsewhere in Greece different sculptural stylizations emphasized structure and realism, the Ionian ideal was one of exquisite patterns.