THE RANDAZZO HOARD 1980 AND SICILIAN CHRONOLOGY IN THE EARLY FIFTH CENTURY B.C.

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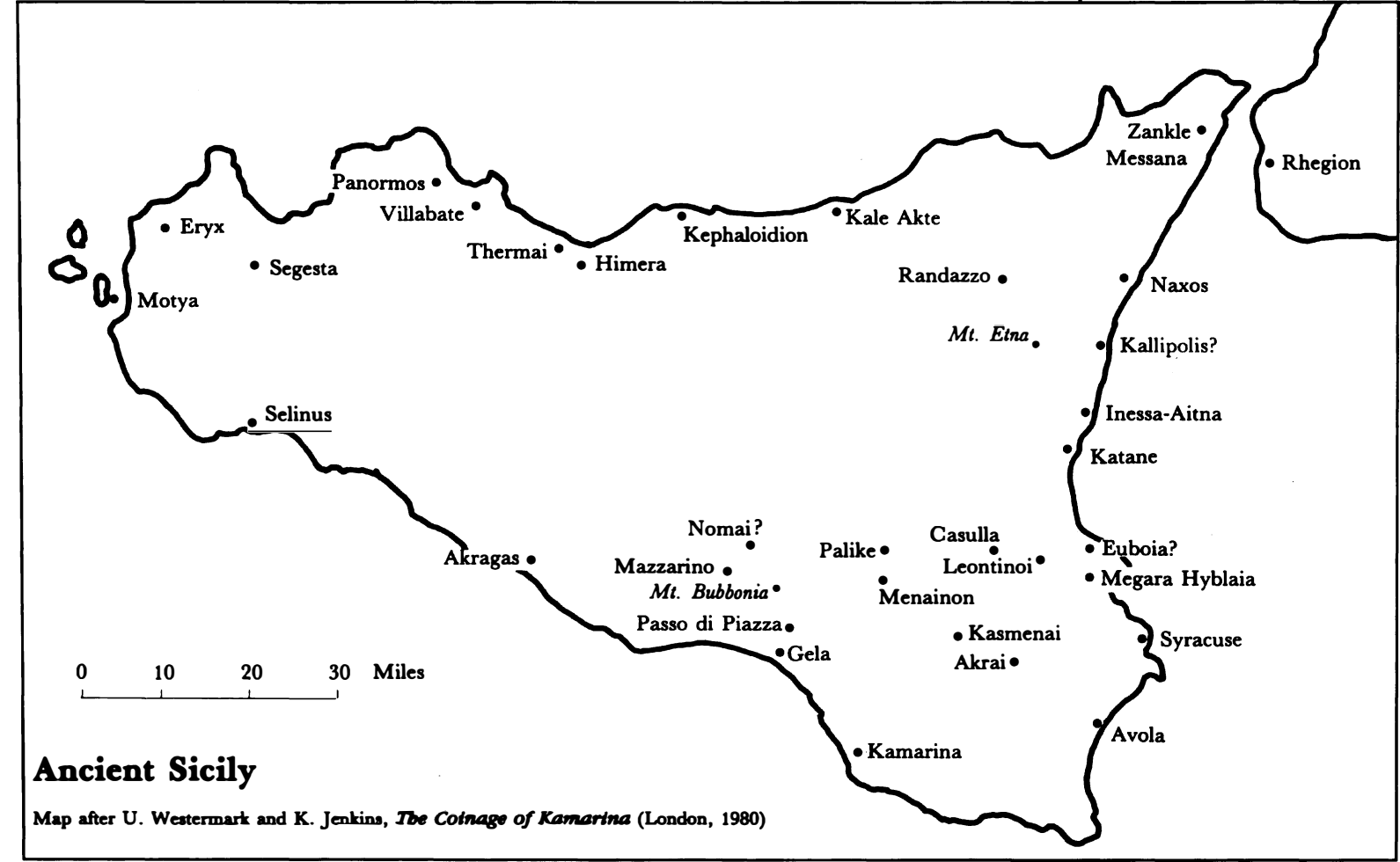
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Ancient Sicily

Map after U. Westermark and K. Jenkins, *The Coinage of Kamarina* (London, 1980)

PREFACE

This study began at the ANS Graduate Seminar in 1981. I am greatly indebted to the Society and in particular to Nancy M. Waggoner for generously allowing me to work on the material and for constant help and assistance. I would also like to express my gratitude to all the dealers without whose help the hoard never could have been reconstituted: J. Aiello, H. Berk, H. A. Cahn and his colleagues P. Strauss and H. Vögtli at MMAG, S. Hurter and L. Mildenberg of Bank Leu and J. Spier. My thanks for discussion and advice to D. Bérend, C. Boehringer, M. Caccamo Caltabiano, H. A. Cahn, E. E. Clain-Stefanelli, G. K. Jenkins, B. E. Levy, A. Moretti, M. Thompson and U. Westermark. M. J. Price has most kindly permitted me to work on the records of the hoard at the British Museum. The research abroad was made possible by a grant from the Penrose Fund of the American Philosophical Society.

Colin M. Kraay was scheduled to be the visiting scholar at the 1982 ANS seminar. His untimely death prevented any thorough discussion of the hoard with him to my deepest regret. The "Randazzo" Hoard 1980 confirms many of his views and if it revises some others, particularly his downdating of the early Syracusan decadrachm, it still is a tribute to his scholarly achievements. His stimulating mind opened a new approach to addressing the problems of Sicilian chronology.

INTRODUCTION

In the last months of 1980, a hoard of silver coins was found in Sicily[1] and immediately dispersed in commerce. The largest number came to the United States; 479 coins in several lots were deposited at the ANS by a dealer in February 1981 for study and the preparation of a plaster cast record. This group no doubt represented the bulk of the hoard but did not include the rarest and most valuable specimens, mainly from Katane and Naxos, some of which were sold immediately.[2] So the hoard was picked over at least twice before being brought to New York. The ANS recorded the hoard coins but acquired none.[3] At least 131 of the tetradrachms seen at the ANS returned to Europe and were sent for cleaning to the British Museum where they were recorded as well. They are now most likely in European collections. The remainder of the hoard has been identified with the help of colleagues, collectors and dealers.

Nothing is known about the circumstances of discovery nor about the exact location of the find. It is said to be near Randazzo, in northeastern Sicily at the foot of Mount Etna (see frontispiece) and the mints represented, particularly Katane, support the hearsay.

The legislative and political conditions that foster illegal excavations have been commented upon elsewhere.[4] It is deplorable that the historical record so often must be reconstructed away from the original find context, to the detriment of scholarship. Coin hoards are no exception; on the contrary they are easier to take out of the country of origin than larger objects. It should be emphasized that the best preserved coins are very rarely found on excavation sites; rather, almost always as chance finds. Yet it remains a prime responsibility of the numismatist to record all that comes to light.

One cannot be sure that the "Randazzo" Hoard 1980, as it is catalogued here, is complete. It seems, however, reasonable to assume that the 539 tetradrachms described form the largest part. Sicilian hoards of the same period, with the exception of the Gela hoard (*IGCH* 2066) and the Avola hoard (*IGCH* 2085) are usually smaller in size. Moreover selections or divisions of hoards are made very soon after discovery. The "best" pieces can be taken out first for special collectors but it is highly improbable that, for instance, all of the latest specimens in the hoard or a whole mint would be sorted out completely by the first finders. Therefore the conclusions proposed here need not be impaired by doubts about whether the record is complete.

All the coins that can be said with absolute certainty to come from the hoard are described here. May they encourage additions and supplements as necessary.

[1] *Coin Hoards* 7 (1985), no. 17.

[2] E.g. Bowers and Ruddy Galleries, Inc., *Masterpieces of Ancient Coinage* (Los Angeles, n.d.). A brochure illustrating nine tetradrachms.

[3] In 1983, A. A. Rosen donated 34 tetradrachms and Russell Trenholme 7 (see catalogue, ANS, ex Rosen; ex Trenholme).

[4] M. J. Price and N. M. Waggoner, *Archaic Silver Coinage: The Asyut Hoard* (London, 1975), p. 9 (hereafter Price and Waggoner, *Asyut*).

The hoard included only tetradrachms,[5] all from Sicilian mints, as Rhegion historically and numismatically is considered such:

Rhegion 10	(nos. 1-10)
Akragas 8	(nos. 11-18)
Gela 29	(nos. 19-47)
Katane 29	(nos. 48-76)
Leontinoi 14	(nos. 77-90)
Messana 136	(nos. 91-226)
Naxos 5	(nos. 227-231)
Syracuse 308	(nos. 232-539)

[5] There were unconfirmed rumors that the hoard also included decadrachms. The presence of Demareteia is possible and would not change the chronological conclusions reached here.

HISTORICAL BACKGROUND

The years covered by the hoard, ca. 510 to 450 B.C.,[6] saw the rise of western tyrannies,[7] their fall and immediate aftermath. From the end of the sixth century to the beginning of the fifth century B.C., the cities that interest us, Rhegion, Akragas, Gela, Katane, Leontinoi, Messana, Naxos and Syracuse, lost their autonomy and fell under the domination of three major families: the Anaxilades at the Straits, the Emmenids at Akragas, the Deinomenids at Gela and Syracuse. The rivalries and the ambitions of the strongest among these tyrants determined the history of this half century during which Sicily rose to the acme of its power and prosperity.

The main ancient sources for this period are Herodotos, book 7.153-67, Diodoros, chiefly book 11 and Pindar through his Odes to the glory of the Sicilian tyrants. These writers vary in objectivity and truthfulness and from them alone it is almost impossible to obtain a clear picture of the events. The approach of Diodoros or Pindar may sometimes be as distorted as our own, the former living in Caesar's time, more than four centuries later than the early tyrants, the latter being a poet called to the Syracusan court to sing Hieron's exploits.

The Tyrants

It was at Gela that the establishment of tyranny began.[8] In 505 B.C., Kleandros, son of that Pantares who won the distinction of being the first Sicilian to gain a chariot victory at Olympia, replaced the oligarchy. Herodotos tells us that at Kleandros's death, the sovereignty passed to his brother Hippokrates,[9] who proceeded to expand his influence over other Sicilian cities, a development typical of western tyrannies. He conquered the Chalcidian cities of Euboia and Kallipolis, Naxos, Zankle and Leontinoi, establishing subordinate tyrants in the last two (Skythes and Ainesidemos). Hippokrates also fought the Syracusans; while he did not succeed in taking over the city, he received Kamarina as part of the peace settlement.

[6] M. I. Finley, *Ancient Sicily* (rev. ed., Totowa, N.J., 1979), pp. 45-64; E. A. Freeman, *The History of Sicily from the Earliest Times*, vol. 2 (Oxford, 1891), pp. 101-50, 162-388; A. Holm, *Geschichte Siciliens im Alterthum*, vol. 1 (Leipzig, 1870), pp. 144-60 and 192-263 (hereafter Holm); E. Will, *Le Monde Grec et l'Orient*, vol. 1 (Paris, 1972), pp. 219-59 (hereafter Will). For further bibliography see F. Sartori, "Storia della Sicilia Greca," *Kokalos* 22-23 (1976-77), pp. 331-49.

[7] A. Andrewes, *The Greek Tyrants* (London, 1956), pp. 128-36, 154. H. Berve, *Die Tyrannis bei den Griechen*, vols. 1-2 (Munich, 1967), pp. 128-58 (hereafter Berve). C. Mossé, *La Tyrannie dans la Grèce Antique* (Paris, 1969), pp. 79-87. On the tyranny in general see K. H. Kinzl, ed., *Die ältere Tyrannis bis zu den Perserkriegen. Beiträge zur griechischen Tyrannis*, (Darmstadt, 1979); on Gelon see A. v. Stauffenberg, *Trinakria, Sizilien und Grossgriechenland* (Munich/Vienna, 1963), pp. 200ff; see also K. H. Waters, "Herodotus on Tyrants and Despots," *Historia*, Einzelschriften 15 (1971), pp. 38-41.

[8] The two earlier tyrannies, that of Panaitios in Leontinoi in the seventh century B.C. and that of Phalaris of Akragas in the sixth century seem to have been precarious and short-lived. Hdt. 7.154; T. J. Dunbabin, *The Western Greeks* (Oxford, 1948), pp. 337-78 (hereafter Dunbabin); Holm, 1, p. 197; Berve, p. 137; G. K. Jenkins, *The Coinage of Gela*, AMuGS 2 (Berlin, 1970), p. 4 (hereafter Jenkins, *Gela*).

[9] Holm, p. 197; Dunbabin, p. 376-409; Jenkins, *Gela*, p. 6; Berve, p. 137-40. For the chronology see Table 1 (below, p. 16), which gives the traditional dates based on Thucydides, accepted by Dunbabin and R. van Compernolle, *Étude de chronologie et d'historiographie siciliotes* (Brussels/Rome, 1959), p. 351. For the controversy about these dates and the proposed revisions see Dunbabin, pp. 432-34. G. Vallet, *Rhégion et Zancle*, Bibliothèque des Écoles françaises d'Athènes et de Rome, no. 189 (Paris, 1958), pp. 346-54 (hereafter Vallet, *Rhégion*); Jenkins, *Gela*, p. 7; Will, p. 227; and the final resolution, E. Gabba and G. Vallet, *La Sicilia antica* (Catania, 1980), pp. 601-2.

At the death of Hippokrates in 491 B.C., his most capable general, commander of the cavalry, Gelon,[10] son of Deinomenes, set himself up as tyrant thus averting the threat of a civil war. His reign inaugurated a period of prosperity and peace for Sicily in general and history records him as a just and benevolent despot, popular among his people. In 485 B.C. Gelon succeeded in what Hippokrates had attempted, the conquest of Syracuse, the wealthy and, thanks to its harbor, strategically important city on the western coast. The Gamoroi, or landowners of Syracuse, having been expelled to Kasmenai by the demos and the local serfs (the Killyrioi) asked Gelon for help. Although he returned the Gamoroi to the city, he installed himself as tyrant.[11]

Gelon's most remarkable exploit no doubt was the defeat of the Carthaginians at the battle of Himera in 480 B.C.,[12] with the help of his father-in-law, Theron, tyrant of Akragas. The interpretation of this conflict, however, has been rather tendentious, as historians have followed Diodoros's emphatically nationalistic version.[13] Diodoros presented the war between Sicily and Carthage as an inevitable war between two races, the Greeks and the Barbarians, and in so doing identified it with the Persian wars in Greece.[14] In fact the Carthaginian attack on Sicily was caused more by internal antagonism than by external imperialism. Terillos, tyrant of Himera, and his son-in-law, Anaxilas of Rhegion, trying to remain independent from Gelon and Theron, asked the Carthaginians for help. After the battle, Gelon showed himself magnanimous toward the Carthaginians, sparing their lives and demanding only war indemnities. It is on this occasion that Gelon's wife Demarete was given one hundred gold talents in gratitude. We shall discuss this point in detail below.

On Gelon's death in 478/7 B.C., his brother Hieron succeeded him at Syracuse and in turn was succeeded at Gela by the third brother Polyzalos.[15] Apart from his naval expedition to help Kyme against the Etruscans, and the victory that ensued in 474 B.C.,[16] Hieron concentrated on the internal affairs of his Sicilian empire. Out of a desire to win the honors of a "heros ktistes" and so immortality, and also perhaps to secure himself a retreat in case of trouble in Syracuse, Hieron founded Aitna in 476/5 B.C.[17] He moved the Chalcidian inhabitants of Naxos and Katane to Leontinoi[18] and refounded Katane with Peloponnesians and Syracusans. Under Hieron the Syracusan court became an intellectual center where not only Pindar, but also Aischylos, Simonides, and Bacchylides sojourned and praised the tyrants.

The death of Hieron in 467/6 B.C. precipitated the fall of all Sicilian tyrannies. Akragas was already free; after the long and stable reign of Theron, who died in 473/2 B.C., his son Thrasydaios was soon expelled. Selinus and Himera were also free and Polyzalos died at Gela probably before Hieron's death. These cities quickly joined their land and sea forces to liberate Syracuse from Thrasyboulos, the last of the Deinomenids.[19]

Only the Anaxilades still survived. Anaxilas succeeded in providing both Rhegion and Zankle/Messana a stable government from 494 B.C., when he installed himself at Rhegion, and 490/89 B.C., when he expelled the Samians from Zankle, until his death in 476 B.C.[20] Despite his

[10] Holm, 1, pp. 202-11; Dunbabin, pp. 411-34; Berve, pp. 140-47; Jenkins, *Gela*, pp. 7-9; Will, pp. 230-37.

[11] Hdt. 7.155.

[12] Holm, 1, pp. 205-10; Dunbabin, pp. 418-32; Berve, pp. 144-46; Will, pp. 233-37.

[13] Diod. 11.20-26, the most detailed description of the battle.

[14] For the very unlikely synchronism between Himera and Salamis or Thermopylai see P. Gauthier "Le parallèle Himère-Salamine," *REA* 68 (1966), pp. 5-32; Will, p. 230, n. 1.

[15] Holm, vol. 1, pp. 212-48; Berve, pp. 147-52; Jenkins, *Gela*, pp. 9-11; Will, pp. 241-45.

[16] Diod. 11.51. It is after that victory, perhaps more important than Himera, that Pindar started celebrating the power of the Deinomenids in the first Pythian ode.

[17] Diod. 11.49.

[18] Perhaps after an eruption of Mt. Etna, see Thuc. 3.116.2.

[19] Arist., *Pol.* 1312b; 1315b; Diod. 11.68; Holm, vol. 1, pp. 249-54; Berve, pp. 152-54.

[20] Holm, vol. 1, pp. 199-200; Vallet, *Rhégion*, pp. 335-55; Berve, pp. 155-58; Dunbabin, pp. 387-98 and 424-26.

efforts to contest with the Deinomenids for power and maintain his independence, the victory of Gelon at Himera forced Anaxilas to recognize Syracuse's supremacy. Mikythos succeeded him until 467/6 B.C., when Anaxilas's sons were old enough to reign. In 461 B.C. they were expelled and democracy restored.[21]

THE AFTERMATH: DOUKETIOS

Little is known of the years following the end of the Sicilian tyrannies. Although Diodoros tells us that Sicily prospered in peace under democratic rule,[22] most of the cities must have been plunged into confusion. Several of them were restored, such as Naxos, Kamarina, Katane; lands were redistributed followed by claims from, among others, expelled settlers returned home and old mercenaries who had served the tyrants. However, the most serious threat to the Greek cities of Sicily in those years was the rise of the Sikel power under Douketios.[23] This hellenized leader of the Sikels appears in the literature for the first time at the restoration of Katane.[24] We then learn that he founded Menainon and Palike, which became his capital.[25] Following the example of the tyrants, Douketios tried to extend his power to the west and attacked a stronghold of the Akragantines, Motyon. Eventually the Syracusans defeated him at Nomai in 451 B.C. and exiled him to Corinth.[26] In 446 B.C. Douketios returned to Sicily, founded Kale Akte,[27] and established himself as leader of the Sikels. But by the death of Douketios in 440 B.C., the Syracusans had mastered the rebellion.[28]

CONCLUSION

The tyranny in Sicily flourished at a time when it had been abolished in mainland Greece. It seems to differ from that of a Pisistratos or a Kypselos, by not necessarily being a movement of the demos against the oligarchs: Gelon took power at Syracuse with the support of the Gamoroi; Anaxilas came from a rich and aristocratic family. Most important, the Sicilian tyrants organized themselves into a military power able to resist foreign invaders such as the Carthaginians and the Etruscans, whereas their Greek counterparts usually commanded limited political strength. In spite of the ethical condemnation that, following Aristotle,[29] one is inclined to impose on such rulers, the early tyranny in Sicily brought prosperity, economic development, and geographic expansion to the Greek colonies. The tyrants can also take credit for fully developing the coinage, which in that period attained an artistic perfection, exceptional even for the Greek world.

The coins represented in the hoard were minted in this historical context. Possibly, the upheaval of Douketios's revolt—perhaps his defeat at Nomai in 451 B.C.—prevented the owner of the hoard from ever retrieving his buried treasure.

[21] Diod. 11.76.5.
[22] Diod. 11.72.
[23] Holm, vol. 1, pp. 257-61; D. Adamesteanu, "L'ellenizzazione della Sicilia ed il momento di Ducezio," *Kokalos* 8 (1962), pp. 167-98; F. P. Rizzo, *La repubblica di Siracusa nel momento di Ducezio* (Palermo, 1970); Will, pp. 248-52.
[24] Diod. 11.76.3.
[25] Diod. 11.78.5; 88.6.
[26] Diod. 11.91-92.
[27] Diod. 12.8.
[28] Diod. 12.29.1-3.
[29] Arist., *Pol.* 1312b.

TABLE 1

Chronological Table of the Cities Represented in the Hoard

	RHEGION	AKRAGAS	GELA	KATANE	LEONTINOI	ZANKLE/ MESSANA	NAXOS	SYRACUSE
Foundation	? 730-720 B.C.	580 B.C.	688 B.C.	729 B.C.	729 B.C.	? 730 B.C.	734 B.C.	733 B.C.
Tyrants			*Kleandros* 505-498 B.C.					
								Gamoroi
	Anaxilas 494/3-476 B.C.		*Hippokrates* 498-491 B.C.					
			Gelon 491/90-486/5 B.C.	Under the *Deinomenids*, no coinage	Under the *Deinomenids*, no coinage	*Anaxilas* 490/89-476 B.C.	Under the *Deinomenids*, 490-476 B.C., no coinage	
		Theron 489-473/2 B.C.	*Hieron* 486/5-478/7 B.C.		*Ainesidemos* 493 - ? B.C.			*Gelon* 486/5-478 B.C.
480 B.C. (battle of Himera)	480 B.C., mule cart victory at Olympia							
474 B.C. (battle of Kyme)	*Mikythos* 476-467 B.C.	*Thrasydaios* 473/2-471 B.C.	*Polyzalos* 478/7-466 B.C.	476 B.C, foundation of *Aitna*	476 B.C., Synoikismos	*Mikythos* 476-467 B.C.	476 B.C. Synoikismos	*Hieron* 478/7-466 B.C.
	Anaxilas's sons 467-461 B.C.			Restoration, 461 B.C.		*Anaxilas's sons* 467-461 B.C.	Restoration, 461 B.C.	*Thrasyboulos* 466/5 B.C.
Democracy		To 450 B.C., oligarchy of the "1,000"		*Douketios's* revolt, 461-440 B.C.				

COMMENTARY ON THE MINTS

RHEGION

There are 10 tetradrachms from Rhegion in the hoard, belonging to two different periods. Nos. 1 to 6 are all from different pairs of dies. Their types are the same as those of Messana of the same period (nos. 91 to 173): on the obverse a mule cart driven by a seated male charioteer and on the reverse a hare running to right. The mule cart is one of the few Greek coin types alluding to a contemporary historical event. Aristotle explains that Anaxilas of Rhegion introduced the hare in Sicily and after winning the mule cart race at Olympia, celebrated his victory on the coins.[30] The interpretation of the reverse probably reflects a legend created a posteriori to fit an unusual type. More likely the hare refers to the rural god Pan with whom it appears on later coins of Messana inscribed ΓΑΝ.[31] The obverse, however, is an original and personal variation of the agonistic horse quadriga introduced first at Syracuse to celebrate the Sicilian victories at the Olympian games and adopted by many other Greek cities of Sicily during the fifth century B.C. Anaxilas, with his new coin types, thereby presented himself as the peer if not the rival of the other tyrants of Gela and Syracuse.

The tetradrachms, nos. 7-10, all from the same pair of dies, present different types: a lion's head facing on the obverse, and on the reverse a bearded man seated, holding a staff, his legs wrapped in a himation. The lion is the sacred animal of Apollo, the god of the colonization, who enjoyed a special cult in the Chalcidian colonies such as Rhegion.[32] Many interpretations have been suggested for the seated man on the reverse[33] but Six's hypothesis—that he must represent the founding hero Iokastos, son of Aiolos whose kingdom the ancient mythographs place in the Lipari islands off the north coast of Sicily—has prevailed and is now generally accepted.[34]

Chronology of the Rhegion Issues

At present there is no comprehensive corpus of the early series of Rhegion.[35] E. S. G. Robinson however, in his article on the Samians at Zankle, established the general chronological sequence of the issues of Rhegion and Messana to the end of the fifth century B.C. and his conclusions are still valid. As was noted above, Anaxilas took power at Rhegion in 494/3 B.C., and succeeded in expelling the Samians from Zankle in 489/8 B.C., thus becoming master of the Straits. He first struck coins on the Chalcidian standard with a lion's head on the obverse and a

[30] Arist., fr. 568 Rose apud Pollux V 75. On these types see E. S. G. Robinson, "Rhegion, Zankle-Messana and the Samians," *JHS* 66 (1946), p. 17 (hereafter Robinson); Vallet, *Rhégion*, pp. 366-67; L. Lacroix, *Monnaies et Colonisation dans l'Occident grec* (Brussels, 1965), pp. 24-25 (hereafter Lacroix).

[31] G. E. Rizzo, *Monete Greche della Sicilia* (Rome, 1946), pl. 26, 11-12 (hereafter Rizzo, *MGS*); Kraay, *ACGC*, pl. 45, 776. For other interpretations, however, see E. Ciaceri, *Culti e Miti nella Storia dell'Antica Sicilia* (Catania, 1911), pp. 98-102; L. Bodson, "Lièvres et mules au royaume du Détroit," *ÉtClass* 46 (1978), pp. 33-44.

[32] H. A. Cahn, "Die Löwen des Apollon," *MusHelv* 7 (1950), p. 192; H. Herzfelder, *Les Monnaies en argent de Rhégion* (Paris, 1957), pp. 17-19 (hereafter Herzfelder); Lacroix, pp. 146-48.

[33] Herzfelder, p. 19.

[34] J. P. Six, "Rhegium-Iocastos," *NC* 1898, pp. 281-85; Herzfelder, pp. 19-21; Lacroix, pp. 44-46.

[35] M. Caccamo Caltabiano in Messina is preparing a corpus of the coinage of Messana and of the parallel "hares" of Rhegion.

calf's head on the reverse.[36] After winning the mule cart race at Olympia, he introduced the new types which interest us here. The date of his victory provides the terminus post quem for the tetradrachms, nos. 1-6. We know from Diodoros that Anaxilas died in 476 B.C. after 18 years of reign.[37] Five Olympiads fall within those years. The first two, in 492 B.C. and 488 B.C., are certainly too early as they would leave almost no time at all for the first lion/calf coins.[38] The fifth, in 476 B.C., is too late for it would presuppose that Anaxilas's successors and not the tyrant himself inaugurated this coinage after his death. There remain those of 484 and 480 B.C. Barron preferred the earlier date on the basis of the Passo di Piazza hoard[39] which contained one didrachm of the mule cart type of Rhegion and which he thought had been buried before 480 B.C., although now a somewhat later date, 480/78 B.C., is generally accepted. The hoard also included three didrachms of the beginning of Group IV of Akragas. As Westermark has shown in a recent study,[40] they are contemporary with the didrachms of Himera of Akragantine type, dated historically between 483 and 472 B.C. No reason compels us to date Anaxilas's victory in 484 B.C., and in fact 480 B.C., the date suggested by E. S. G. Robinson, is preferable as it agrees better with the historical context. With the new types, Anaxilas also changed the standard of the coins from the Euboic-Chalcidian to the Euboic-Attic (four drachms to the tetradrachm instead of three to the stater, both of about 17 g). This is the standard used in Syracuse from the beginning of its coinage in the sixth century B.C. and after the battle of Himera in 480 B.C., which established the city's supremacy and the Deinomenid's hegemony over most of the island, it was adopted by all the other cities striking coins. It was also after the battle of Himera that Anaxilas had to renounce his rivalry with Gelon and submit to the Deinomenid authority in order to save his dominion over the Straits.

The terminus ante for the mule cart issues at Rhegion or the terminus post for the introduction of the new types, nos. 7-10, is generally thought to be the fall of the Anaxilades in 461 B.C. The hoard evidence supports this date. At that point Rhegion and Messana each resumed their own independent coinage with different types.[41] The coinage of Rhegion, from the restoration of democracy in 461 B.C. to the middle of the fourth century B.C., has been studied in a corpus by H. Herzfelder. The lower limit for his first group, to which the tetradrachms, nos. 7-10 belong, is given by the Villabate hoard.[42] A. Evans in the initial publication of the hoard suggested a burial date around 450 B.C.,[43] accepted by Herzfelder. On the basis of the coins of Gela represented in the hoard, Jenkins showed that a slightly lower date is preferable.[44] C. M. Kraay, noting that the hoard also contained one tetradrachm from Messana with the four-bar sigma, argued in favor of an even later date ca. 440 B.C.[45] Since some interruption in the coinage between the change of regimes is likely, the tetradrachms, nos. 7-10, were probably minted around 450 B.C.

The tetradrachm, no. 1, with the ethnic reading from left to right is extremely rare. The only other published specimen, from the same pair of dies, is in the collection of King Gustav VI in

[36] Robinson, pp. 18-19, pl. 5, 2-3; C. Arnold-Biucchi, "Appunti sulla zecca di Messana dal 480 al 450 B.C.," *NumAntClas* 12 (1983), pp. 49-64.

[37] Diod. 11.48.2.

[38] Regardless of whether this Chalcidian series began first at Rhegion soon after Anaxilas's accession to power in 494/3 B.C., or in both cities at the same time in 489/8 B.C., after Messana as well fell under the tyrant.

[39] *IGCH* 2068. J. P. Barron, *The Silver Coins of Samos* (London, 1966), p. 42; but see Jenkins, *Gela*, pp. 21-22 and 156.

[40] U. Westermark, "Overstrikes of Taras on Didrachms of Acragas," *Essays Thompson* (1979), pp. 287-93.

[41] Herzfelder, pp. 46-47.

[42] *IGCH* 2082. Herzfelder, pp. 46-47; Jenkins, *Gela*, pp. 66-67 and 160.

[43] "Contributions to Sicilian Numismatics," *NC* 1894, pp. 201-16.

[44] Jenkins, *Gela*, p. 66.

[45] C. M. Kraay, *Greek Coins and History* (London 1969), pp. 35-36.

Stockholm (see catalogue). The same reverse die is also combined with a different obverse.[46] All the other coins from the mule cart/hare series at Rhegion bear a retrograde legend. The "abnormal" reverse die of no. 1 probably belongs to the beginning of the series, close to 480 B.C. It is interesting to note that Messana does exactly the opposite—the retrograde ethnic is rare, and the legend from left to right normal. The tetradrachms, nos. 3-6, have wider flans which indicate a later date. Nos. 7-10 are all from the same pair of dies, Herzfelder 1 (D1/R1). The obverse has been recut[47] and on the reverse, die breaks have developed on the wreath and on the foot and raised right arm of Iokastos. In other words the dies are worn but the coins need not have circulated long after 450 B.C.

AKRAGAS

There are 8 tetradrachms from Akragas in the hoard, nos. 11-18, from 7 obverse dies and 8 reverse dies. The main types—eagle and crab—are the same as those of the earlier didrachms and remain constant throughout the coinage of the city, including the bronzes. Only toward the end of the fifth century B.C. does a horse quadriga appear on the obverse. The eagle on the obverse, with a large beak and thick leg feathers, is a sea eagle.[48] It is the sacred animal of Zeus whose cult is well attested in Akragas.[49] We know that Theron erected a colossal temple to Zeus after his joint victory over the Carthaginians at Himera in 480 B.C.[50] The reverse bears the original and very plastic representation of the crab to which sometimes symbols are added (nos. 15, 16, 18). Several interpretations, more or less fanciful, have been advanced for this type.[51] It now seems certain that it is a fresh water crab of the species *telphusa fluviatilis*[52] and generally believed to be a symbol of the river god Akragas after whom the city was named. The Greek καρκίνος may at the same time be a pun on the name of the city.

Chronology of the Akragas Issues

U. Westermark is completing a corpus on the mint of Akragas and the sequence of the coins here follows her arrangement.[53] The city started its coinage ca. 510 B.C. with an important issue of didrachms. On hoard evidence, these no doubt preceded the tetradrachms and do not overlap them. So the terminal date of the didrachms gives us the terminus post quem for the tetradrachms. Jenkins, in his monograph on Gela, established a preliminary arrangement of the didrachms in four groups, dated between 510 and 480 B.C.[54] U. Westermark has now confirmed the relative chronology but also revised the absolute dates.[55] She proved that Group 3 must end around 483/2 B.C. and Group 4 must be contemporary with the Himera didrachms minted during the Akragantine dominance 482-472 B.C.[56] The year 472 B.C. marks the end of the long and stable reign of Theron over Akragas. His son succeeded him only very briefly. The didrachms, then, end with the tyranny. It is probably at this time that an interruption in the

[46] Hess, 25 Mar. 1929 (Vogel), 115.

[47] Herzfelder, pp. 24-25 and 72-73; pl. 1 and pl. 20, 1c, 1b, 1q.

[48] *Haliaeetus albicilla*; see U. Westermark, "The Fifth Century Bronze Coinage of Akragas," *AIIN 25, Suppl.* (1979), pp. 7-8.

[49] J. A. de Waele, *Acragas Graeca* (s'Gravenhage, 1971), pp. 185-88.

[50] G. Gruben, *Die Tempel der Griechen*, 3rd ed. (Munich, 1980), pp. 297-99.

[51] For instance I. Cazzaniga, "Un'ipotesi sul significato dell'emblema del granchio nella monetazione di Akragas Sicula," *NumAntClas* 1 (1972), pp. 27-31.

[52] Westermark, (above, n. 48), pp. 8-9.

[53] I am much indebted to her for reading and revising my original seminar paper and discussing many problems with me.

[54] Jenkins, *Gela*, pp. 162-64.

[55] Westermark (above, n. 40), pp. 287-93.

[56] The relevant hoards are Gela, Monte Bubbonia, and Casulla, *IGCH* 2066, 2071, and 2075 (see below, pp. 41-44).

coinage occured—a hypothesis supported by the hoard evidence. The Monte Bubbonia and Casulla hoards, both buried perhaps ca. 470 B.C., contained only didrachms of Akragas and no tetradrachms.[57] So the period between 464 or 461 and 450 B.C. where the dated issues of other mints in the Randazzo hoard belong, seems very suitable for the tetradrachms of Akragas as well.

The crab on the first tetradrachms has a rather small and triangular body (no. 11); symbols are added later as on the didrachms.[58] All dies represented in the Randazzo hoard are well known in several specimens except for the pair of dies of no. 12, with the legs closely parallel on the left on the reverse, known only from a plated coin in Naples.

GELA

There are 29 tetradrachms from Gela in the hoard, nos. 19-47, from 17 obverse dies and 21 reverse dies, including one die combination and one reverse die not known to Jenkins in his 1970 monograph.

Obverse 32 (no. 19) inaugurates the regular series of tetradrachms,[59] preceded only by a very short experimental issue at the end of Group 1. The Syracusan quadriga is adopted as obverse type and remains constant throughout the entire coinage of Gela for this denomination, with variations only in the adjunct symbols. As noted above, the four-horse racing chariot is an agonistic type and it is most likely that the first Sicilian to win the Olympian chariot race was a Geloan, Pantares,[60] father of the tyrant Kleandros. The small Nike flying above the chariot, crowning the horses, symbolizes the victory. In the later group of tetradrachms (nos. 40-47), Jenkins Group 3, the Nike is replaced by an Ionic column shown behind the horses. In this context it must be interpreted as a terma, a turning post in the race.[61] The man-faced bull of the reverse represents the characteristic Geloan type, already adopted in the earliest issues of didrachms. Only the forepart appears in the two groups of tetradrachms present in the hoard. He is always bearded, with taurine ears and horns. The bent legs are often interpreted as "swimming" but more likely they simply conform to the archaic "Knielauf" schema and indicate movement.

In spite of H. P. Isler's thesis, according to which the man-headed bull always represents the river god Acheloos,[62] one must recognize here the local river god Gelas,[63] just as other Sicilian and South Italian cities represent their local river gods on their coins. In this group of tetradrachms, symbols appear in the obverse exergue: a wheat ear (no. 40), or a ketos (no. 41-43). In the past such symbols have been interpreted in connection with contemporary historical events,[64]

[57] In addition, we know that the Sicily, 1890 hoard (*IGCH* 2076) also contained coins of Akragas but unfortunately E. J. Seltmann's description ("Über einige seltene Münzen von Himera," *ZfN* 1895, p. 165), is too general and it is impossible to determine whether the hoard contained didrachms, tetradrachms, or both denominations.

[58] Jenkins, *Gela,* pl. 37.

[59] Jenkins, *Gela,* p. 43.

[60] Dunbabin, pp. 378 and 404.

[61] Jenkins, *Gela,* pp. 53-54.

[62] H. P. Isler, *Acheloos, Eine Monographie.* (Berne, 1970); *LIMC* 1, 1, s.v. "Acheloos" (Isler), coins: pp. 15-16, nos. 32-53 (Gela nos. 32-35).

[63] F. Imhoof-Blumer, "Fluss- und Meergötter auf griechischen und römischen Münzen," *SNR* 23 (1923), pp. 199-201; Jenkins, *Gela,* pp. 165-75; Lacroix, pp. 116-17; *LIMC* 4, s.v. "Gelas" (Cahn).

[64] E. Boehringer, *Die Münzen von Syrakus* (Berlin, Leipzig, 1929), pp. 88-89 (hereafter E. Boehringer, *Syrakus*) for the ketos as symbol of the battle of Kyme in 474/3 B.C. and pp. 90-93 for the lion and other symbols.

a view which has since been decisively challenged.[65] We simply do not know the precise meaning of such symbols; perhaps they were used primarily to mark the issue. It is interesting to note that for Sicily the same symbol occurs at the same time at different mints, according to the revised lower chronology; for example: the ketos at Gela, Katane and Syracuse; the palmette at Gela and Katane; the lion at Syracuse and Leontinoi.

Chronology of the Gela Issues

The coinage of Gela has been treated in full in Jenkins's exemplary and exhaustive corpus.[66] His chronology has met with general approval,[67] aside from some minor revisions.[68] Like Akragas, Gela first issued didrachms (Jenkins Group 1) followed without overlap by the tetradrachms (Jenkins Group 2).[69] The Passo di Piazza hoard (*IGCH* 2068)[70] gives the terminus post quem for these: it did not contain any tetradrachms and as we have seen it cannot have been buried before 480/78 B.C. because of the Akragas didrachms of Group 4 and the Messana mule cart/hare didrachm. C. M. Kraay suggested that the tetradrachms with the new Syracusan obverse were introduced by Polyzalos, on his accession to power in Gela after Gelon's death in 478/7 B.C. This possibility also occurred to Jenkins even though he did not stress the point.[71] The lower limit of this first group of tetradrachms is given by the Monte Bubbonia hoard (*IGCH* 2071) buried ca. 475/70 B.C., as Jenkins established.[72] The latest coins represented are didrachms from Akragas Group 4 and didrachms from Himera with the crab on the reverse,[73] both dated to the reign of Theron of Akragas over Himera 483/2-472 B.C. Kraay argued for a date ca. 465 B.C. or later[74] but his interpretation of the Sicily, 1890 hoard (*IGCH* 2076) should not be followed, as we shall see in detail below. The first issue of tetradrachms, nos. 19-39, can be dated generally to the reign of Polyzalos.

The tetradrachms, nos. 40-47, belong to Jenkins Group 3—an interval of some years separate them from the previous group.[75] The style has changed and on the obverse an Ionic column and a symbol in exergue are introduced. There is no direct evidence for the dating of Group 3. Jenkins places it between 465 and 450 B.C. on the basis of the number of dies used and of the beginning of Group 4. The terminus post quem for Group 4 is given by an overstrike of Gela on a coin of Mende dated ca. 450 B.C.[76] Group 3 belongs to the period of restored democracy.

Jenkins has described all the dies and their stylistic evolution in great detail and with great precision and I can only refer the reader to his book. Nos. 27-28 deserve special notice as they present a die combination not known to Jenkins—O 37 with R 77. Obverse 37 occurs with R 74, 75 and 76 and R 77 with O 36 and 38,[77] so the new combination merely confirms the arrangement and reinforces the linkage of Jenkins Group 2b. The reverse die of nos. 45 and 46 is not in Jenkins's corpus. In style it is very close to R 121 and 124 and probably cut by the same engraver. Characteristic are the fine features of the face with the pointed nose and well-shaped

[65] As early as K. Regling, rev. of E. Boehringer, *Syrakus*, in *Gnomon* 6 (1930), p. 632.
[66] See above, n. 8.
[67] E.g. the reviews of P. Naster, *RBN* 1971, pp. 315-16 and N. M. Waggoner, *AJA* 75 (1971), pp. 448-49.
[68] C. M. Kraay, rev. of Jenkins, *Gela*, in *NC* 1971, pp. 332-38.
[69] Jenkins, *Gela*, p. 24.
[70] See above, n. 39.
[71] Kraay (above, n. 68), p. 334; Jenkins, *Gela*, p. 26.
[72] Jenkins, *Gela*, pp. 22-24 and 154-55.
[73] For the dating see also Jenkins, "Himera: the Coins of Akragantine Type," *AIIN* 16-17, *Suppl.* (1971), pp. 21-33.
[74] Kraay (above, n. 68), p. 335 and "The Demareteion Reconsidered: A Reply," *NC* 1972, pp. 17-18.
[75] Jenkins, *Gela*, pp. 52-53.
[76] *SNGANS* 4, 63. Jenkins, *Gela*, pp. 65-66.
[77] Jenkins, *Gela*, pp. 40-41.

mouth and the curly beard. The lettering of the ethnic is also fine and small. With O 62 we are almost at the end of Group 3 which includes O 65, the last obverse combined with the remarkable wreathed Gelas of R 130,[78] and linked to the following Group 4.

KATANE

There are 29 tetradrachms from Katane in the hoard, nos. 48-76, from 8 obverses dies and 10 reverse dies.[79] Two die combinations are new, as are one obverse die and two reverse dies.

The obverse bears a man-faced bull, representing the local river god Amenanos to the right,[80] usually with the right foreleg bent to indicate that he is "swimming" or simply in motion, or sometimes just standing (nos. 70-73). The fish under the river god and the lack of exergue line in the earlier dies (nos. 48-59) emphasize the idea of the water. The branch above seems to be a pine branch.[81] The sea monster (nos. 60-69) can also be interpreted as a marine symbol although its precise meaning remains unclear as at Syracuse and Gela. The palmette is purely decorative. Other symbols on the obverse are the Satyr (nos. 60-69) or the Nike (nos. 70-73).

On the reverse Nike appears, her hair rolled up, clad in a long, transparent chiton, showing the outline of the breasts and the legs. She runs or walks to the left, a fillet in her outstretched right hand, holding her drapery with her left (no. 48) or a branch (no. 70) or a wreath (no. 73). The type is quite common on coins and does not necessarily relate to a political victory such as that over the tyranny in this case. More likely it alludes to an agonistic victory. The later reverse dies, nos. 70-76, have a letter in field, ϟ or H. The ethnic is KATANE at first (nos. 48-58), then KATANAION (nos. 59-69, 74-76) or sometimes KATANAIOΣ (nos. 70-73).

Chronology of the Katane Issues

The Katane tetradrachms in the hoard represent the first emission of the city in its own name. Not much is known of the early history of Katane:[82] it must have fallen under the domination of the tyrants with Kallipolis, Leontinoi and Naxos around 497 B.C. In 476 B.C., probably after an eruption of Mount Etna, Hieron of Syracuse evacuated the Kataneans to Leontinoi and refounded the city under the name of Aitna[83] with new settlers from Syracuse and the Peloponnese. It became his capital. After the fall of the tyranny in 467 B.C., Hieron's supporters were allowed to leave and settle at Inessa, which they renamed Aitna, and the original inhabitants of Katane could return home. It is at that time and not earlier as previously thought,[84] that the first coins in the name of Katane were minted.[85] Two issues in the name of Aitna survive—the first is known only by a unique tetradrachm in a private collection, bearing on the obverse a quadriga driven by Athena and on the reverse the seated figure of Zeus

[78] Jenkins, *Gela*, p. 57 and pl. 54.

[79] The early rumor that there were about 40 tetradrachms of Katane in the hoard remains unsubstantiated.

[80] *LIMC* 1, 1, s.v. "Amenanos" (Cahn), pp. 663-64.

[81] S. Mirone, "Le Monete dell'antica Catana," *RIN* 30 (1917), p. 138, thinks it is the river plant *parietaria officinalis*.

[82] C. Boehringer, "Hieron's Aitna und das Hieroneion," *JNG* 18 (1968), pp. 68-69.

[83] Diod. 11.49.1-2; Strabo C 268.

[84] *HN*, p. 130; Rizzo, *MGS*, p. 102.

[85] Already in 1929 E. Boehringer, *Syrakus*, p. 89, argued that because of their very developed style, the Amenanos/Nike tetradrachms must belong *after* 461 B.C.; see also W. Schwabacher, "Zu den Münzen von Katana," *Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung* 48 (1933), pp. 121-26; C. Boehringer (above, n. 82), p. 94 and "Rekonstruktion des Schatzfundes von Ognina 1923," *SNR* 57 (1978), p. 138; Kraay, *ACGC*, p. 217.

Aitnaios, and by another unique drachm with a horseman and Zeus Aitnaios.[86] The second consists of the unique tetradrachm in Brussels with the impressive Silenus head on the obverse and the seated Zeus on the reverse,[87] accompanied by a series of obols. The issue with Athena as charioteer is certainly the earlier and dates from Hieron's Aitna, between 476 and 466 B.C. It was a special issue in honor of Hieron, while the regular money needed by the tyrant was supplied by the other mints under Deinomenid rule, such as Syracuse and Gela. The Brussels tetradrachm is generally thought to belong to Aitna-Katane and to be the work of the master of the Naxos tetradrachm, here nos. 227-31, struck just before 461 B.C. Kraay, however, pointed out that after the death of the last Deinomenid, Thrasyboulos, in 466 B.C. there was hardly an occasion for such a splendid coin and he suggested that the Brussels tetradrachm might be the first issue of Inessa rather than the last of Aitna.[88] This is possible: the disappearance of the Syracusan quadriga from the obverse supports a date after the fall of the tyranny. The new settlement of Inessa/Aitna could be an appropriate occasion for the coin. The style is close to that of the Naxos tetradrachm and also to that of the first issue of Rhegion after 461 B.C. with the seated Iokastos, here nos. 7-10. However, Kraay's argument is weakened by the fact that the litrai of Aitna also bear a Silenus head which continued in the litrai of Katane.

Katane then minted one special issue under Hieron in the name of Aitna and started its regular autonomous coinage only after the fall of the tyranny in 465 B.C. This is not surprising since the tyrants tended to monopolize the coinage and to prevent cities under their rule from striking autonomous coins as, for example, at Naxos and Kamarina.

The Amenanos/Nike tetradrachms from Katane are perhaps the most important and most interesting component of the hoard. These coins are quite rare, as a glance through the major collections and catalogues shows. The catalogue indicates the number of specimens known from each die pair before and after the discovery of the Randazzo hoard (e.g. 5/11), which on average has more than doubled their number. Very rarely do they appear in hoards (see chart, pp. 42-43) and never in any large number. To date only the Ognina hoard[89] contained as many as 10 tetradrachms of Katane of the Amenanos/Nike type. Thus the Randazzo hoard with 29 examples is quite exceptional. The coins are not all in good condition; some are encrusted with a layer of dirt, as nos. 57 and 71. Many of them are poorly struck, off center, and often double struck (nos. 52, 56, 60, 62). Some might be overstruck if the flattened flan is an indication (nos. 51, 62, 75) but no traces of an undertype are discernable. The dies were used for a long time even after they began to crack (as the die of no. 48 at the right foreleg) or became corroded (nos. 56-57). It is interesting to note how closely die linked the group is. The whole relative sequence of the first issue of Katane with river god and Nike can be reconstituted practically on the basis of the specimens present in the Randazzo hoard. Few dies seem to be missing: the most conspicuous being the obverse die of Ognina 74 with the crane above the bull as symbol, which certainly belongs at the beginning, as shown by the reverse die linking to the obverse die with the branch (no. 48). Also not represented in the hoard is the later die with a similar water fowl as symbol in the British Museum[90] or some with the Satyr as symbol. But the series is almost complete, as the latest dies with the Nike as symbol above the man-faced bull are present in the hoard. The die linkage indicates on the one hand that the coins must have been minted in a short span of time and also that they were struck not far from their burial site which strengthens the likelihood of Randazzo as the find spot.

[86] C. Boehringer (above, n. 82), pl. 7, 1-2; Kraay, *ACGC*, p. 212, 837.

[87] *De Hirsch* 269; Kraay, *ACGC* 838.

[88] Kraay, *ACGC*, p. 213 and also in his rev. of Jenkins (above, n. 68), p. 337.

[89] *IGCH* 2120. C. Boehringer, *SNR* 57 (above, n. 85), pp. 102-43. The new "East Sicilian" hoard (Randazzo 2), to be published by C. Boehringer, also contains tetradrachms of this series, including one specimen of the hitherto unique Ognina 74.

[90] *BMCSicily*, p. 41, 3; Rizzo, *MGS*, pl. 9, 15.

With the conservative estimate of one die per year, the bull/Nike series fits very well between the years following the return of the Kataneans to their city after the death of Thrasyboulos and ca. 450-445 B.C.[91] The more common quadriga/Apollo head tetradrachms which will replace this series are not represented in the hoard and cannot have started before 445/40 B.C. Nos. 59 and 73 present new die combinations. No. 69 stands out due to its very different, barbarous style: both the Nike and the man-faced bull are cut in shallow relief; the folds of Nike's chiton are very linear and stiff and so is the rendering of the feathers of the wings. No. 76 presents a new reverse die, certainly by the same hand as nos. 73 and 74, as can be seen in the rendering of the drapery and the wing. But the disposition of the letters of the legend is different, starting at the bottom of the wing and ending at the fillet. The H in field is smaller than on no. 71.

LEONTINOI

There are 14 tetradrachms from Leontinoi in the hoard, nos. 77-90, from 9 obverse dies and 11 reverse dies. Nos. 77-87 belong to the first issue of the city and 88-90 to the second. Only one reverse die, no. 83, was hitherto unknown.

The first group has on the obverse the typical four-horse chariot, the agonistic type first introduced at Syracuse. The reverse shows a lion's head in profile, with jaws opened wide and the tongue protruding; all surrounded by four grains of barley. The lion is the sacred animal of Apollo whose cult was predominant in the Chalcidian colonies.[92] The type also offers a pun on the name of the city. The grains of barley symbolize the fertility of the soil which brought wealth to the city and at the same time indicate the denomination, the four-drachma piece.

In the second group, nos. 88-90, the Nike on the obverse crowns the charioteer rather than the horses. A lion appears in the exergue; again it must be interpreted as an allusion to the cult of Apollo, despite the different interpretations given this symbol, which will be discussed in greater detail below in relation to the parallel issue at Syracuse. On the reverse the head of Apollo himself replaces the lion; it is surrounded by three laurel leaves and a small lion like the one on the obverse.

Chronology of the Leontinoi Issues

The mint of Leontinoi awaits complete study by Christof Boehringer. The arrangement of the coins in the catalogue follows that of the corpus in preparation. On hoard evidence, it is now generally accepted that coinage at Leontinoi did not start as early as previously thought. We know that the city was taken by Hippokrates of Gela around 490 B.C., as were Kallipolis, Naxos and Zankle.[93] As Naxos, Katane, and Kamarina, Leontinoi did not strike its own coinage in that period. In 476 B.C., Hieron of Syracuse moved the inhabitants of Naxos and Katane to Leontinoi and enlarged the city.[94] It must be at that time that the first coins were issued. There are no coins of Leontinoi in the Gela hoard buried ca. 490/485 B.C.,[95] nor in the Passo di Piazza hoard

[91] The number of dies is by no means an absolute criterion for calculating the duration of an issue and for establishing a chronology. We know very well from Athens and Syracuse, for example, that a mint could produce many dies in a single year. Nevertheless when a series of coins is tightly die linked and exhibits some stylistic development--as we have here with nos. 48-76 and below, p. 27, nos. 174-226, the beginning of the Nike series at Messana—the length of the issue can be estimated roughly on the basis of one die per year, to be checked of course against other arguments.

[92] H. A. Cahn (above, n. 32), p. 192; Lacroix, pp. 139-42.

[93] Hdt. 7.154; Dunbabin, pp. 380-81 and 433-34. For the earlier dating see H. Chantraine, "Syrakus und Leontinoi," *JNG* 8 (1957), pp. 7-19; Holm, pp. 580-81.

[94] Diod. 11.49.1-2; Strabo C 268; C. Boehringer (above, n. 82), p. 71.

[95] Price and Waggoner, *Asyut*, p. 20, date the burial at 480 B.C.

buried ca. 480/78 B.C., but two tetradrachms are present in the Monte Bubbonia hoard buried ca. 475/70 B.C.[96] They are of the quadriga/lion's head type and struck from the very first die of this issue.[97] Leontinoi, unlike Gela and Akragas, must have minted tetradrachms and didrachms at the same time; the Casulla hoard (*IGCH* 2075), buried ca. 470/65 B.C., contained two didrachms from Leontinoi. Also the lion's heads are very similar in style on both denominations. Exactly how long this first issue lasted can only be determined by the final die study but it seems reasonable to assume that it did not extend beyond Hieron's death in 466 B.C. Nos. 77-87 belong to this period. Few die links occur among the tetradrachms represented in the Randazzo hoard and it can therefore be inferred that the total issue was much larger than the coins represented here. Style variations among the issues confirm this: there is a great difference between the lion's heads of nos. 77-81, with a very fine and stylized mane, and the more realistic version of nos. 83-85, certainly of later date. No. 87 introduces the ethnic ΛΕΟΝΤΙΝΟΝ in exergue on the obverse and a dotted truncation of the lion's head on the reverse.

The dating of the second group, nos. 88-90 poses a problem which will only be solved satisfactorily by the complete die study and by the detailed publication of other hoards. The similarity between the tetradrachms of Leontinoi with the early Apollo head and the Syracusan Demareteia is obvious: they both bear the same lion in exergue on the obverse, repeated on the reverse as well at Leontinoi; both the Arethusa and the Apollo heads are wreathed with laurel and present a close similarity of style.[98] No doubt the Leontinoi tetradrachms were influenced by the Demareteion. But there are also differences such as the rendering of the eye, clearly in profile on no. 90, whereas the Demareteia still show a frontal eye.[99] Also the quadriga at Leontinoi, with the more realistic and fleshy charioteer, compared to the wiry, stylized one of the Demareteia, is more advanced in style. So the Leontinoi tetradrachms are somewhat later but how much later remains open. If we accept a dating of the Syracusan decadrachm in the last years of Hieron's reign, there is not sufficient time for the early Apollo head tetradrachms of Leontinoi; this type so strongly associated with the Deinomenids must have been minted before their fall. On the other hand since the mint opened around 476 B.C., both issues of tetradrachms represented here must be compressed within ten years at the most. The early Apollo head issue at Leontinoi was no doubt a very limited one as there seem to be only two obverse and two reverse dies known.[100] It is of course possible that the lion's head tetradrachms were parallel to this issue in the early 60s of the fifth century B.C. instead of strictly sequential and also that the output of the mint of Leontinoi in Hieron's days was much more important than the conservative estimate of one die per year used for the coinages of Katane and Messana in the same period. One can also question whether in this early period a change of political regime was necessarily reflected in the coin types. At any rate we must assume that the two Leontinoi series present in the Randazzo hoard belong to Hieron's reign.

The new reverse die, no. 83, with the fine lettering of the ethnic, the high relief of the lion's head, and the rendering of the contour of the jaw in a half circle, is very similar to that of the tetradrachm in Naples from the same obverse die and most likely by the same hand.

[96] *IGCH* 2071. Jenkins, *Gela*, pp. 22 and 154-55. The hoard cannot have been buried as late as 465 B.C., as Kraay has suggested, see U. Westermark and G. K. Jenkins, *The Coinage of Kamarina* (London, 1980), p. 23 (hereafter Westermark and Jenkins, *Kamarina*).

[97] Rizzo, *MGS*, pl. 22, 4.

[98] See R. Holloway, "Demarete's Lion," *ANSMN* 11 (1964), pp. 6-11, for the Demareteion Master at Leontinoi.

[99] E. Boehringer, *Syrakus*, pl. 14; Rizzo, *MGS*, pls. 24 and 36.

[100] Based on examination of the coins in the major published collections and in the ANS photo file.

MESSANA

There are 136 tetradrachms from Messana in the hoard, nos. 91-226, from 70 obverse dies and 67 reverse dies. Like the coins of Rhegion, nos. 1-10, they can be divided into two different groups: nos. 91-173 bear on the obverse a mule cart and nos. 174-226 have the addition of a small Nike flying above the mules.

The types of the mule cart and the hare are identical to those of the first group at Rhegion, nos. 1-6, except for the ethnic, and have been explained above. They are the original badge of the tyrant Anaxilas. In the second group, the basic type is maintained but altered slightly by the adjunct of the small Nike crowning the mules on the obverse and of symbols or letters on the reverse above or below the hare's body, whereas at Rhegion, as we have seen, the types change to a lion's head and seated oecist at that time. The Nike is an agonistic symbol and refers to the victory at the Olympian games; she does not symbolize the victory over the tyranny as has been postulated.[101]

Chronology of the Messana Issues

The absolute chronology of the two groups of tetradrachms of Messana in the hoard is the same as that of Rhegion as Robinson has already demonstrated.[102] The new types of Anaxilas struck on the Attic standard, replacing the lion's head/calf's head types on the Euboic-Chalcidian standard, were introduced in 480 B.C. after the tyrant's victory at Olympia, and lasted until the fall of the Anaxilades in 461 B.C. Since the issue without the Nike is a fairly large one, it seems reasonable to assume that the one with the Nike starts when Rhegion introduced the lion's head/oecist issue. From then on the two cities resumed their independent coinages. To date there are no known reverse die links between the two groups of Messana; an interruption in the coinage must have occurred with the change of regime. The lower limit of the second group of tetradrachms of Messana in the Randazzo hoard is given in relative terms[103] by a change in the lettering of the ethnic: all the coins bear the curved sigma ϛ. The four-bar sigma Ϟ was introduced soon after the burial date of the hoard and gives a terminus ante quem for the tetradrachms, nos. 174-226.

The hoard evidence for the introduction of the four-bar sigma is scanty as so few hoards have been published in detail. Also the coins of Messana were once regarded as less interesting or less important than those of other Sicilian mints such as Syracuse or Gela and are often not described at all in hoard reports dating to the end of the nineteenth or the beginning of the twentieth century. Three hoards in particular would be important: Calabria 1833, Villabate 1893 and Selinunte 1923.[104] All contained tetradrachms of Messana but the details of the lettering are known only for the Villabate hoard: it contained 13 tetradrachms of the mule cart type, 10 of which had the four-bar sigma Ϟ.[105] A burial date ca. 445 B.C. is generally accepted.[106]

Other factors can be considered in trying to establish the duration of the Nike group with the curved sigma, such as the number of dies represented, as Kraay has suggested,[107] and over-

[101] Kraay, "Fifth Century Overstrikes at Rhegium and Messana," *AIIN* 12-14, *Suppl.* (1969), p. 143.
[102] Robinson, p. 18; see also C. Arnold-Biucchi (above, n. 36), pp. 49-64.
[103] Only in relative terms unfortunately since epigraphists often rely on the coin evidence for the dating of the lettering; see L. H. Jeffrey, *The Local Scripts of Archaic Greece* (Oxford, 1961), p. 243.
[104] *IGCH* 1891, 2082, and 2084.
[105] Evans (above, n. 43), p. 210.
[106] Jenkins, *Gela*, pp. 66-67. Westermark and Jenkins, *Kamarina*, p. 22.
[107] Kraay (above, n. 101), pp. 141-50; *ACGC*, p. 219.

strikes. There are 14 obverse dies and 12 reverse dies in this issue; a duration of about 10 years seems plausible. So the absolute dates for the two groups can be established as 480-461 B.C. for the first group and 461-450 B.C. for the second group.

The relative sequence within the issues, however, remains more difficult to reconstitute. Until a complete corpus of the coinage of Messana is compiled,[108] only a working hypothesis can be suggested.

The first group is particularly difficult to order because of the absence of symbols which could help to reconstruct the sequence. Style is not really helpful either. There is very little evolution in the treatment of the mules, the charioteer, and the hare. There are differences between the rather stylized and elongated charioteer of nos. 91 and 93 for instance, where both are of about the same size, and the more fleshy, squat and realistic version of nos. 165 and 168. Changes also occur in the leaf in the exergue, small and bulky on nos. 91 and 93 or small and flat on nos. 99-100, or larger and more naturalistic, with a rendering of the veins on nos. 146 and 156. The hare on the reverse develops from the skinny animal with a small head and short ears of nos. 91, 93, 98 into a more muscular and well-proportioned rendering in nos. 156 and 167. The basic position however remains the same throughout: the hare is running to right with outstretched parallel paws. On the whole these details are not sufficient to permit a refined stylistic classification, as for instance can be determined by the numerous variations in the rendering of the head of Arethusa at Syracuse in the same period.

Many die links have already been observed (see catalogue) and eventually they will assure the reconstitution of the series without the Nike. Meanwhile the most reliable criterion seems to be the lettering of the ethnic on the reverse. It is always MESSENION in the group without the small Nike, in the Ionian form, usually written from left to right around the hare, starting at the hind paws and ending at the tail, except for the dies of nos. 91-92 and 93-94 where the inscription is retrograde. At Rhegion, as we have seen, the opposite occurs and the "normal" form from left to right constitutes the exception. Such short-lived variations are usually thought to be experimental and placed therefore at the beginning of a series. At Messana this arrangement also agrees with the style: the stylized mule cart and hare of no. 91 are certainly earlier than those on no. 159 for example. The curved sigma is a local variation found at Rhegion and Zankle-Messana.[109] On most dies in both groups the sigma is reversed, pointing to the left. Only the dies of nos. 99, 105-6, 107, 108, 114-15 and 126 in the first group and of nos. 177-78, 179-80 and 226 in the second group have the right-pointing sigma.[110] Obverse die links connect the two forms: no. 99 is linked to no. 100 by the same obverse die and nos. 176 and 177 also share the same obverse die. The sigma pointing to the left and the one pointing to the right, or the reversed and the normal sigma, alternate rather than follow or supplant each other, as they both occur in the two groups. In the second group, whose sequence is certain, the sigma pointing to the right Ϛ appears at the beginning with the letter A and is replaced by Ϲ with B, C, and D but reappears later, if indeed no. 226 belongs where I have put it.

The shape and size of the letters vary: sometimes they are small and regular, as on nos. 91, 100, 108, or large and thicker as on nos. 137 and 147. Nos. 123, 125, and 129 show particularly small letters in the ethnic but it is possible that these dies were intended for didrachms rather than for tetradrachms.

The Nike group (nos. 174-226) is easier to classify: numerous die links, as well as symbols and letters on the reverse, assure the correct sequence. The letters A, B, C, and D appear below the hare. Coins with B and C share the same obverse die (nos. 184-194) and the wear of the die

[108] See above, n. 35.

[109] Jeffery (above, n. 103), pp. 80 and 243-44.

[110] I don't believe the letters are "inadvertently reversed" as Jeffery states, p. 243, since this is the more common form; the die engraver simply did what was easier for him.

confirms the alphabetical order. Moreover the change in the ethnic from the Ionian **MESSENION** of the first group without Nike to the Doric **MESSANION** occurs at the beginning of the Nike group, more precisely between the letter **A** and the letter **B** issues: nos. 179-80 still have **MESSENION** but nos. 181-184 have **MESSANION**. The obverse die of no. 178, in more worn condition, is also used in combination with the reverse of 179, to strike coins with the letter **A**,[111] proving that nos. 176 and 177 with the olive twig as a symbol below the hare must be placed before the series with letters (nos. 179ff.).

Nos. 174 and 175 with the olive twig and the olive as symbol, very likely belong at the beginning of the group. The round **C** for gamma and **D** for delta are typical archaic forms of the Euboean-Chalcidian alphabet. Letters were used on the coinage of the Samians at Zankle, where **A**, **B**, **Γ**, **Δ**, **Ξ** and **Z** marked the yearly issues.[112] The meaning of the letters in the Nike group at Messana is probably the same although they cannot be interpreted strictly as dates, rather they served to distinguish the issues. They cannot be meant to mark the dies since different dies share the same letter as on the coins of the Samians. The four issues vary in size and importance, it seems: there are many more coins with **B** and **C** than with **A** even though the number of dies used is approximately the same (perhaps 3). It is interesting to note that dies in this period were used until badly deteriorated: the dies of nos. 184 and 217 in particular continued to be used even after corrosion had made them almost unrecognizable. Also in this period dies were often recut: the **B** of nos. 185-87 is recut into a **C** on no. 188 and it confirms the practice of keeping the dies in use as long as possible. The reason might have been a shortage of die cutters after the fall of the Anaxilades when Rhegion and Messana resumed their independent coinage. A comparison of the coins struck after the restoration of democracy in 461 B.C. at Rhegion (nos. 7-10) and at Messana (Nike group nos. 174-226) is striking: at Rhegion the quality of the engraving is far superior, with the beautiful and plastic lion's head facing and the seated oecist on the reverse, which successfully realizes an attempt at perspective. The coins are also carefully struck. At Messana, in contrast, the same mule cart and hare continue with practically no stylistic development. Only with the die of no. 203 do we encounter a representation in three-quarter view of the charioteer on the obverse. Otherwise the dies seem to have been made and cut poorly: not only do they rust but they also break very easily (nos. 174-75 and nos. 177-78 each have a large flaw behind the hare's neck). The coins of this series were struck hastily and carelessly. Many of them show signs of double striking (nos. 185-87, 193-99, 212-13, 217, 223). Obviously Messana needed coins quickly and in large quantities in that period. The small gold issue which, as I have suggested elsewhere, most likely belongs to this same period,[113] reinforces the idea of an emergency coinage, struck perhaps to pay the soldiers or mercenaries who helped in the expulsion of the tyrants. As discussed earlier, the ancient sources for the history of Messana are scanty so we do not know in any detail what happened in that decade. At any rate, the change and the differences between the issues of Rhegion and Messana after 461 B.C., where previously the two coinages had been identical under the Anaxilades, might indicate that Anaxilas had installed a single mint[114] for the two cities under his rule, probably at

[111] No examples in this hoard; see Naville 18 June 1923 (BM dupl.), 946; Schlesinger 4 Feb. 1935, 292 (another specimen).

[112] Barron, *Samos* (above, n. 39), pp. 40-43 and 178-79, pls. 6-7; a fraction with **Z** is illustrated by W. Schwabacher, "Zur Münzprägung der Samier in Zankle-Messana," in *Wandlungen, Studien zur antiken und neueren Kunst,* Festschrift für E. Homann-Wedeking (Waldsassen, 1975), p. 108, pl. 23c; for the hemiobol in Oxford with **Z**, see Price and Waggoner, *Asyut,* p. 130, n. 26; for the shape of the letters see Jeffery (above, n. 103), p. 79.

[113] Arnold-Biucchi (above, n. 36), p. 60.

[114] G. Manganaro, "La Caduta dei Dinomenidi e il *Politikon Nomisma* in Sicilia nella prima metà del V sec. a.C.," *AIIN* 21-22 (1974/75), pp. 21-22, also suggested this possibility because of shared obverse dies between Rhegion and Messana; see Arnold-Biucchi (above, n. 36), p. 58.

Rhegion, his capital. After the fall of the tyrants, Messana practically had to open a new mint, inoperative since the period of the incuse coinage preceding the Samians at Zankle. This would explain the difficulty in finding good engravers and good craftsmen to strike the coins.

NAXOS

There are five tetradrachms of Naxos in the hoard, nos. 227-31, all from the same pair of dies.[115] The obverse bears the head of Dionysos to right, bearded, with long hair pulled up and tied in a small bun behind his neck, crowned with ivy. Dionysos was the principal god of the island of Naxos in the Cyclades,[116] but the ancient literary sources don't mention him in connection with Sicily; nor do the inscriptions, his cult is attested only by the coins. He is certainly an appropriate deity for the fertile region around Mount Etna rich in vineyards and wine.[117] The reverse depicts a naked, ithyphallic Silenos, squatting; he is bearded, with long wild hair and a tail curling around his feet; he holds a kantharos in his right hand and rests on his left. He is the usual companion of Dionysos.

Chronology of the Naxos Issues

According to Thucydides, Naxos was the first colony in Sicily, founded in 734/3 B.C. by settlers from Naxos and Chalkis. H. A. Cahn studied the coinage of the city in a corpus and believed that it was also the first mint to issue coins in Sicily.[118] After a detailed stylistic analysis, Cahn dated the beginning of the coinage ca. 550 B.C. This is now considered too early and Kraay tentatively suggests 530 B.C.[119] Moreover Selinus and Himera were the two major mints of sixth century Sicily, judging by the surviving number of coins and dies, and they must also have been the first to strike coins, not before 540/30 B.C., followed by Zankle and Naxos. The amazing feature of the coinage of Naxos is that from the beginning it displays a fully developed reverse type, the attribute of the deity on the obverse.

As noted, the city was taken by Hippokrates of Gela ca. 490 B.C. and stopped minting coins in its own name. Coinage was resumed only after the fall of the tyranny in Sicily in 461 B.C. with this remarkable issue,[120] one of the greatest masterpieces of Greek coinage and Greek art in general. The head of the obverse reflects the monumentality of early classical art and the reverse is a daring representation, both in subject and in technique, of the human body in a complicated position, beautifully contained within the narrow circumference of the flan. The artist is thought to be the same as that of the later tetradrachms of Aitna that have survived only in the unique example with the Silenos head in Brussels.[121]

There is no doubt about the date of this issue:[122] the Naxians had been moved to Leontinoi by Hieron in 476 B.C. and returned home in 461 B.C. They celebrated their recovered freedom with this new coinage.

With this issue the Naxians achieved the highest quality not only artistically but also in the manufacture of the dies: the five tetradrachms in the hoard are all from the same pair of dies

[115] There were rumors of at least seven specimens but I could only obtain casts or photographs of the five listed in the catalogue.

[116] *RE* 16 (1935), s.v. "Naxos" col. 2085 (R. Herbst); *LIMC* 3 (1986), s.v. "Dionysos," pp. 141-514 (Carlo Gaspari, "fonti letterarie" Alina Veneri).

[117] Dunbabin, pp. 211, 220.

[118] H. A Cahn, *Die Münzen der sizilischen Stadt Naxos* (Basle, 1944).

[119] Kraay, *ACGC*, pp. 206-7.

[120] Cahn (above, n. 118), pp. 42-49 and 114-17.

[121] *De Hirsch* 269.

[122] Cahn, p. 47; Kraay, *ACGC*, p. 217.

(Cahn no. 54) which is the only one known for this issue. Cahn, in 1944, listed 56 known specimens, all from the same pair of dies. The number has since increased by at least 50%, some 20 new specimens having surfaced. Drachms of the same issue (Cahn no. 56) are known in more than 78 specimens. Rarely do Greek coinages present such a high number of surviving specimens from a single pair of dies (Knidos and some Cretan mints offer an even greater frequency). The condition of the dies is equally remarkable: there are die breaks, on the reverse between the hand holding the kantharos and the border of the coin, which Cahn thinks existed almost from the beginning of the emission sequence, and also on the obverse under the truncation of the neck, in front of the mouth, and at the beard, but there is apparently very little die deterioration.[123] No. 227 is in very fresh condition and shows no traces of die breaks at the neck nor in front of the mouth on the obverse. The break in front of the mouth starts faintly on no. 228, develops into a small stroke on no. 229 and becomes larger on nos. 230 and 231 where the die break at the neck is also present, filling the border of dots.

SYRACUSE

The coins from Syracuse form the major part of the Randazzo hoard with 308 tetradrachms (nos. 232-539) or 57%, struck from 127 obverse dies and 166 reverse dies. There are three obverse and eight reverse dies that were not known to E. Boehringer,[124] as well as 25 new die combinations (including those with the new dies). Of these nos. 247, 257, 265-66, 393-96, 418, 421, 447, and 459 have been published in different sale catalogues since 1929 and nos. 307-9 are probably Boehringer's no. 271E. But nos. 232, 328-29, 333, 358, 398-99, 400, 422-23, 424, 427-29, 432, 445, 448, 469, 475, 481, and 510 are hitherto unpublished. The very limited number of new dies in such a large hoard shows once again how remarkably precise and reliable Boehringer's corpus remains even more than 50 years after its publication. We have an almost complete record of the dies.

Types of the Syracuse Issues

The types remain the same throughout the tetradrachm issues represented in the hoard with some variation in details and symbols. The obverse bears a four-horse chariot at the walk, driven by a male charioteer; the reverse shows a female head. In the first group (nos. 232-35), the ethnic ΣVRAΡOΣION or ΣVRA is placed above the horses on the obverse in a rather heavy and static composition. From the second group on (nos. 236ff.), a small Nike is added crowning either the horses or the charioteer, and the ethnic is moved to the reverse. The quadriga, which we already encountered at Rhegion, Gela, Leontinoi, and Messana, was originally a Syracusan type, first introduced there at the end of the sixth century B.C., inspired by northern Greek types.[125] The Deinomenids adopted it and developed it to celebrate their exploits at the Olympian games as a symbol of their power. As the tyrants expanded their rule over cities, the quadriga appeared on those coinages and became a truly Sicilian type. Its meaning however is purely agonistic, we must assume, and not political, or the type would have disappeared with the tyranny.

The head on the reverse is at first very small, centered on an incuse swastika, but soon develops into a fully modeled head (nos. 236ff.) surrounded by four dolphins and the ethnic. The hair style and the jewelry are rendered in an amazing variety of detail and attest to the level of

[123] Cahn, p. 116, for a detailed description.
[124] Boehringer, *Syrakus*.
[125] H. A. Cahn, "Olynthus and Syracuse," *Essays Thompson*, pp. 47-52.

sophistication of the time. The dolphins allude to the geographical location of Syracuse by the sea. The pearled diadem is purely decorative. In these early series no specific attributes characterize the female head further.[126] Therefore, following Imhoof-Blumer,[127] most scholars have recognized the local nymph on the coins[128] as in many other Sicilian or South Italian mints. She is Arethusa: Pausanias tells us that she crossed the sea from Elis to the island of Ortygia in Syracuse, trying to escape Alpheios who was in love with her.[129] She was turned into a spring sacred to the goddess Artemis.[130] E. Boehringer preferred to recognize Artemis herself on the coins[131] and his discussion created some confusion which has carried forward to the present.[132] The earliest literary sources, such as Pindar, don't mention Arethusa, but the iconography of the nymph can best be attested by the coins themselves.

The interpretation of two symbols is also important: the lion which appears on Boehringer's Group 3, 12e, the Demareteion series, (no. 524 has no lion in exergue but belongs to the same group) and the ketos, the sea monster of Boehringer's Group 4 (here nos. 525-39). The lion, as we have seen, also occurs on coins of Leontinoi (nos. 88-90) in the exergue on the obverse and under the truncation of Apollo's neck on the reverse. Several interpretations have been suggested: for Holm[133] and Head[134] it symbolized the defeated Carthaginians. Holloway[135] sees in the lion the seal of the Emmenids, the family of Demarete. Evans[136] related it to the games in honor of the Delphic Apollo. The first two interpretations give the lion a political and historical meaning for which there is no parallel in Greek coinage.

Coin types do not refer directly to historical events or personal exploits in the sixth and fifth centuries B.C., with the notable exception of Anaxilas's mule cart at Rhegion (nos. 1-6) and Messana (nos. 91ff.). The hellenistic rulers introduced allusions to their victories on their coinages (Demetrios Poliorketes, Antigonos Gonatas, Agathokles) but only the Roman emperors will become masters of political propaganda and use the coinage for that purpose. Only then does every symbol and image on the coin relate to the person of the emperor and must be interpreted as such.[137] Evan's hypothesis seems the most likely. The mythological significance of the lion is as the sacred animal of Apollo. As Boehringer pointed out, the ketos does not have any precise mythological meaning.[138] He saw in it a reference to the naval victory of the Syracusans over the Etruscans at the battle of Kyme in 474 B.C. Again this seems a doubtful interpretation as will become clear in the discussion of the chronology.

Chronology of the Syracuse Issues

E. Boehringer's book presents a corpus of the silver coinage of Syracuse from its inception to the period of the signing engravers and the change to the galloping quadriga ca. 425 B.C.[139] The

[126] Later, in the period of the signing engravers, the head sometimes wears a wreath of ears of grains or a helmet and can clearly be interpreted as Demeter/Kore or Athena, or is named by an inscription such as ΑΡΕΘΟΣΑ.

[127] F. Imhoof-Blumer, "Nymphen und Chariten auf griechischen Münzen," *JIAN* 11 (1908), pp. 47-55.

[128] Lauri O. Th. Tudeer, *Die Tetradrachmen von Syrakus in der Periode der signierenden Künstler* (Berlin, 1913), pp. 271-75; more recently, *LIMC* 1, 2 (1984), s.v. "Arethousa," pp. 583-84 (Cahn).

[129] Paus. 5.7.2. For additional literary sources, see Cahn (above, n. 128).

[130] Diod. 5.3.5.

[131] *Syrakus*, pp. 95-102.

[132] Lacroix, p. 106.

[133] Holm (above, n. 6), vol. 3 (Leipzig, 1898), p. 582.

[134] B. V. Head, "On the Chronological Sequence of the Coins of Syracuse," *NC* 1874, p. 10.

[135] R. Ross Holloway, "Demarete's Lion," *ANSMN* 11 (1964), pp. 1-11.

[136] A. J. Evans, "Syracusan 'Medallions' and their Engravers," *NC* 1891, pp. 332-33.

[137] K. Christ, "Antike Siegesprägungen," *Gymnasium* 64 (1957), pp. 509-31.

[138] *Syrakus*, pp. 84-90.

[139] Where Tudeer's study begins (see above, n. 128).

relative classification of the issues is based on die linkage and remains sound. As noted above, since the publication of the corpus very few new dies have come to light in the numerous hoards recovered in the past 50 years. When they do occur, they can always be inserted logically into Boehringer's arrangement. There is no cause to revise the relative sequence except perhaps in some minor details.

Boehringer proposed the following absolute dates:

Group 1	(Series 1-2)	530-510 B.C.	(nos. 232-35)
Group 2	(Series 3-5)	510-485 B.C.	(nos. 236-43)
Group 3	(Series 6-12d)	485-479 B.C.	(nos. 244-533)
	(Series 12e) Demareteion	480-479 B.C.	(no. 524)
Group 4	(Series 13-18)	474-450 B.C.	(nos. 525-39) to Series 16a
Group 5	(Series 19-22)	450-439 B.C.	
Group 6	(Series 23-25)	439-434 B.C.	

The cornerstone of this chronology is the Demareteion,[140] the early Syracusan silver decadrachm, which Boehringer thought was struck to commemorate the battle of Himera in 480 B.C. The second fixed point is given by the battle of Kyme in 474 B.C. to which the ketos is supposed to allude. The date of 530 B.C. for the beginning of the coinage at Syracuse is based on stylistic comparisons with works of sculpture of the second half of the sixth century B.C.[141] The date of 450 B.C. is tentatively suggested based on the victory of Syracuse over Douketios. The end date of 435 B.C. is calculated back from the destruction dates of Selinus, Akragas, Gela, and Kamarina by the Carthaginians between 408 and 405 B.C. In their last issues these cities had already adopted the galloping quadriga introduced by the signing engravers and Boehringer allowed ca. 20 years for this development.

If the relative chronology seems unassailable, the absolute chronology met with some criticism from the beginning. Regling in his review of Boehringer[142] argued that the starting date of 530 B.C. is too high; at present the date generally recognized is ca. 510 B.C.[143] The most unlikely aspect of Boehringer's chronology is the postulated gap in the coinage between 479 and 474 B.C.[144] Coinage is always intermittent but after the battle of Himera, Gelon received not only the spoils of the war but 2,000 talents of silver from the Carthaginians to cover the war expenses he incurred.[145] Moreover Hieron, succeeding his brother Gelon at his death in 478 B.C., must have needed coins for his numerous activities and in preparation for the war against the Etruscans. In this particular historical context, an interruption in the coinage would be illogical. Two solutions have been offered to fill the gap: either to continue Group 3, the "Massenprägung" until 474 B.C.,[146] putting some of the issues after the Demareteion; or to begin the ketos group immediately after the Demareteion issue, abandoning the association of the sea monster with the battle of Kyme.[147] The discussion of the hoard evidence and of the consequences of the Randazzo hoard for Sicilian chronology, will make clear which of these alternatives is preferable. The interval between 435 and 425 B.C. was also questioned but it does not concern us here.[148]

[140] Boehringer, *Syrakus*, p. 90.
[141] Boehringer, *Syrakus*, p. 12.
[142] Above, n. 65, p. 632.
[143] Cahn, *Essays Thompson* (above, n. 125), p. 51; Kraay, *ACGC*, p. 209.
[144] As immediately recognized by E. S. G. Robinson, rev. of Boehringer, *Syrakus*, in *NC* 1931, p. 243.
[145] Diod. 11.26.2.
[146] Robinson (above, n. 144); Jenkins, *Gela*, p. 23.
[147] Regling (above, n. 65); G. E. Rizzo, *Saggi Preliminari su l'Arte della Moneta nella Sicilia Greca* (Rome, 1938), p. 30.
[148] Jenkins, *Gela*, pp. 66-67.

No doubt the most serious attack on Boehringer's dating and consequently on the very foundation of Sicilian chronology was made by Colin M. Kraay more than 20 years ago.[149] In the 1830s two scholars, Karl Otfried Müller[150] and H. Duc de Luynes[151] independently identified the early Syracusan decadrachm with the coin of Demarete, wife of Gelon, mentioned by the ancient sources.[152] Its commemorative character was readily accepted and thus the date of 480/79 B.C. for its issue, immediately after the battle of Himera. Since then the Demareteion has served as the cornerstone for the chronology not only for numismatists but for historians and archaeologists as well.[153] Kraay argued that the date of 480/79 B.C. was too early for the decadrachm; therefore the coin could not be the Demareteion described by the ancient historians. In his opinion, the decadrachm was issued after the fall of the Deinomenids, possibly in 461 B.C., to pay a special donative to the elite army that was able to control the mercenaries' revolt.[154] The Demarateion referred to in the sources must therefore be an as yet unknown gold coin. It seems superfluous to repeat here the arguments that during the past two decades have gone back and forth between Kraay and those scholars who did not accept his "destruction" of the Demareteion.[155] Suffice it to point out that Kraay's main objection to the traditional chronology relies on the assumption that it is not plausible to postulate, as Boehringer did, the concentration of dies for his Group 3, a massive coinage of about 150 dies (with the new additions of recent years), issued over a period of just seven years. Kraay also uses several hoards, notably Gela, Passo di Piazza, Monte Bubbonia, Seltmann, Villabate, and Selinunte (*IGCH* 2066, 2068, 2071, 2076, 2082, and 2084) to support his arguments. The undermining of the Demareteion received some reinforcement from Christof Boehringer who in 1968 published a new tetradrachm from Aitna in a private Swiss collection.[156] This remarkable piece bears on the obverse the usual horse quadriga driven not by a male charioteer but by the goddess Athena. The reverse has a seated Zeus. If we compare the Aitna quadriga to those on Syracusan coins, we find strong similarities in Group 3, 9-11 as Boehringer showed, as early as V86.[157] For the new tetradrachm we have an absolute date or at least a terminus post quem: we know that the city of Aitna was founded after the inhabitants of Katane and Naxos were moved to Leontinoi after 476 B.C.[158] On the other hand this issue must be earlier than the famous Brussels tetradrachm with the head of Silenus. Stylistically then, the Demareteion is later than the Aitna tetradrachm with Athena and C. Boehringer's conclusion at the time was that the early decadrachm of Syracuse was not the Demareteion mentioned by Diodoros and other ancient sources but a "Hieroneion," a coin

[149] First in C. M. Kraay and M. Hirmer, *Greek Coins* (London, 1966), pp. 280 and 288; then more detailed in *Greek Coins and History* (above, n. 45), pp. 19-42; see also *ACGC*, pp. 205, 211.

[150] *Die Etrusker*, vol. 1 (Breslau, 1828), pp. 327-28.

[151] "Du Démarétion," *Ann. dell'Ist. di Corris. Arch.* 2 (1830), pp. 81-88.

[152] Principally Diod. 11.26.3; also Poll., *Onom.* 9.84. For a more detailed discussion of the sources see C. Boehringer (above, n. 82), pp. 86-92 and Maria R. Alföldi, *Dekadrachmon. Ein forschungsgeschichtliches Phänomen* (Wiesbaden, 1976), pp. 109-12.

[153] For instance E. Langlotz, *Zur Zeitbestimmung der strengrotfigurigen Vasenmalerei und der gleichzeitigen Plastik* (Leipzig, 1920).

[154] Diod. 11.76.2 tells us that the Syracusans paid 600 soldiers each a mina of silver or 100 drachms.

[155] As witness the different reviews of *Greek Coins*: J. P. Barron in *NC* 1966, pp. 337-40; W. Schwabacher in *SNR* 45 (1966), pp. 185-89; and of *Greek Coins and History*: H. Chantraine in *HBN* 22-23 (1968-69), pp. 517-28, to which Kraay replied, "Sicilian Numismatic Chronology," *HBN* 24-26 (1970-72), pp. 211-14. The most detailed rejection of Kraay's downdating is perhaps R. T. Williams, "The Demareteion Reconsidered," *NC* 1972, pp. 1-11, followed by Kraay's reply, "The Demareteion Reconsidered: A Reply," pp. 13-24. C. Boehringer (above, n. 82), pp. 67-98, was in favor of a downdating of the decadrachm as well, seeing it as a "Hieroneion." The best summary of the problem and the most reasonable "compromise solution" in its time remains that of Maria R. Alföldi (above, n. 152).

[156] Above, n. 82, pp. 67-98.

[157] Above, n. 82, p. 85.

[158] Diod. 11.49.1-2; Strabo 6.268.

struck by Hieron around 470 B.C. to celebrate his exploits. He held to the commemorative character of the issue, considering the literary evidence about the Demareteion too detailed and formidable to be dismissed, but found it difficult to accept the idea of a gold Demareteion. More recently C. Boehringer has revised his opinion, following Maria R. Alföldi:[159] the decadrachm is the Demareteion but it was not struck immediately after the battle of Himera; rather ca. 470 B.C., essentially for economic reasons not primarily as a commemorative issue.[160]

G. Manganaro[161] agreed with Kraay's downdating of the decadrachm but his arguments are mainly historical and philological; he prefers the date of 463 B.C. for the issue and thinks it was related to the distribution of ἀριστεῖα to the army, described by Diodorus.[162]

Looking at the Syracusan tetradrachms represented in the hoard (nos. 232-539), it is immediately apparent how closely they follow and reflect E. Boehringer's arrangement: 4 coins belong to Group 1, nos. 232-35; 8 to Group 2, nos. 236-43; 281 to Group 3, nos. 244-524, and 5 to the beginning of Group 4; the ketos group, nos. 525-39. While the specimens of Group 2 in the hoard already display close die linkage, with three obverse dies used for eight coins (a ratio of 2.66); it is in Group 3 that the linkage is truly amazing, especially for Series 8, 9, and 11. There are 114 obverse dies for 281 tetradrachms. The pattern of the hoard supports strongly E. Boehringer's view: Group 3 represents a massive and intensive coinage which most likely was struck over a relatively short period of time. The 15 tetradrachms of Group 4 stretch over Series 13a-b and 14a with very little die linkage. The output here must have been much more limited. Nos. 525-31 (Group 4, 13a) present a somewhat staring and expressionless archaistic style, particularly the heads on the reverses, and constitute as Boehringer rightly remarked, a transitional group between the still archaic massive coinage and the Demareteion group, and the severe style which follows. With no. 532 of Group 4, 14a, clearly a new phase begins: the head is much larger, the chin full and heavy and the flans more spread. The eye is fully in profile with for the first time a rendering of all the details: the iris, the pupil, and eyelashes on upper and lower lids. The archaic smile has disappeared. The hairstyle still shows the influence of the archaic fashion but it falls in a more natural way and the krobylos is minimized. Soon it will be rolled up and developed into more complicated and innovative compositions as on R353 or R374 bound by a kekryphalos and then covered completely by a sakkos on R435. The quadriga does not show the stylistic development quite as clearly but the charioteer is now more articulated and muscular, the proportions and rendering of the horses more realistic. The latest tetradrachm of Syracuse in the hoard is no. 539, Boehringer 483 (V257/R346), the latest in his Group 4, 14a. Boehringer's Group 4, the ketos group, his nos. 408-627, includes 108 obverse dies (V211-V318) and 145 reverse dies (R288-R431) presumably evenly spread between 474 and 450 B.C. Die V257 stylistically still belongs in the first group of the heads, the 15 tetradrachms of our hoard cover a span of 46 dies and would thus be dated around 465 B.C. according to the traditional chronology. However this date will have to be lowered by about 10 to 15 years as will be seen from the discussion of the burial date and of the evidence of other hoards.

From the latest Syracusan issue in the hoard, one can return to the other groups and see what specific information can be drawn from the run of 308 tetradrachms. The four tetradrachms of Group 1 (nos. 232-35) represent the oldest coins in the hoard; as we have seen they most likely

[159] Above, n. 152.

[160] Leo Mildenberg and Silvia Hurter, eds, *The Arthur S. Dewing Collection of Greek Coins*, ACNAC 6 (New York, 1985), pp. 50-51.

[161] G. Manganaro (above, n. 114), pp. 9-40.

[162] 11.76.2.

date between 510 and 500 B.C. Their condition however is excellent,[163] with hardly any more signs of wear than some of the latest specimens of Syracuse (nos. 525-39) or of Gela or Messana. We must therefore conclude that the Randazzo hoard is in all probability a savings hoard, representing the accumulation of wealth of one individual or one family over many years, and not a currency hoard or an example of coins taken from circulation at the specific time of burial.

Group 2 (nos. 236-43) introduces the dolphins around the head together with a larger Arethusa head. These coins again are in quite good condition.

Group 3 comprises a large and closely die-linked component of the hoard, as tabulated in Table 2 (below, p. 36).[164] Dotted lines indicate new links not known to E. Boehringer in 1929. A comparison of this chart to Maria Alföldi's demonstrates that the hoard contents match exactly the arrangement of Boehringer's corpus. At the same time some minor revisions can be suggested: the new die combinations of nos. 247 (V37/R47) and 248 (V37/R49) show that Series 6a ends with V37 (Boehringer 80), and Series 6b starts with Boehringer 81 (V38/R53). More important is the die combination of nos. 307-9 (V64/R187E). Boehringer did not know the obverse die for his no. 271E and placed his R187E in Series 11 because of its similarity with R179 (nos. 436-38) and R188 (nos. 449-52). This new combination places R187E in Series 8b; it is in style very close to R96 or R97 and R99 (nos. 299, 300, and 305); compare especially the rendering of the eye and the mouth. So in fact R187E is 99E; of importance is that if 187E can be compared to reverses in both Series 8b and 11, the two issues are very close in style and therefore in time. Boehringer[165] has already emphasized that with Group 3, 8 and in particular Series 8b, we encounter such monotony and mediocrity in the style of the Arethusa heads that it becomes difficult to find an individualized head, let alone a masterpiece. There is no real stylistic development between Series 8 (nos. 258ff.) and Series 12, rather just different types of heads and hair styles. The long tail falling on the neck and shoulder of no. 258 occurs again in Series 8b, nos. 274-75, or 301-5 on a larger type of head, Series 9a, nos. 366-67. Other heads are smaller, as on no. 270, 290-91, 319, 348-49. Others are of a definitely ugly, almost barbarous style, like the works of the artist of nos. 389-92, 393-96, 397, or those of the engravers of nos. 423, 425, 431, 455, etc. It is not the place here to divide the dies of the massive coinage into groups and attribute them to different engravers, which can be done in spite of the low artistic quality. But these few examples suffice to show that the differences between Boehringer's Series are due to individual styles and not to a chronological progression. Only Series 12e, the Demareteion issue, introduces significant innovations. There is only one tetradrachm of this group in the Randazzo hoard, no. 524;[166] the obverse is in poor condition, the die however is worn and not the coin.[167] The lion in exergue has disappeared from this die, the last of the group of tetradrachms of Series 12e. The reverse is by comparison a better preserved die in spite of the break above the upper lip. The head is wreathed, the expression of the face is softer, the eye is now for the first time in profile. Series 12a-d form a stylistically homogeneous group and belong together. Jenkins[168] proposed to move these issues after the Demareteion issue 12e in order to fill the gap between 479 and 474 B.C. The last two tetradrachms of Series 12e, R276 and R276E are very similar to

[163] I must emphasize once more that I worked mainly with casts and saw only very briefly a small portion of the hoard coins. For Syracuse and Gela, however, the known specimens help us to determine whether the die or the coin is worn.

[164] Maria R. Alföldi has similarly plotted the entire run of Syracusan dies down to the Demareteion (Group 3, 12e); see *Dekadrachmon* (above, n. 152), Table 1.

[165] *Syrakus*, p. 20.

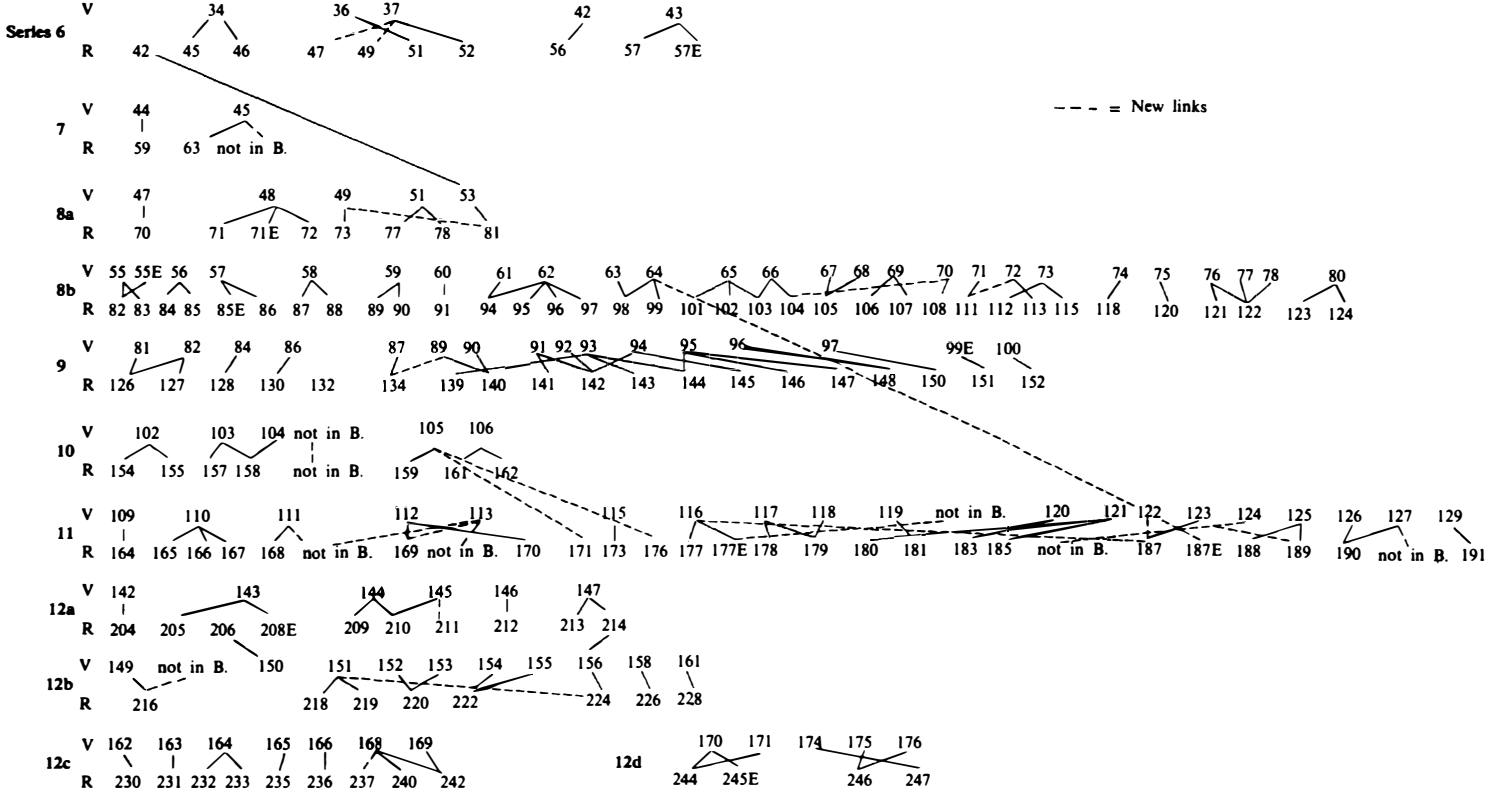
[166] An unpublished tetradrachm in the Nelson Bunker Hunt collection is reputed to come from this hoard but I could not be certain and did not include it in the catalogue.

[167] Boehringer, *Syrakus*, p. 188, 391 notes "Stempel kaum mehr kenntlich." At any rate we have already emphasized that the Randazzo hoard probably represents a savings deposit and therefore chronological conclusions from the condition of the coins must be drawn only with the greatest caution.

[168] *Gela*, pp. 23-24.

TABLE 2

Syracuse: Massive Coinage - Series 6-12d (As Represented in the Randazzo Hoard)



R243, R246 in Series 12d and even to some dies in 12a like R201 or 12b (R215) indicating that a reversal of Boehringer's arrangement is possible. R. T. Williams,[169] among others, has readily accepted Jenkins's suggestion but Kraay rejected it;[170] for him it is unthinkable that the "new style" of the Demareteion issue should not have influenced the following Series 12a-d. Table 2 (above, p. 36) illustrates the die linkage of Boehringer Group 3 as represented in the Randazzo hoard. It shows that the massive coinage can be divided into three groups or phases: 1) Series 6-8a; 2) Series 8b-11; 3) Series 12a-d.

These three phases probably developed in a chronological sequence, but within the phases the issues can be considered parallel and contemporary. I believe that phase 1 represents the beginning of Gelon's coinage at Syracuse, phase 2 the coinage after the battle of Himera and phase 3, Hieron's coinage. The Demareteion issue belongs either at the end of phase 2 or with phase 3. But before deciding we need to discuss the burial date and the hoard evidence.

[169] Above, n. 155, p. 2.
[170] Above, n. 155, pp. 13-16.

THE BURIAL DATE

Table 3 (below, p. 40) summarizes the latest issues in the Randazzo hoard. The dates for the different mints, as we have seen, are to a great extent independent in this period and based on historical events: Rhegion and Messana resume their individual coinages after the fall of the Anaxilades in 461 B.C.; so does Naxos after an interruption of almost 30 years when its inhabitants, displaced by Hieron, were able to return home. Katane, under similar circumstances, at last was free to inaugurate its own coinage. Jenkins's reasons for dating the end of his Group 3 to 450 B.C. are sound and generally accepted. U. Westermark in her as yet unpublished corpus of the coinage of Akragas agrees to a date between 461 and 450 for the beginning of the tetradrachms. It is important to emphasize that these dates are not contingent on the chronology of Syracuse. The latest issues from these six mints are clearly contemporary and terminate at the same time.

If the Randazzo hoard is indeed a savings hoard, as was suggested above,[171] the condition or wear of the coins in this deposit is not a determining chronological factor. The earliest tetradrachms from Syracuse (nos. 232-35) are as fresh as some of the latest tetradrachms from Gela (e.g. nos. 38-39) or Leontinoi (no. 87). On the whole the coins are in very good condition. They did not circulate long but were saved within a few years after their issue. Many of the coins were struck from worn dies, in particular at Katane and Messana (nos. 218-26) and Syracuse (no. 524 from the Demareteion group but this has no bearing on its date). The two kinds of wear must not be confused.

Only the date for the latest tetradrachms of Syracuse, and consequently of Leontinoi, does not seem to coincide with the rest of the hoard. If we accept the traditional chronology there is a discrepancy of some 15 years between the last tetradrachms of Syracuse and those from the other mints. Syracuse is the most important mint in the hoard and the most productive in Sicily at that time. The hoard was deposited near ancient Katane, at or in the vicinity of Randazzo, only some 70 miles from Syracuse. This is certain even though little is known of the actual circumstances of discovery; otherwise one cannot explain the presence of so many tetradrachms of Katane. It is logical to assume that all the issues in the hoard must terminate at about the same time and that the latest coins of Syracuse are as late as the burial date.[172] The hoard was probably interred around 450 B.C. It cannot have been buried before 455 B.C. due to the inclusion of the restoration issues of Naxos, Katane, Messana, and Rhegion. A date after 445 B.C. is implausible as well since the four-bar sigma �² at Messana is not represented in the hoard nor the later Apollo head tetradrachms of Katane and Leontinoi. Historically, 450 B.C. corresponds to the upheaval of the Sikel power under Douketios but we cannot be certain that there was any direct relation between the victory of Syracuse over Douketios and the close of the deposit.[173]

[171] P. 35.

[172] R. T. Williams (above, n. 155), p. 3, in his criticism of Kraay's revised Sicilian chronology and of his dating of the Gela hoard in particular, argues that in a hoard buried away from Syracuse, the latest Syracusan coins included in the deposit may be considerably earlier than the burial date of the hoard. The distances within Sicily, however, are not great and we have ample evidence from many hoards that coins circulated among the main western Sicilian mints, perhaps less so among those of the northeastern coast.

[173] The term "burial date" is used by numismatists for convenience but actually "termination date" would be more accurate. We should not assume that exceptional circumstances such as political conditions or wars prompted individuals to bury their treasures. It is more likely that coins and other savings were set aside in a secure place much as people use banks today. Sometimes the treasures could not be recovered, either because the owner died, or had to leave the country, or for other reasons, including war or strife. Therefore we must be careful in trying to connect all deposits with known historical events. I thank C. Boehringer for making this point clear to me.

TABLE 3

Latest Coins in the Hoard (Traditional Chronology)

	RHEGION	AKRAGAS	GELA	KATANE	LEONTINOI	MESSANA	NAXOS	SYRACUSE
No.	7-10	18	47	76	88-90	226	227-31	539
Obv.	Lion's head facing	Eagle standing to r.	Quadriga to r.; behind, column	Bearded man-faced bull kneeling	Quadriga to r.; lion in exergue	Biga of mules r.; Nike crowning charioteer	Head of Dionysos	Quadriga to r.; ketos in exergue
Rev.	Iokastos	Crab; below, floral pattern	Forepart of man-faced bull (Gelas)	Nike walking; H	Head of Apollo; 3 laurel leaves and lion around	Hare running; olive twig below	Silenus squatting	Head of Arethusa
Ref.	Herzfelder 1	*SNGANS* 3, 984	Jenkins 234; 062/R121	New Rev.	*SNGANS* 4, 218	*SNGANS* 4, 333	Cahn 54	Boehringer 483; V257/R346
Date	461-450 B.C.	465/61-450 B.C.	465-450 B.C.	464-450 B.C.	Contemporary with the "Demareteion"?	461-450 B.C.	461-450 B.C.	474-462 B.C. Ketos-Group 4, 14a

THE EVIDENCE OF RELATED HOARDS

No matter how important a single hoard might be, the conclusions drawn are convincing only when the hoard's evidence relates positively to that of other similar hoards, and is in agreement with the historical context of the period under consideration. Let us then compare the Randazzo hoard to other fifth century hoards with a similar distribution of mints and denominations (i.e. tetradrachms and didrachms of Sicily).

Table 4 (below, pp. 42-43), which graphs Randazzo and related hoards, is based on *IGCH*. Excluded are hoards whose contents appear too small to be relevant to the discussion of the chronology, such as *IGCH* 2069-70, 2073, 2080-81, 2083. The Avola hoard, *IGCH* 2085, is not included since only 21 coins are known today from the original content of ca. 2,000 coins.[174] Table 4 lists the total number of coins in each hoard (contents), the breakdown of specimens of each mint, together with an indication of the latest coins represented per mint, when known and datable. I have not been able to examine these hoards myself and have relied on published descriptions.[175] The burial dates are those generally accepted in the works cited with the exception of the Lentini hoard, *IGCH* 2077.

Burial Dates of Related Hoards

The burial dates are here discussed independent of Syracuse when possible to strengthen the objectivity of the chronological conclusions.

The Gela hoard, *IGCH* 2066, will soon be published in detail and hopefully whatever doubts and problems now remain will be solved.[176] The burial date of 485 B.C. suggested by Jenkins certainly seems the most acceptable and objective one.[177] As he pointed out, the Gela hoard must be dated by its Sicilian contents rather than by the Athenian.[178] Among its latest datable coins are a tetradrachm of the Samians at Zankle with the letter A, in fresh condition, and one tetradrachm of Anaxilas's first coinage from Rhegion. The hoard also contained over 400 didrachms from Akragas, including 230 from Group 3. The group, however, was not represented in its entirety; the latest issues are absent. Group 4 of Akragas, as U. Westermark has demonstrated, belongs to the period 482-472 B.C.,[179] which means that the latest issues of Group 3 must have been minted between the burial date of the Gela hoard and 482 B.C. The years 490-485 B.C., therefore, seem a reasonable span for the closing of the deposit. I see no reason to date the Gela hoard any later than 485 B.C.

The Passo di Piazza hoard, *IGCH* 2068, was discussed above in determining the chronology of the tetradrachms of Rhegion and Messana.[180] It contained three early didrachms of Group 4 of Akragas and one didrachm of the new Anaxilas type from Messana with the mule cart and hare and must have been buried shortly after 480 B.C.

[174] Housed in Syracuse; all issues of Syracuse to B 631, see Jenkins, *Gela*, pp. 147-48.
[175] Jenkins, *Gela*, pp. 142-61; Westermark and Jenkins, *Kamarina*, pp. 21-23 and 99-101.
[176] In the series *Bibliotheca*, published by the Centro Internazionale di Studi Numismatici in Naples.
[177] *Gela*, pp. 20-21 and 150-151; see also Kraay, *Greek Coins and History* (above, n. 45), p. 27; R. T. Williams (above, n. 155), pp. 2-3, Kraay (above, n. 155), pp. 16-17.
[178] Compare Price and Waggoner, *Asyut*, p. 20.
[179] U. Westermark, "Overstrikes of Taras on Didrachms of Acragas," *Essays Thompson*, pp. 289-90.
[180] Above, pp. 18 and 26.

TABLE 4

Randazzo and Related Hoards[a]

Hoards	Gela, 1956	Passo di Piazza	Monte Bubbonia (Mazzarino)	Casulla	Randazzo, 1980	Villabate	Sicily, 1890 (Seltmann)	Lentini, 1921	Selinunte, 1923
IGCH	2066	2068	2071	2075		2082	2076	2077	2084
Contents	ca. 1,076 *AR*	45 *AR*	338 *AR*	40 *AR*	539 *AR*	ca. 250 *AR*	ca. 200 *AR*	88 *AR*	475 *AR*
Rhegion	1 tetr. lion/calf		4 tetr. mule cart		10 tetr. H 1	1 tetr. H 5			
Akragas	410 didr. grp. 2, 1 (early)	6 didr. grp. 4 (early)	78 didr. grp. 4 (early)	24 didr. grp. 4 (end)	8 tetr.	18+ tetr.	?	7 didr. 2 tetr.	88 didr. 3 tetr.
Gela	254 didr. grp. 1 J 40	19 didr. grp. 1 J 82	61 didr. 7 tetr. grp. 2 J 178		29 tetr. grp. 3 J 234	17+ tetr. grp. 4 J 350	?	2 didr. 9 tetr. grp. 3 J 217	70 didr. 25 tetr. grp. 5 J 378
Himera			1 dr. hen 5 didr. crab J, O13	4 didr. crab J, O15		9 tetr. G-S 6	12 didr. crab 8 tetr., G-S 7 2 didr., G-S 1		2 didr. archaic 1 tetr., G-S 15 2 didr., G-S 2
Kamarina			1 didr. W-J 9,5						
Katane					29 tetr. Nike/bull				2 tetr. Apollo hd.
Leontinoi			2 tetr. quadriga/lion	2 didr.	14 tetr. quadriga/Apollo	10 tetr. quadriga/lion	didr. tetr. quadriga/lion	1 tetr.	8 didr. 19 tetr. Apollo/lion
Messana	3 tetr. Zankle Samian A	1 didr. mule cart	2 dr. Zankle 5 tetr. mule cart	1 tetr. mule cart	136 tetr. Nike ⟨	13+ tetr. Nike ⟨	?	10 tetr.	20 tetr.
Naxos					5 tetr. C 54				
Segesta							? didr.		
Selinus			30 didr. leaf						75 didr. 25 tetr. S 11

Hoards	Gela, 1956	Passo di Piazza	Monte Bubbonia (Mazzarino)	Casulla	Randazzo, 1980	Villabate	Sicily, 1890 (Seltmann)	Lentini, 1921	Selinunte, 1923
Syracuse	31 tetr. 2 didr. grp 2, 4 B 46	18 tetr. ? didr. grp 3, 6b B 85	61 tetr. grp. 3, 12d B 357	9 tetr. grp. 3, 12b B 324	308 tetr. grp. 4, 14a B 483	79+ tetr. grp. 4, 15 B 535	? didr. ? tetr. grp. 3, 12b B ?	57 tetr. grp. 4, 16a B 554	4 didr. 132 tetr. grp. 4, 18 B 604
Akanthos	2 tetr.		1 tetr.						
Athens	166 tetr.		6 tetr.						
Burial	490/85 B.C.	480/78 B.C.	475/70 B.C.	470/65 B.C.	455/50 B.C.	450/45 B.C.	450/45 B.C.	445/40 B.C.	435 B.C.

• The following abbreviations and symbols are used:

B E. Boehringer, *Die Münzen von Syrakus* (Berlin, Leipzig, 1929).

C H. A. Cahn, *Die Münzen der sizilischen Stadt Naxos* (Basel, 1944).

G-S F. Gutmann and W. Schwabacher, "Die Tetradrachmen- und Didrachmenprägung von Himera," *Mitteilungen der Bayerischen Numismatischen Gesellschaft* 47 (1929), pp. 101-44.

H H. Herzfelder, *Les monnaies d'argent de Rhégion* (Paris, 1957).

J G. K. Jenkins, *The Coinage of Gela,* AMUGS 2 (Berlin, 1970).

J, O Obv. die in G. K. Jenkins, "Himera: The Coins of Akragantine Type," *Atti del II Convegno del Centro Internazionale di Studi Numismatici - Naples 1969, AIIN* 16-17, *Suppl.* (1971), pp. 21-36.

S W. Schwabacher "Die Tetradrachmenprägung von Selinunt," *Mitteilungen der Bayerischen Numismatischen Gesellschaft,* 43 (1925), pp. 2-89.

W-J U. Westermark and G. K. Jenkins, *The Coinage of Kamarina* (London, 1980).

? Unknown quantity present in hoard.

The Monte Bubbonia or Mazzarino hoard, *IGCH* 2071, has been much discussed.[181] Kraay wanted to lower its burial date to about 465/60 B.C. in accordance with the Sicily, 1890 hoard, *IGCH* 2076, and his downdating of the earlier Syracusan decadrachm. The one didrachm of Kamarina in this hoard, as shown by Westermark and Jenkins,[182] belongs to the first period of the city, 492-485 B.C., and not to the time of its refoundation in 461 B.C. It cannot therefore be used as an argument in favor of a late burial date. Only the earlier half of the didrachms of Akragas Group 4 is represented.[183] The latest tetradrachms of Gela extend almost to the end of Jenkins Group 2. The two tetradrachms of Leontinoi are of the quadriga/lion's head type and belong to the first issue of the city struck between 478 and 470 B.C. at the latest, as noted above.[184] The Himera didrachms with the crab on the reverse are those of the period of Akragantine dominion, 482-472 B.C., studied by Jenkins.[185] The last specimen in this hoard is from obverse die O13, from a group ending with O15. So unless we want to "press" the chronology of the Syracusan coins down, there is no reason to date the Monte Bubbonia hoard much later than 475/70 B.C.

The Casulla hoard, *IGCH* 2075, is a very similar though smaller hoard of somewhat later date since it contained didrachms of Akragas through the end of Group 4 and Himera didrachms of the Akragantine type to obverse O15, the latest die in the group, in excellent condition.[186]

The next hoard listed in the *IGCH* is no. 2076, the Sicily, 1890 or Seltmann hoard. This is a very controversial find: it is "the crucial document" in Kraay's argument against the decadrachm being the Demareteion and therefore, of course, the most attacked by his opponents.[187] The hoard was first acquired by E. J. Seltmann who published the most important pieces.[188] He saw some 200 didrachms and tetradrachms of Akragas, Gela, Leontinoi, Messana, Segesta, Syracuse, and Himera. He described in detail only the Himera coins which he found most interesting. He further illustrated two tetradrachms and one didrachm from Leontinoi, two didrachms from Segesta, one early didrachm of Syracuse, Boehringer 99 (Group 3, 7) and one tetradrachm, Boehringer 321 (Series 12b, V156/R224) and one reverse R246 (Series 12d). For the other mints we have no details and it appears that it is no longer possible to reconstruct the hoard. Seltmann also remarked that the coins were in extremely fine condition. The latest Himera didrachm in the hoard is Gutmann and Schwabacher no. 1a; the latest tetradrachms are Gutmann and Schwabacher nos. 7a and 12.[189] The latter is the rare issue with ΓΕΛΟΥ on the obverse above the quadriga which most likely is the first of the city after 472 B.C.[190] So the latest tetradrachms would be Gutmann and Schwabacher no. 7, represented by six specimens in very good condition. The Leontinoi tetradrachm illustrated is from the same obverse die as our nos. 77-78 and represents the first issue of the city. The same is true of the Segesta didrachms.[191]

[181] Jenkins, *Gela*, pp. 22-24 and 154-155. Kraay, *Greek Coins and History* (above, n. 45), pp. 31-32 and *NC* 1972 (above, n. 155), pp. 17-18; R. T. Williams (above, n. 155), pp. 4-5; most recently Westermark and Jenkins, *Kamarina*, pp. 21-23.

[182] *Kamarina*, p. 145, no. 9.5.

[183] Westermark, *Essays Thompson* (above, n. 179), p. 290.

[184] P. 25.

[185] Above, n. 73, pp. 21-36.

[186] Jenkins (above, n. 73), p. 31; Westermark, *Essays Thompson* (above, n. 179), p. 290; Westermark and Jenkins, *Kamarina*, p. 21.

[187] Kraay, *Greek Coins and History* (above, n. 45), pp. 31-34; Kraay (above, n. 155), pp. 19-21; Williams (above, n. 155), p. 5; Jenkins, *Gela*, p. 159.

[188] Above, n. 57, pp. 165-82, pl. 3.

[189] References are to F. Gutmann and W. Schwabacher, "Die Tetradrachmen- und Didrachmenprägung von Himera," *Mitteilungen der Bayerischen Numismatischen Gesellschaft* 47 (1929).

[190] This has already been suggested by Westermark and Jenkins, *Kamarina*, p. 113, n. 90 and was Gàbrici's opinion when he first dealt with the coinage of Himera, "Topografia e Numismatica dell'antica Imera e di Terme," *RIN* 1894, p. 410. See now C. Arnold-Biucchi, "La monetazione d'argento di Himera classica: i tetradrammi," *NumAntClas* 17 (1988), pp. 85-100.

[191] For the dating see Kraay, *ACGC*, p. 220, ca. 470 B.C.

Unfortunately nothing is known of the Akragas, the Gela, or the Messana coins. Obviously the hoard must be dated by its latest coins: the Himera tetradrachms which cannot date before 472 or even 466 B.C.[192] Possibly the first Pelops issue was minted between 466 and 460 B.C. and the second issue, including Gutmann and Schwabacher no. 7, only after 450 B.C. The coins from Leontinoi, Segesta and Syracuse in the hoard, on the other hand, date in the 470s. Clearly there is a discrepancy here that cannot simply be solved by downdating the Syracusan issues as Kraay tried to do.

We don't known where the hoard was discovered; because of the presence of a large number of coins of Himera, it is assumed to have been in the vicinity of the city. Table 4 (above, pp. 42-43) shows that the Sicily, 1890 hoard constitutes the exception and does not correspond to the general pattern of the other fifth century hoards. Its burial date is approximately that of the Villabate hoard. Why the Syracusan issues with the ketos are not represented remains unexplained but it is certainly not a reason to make Series 12d contemporary with the Himera tetradrachms of the 450s and put the other hoards at odds.

The Villabate hoard, *IGCH* 2082,[193] as can be seen from the Table 4 summary, must have been buried a few years after the Randazzo hoard. It was discovered near Palermo, some 20 miles west of Himera, in 1893. Among the latest datable coins is a tetradrachm from Rhegion, Herzfelder 5 (D2/R4) from the same group as Herzfelder 1 (D1/R1) in the Randazzo hoard. The latest tetradrachms from Akragas have an eight-rayed star as a symbol and are probably slightly later than our nos. 11-18.[194] The Gela tetradrachms are represented to the beginning of Group 4, Jenkins 350 (O67/R135) which was minted after 450 B.C. The latest Himera tetradrachms, Gutmann and Schwabacher no. 6, must have been minted after 450 B.C., as suggested above. As in the Sicily, 1890 hoard, their presence is the determining factor for the burial date, since these tetradrachms come from the mint closest to the findspot. The Leontinoi tetradrachms are of the quadriga/lion's head type, the first issue of the city (as our nos. 77-87). No Apollo heads of the Demareteion type were present but since these were a rather limited issue, it should not be too surprising that they did not reach the northern part of the island. It is also possible that the more rare and valuable specimens were picked out before the hoard was shown to Evans. The Messana tetradrachms included types with the four-bar sigma ≤, the relative terminus ante quem for the Randazzo hoard. The burial date around 445 B.C. suggested by Jenkins is in perfect agreement with the chronology of the different mints.

For the date of the Lentini, 1921 hoard, *IGCH* 2077, one must look to the Syracusan issues. Very little is known of the hoard.[195] Of the 11 Gela coins, only three could be identified by Jenkins; the rest were not available. No details are known of the Akragas and the Messana coins included. The latest Syracusan coins represented, according to Jenkins, belong to Series 16a and are later than Gela Group 3. One must therefore rely on the known Syracusan tetradrachm and propose a burial date some years later than the Villabate and Sicily, 1890 hoards.

The last hoard relevant to the dating of the issues represented in the Randazzo hoard is the Selinunte, 1923 hoard, *IGCH* 2084.[196] It is the first hoard containing tetradrachms from Group 5 of Gela, dated by Jenkins between 440 and 430 B.C. The latest Himera tetradrachm included is Gutmann and Schwabacher no. 15 in mint condition. Two tetradrachms from Katane with the Apollo head on the reverse were also present. The Randazzo hoard shows that they must have

[192] W. S. Barrett, "Pindar's Twelfth *Olympian* and the Fall of the Deinomenidai," *JHS* 93 (1973), pp. 23-25.

[193] A. J. Evans (above, n. 43), pp. 201-16, pls. 6-7; Herzfelder, p. 47; Jenkins, *Gela*, pp. 66 and 160-161; Westermark and Jenkins, *Kamarina*, p. 22.

[194] Evans (above, n. 43), pl. 7, 10.

[195] Jenkins, *Gela*, p. 153.

[196] A. H. Lloyd, "A Recent Find of Sicilian Coins," *NC* 1925, pp. 277-300, pls. 10-14; Herzfelder, pp. 47-49; Jenkins, *Gela*, pp. 70 and 159; Westermark and Jenkins, *Kamarina*, p. 22.

been struck after 450 B.C. There were several Leontinoi tetradrachms of the ugly, severe, transitional style and one of the finer classical style.[197] The Selinus tetradrachms included all belong to Schwabacher's Group 1.[198] Unfortunately, once again the Messana tetradrachms were considered "too poor" to be described or illustrated. At any rate, as Herzfelder has demonstrated, the Selinunte hoard must have been buried some five to ten years after the Villabate hoard and on Jenkins's revised chronology, this dates it to ca. 435 B.C.

The Syracusan Chronology

To summarize: a comparison between the Randazzo hoard and other fifth century Sicilian hoards confirms its suggested burial date of about 455/50 B.C., five to ten years earlier than the Villabate hoard and definitely later than the Monte Bubbonia and Casulla hoards.

More important perhaps are the conclusions for the chronology of Syracuse. As indicated, the burial dates of eight of the nine related hoards (excluding Lentini, 1921) can be estimated independent of the Syracusan context. Looking at the distribution of the Syracusan issues in Table 4 (above, pp. 42-43), one observes a very cogent and regular sequence from Boehringer 46 (V27/R30) Series 4, practically the beginning of Group 2, through Boehringer 604 (V296/R410) Series 18, almost the end of Group 4, the ketos group. The only hoard which does not seem to follow the general pattern is the Sicily, 1890 hoard as was noted.[199]

We must then conclude that Group 2 at Syracuse—what Kraay calls the earliest dolphins—must have started *before* 485 B.C., i.e. before Gelon took power in Syracuse. As tempting as it might be to associate coinage with political events, as Kraay has done, too little is known about the earliest tyrannies in Sicily and the hoard evidence does not support Kraay's idea that the new Arethusa heads constitute Gelon's imperial coinage. The beginning of Gelon's coinage, I believe, is represented by Group 3, Series 6-8a. The interruption in the coinage following the battle of Himera in 480 B.C. supposed by E. Boehringer has rightly been criticized and must be rejected. The Passo di Piazza hoard shows that the real "massive coinage" of Series 8b-11 (or phase 2),[200] must have started after 480/78 B.C., therefore after the battle of Himera. I would be inclined to see in this tightly linked group the result of the Carthaginian war indemnities of 2,000 talents paid as reparation. It was an intensive coinage, struck within a short period of time, and could possibly have started before Gelon's death.

The Monte Bubbonia and Casulla hoards show that Series 12 or the end of Group 3 extended into the 470s and represents in fact Hieron's coinage. This is supported by the later hoards of Randazzo and Villabate where the "massive coinage" is also the most important. As we have seen, Series 12e, the Demareteion issue, is not die linked to any other series, except for the stylistic similarity of die R276 and Series 12d.

Jenkins has suggested reversing the sequence and putting Series 12e before Series 12a-d. If we accept this solution, the Demareteion could be dated as early as 478 B.C., perhaps even before Gelon's death, since, as E. Boehringer suggested, the "massive coinage" most likely comprised parallel issues that did not strictly follow each other in a chronological sequence.

This date would agree with Diodorus's account but does not fit well with the hoard evidence or with stylistic considerations for if the Demareteion was issued at the beginning of Series 12, how does one explain that its new progressive style did not really influence the parallel and later issues a-d ? There is also the difficulty with regard to the unique Aitna tetradrachm with Athena

[197] As Rizzo, *MGS* (above, n. 31), pl. 23, 21.

[198] W. Schwabacher, "Die Tetradrachmenprägung von Selinunt," *Mitteilungen der Bayerischen Numismatischen Gesellschaft* 43 (1925), pp. 30-31.

[199] Above, pp. 44-45.

[200] See above, pp. 36-37.

in the quadriga, which C. Boehringer is right in considering earlier or at least more conservative stylistically than the Demareteion. Of course the coinage of Aitna was a very limited and short-lived phenomenon and it is possible that the engraver of the first die had not been influenced by the progressive new style. Obviously Hieron did not use the coinage of his new city as an important carrier of his personal political propaganda or the issues would have been far more considerable.

The alternative is to leave Series 12e at the end of Group 2, where E. Boehringer had placed it and date it to ca. 475/70 B.C. according to the hoard evidence. This date would allow enough time for the first quadriga/lion's head issues of Leontinoi to start before the Demareteion and for the second issue with the Apollo head to follow some years later.

This somewhat later date does not quite fit with the traditional interpretation of the literary sources; it means that the coin that Diodorus tells us was struck for Demarete, after the battle of Himera, in fact was issued at least five years after Himera, when Gelon's widow had returned to Gela and married Polyzalos. This is not impossible. I tend to agree with Maria R. Alföldi that the Syracusan decadrachm is not primarily a commemorative issue but was struck for economic reasons—to pay the mercenaries after the war against the Carthaginians once the silver was available, perhaps as a special gift. At this point, we can be reasonably sure that the earlier silver decadrachm is the Demareteion mentioned by the ancient authors but we need more evidence than the Randazzo hoard to decide exactly when it was minted: at present the years 475/70 B.C., during Hieron's reign, seem the most plausible date.

The hoard evidence also shows that at Syracuse the ketos group, Group 4, did not begin in 474 B.C. but some 10 to 15 years later. The Randazzo hoard points strongly to this conclusion. I consider Series 14 and following as the coinage of the restored democracy after the fall of the Deinomenids in 466 B.C. Series 13, which Boehringer considered as the beginning of the group, is perhaps rather to be seen as a transitional phase at the end of Hieron's reign. The style of the Arethusa heads, such as R288 or R289 (nos. 525-26) is still very close to that of Series 12 and heads like R311 (no. 528) of Series 13b are almost a stereotyped, lifeless, rendering of the severe style of the Demareteion. In contrast R338 through R346 (nos. 532-39) represent a new beginning that can be associated with the restoration of the democracy.

The end of Group 4 must also be lowered about 15 years beyond Boehringer's date of 450 B.C. as shown by the Selinunte hoard and also by the Randazzo hoard where only the very beginning of the group, Group 14a, is present just before 450 B.C.

Based on the foregoing, the following revised chronology is the most probable for Syracuse:

Group 1	(Series 1-2)	510-500 B.C.[201]
Group 2	(Series 3-5)	490-485 B.C.
Group 3	(Series 6-8a)	485-480 B.C.
	(Series 8b-11)	480/78-475 B.C.
	(Series 12a-e)	475-470 B.C.
Transitional Phase	(Series 13)	470-466 B.C.
Group 4	(Series 14-18)	466-435 B.C.

[201] Jenkins, *Gela*, p. 43, n. 2.

CATALOGUE

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*[202]
				RHEGION	
		Obv. Biga of mules r. driven by charioteer; in exergue, leaf (3-6). *Rev.* **RECINON** (1) or **NONIↃƎЯ** (2-6). Hare running r.			
		480-461 B.C.			
1	16.59			*SNGSweden* 1 (King Gustaf VI Adolf Coll.), 18 = Schwabacher, *Gr. Mz.* 13. NFA 17-18 Sept. 1981, 27 (this coin).	
2	17.15			*BMC* 3.	
3	17.15			Obv. of Hirsch 17 Nov. 1913, 259.	
4	17.17	Double struck.		Rev. of Hess-Leu 27 Mar. 1956, 51.	
5	17.11			*SNGANS* 628. ANS, ex Trenholme (this coin).	
6				Bank Leu FPL, Dec. 1961, 97. Smithsonian (this coin).	
		References for nos. 7-10 are to the die combinations in H. Herzfelder, *Les monnaies d'argent de Rhégion* (Paris, 1957).			
		Obv. Lion's head facing. *Rev.* **RECINOS** Iokastos seated l., holding staff.			
		After 461 B.C.			
7	17.32				Herzfelder 1 (19)
8	17.27				Herzfelder 1
9	17.26				Herzfelder 1
10	17.32				Herzfelder 1

[202] The number in parentheses indicates the number of specimens known for the referenced die combination. For explanation of the Katane examples, see above, p. 23.

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*

AKRAGAS

Obv. AKRACAИTOΣ Eagle standing l.
Rev. Crab.

464-450 B.C.

11	17.36			*BMC* 37; Sambon- Canessa, 27 June 1927, 647; Cahn 27 Feb. 1933, 78.	
12	16.80			Naples, Mus. Naz. Fiorelli 3912 (plated).	
13	17.24			Baranowsky FPL, 1929, 1529b; MMAG FPL, Aug. 1967, 1.	
14	17.13			*Gulbenkian* 159 = *Jameson* 2413; Ognina 1923 Hoard *SNR* 57 (1978), 22; *SNGANS* 971.	
15	16.69		Below, flower with tendrils.	Cahn 9 May 1930, 99; Baranowsky FPL, 1934, 4612; *SNGSweden* 1, (King Gustaf VI Adolf Coll.), 23.	
16	17.38	Eagle standing on capital.	Below, large spiral.	*SNGCop.* 43; Hirsch 6 Dec. 1906, 208; Glendining 25 Nov. 1953, 35.	
17	17.37		Below, no symbol.	Ognina 1923 Hoard *SNR* 57 (1978), 21; Hirsch 24 May 1910, 56; Naville 18 Oct. 1926, 670.	
18	17.24		Above Φ; below, flower with tendrils.	*SNGANS* 984; *SNGLloyd* 806; Hess-Leu 5-6 May 1965, 51.	

GELA

References are to the die combinations in G.K. Jenkins, *The Coinage of Gela, AMUGS* 2 (Berlin, 1970).

Obv. Quadriga r. driven by charioteer; above, Nike crowning horses.
Rev. CEΛAΣ Forepart of river god (Gelas) as man-faced bull, r.

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
	Jenkins Group 2. 480/75-475/70 B.C.				
19	17.15				Jenkins 104 (19)
20	16.94				Jenkins 109 (4)
21	17.45				Jenkins 110 (5)
22	17.45	Charioteer looking back.			Jenkins 118 (7)
23	16.56		Die flaw to r.		Jenkins 119 (4)
24	16.81	Die break to r.; coin and die worn.	Die break above.		Jenkins 124 (8)
25	17.36	Die flaws above r.			Jenkins 128 (3)
26	17.27				Jenkins 128
27	16.70		Die break center.		Jenkins 037/R77
28	17.12				Jenkins 037/R77
29	17.27			Lanz 25 Apr. 1983, 63 (this coin).	Jenkins 134 (5)
30	17.17				Jenkins 138 (3)
31	17.35				Jenkins 139 (6)
32	17.27				Jenkins 139
33	17.15				Jenkins 146 (7)
34	16.63				Jenkins 154 (1)
35	16.69	Small flaw r.	Small flaw r.		Jenkins 155 (1)
36	17.19				Jenkins 164 (4)
37	17.14				Jenkins 167 (6)
38	17.26			Lanz 25 Apr. 1983, 64 (this coin).	Jenkins 175 (5)
39	17.27				Jenkins 182 (2)
	Jenkins Group 3. 465-450 B.C.				
40	16.98	Behind, free standing Ionic column; in exergue, wheat ear.			Jenkins 209 (2)
41	17.24	Quadriga l.; behind, free-standing Ionic column; in exergue,	Above, Nike flying r. (off flan), crowning Gelas; die break in		

No.	Wt.	Obverse	Reverse	Publication	Reference
		ketos; large die break in center.	center.		Jenkins 220 (6)
42	17.45				Jenkins 220
43	16.86	Quadriga r.; behind, free-standing Ionic column; in exergue, ketos; die flaws r.			Jenkins 223 (2)
44	17.28	Surface cracking.	Above, no Nike.		Jenkins 230 (11)
45	17.41	As 43.	As 44.		Jenkins 062/ Rnew (in style, close to R121 (below, no. 47), R124.
46	17.41				Jenkins 062/Rnew
47	17.24	As 44; die flaws below.			Jenkins 234 (1)

KATANE

Obv. River god Amenanos as man-headed bull swimming r. or standing (70-73); above, branch (48-59) or Satyr (60-69) or small Nike (70-73); below, fish (48-59) or ketos (60-69) or palmette (74-76).

Rev. KATANE (48-58) or ИОІАИАТАЖ (59,62-66) or KATANAION (60-61, 67-69, 74-76) or KATANAIOΣ (70-73). Nike in long chiton running l., holding fillet in outstretched r. hand.

464-450 B.C.

48	17.26		Ognina 1923 Hoard *SNR* 57 (1978), 75; *BMC* 2; *SNGCop* 175; Jameson 1891. NFA 17-18 Sept. 1981, 32 (this coin).	(5/11)
49	17.10			
50	17.31			
51	17.32			
52	17.23	Double struck.		
53	17.32	Double struck and corroded.		
54	17.29		De Luynes 887; *BMC* 1.	(2/3)

No.	Wt.	Obverse	Reverse	Publication	Reference
55	17.28			Ognina 1923 Hoard *SNR* 57 (1978), 77; Naville 3 July 1933, 462; *SNGAshmolean* 1702.	(3/6)
56	17.34	Die corroded.			
57	16.79	Die very corroded.	Die corroded.		
58	17.04		Die corroded.	Ognina 1923 Hoard *SNR* 57 (1978), 78, 79 = Rizzo, pl. 9, 5.	(5/6)
59	16.71			New die combination; rev. of Rizzo, pl. 9, 13 (Acireale, Pennisi coll.)	
60	17.19			De Luynes 888.	(2/4)
61	17.33				
62	17.35				(1/6)
63	17.33				
64	17.27		Die break to l.		
65	17.33				
66	17.25				
67	17.11		Nike holds fillet in each hand.	*SNGLloyd* 887.	(3/5)
68	17.27				
69	16.03		As 67	New dies. Barbaric style.	
70	17.48	Double struck.	Nike holds branch in l. hand; to l., ⋊.	*SNGCop* 174; *BMC* 7	(2/5)
71	17.35	Obscured by dirt deposit.			
72	16.77	Obscured by dirt deposit.			
73	17.32		Nike holds wreath in l. hand; to l., H.	New die combination. Obv. of Jameson 533; Ognina 1923 Hoard *SNR* 57 (1978), 81; rev. of *BMC* 6; Hess-Leu 5-6 May 1965, 53 = Naville 17-19 June 1922, 217. MMAG 7-8 Oct. 1982, 43 (this coin).	

No.	Wt.	Obverse	Reverse	Publication	Reference
74	17.12		Type as 73.	*BMC* 5.	(3/5)
75	17.07				
76	17.09		As 73.	New rev. die. Bowers and Ruddy, *Masterpieces,* 1 (this coin).	

LEONTINOI

Obv. Quadriga r., horses galloping (77-78) or walking (79-87); above, Nike crowning the horses. *Rev.* ΛΕΟΝΤΙΝΟΝ Lion's head r.; around, four barleycorns.

476-466 B.C.

77	17.24			De Luynes 989.
78	16.10			
79	17.31		Very worn.	MMAG FPL Apr. 1959, 13 = H. Schulman 23-24 Mar. 1956, 657.
80	17.48			*SNGANS* 201.
81	17.22			*SNGMunich* 539.
82	16.91	Large die break in exergue.		*SNGANS* 205.
83	16.32			Obv. of Rizzo, pl. 22, 18 (Naples, Muz. Naz. 4491); new rev.
84	16.98			Rizzo, pl. 22, 21 (Berlin). Lanz 25 Apr. 1983, 94 (this coin).
85	17.44	Die more worn.		
86	16.83			Ball 9 Feb. 1932, 42.
87	17.01	In exergue, ΛΕΟΝΤΙ-ΝΟΝ		Rizzo, pl. 22, 16 (Berlin); *SNGANS* 204; Pozzi 463; Jameson 622. ANS, ex Rosen (this coin).

No.	Wt.	Obverse	Reverse	Publication	Reference
		Obv. Quadriga r., horses galloping; above, Nike crowning charioteer; in exergue, lion running r. *Rev.* ΛΕΟΝΤΙΝΟΝ Laureate head of Apollo r.; around, three laurel leaves; below, lion running r.			
88	17.17			*Gulbenkian* 211; Cahn 26 Nov. 1930, 1084; *SNGANS* 217. Bank Leu 28 Apr. 1982, 33 (this coin).	
89	17.09				
90	17.25			*SNGLloyd* 1046; *SNGANS* 218. Bowers and Ruddy, *Masterpieces,* 2 (this coin).	

MESSANA

Obv. Biga of mules r., driven by seated charioteer holding reins and whip in outstretched hands; in exergue, leaf.
Rev. NOINƎɿɿƎM (91-94) or MEɿɿENION (95-98, 100-104, 109-13, 116-25, 127-73) or MESSENION (99, 105-8, 114-15, 126). Hare running r.

Group 1: without Nike. 480-461 B.C.

91	17.30	Die break to l.		*SNGCop* 389; Stack's 19-20 June 1969, 50.	
92	17.28	Die more worn; break larger.			
93	17.20				
94	17.33	Die worn.	Die worn.		
95	17.32		Below hare, pellet.	*SNGANS* 314; *SNGFitzwilliam* 1067.	
96	17.39	Die break below.	As 95.	Sotheby 3 Feb. 1909, 229.	
97	16.96	Die break larger.		Coin Galleries (NY) FPL 1962/5, E46; Hess 28 Oct. 1930, 2282; *Dewing* 636.	
98	17.35			*SNGCop* 390.	

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
99	17.15	Die break beginning below.		Malloy, 28 Mar. 1973, 25; obv. of Kriecheldorf 28-29 May 1956, 944; H. Schulman 18-21 Mar. 1964, 8.	
100	17.32	Die break larger.		Baranowsky FPL, 1929, 1562a; MMAG FPL, May 1972, 16; MMAG FPL, Sept. 1973, 1; Kress 2 Apr. 1973, 120.	
101	17.30				
102	16.84			ANS, ex Rosen (this coin).	
103	17.40				
104	17.44	Double struck.		ANS, ex Rosen (this coin).	
105	16.82		Below hare, pellet.	Naville 28 Jan. 1924, 405; Baranowsky FPL, 1929, 1562b; J. Schulman 6-8 Mar. 1958, 3618; Glendining 27 Sept. 1962, 64; G. Hirsch 22-24 June 1966, 116.	
106	17.17				
107	17.26		Corroded.	Rev. of Basel Münzhdl. 1 Oct. 1935, 464.	
108	17.23			Hamburger 25 Oct. 1932, 49; rev. of *BMC* 14; Vinchon 3-4 Mar. 1975, 10.	
109	17.20				
110	17.32				
111	17.35	Below, large die break.	Below, beginning of die break.	Coin Galleries (NY) FPL, 1964/1, A15; *SNGAshmolean* 1830.	
112	17.34	Overstruck, vestiges of SSE.	Below, die flaw.	Rev. of MMAG FPL, Aug. 1967, 7; Ciani 20-22 Feb. 1935, 66.	
113	17.06	Overstruck, vestiges of ON in exergue		ANS, ex Rosen (this coin).	
114	17.28	Die worn.	Below, die break.	Platt 3 Apr. 1938, 45; obv. of MMAG FPL, Apr. 1965, 3.	
115	17.36		More worn.	*Dewing* 641; obv. of Hamburger 27 May 1929, 125.	

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
116	17.37			Cahn 14 Oct. 1931, 155; *BMC* 11; obv. of Naville 3 July 1933, 556; G. Hirsch 28-30 Sept. 1960, 1742.	
117	17.36		Above and below, die breaks (or recut die?).	Obv. of Rosenberg 19 June 1928, 1398.	
118	17.26				
119	17.19	Die more worn.		Rosenberg 19 June 1928, 1398.	
120	17.10				
121	17.25		Die worn.		
122	17.27			Bowers and Ruddy, *Masterpieces*, 3 (this coin).	
123	17.36		Die of didrachm?		
124	17.28				
125	17.20				
126	17.37	Die very worn; breaks below.		Obv. of *SNGANS* 318; Kress 3 Nov. 1971, 164; Hess-Leu 6-7 Dec. 1966, 166; rev. of *SNGANS* 320.	
127	17.28	Die breaks above and below.	Small die; large break above.	Glendining 9 Mar. 1931, 932; obv. of H. Schulman, 25 Apr. 1953, 506; rev. of Florange 12 May 1926, 14; Gans 19 Apr. 1960, 140.	
128	17.23		Large die break above.	Obv. of Ciani 12-15 May 1926, 14; Gans 19 Apr. 1960, 140.	
129	17.39	Die very worn; large vertical break increasing in exergue.	Small die.	Obv. of Bourgey 5 Dec. 1932, 82; rev. of Malloy FPL, Aug.-Sept. 1972, 276.	
130					
131	17.18	Die and coin worn; die break to r.	Die break above and below.	Rev. of Sambon-Canessa 27 June 1927, 813.	
132	17.27				
133	17.28	Die corroded.			
134	17.37				

No.	Wt.	Obverse	Reverse	Publication	Reference
135	17.34	Small flaw below.	Die break to l.	Rev. of Sambon-Canessa 27 June 1927, 812.	
136	17.14		Die break at center.	Rev. of Schulman Coin 6-9 Feb. 1974, 50; Kölner Münz. 7-9 Nov. 1977, 23.	
137	17.25				
138	17.33	Very worn.	Beginning of vertical die break below.	Obv. of Canessa 12 June 1928, 556.	
139	17.28		Die break larger.		
140	17.11	Worn and corroded.	Die break beginning below.	Obv. of Grabow 9 July 1930, 193; Sotheby 1 May 1929, 21. ANS, ex Rosen (this coin).	
141	16.89	More worn.	More worn.	ANS, ex Rosen (this coin).	
142	17.16	Worn and corroded.	Die break larger.		
143	17.26	Very worn and corroded.		Rev. of Bourgey 17-19 June 1959, 133.	
144	17.36	Die break beginning to l.	Die break beginning below.		
145	17.25				
146	16.90			Schlessinger 4 Feb. 1935, 291; rev. of Simonetti 3 Nov. 1974, 6.	
147	17.34			Kress 3-5 Nov. 1971, 163.	
148	17.38				
149	17.23				
150	17.30				
151	17.27	Die worn.			
152	17.22	Die worn.			
153	17.34		Die break beginning above.	Rev. of Klenau 1-2 May 1977, 205.	
154	17.39		Die break larger.	Klenau 1-2 May 1977, 205. ANS ex Rosen (this coin).	
155	17.18			Obv. of MMAG FPL, Jan. 1966, 9.	
156	17.18	More worn.			
157	17.23				

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
158	17.35			Rev. of MMAG FPL, Jan 1966, 9.	
159	17.28	More worn; die breaks larger.			
160	17.30				
161	17.27				
162					
163	17.32		Die worn.	Obv. of Berk FPL, Fall 1984, 29; rev. of Glendining 14 July 1977, 43.	
164	16.95	Worn and corroded; flan split.			
165	17.26			Schlessinger 4 Feb. 1935, 290 = Basel Münzhdl. 4 Oct. 1935, 465; Ball 9 Feb. 1932, 461.	
166	17.18	Coin and die worn; die break beginning vertically below.			
167	17.40				
168	17.27			Naville 3 July 1933, 555 = Cahn 29 Nov. 1933, 131; Hamburger 3 Apr. 1933, 257.	
169	17.38		Die break beginning above.		
170	17.35	Die break to l.			
171	17.26				
172	17.30	Die worn.	Die break beginning below.		
173	17.23			Obv. of BM G0107.	

Obv. Above, Nike flying r. crowning mules.
Rev. **ME**ϷϷ**ENION** (174-76) or **MESSENION** (177-80) or **ME**ϷϷ**ANION** (181-182, 184-225) or **MESSANION** (183, 226).

Group 2: with Nike. After 461 B.C.

No.	Wt.	Obverse	Reverse	Publication	Reference
174	17.43		Below, olive twig with olive; large die break center.	*SNGLloyd* 1085 = *Weber* 1413; *SNGANS* 328; Glendining 25 Nov. 1953, 43.	
175	17.29	More worn.	Die break larger.		
176	17.29		Large die flaw below.	*SNGMunich* 639; obv. of Hamburger 3 Apr. 1933, 259; Kress 2 Apr. 1973, 121.	
177	17.35	More worn and corroded.	Die break above.	Hamburger 3 Apr. 1933, 259; Kress 2 Apr. 1973, 121.	
178	16.95	Die break to r.		Obv. of Schlessinger 4 Feb. 1935, 292; Naville 17-19 June 1922, 946; *NumCirc.* 1972, 7148 = Sotheby 8 May 1916, 43; all with *rev.*: above, **A**.	
179	16.97	Die break to r.	Above, **A**.	De Luynes 1012; *SNGOxford* 1835.	
180	17.35	More worn; die breaks below.	Die break above.		
181	17.32			Cahn 2 July 1928, 199; Hamburger 3 Apr. 1933, 260; *SNGMunich* 646.	
182	17.30	Very worn and corroded; die breaks to l. and above.			
183	17.15	Die breaks larger.		Rev. of *SNGANS* 332; *SNGMunich* 647; Riechmann 11 Dec. 1924, 265.	
184	17.36		Above, **B**.	*SNGANS* 335 (overstruck on Leontinoi); Kriecheldorf 12 June 1961, 169; Schlessinger 11 Feb. 1934, 60; De Luynes 1014.	
185	17.41	Die worn and corroded.	Below, **B**; double struck.	Rev. of Coin Galleries (NY) 17 Apr. 1975, 247; *BMC* 19.	
186	17.31				
187	17.09	Die corroded.	Die break below; double struck.		
188	17.12	More corroded.	Below, **B** recut into **C**.	Obv. of Helbing 20 Mar. 1928, 88.	

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
189	17.34				
190	17.39				
191	17.20	Very corroded.			
192	17.24				
193	17.40		Double struck.		
194	17.23				
195	16.95		Above, C; double struck.	Myers FPL "A Numismatic Bestiary" [Feb. 1973], 18.	
196	17.26		Die break above; double struck.	ANS, ex Rosen (this coin).	
197	17.18				
198	17.13		Die break larger; double struck.	*SNGANS* 336; Kress 1-2 Apr. 1974, 357; Ariadne 2 Dec. 1982, 26 (this coin).	
199	17.23	Die more worn.			
200	17.05		Double struck; die breaks l. and below.		
201	17.37		Double struck.		
202	17.37	Die very worn.	Die breaks larger.		
203	17.38				
204	17.41	Die more worn.			
205	17.37		Die more worn.		
206	17.24		Flan surface layered.		
207	17.32		Die worn.		
208	17.36				
209	17.37				
210	17.35		Above, D. Corroded.	Jameson 646.	
211	17.14				
212	17.35	Die break to l. center	Double struck.	Clerici 1 Mar. 1910, 334; Hamburger 2 Apr. 1933, 262; Coin Galleries (NY) 25 Nov. 1969, 1016; Canessa 12 June	

No.	Wt.	Obverse	Reverse	Publication	Reference
				1928, 553-obv. and 558-rev. (error on plate).	
213	17.45	Die break larger.			
214	17.23			ANS, ex Rosen (this coin).	
215	17.08		Below, D.	McClean 2386; Auctiones A.G. 30 Sept. 1976, 54; Lanz 25 Apr. 1983, 101 (this coin).	
216	17.31			ANS, ex Rosen (this coin).	
217	17.31		Die more worn.		
218	17.11	Link probable although die very corroded on this and following linked obverses.			
219	17.29		Die progressively more worn on this and following linked reverses.		
220	17.33				
221	16.98		Die break to l.		
222	16.61				
223	17.31				
224	17.34				
225	17.17				
226	17.45	Die worn; breaks above and below.	Below, olive twig with flowers.	*SNGMunich* 642; *SNGANS* 333; De Luynes 1013; Naville 18 June 1923, 950.	

NAXOS

Reference for nos. 227-31 is to the die combination in H.A. Cahn, *Die Münzen der Sizilischen Stadt Naxos* (Basel, 1944).

Obv. Head of Dionysos r., wearing ivy wreath.
Rev. NAXION Squatting Silenos holding kantharos in r. hand.

No.	Wt.	Obverse	Reverse	Publication	Reference
	After 461 B.C.				
227	16.96		Die break beginning to l.		Cahn 54.
228	17.35		Die break area off flan.	NFA 17-18 Sept. 1981, 45 (this coin).	Cahn 54.
229	17.42		Die break area off flan.		Cahn 54.
230	17.34	Die break beginning below.	Die flaws expanding to l.	NFA 31 Mar. 1987, 40 (this coin).	Cahn 54.
231	17.31	Die break larger.		Bowers and Ruddy, *Masterpieces,* 4 (this coin).	Cahn 54.

SYRACUSE

Boehringer references are to the die combinations in E. Boehringer, *Die Münzen von Syrakus* (Berlin-Leipzig, 1929). The sequence given is that of Boehringer; the revised dates are as adopted in this study.

Obv. ⸗VRA⸮O⸗ION (232) or ⸗VRA (233-35). Quadriga r. driven by charioteer.
Rev. Head of Arethusa l. in center of quadripartite incuse square.

Group 1, 1-2. 510-500 B.C.

232	16.73		Bowers and Ruddy, *Masterpieces,* 5 (this coin).	Boehringer V7/Rnew
233	16.85			Boehringer 23E (1)
234	17.16			Boehringer 26 (1)
235	17.10		NFA 8 Dec. 1982, 33 (this coin).	Boehringer 29 (3)

Obv. Quadriga r. or l. (246) driven by charioteer; above, Nike flying r. crowning horses (236-527, 532-39) or l. crowning charioteer (528-31).
Rev. ⸗VRA⸮O⸗ION (236-38) or ⸗VRAKO⸗ION (239-539). Head of Arethusa r.; around, four dolphins.

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
	Group 2, 3-5. 490-485 B.C.				
236	17.24				Boehringer 38 (8)
237	17.10				Boehringer 39 (3)
238	17.41				Boehringer 43 (3)
239	17.38				Boehringer 44 (2)
240	17.11				Boehringer 57 (8)
241	16.88			ANS, ex Trenholme (this coin)	Boehringer 57
242	16.80				Boehringer 59 (12)
243	17.13				Boehringer 60 (1)
	Group 3, 6-8a. 485-480 B.C.				
244	17.13				Boehringer 69 (2)
245					Boehringer 70 (5)
246	17.23				Boehringer 76 (15)
247	17.21			*SNGFitzwilliam* 1176; G. Hirsch 25-27 Sept. 1958, 55.	Boehringer V37/R47
248	17.39			Cahn 5 Apr. 1911, 104.	Boehringer 79a (1)
249	16.78			ANS, ex Trenholme (this coin).	Boehringer 80 (8)
250	17.44				Boehringer 87 (3)
251	16.91				Boehringer 88 (4)
252	17.31				Boehringer 88
253	17.37				Boehringer 88E (1)
254	16.97				Boehringer 90 (4)
255	17.16				Boehringer 94 (5)
256	17.32		Die more worn.		Boehringer 94
257	17.03			Naville 3 July 1933, 659.	Boehringer V45/Rnew
258	17.11				Boehringer 102 (11)
259	16.92			ANS, ex Rosen (this coin).	Boehringer 102
260	17.16				Boehringer 104 (5)
261	16.96				Boehringer 104E (1)
262	17.00				Boehringer 105 (3)

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
263	17.40				Boehringer 107 (5)
264	16.21		Dirty and corroded.		Boehringer 107
265	17.10	Die break below.		Rasmussen 10-11 Mar. 1970, 411 (not ill.).	Boehringer V49/R81
266	17.36				Boehringer V49/R81
267	17.09				Boehringer 112 (3)
268	17.27				Boehringer 112
269	17.15				Boehringer 113 (2)
270	17.28				Boehringer 116 (3)
271	17.28				Boehringer 117 (7)
	Group 3, 8b-11. 480/78-475 B.C.				
272	17.44				Boehringer 121 (2)
273	17.21	Die more worn; coin slightly corroded.			Boehringer 121
274	17.41				Boehringer 122 (5)
275	17.00				Boehringer 122
276	16.95				Boehringer 122E (1)
277	17.22				Boehringer 123 (4)
278	17.44				Boehringer 123
279	17.18				Boehringer 124 (4)
280	16.70				Boehringer 124E (1)
281	17.20				Boehringer 124E
282	16.74	Coin dirty and corroded.			Boehringer 124E
283	17.28				Boehringer 125 (2)
284	17.12				Boehringer 127 (3)
285	17.12				Boehringer 127
286	17.25				Boehringer 128 (3)
287	16.86				Boehringer 128
288	17.47	Coin worn.			Boehringer 129 (1)
289	17.67				Boehringer 130 (3)

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
290	17.44	Die break below.			Boehringer 131 (3)
291	17.35			ANS, ex Rosen (this coin).	Boehringer 131
292	16.85		Die break above.		Boehringer 136 (3)
293	16.97				Boehringer 136
294	17.18				Boehringer 137 (2)
295	17.27				Boehringer 137
296	16.57	Die worn and coin corroded.			Boehringer 138 (4)
297	17.12	Die break beginning below.			Boehringer 139 (1)
298	17.39				Boehringer 139
299	17.10				Boehringer 139
300	17.24	Die worn.			Boehringer 140 (1)
301	16.92	Die and coin worn.		ANS, ex Rosen (this coin).	Boehringer 142 (2)
302	17.04				Boehringer 142
303	16.82	Die worn and coin dirty.			Boehringer 143 (1)
304	17.37				Boehringer 144 (6)
305	17.26				Boehringer 144
306	17.33				Boehringer 144
307	17.01				Boehringer V64/R187E
308	16.86				Boehringer V64/R187E
309	17.04		Large die break center.	ANS, ex Rosen (this coin).	Boehringer V64/R187E
310	16.83	Coin worn.			Boehringer 147 (1)
311	17.42				Boehringer 148 (2)
312	17.09			Bowers and Ruddy, *Masterpieces*, 6 (this coin).	Boehringer 148
313	17.25	Die break below larger.			Boehringer 148
314	17.42				Boehringer 148

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
315	16.61		Coin dirty and corroded.		Boehringer 148
316	17.30	Die break below larger.			Boehringer 149 (5)
317	17.15				Boehringer 149
318	17.28		Die more worn.	ANS, ex Trenholme (this coin).	Boehringer 149
319	16.96				Boehringer 149
320	17.04			ANS, ex Rosen (this coin).	Boehringer 150 (1)
321	17.23				Boehringer 151 (6)
322	16.40				Boehringer 152 (9)
323	16.84	Raised surface to l. probably a deposit.		ANS, ex Trenholme (this coin).	Boehringer 152
324	16.30	Surface dirty and corroded.			Boehringer 153 (1)
325	17.33				Boehringer 154 (3)
326	17.15				Boehringer 154
327	17.44				Boehringer 155 (2)
328	17.07		Die break below r.		Boehringer V70/R104
329	16.84			ANS, ex Trenholme (this coin).	Boehringer V70/R104
330	17.40				Boehringer 156 (2)
331	17.41				Boehringer 156
332	17.49				Boehringer 160 (4)
333	17.19				Boehringer V72/R111
334	17.30				Boehringer 164 (2)
335	17.15				Boehringer 165E (1)
336	17.15				Boehringer 165E
337	17.11				Boehringer 166 (10)
338	17.33				Boehringer 169 (1)
339	17.25				Boehringer 172 (7)
340	17.05				Boehringer 172
341	17.23	Die break beginning below l.			Boehringer 172

No.	Wt.	Obverse	Reverse	Publication	Reference
342	17.13				Boehringer 174 (3)
343	17.87				Boehringer 175 (2)
344	17.41				Boehringer 176 (2)
345	17.34				Boehringer 177 (5)
346	17.21				Boehringer 177
347	17.65				Boehringer 179 (4)
348	17.05				Boehringer 180 (3)
349	17.18				Boehringer 180
350	17.16				Boehringer 183 (5)
351	17.10			ANS, ex Rosen (this coin).	Boehringer 183
352	17.47				Boehringer 184 (7)
353	17.38				Boehringer 184
354	17.06				Boehringer 185 (4)
355	17.39				Boehringer 188 (2)
356	16.79				Boehringer 190 (1)
357	17.00	Die worn.			Boehringer 195 (2)
358	17.00	Die and coin worn.	Die corroded.	ANS, ex Rosen (this coin).	Boehringer V89/R134
359	17.08	Die worn.			Boehringer 202 (3)
360	16.86	Die more worn.	Die worn; coin corroded.		Boehringer 202
361	17.59				Boehringer 203 (4)
362	17.04			ANS, ex Rosen (this coin).	Boehringer 203
363	16.57	Die worn.	Die worn.		Boehringer 203
364	17.32				Boehringer 203
365	16.06				Boehringer 205 (5)
366	16.97	Die worn; coin corroded.			Boehringer 206 (1)
367	17.17				Boehringer 207 (5)
368	17.00				Boehringer 207E (2)
369	17.09				Boehringer 208 (7)
370	16.40				Boehringer 209 (2)

No.	Wt.	Obverse	Reverse	Publication	Reference
371	17.21				Boehringer 211 (1)
372	17.02				Boehringer 212 (6)
373	16.98	Die more worn.		ANS, ex Rosen (this coin).	Boehringer 212
374	17.23				Boehringer 213 (8)
375	17.10				Boehringer 215 (1)
376	17.29	Die break below r. larger.			Boehringer 216 (6)
377	17.36				Boehringer 216
378	17.40			ANS, ex Rosen (this coin).	Boehringer 216
379	17.00	Die and coin worn.			Boehringer 218 (8)
380	17.41	Die and coin worn.	Die and coin worn.		Boehringer 221 (4)
381	17.31	Die breaks center and below larger.			Boehringer 221
382	16.84			ANS, ex Rosen (this coin).	Boehringer 223E (1). Obv. almost identical to Boehringer V60 (290-91) and V79
383	17.15			ANS, ex Rosen (this coin).	Boehringer 224 (7)
384	17.16				Boehringer 228 (2)
385	17.39				Boehringer 228
386	17.23	Die more worn.			Boehringer 229 (6)
387	17.02				Boehringer 229
388	17.27			ANS, ex Rosen (this coin).	Boehringer 229
389	17.26				Boehringer 231 (3)
390	17.39				Boehringer 232 (2)
391	17.35				Boehringer 233 (6)
392	17.28				Boehringer 233
393	17.36			Naville 2 July 1930, 332 = Naville 3 July 1933, 677 = Gans-Grunthal 5 June 1950, 94.	Boehringer Vnew/Rnew Rev. similar to R157, R158
394	17.44				Boehringer Vnew/Rnew
395	17.44				Boehringer Vnew/Rnew
396	17.13				Boehringer Vnew/Rnew

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
397	17.51				Boehringer 234 (2)
398	17.25				Boehringer V105/R171
399	17.11				Boehringer V105/R176
400	17.21				Boehringer V105/R176
401	17.05				Boehringer 236 (4)
402	17.29				Boehringer 236
403	16.80				Boehringer 236
404	17.26				Boehringer 237 (5)
405	17.11			ANS, ex Rosen (this coin).	Boehringer 237
406	17.31				Boehringer 237
407	17.19				Boehringer 242 (3)
408	17.39				Boehringer 244 (6)
409	17.21				Boehringer 244
410	17.15		Die break below.		Boehringer 245 (1)
411	17.50				Boehringer 245
412	17.30				Boehringer 245
413	17.35				Boehringer 245
414	17.30				Boehringer 245
415	17.39				Boehringer 246 (1)
416	16.98			ANS, ex Rosen (this coin).	Boehringer 246
417	17.34				Boehringer 247 (1)
418	17.40		Die and coin worn.	ANS, ex Rosen (this coin).	Boehringer V111/Rnew
419	17.31			ANS, ex Rosen (this coin).	Boehringer 248 (2)
420	17.28				Boehringer 249 (2)
421	17.43			Kriecheldorf 11-12 Feb. 1971, 21.	Boehringer V113/Rnew
422	17.34				Boehringer V113/R169
423	16.96	Die more worn.	Traces of die corrosion.	ANS, ex Trenholme (this coin).	Boehringer V113/R169
424	17.04				Boehringer V113/Rnew
425	17.28				Boehringer 254 (3)
426	17.30				Boehringer 254

No.	Wt.	Obverse	Reverse	Publication	Reference
427	17.30				Boehringer V116/R191
428	16.69				Boehringer V116/R191
429	17.05				Boehringer V116/R191
430	17.08				Boehringer 257 (3)
431	17.09			ANS, ex Rosen (this coin).	Boehringer 257E (1)
432	17.46				Boehringer Vnew/R177E
433	17.34		Die break center.		Boehringer 259 (2)
434	16.92		Coin corroded.		Boehringer 259
435	16.69	Die worn.	Coin corroded.		Boehringer 259
436	17.79	Coin corroded.			Boehringer 260 (2)
437	17.31				Boehringer 261 (1)
438	17.25	Die worn.			Boehringer 261
439	17.19		Double struck.		Boehringer 263 (2)
440	17.26				Boehringer 263
441	17.03	Coin worn.		ANS, ex Rosen (this coin).	Boehringer 265 (2)
442	17.19				Boehringer 267E (1)
443	17.31				Boehringer 268 (9)
444	17.26	Die more worn.			Boehringer 268
445	17.33				Boehringer V122/R187
446	17.35				Boehringer 270 (2)
447	17.14			*Dewing* 757.	Boehringer V123/R189
448	17.26				Boehringer V124/Rnew
449	17.26				Boehringer 272 (2)
450	17.39	Die more worn; die breaks below.			Boehringer 272
451	16.90				Boehringer 272
452	17.28	Die breaks larger.			Boehringer 272
453	17.12				Boehringer 273 (1)
454	17.00				Boehringer 274 (6)
455	17.17				Boehringer 274
456	17.24	Die more worn.			Boehringer 274
457	17.16	Die more worn.			Boehringer 274
458	16.99		Die more worn.	ANS, ex Rosen (this coin).	Boehringer 275 (1)
459	17.25			Kress 7-8 Aug. 1967, 15.	Boehringer V127/Rnew

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
460	17.39				Boehringer 278 (3)
461	17.35	Coin worn.			Boehringer 278
	Group 3, 12a-e. 475-470 B.C.				
462	17.24				Boehringer 296 (4)
463	17.37				Boehringer 297 (1)
464	16.79			ANS, ex Rosen (this coin).	Boehringer 300E (1)
465	17.21		Die break center.		Boehringer 301 (1)
466	17.45				Boehringer 302 (2)
467	17.32				Boehringer 303 (6)
468	17.07				Boehringer 303
469	17.37				Boehringer V145/R211
470	16.56	Die worn.			Boehringer 305 (2)
471	17.22				Boehringer 307 (5)
472	16.60			ANS, ex Rosen (this coin).	Boehringer 307
473	17.14				Boehringer 308 (1)
474	17.41				Boehringer 310 (4)
475	17.10				Boehringer Vnew/R216
476	16.62				Boehringer 310E (2)
477	16.79				Boehringer 310E
478	17.28				Boehringer 312 (8)
479	16.90		Die worn and coin corroded.		Boehringer 312
480	17.20				Boehringer 313 (7)
481	17.35				Boehringer V151/R224
482	16.63			ANS, ex Rosen (this coin).	Boehringer 314 (6)
483	17.28				Boehringer 314
484	17.12				Boehringer 316 (3)
485	17.29				Boehringer 317 (1)
486	17.27				Boehringer 318 (5)
487	17.44				Boehringer 320 (1)
488	17.18				Boehringer 320
489	17.05				Boehringer 321 (12)

No.	Wt.	Obverse	Reverse	Publication	Reference
490	17.05				Boehringer 321
491	17.23				Boehringer 321
492	17.10	Die more worn.			Boehringer 321
493	17.09				Boehringer 321
494	16.99				Boehringer 323 (7)
495	17.13				Boehringer 323
496	17.26				Boehringer 323
497	17.25	Die break below.			Boehringer 326 (2)
498	17.20	Die worn.			Boehringer 329 (1)
499	17.24				Boehringer 331 (6)
500	16.83		Coin corroded.		Boehringer 331
501	17.25	Die more worn.			Boehringer 331
502	17.05	Die more worn.			Boehringer 331
503					Boehringer 331
504	17.31				Boehringer 332 (9)
505	17.07	Coin dirty and corroded.			Boehringer 333 (4)
506	17.41				Boehringer 335 (2)
507	17.36				Boehringer 338 (5)
508	17.09				Boehringer 338
509	17.21				Boehringer 338
510	17.42		Coin corroded.		Boehringer V168/R237
511	17.31		Coin dirty and corroded.		Boehringer 341 (2)
512	17.32	Die more worn.	Die and coin worn.		Boehringer 343 (5)
513	16.93				Boehringer 344 (7)
514	17.11			ANS, ex Rosen (this coin).	Boehringer 344
515	17.31	Die more worn; die break center below.			Boehringer 344
516	17.39	Die worn.			Boehringer 346 (2)
517	17.20				Boehringer 347E (1)
518	17.35				Boehringer 348 (5)
519	17.28				Boehringer 352 (3)
520	17.45		Die break center.		Boehringer 352

No.	*Wt.*	*Obverse*	*Reverse*	*Publication*	*Reference*
521	16.98	Coin dirty and corroded.			Boehringer 353 (5)
522	17.02	Die more worn.			Boehringer 353
523	16.67				Boehringer 354 (4)
524	16.86	Die very worn.	Arethusa in laurel wreath ("Demareteion" type).		Boehringer 391 (2)
		Obv. In exergue, ketos.			
		Group 4, 13 (transitional phase). 470-466 B.C.			
525	17.21				Boehringer 408 (6)
526	17.21				Boehringer 409 (3)
527	16.74				Boehringer 412 (4)
528	17.46			Bowers and Ruddy, *Masterpieces*, 7 (this coin).	Boehringer 435 (1)
529	17.41				Boehringer 440 (15)
530	16.91				Boehringer 440
531	17.16				Boehringer 441 (2)
		Group 4, 14a. After 466 B.C.			
532	17.20			Bowers and Ruddy, *Masterpieces*, 8 (this coin).	Boehringer 469 (2)
533	16.58				Boehringer 473 (3)
534	17.48			Bowers and Ruddy, *Masterpieces*, 9 (this coin).	Boehringer 474 (2)
535	17.16				Boehringer 477 (7)
536	17.25				Boehringer 477
537	17.18				Boehringer 478 (5)
538	17.31				Boehringer 480 (4)
539	17.21				Boehringer 483 (14)

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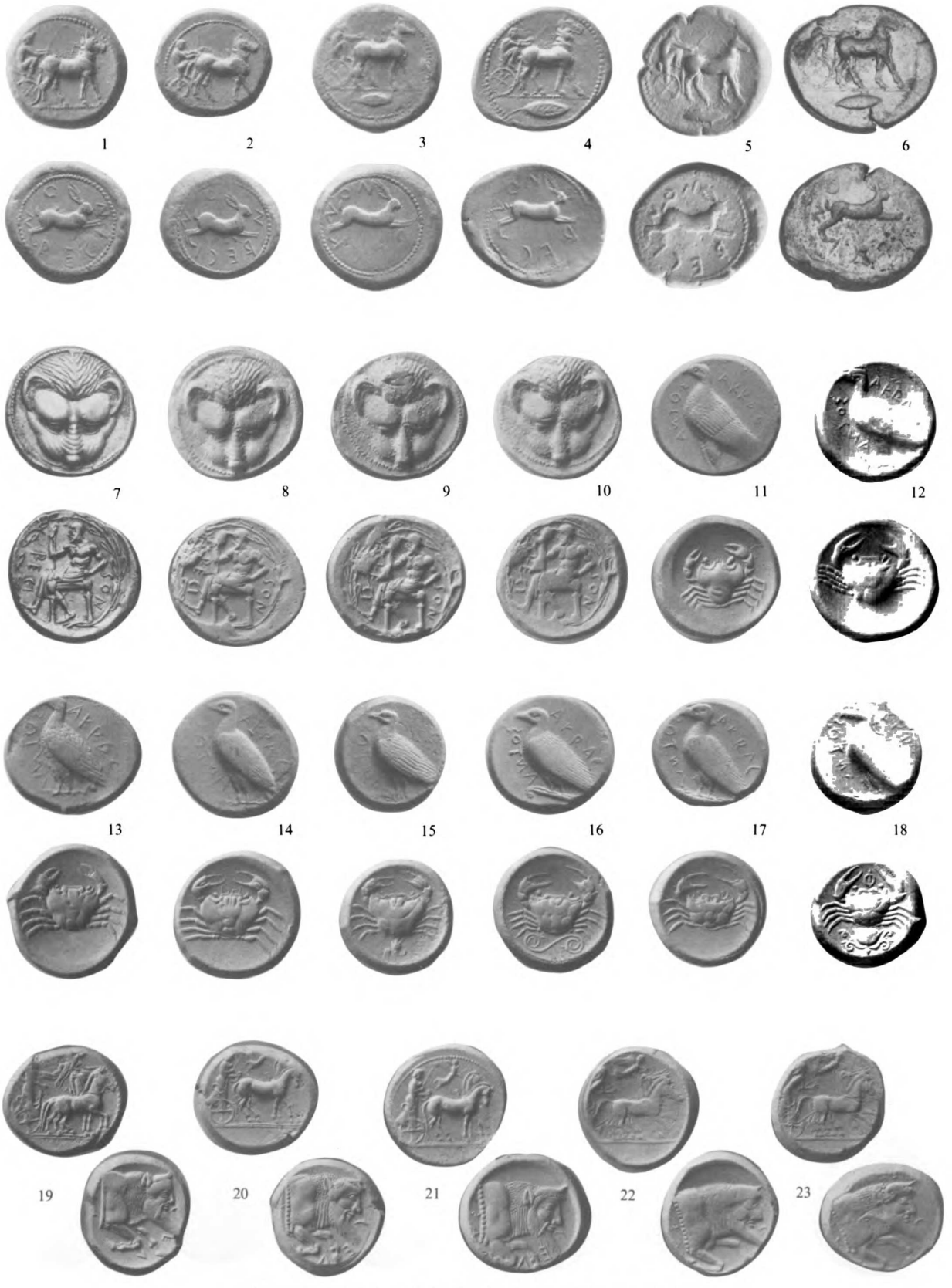
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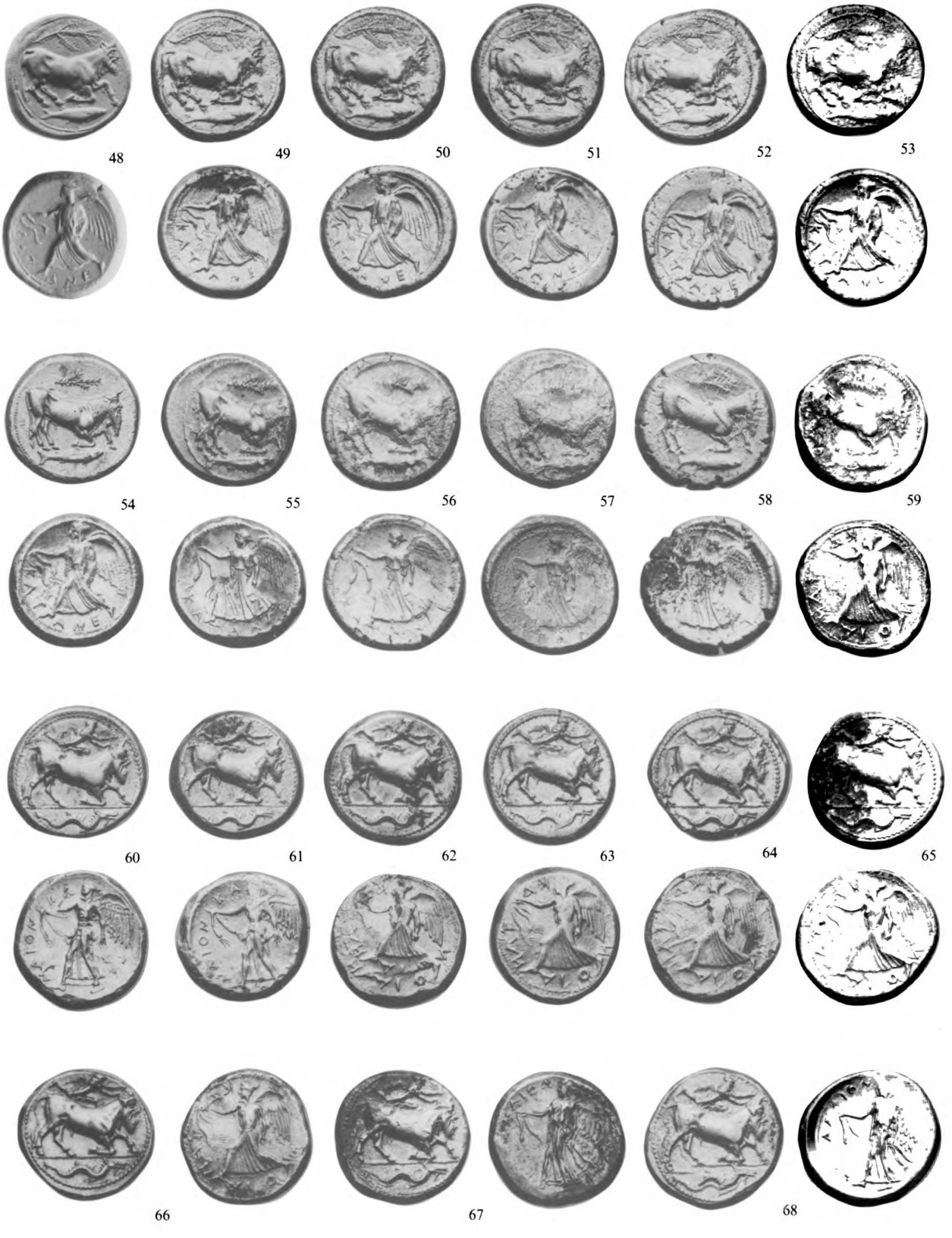


RHEGION (1-10); AKRAGAS (11-18); GELA (19-23)

Plate 2



GELA (24-47)



48 49 50 51 52 53

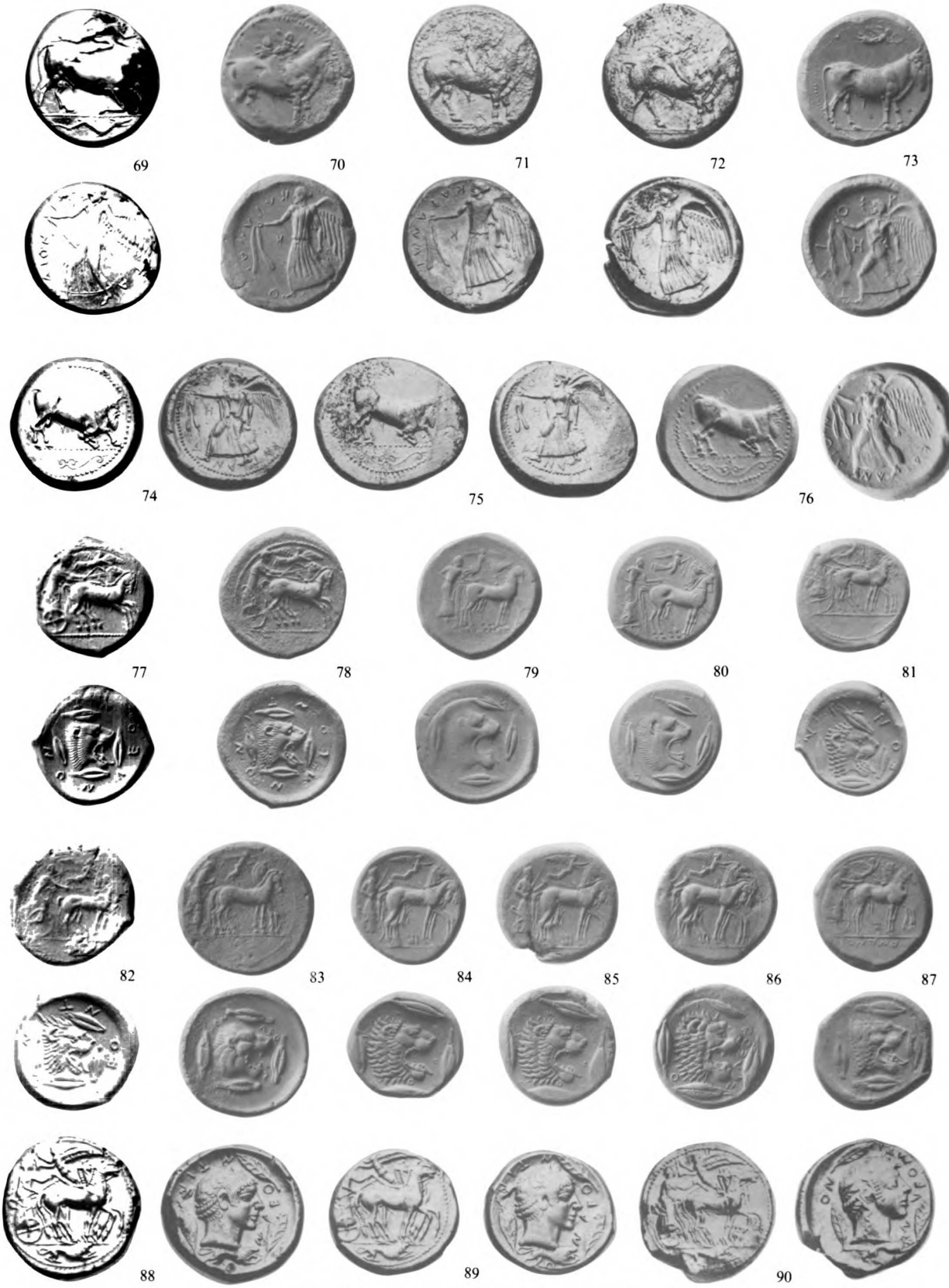
54 55 56 57 58 59

60 61 62 63 64 65

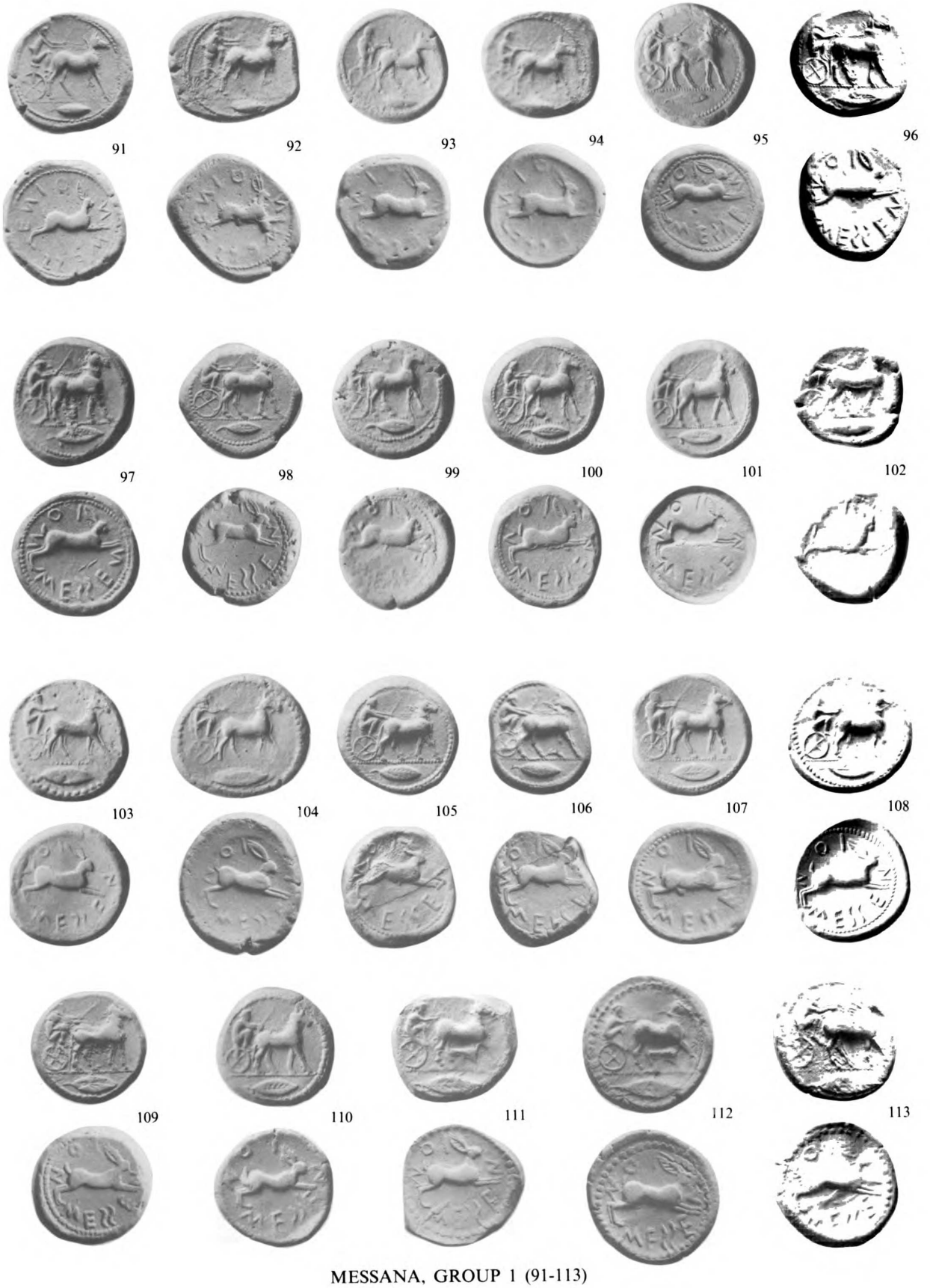
66 67 68

KATANE (48-68)

Plate 4



KATANE (69-76); LEONTINOI (77-90)



91 92 93 94 95 96

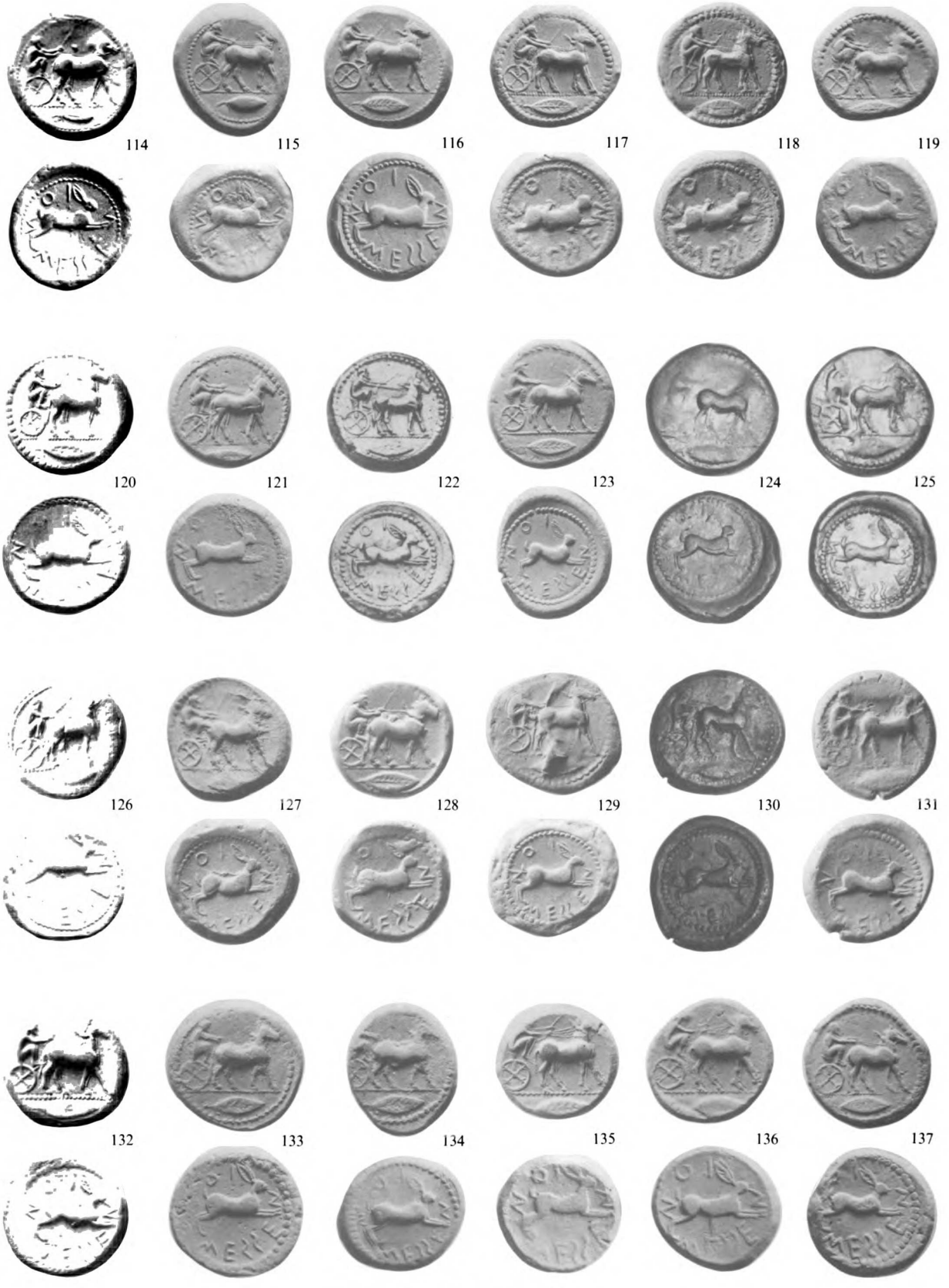
97 98 99 100 101 102

103 104 105 106 107 108

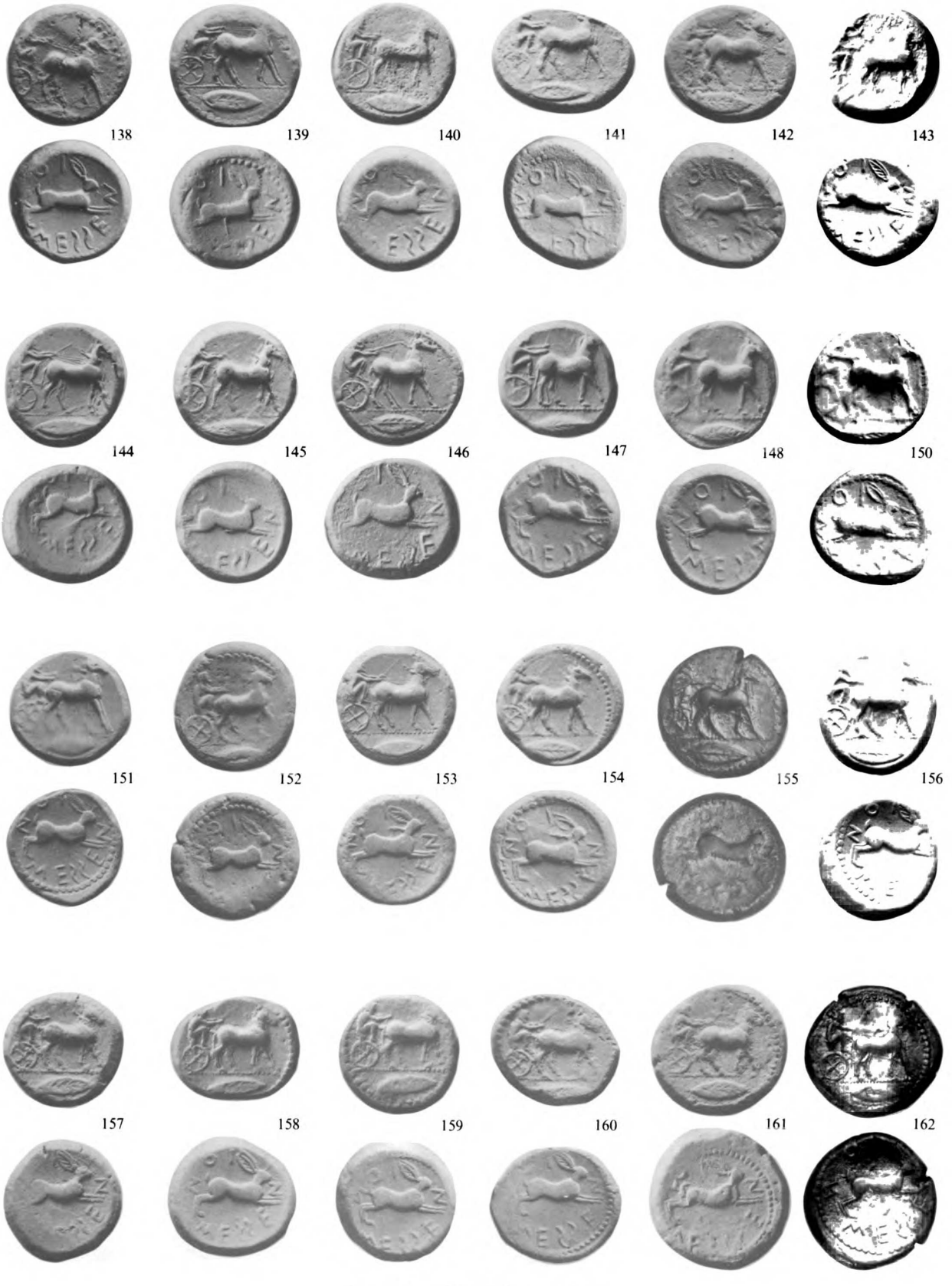
109 110 111 112 113

MESSANA, GROUP 1 (91-113)

Plate 6

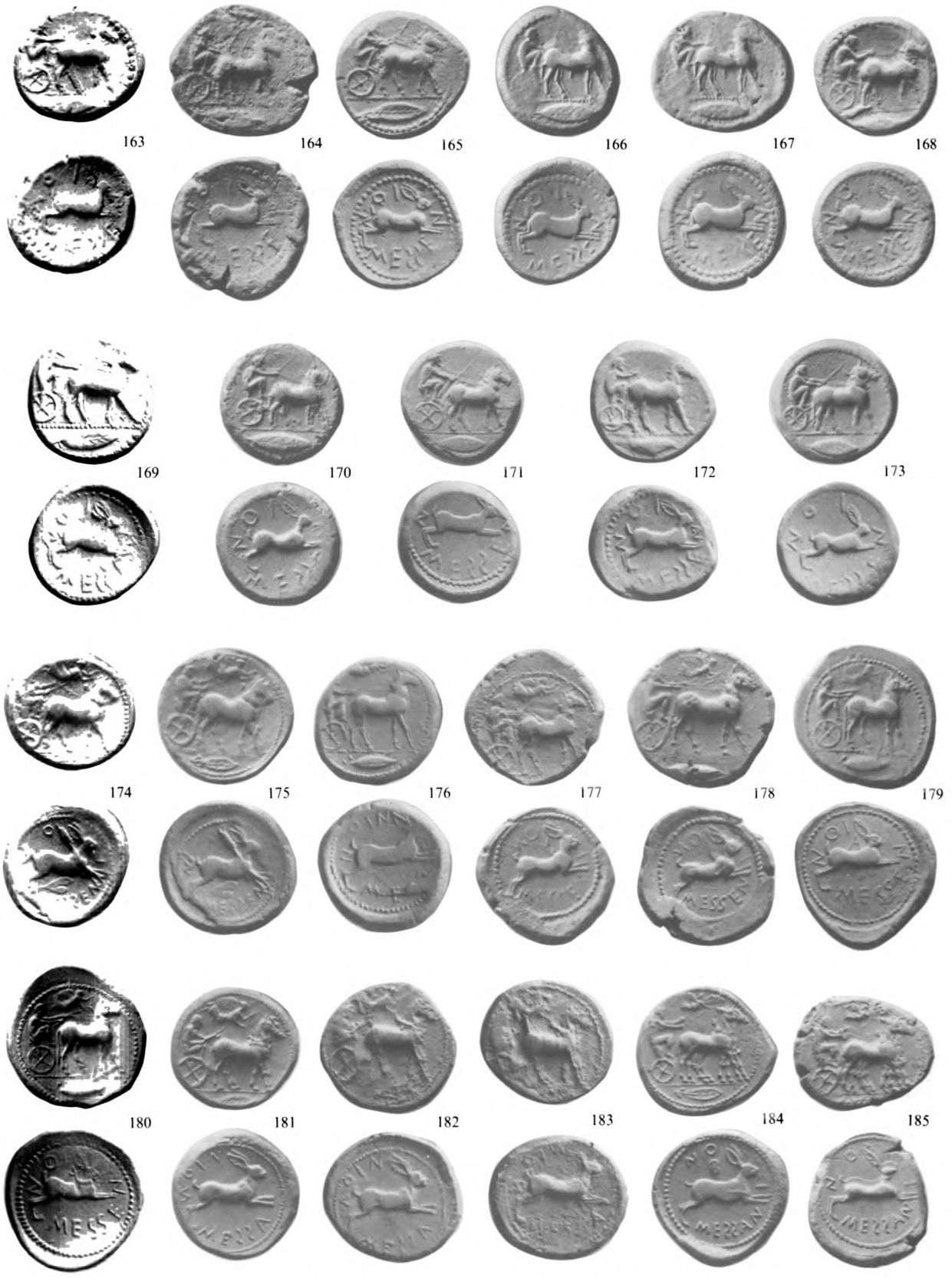


MESSANA, GROUP 1 (114-37)

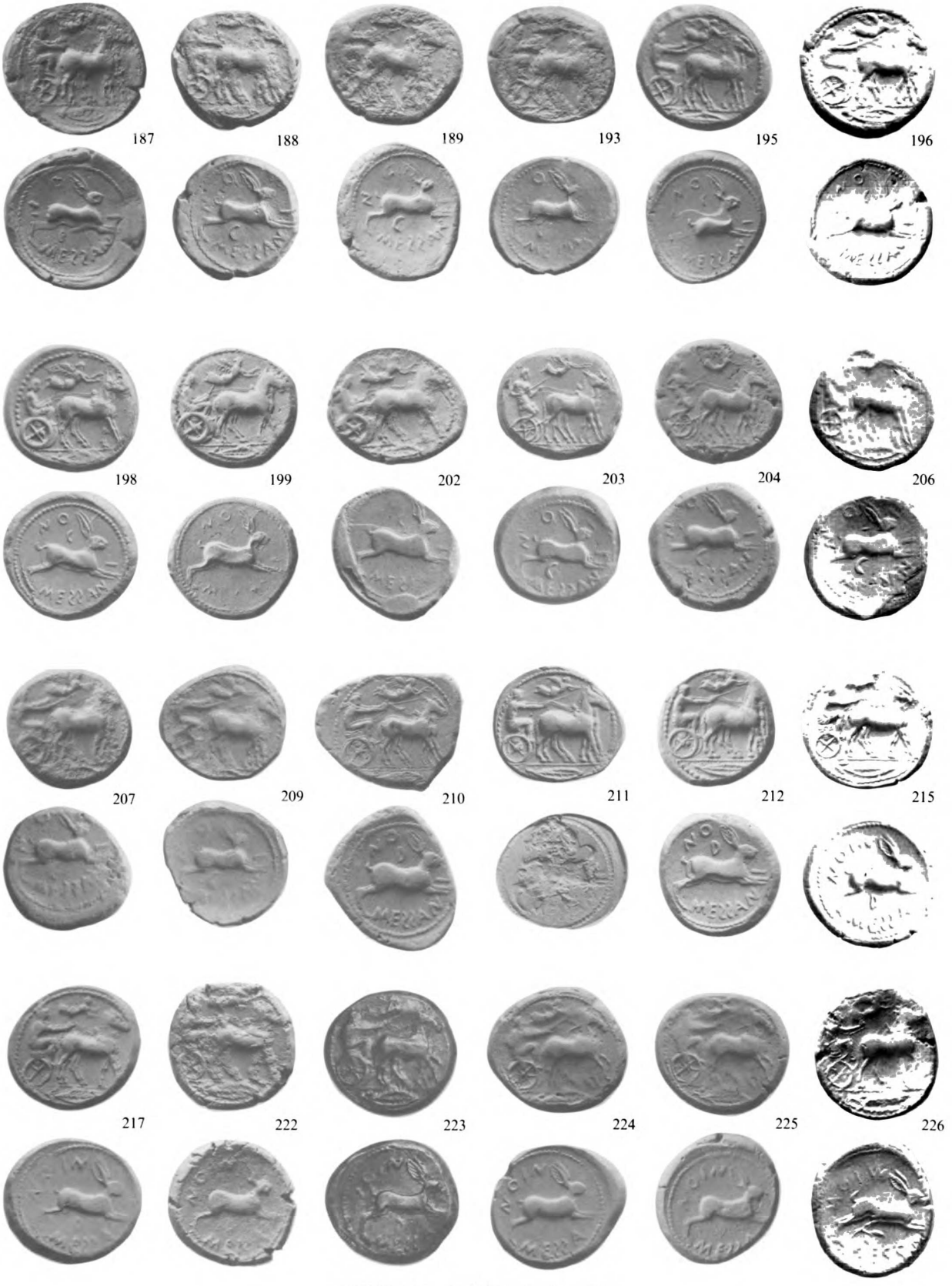


MESSANA, GROUP 1 (138-62)

Plate 8



MESSANA, GROUP 1 (163-73); GROUP 2 (174-85)



MESSANA, GROUP 2 (187-226)

Plate 10



NAXOS (227-31); SYRACUSE, GROUP 1, 1-2 (232-35); GROUP 2, 3-5 (236-50)

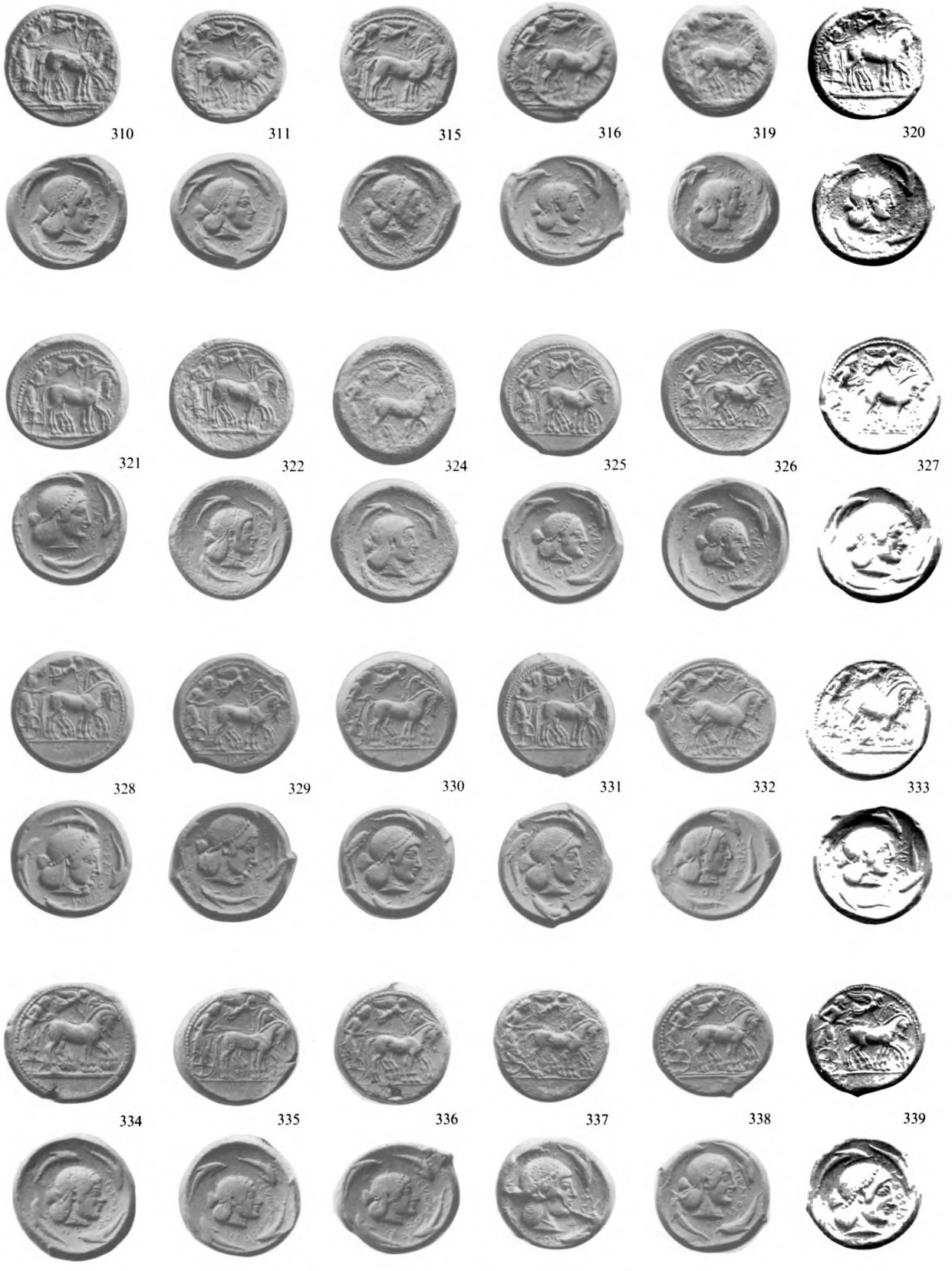


SYRACUSE, GROUP 2, 3-5 (251-71); GROUP 3, 8b-11 (272-79)

Plate 12



SYRACUSE, GROUP 3, 8b-11 (280-309)



SYRACUSE, GROUP 3, 8b-11 (310-39)

Plate 14

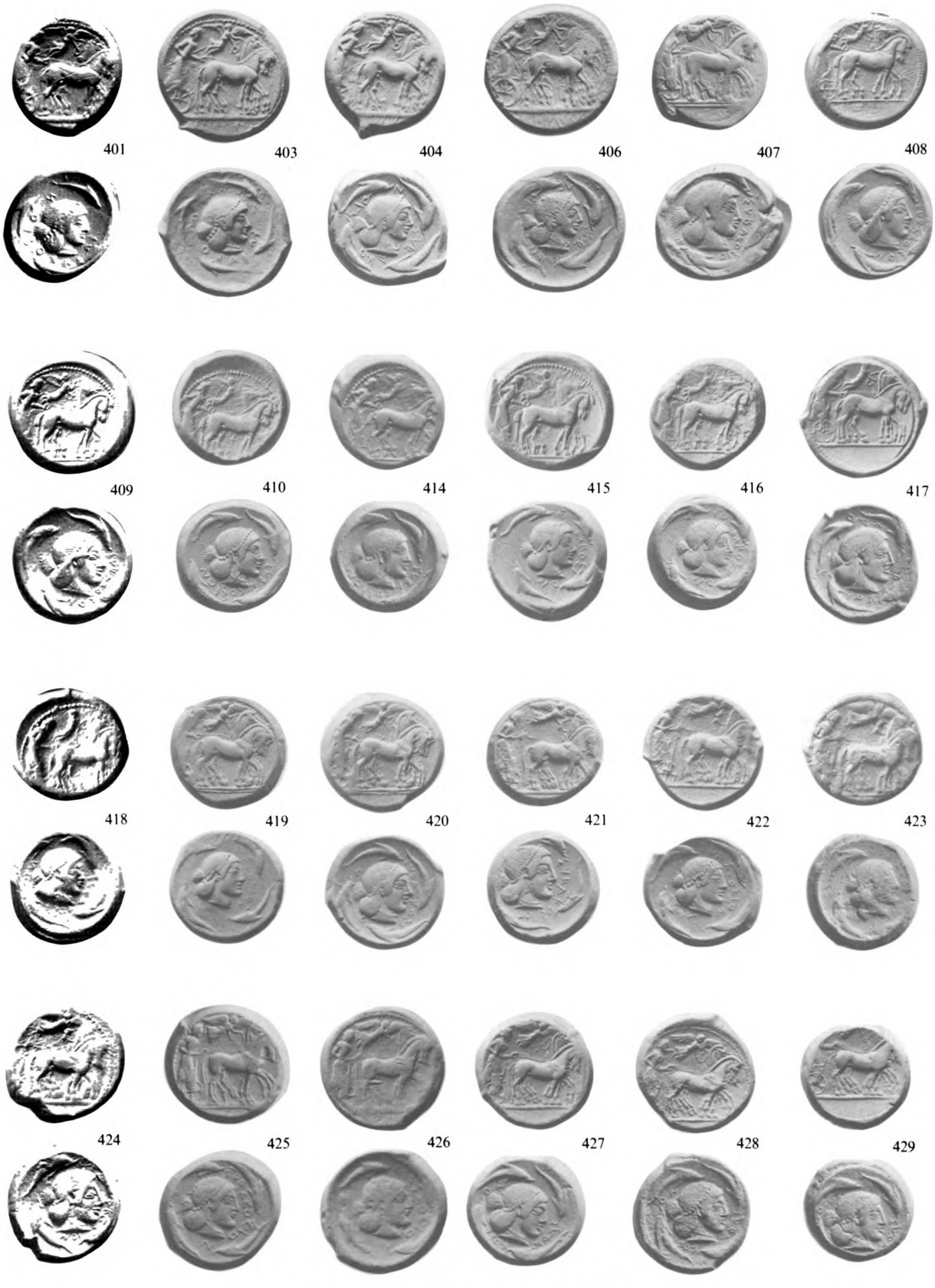


SYRACUSE, GROUP 3, 8b-11 (342-70)

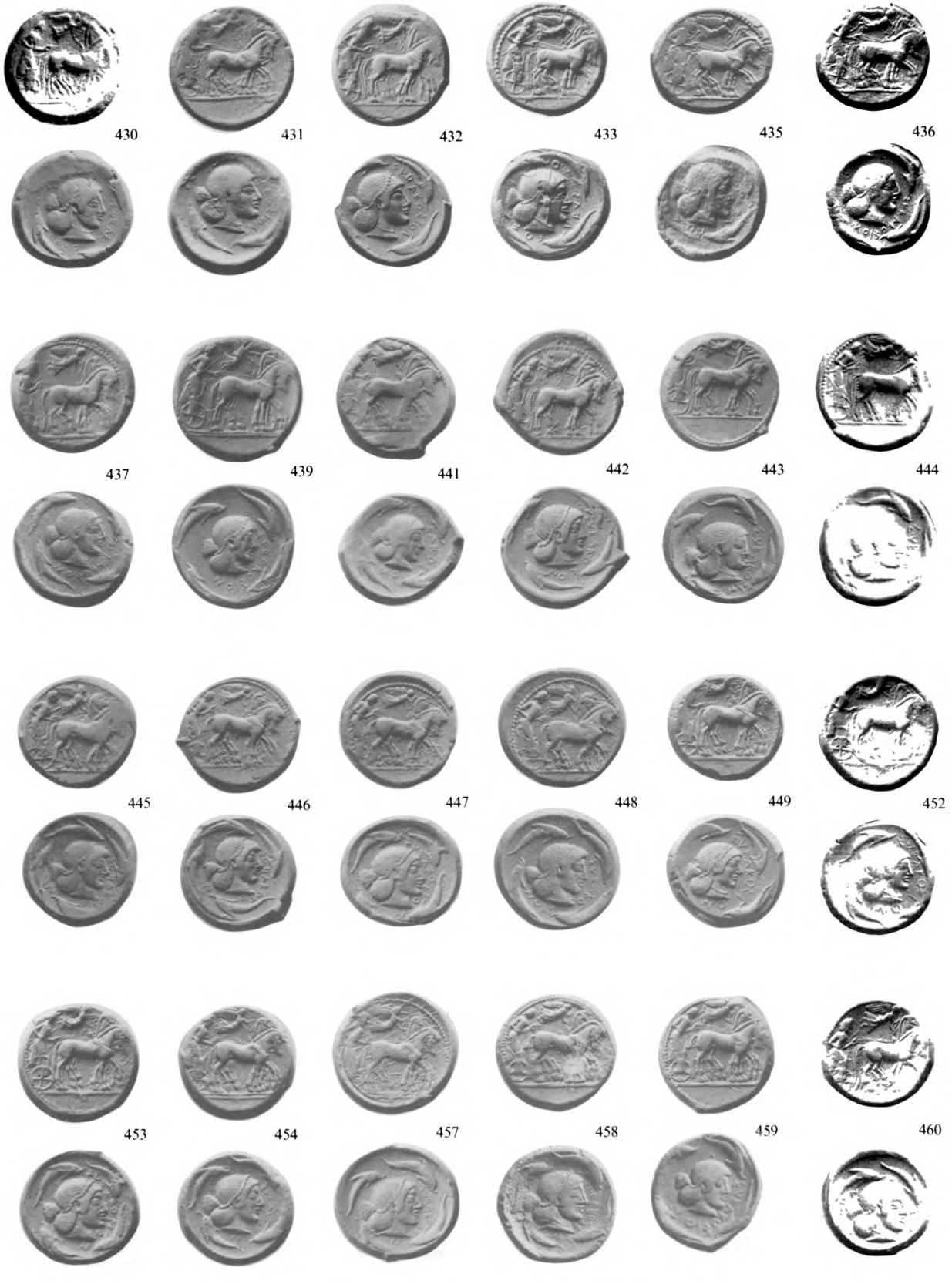


SYRACUSE, GROUP 3, 8b-11 (371-400)

Plate 16



SYRACUSE, GROUP 3, 8b-11 (401-29)

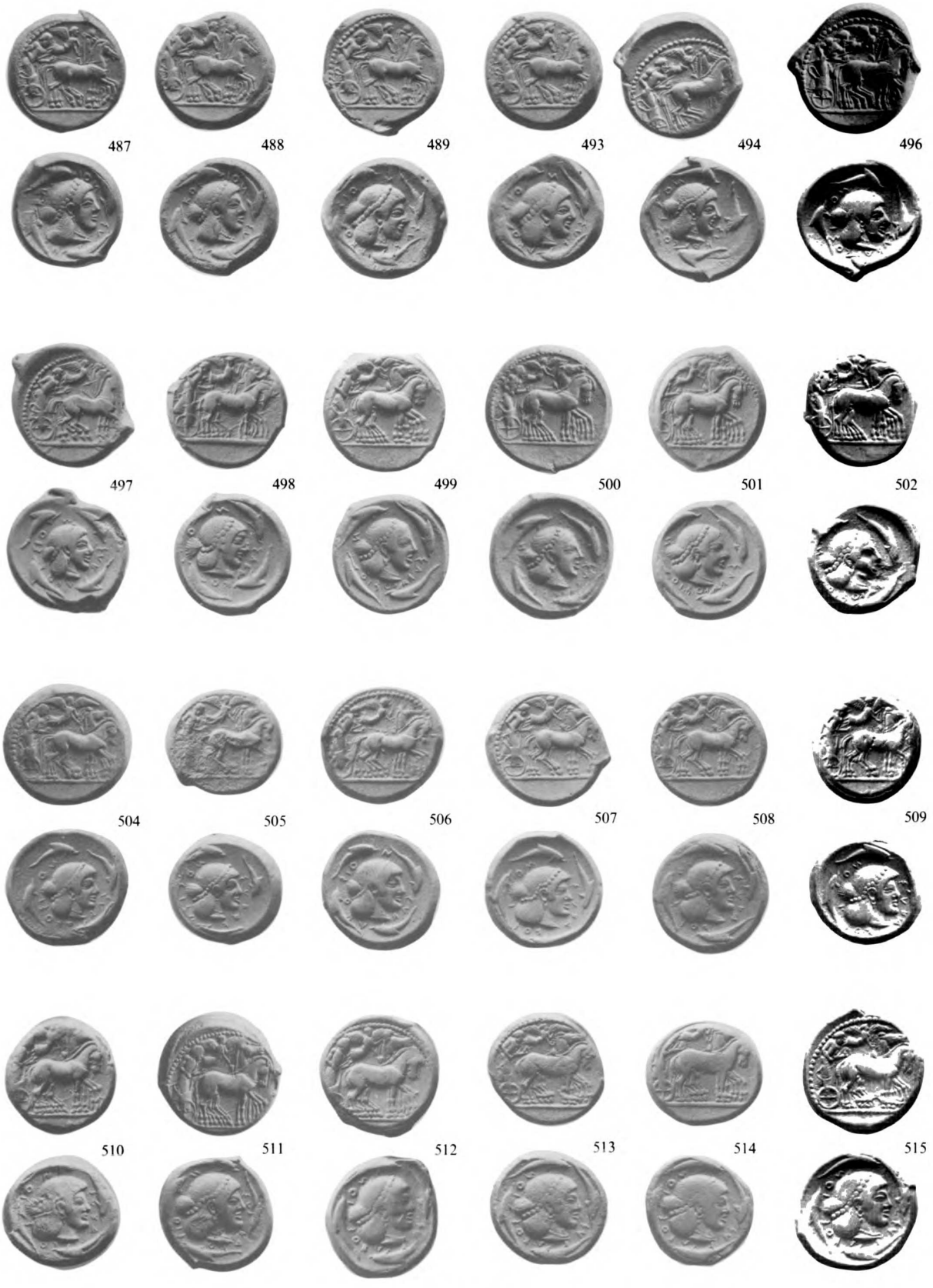


SYRACUSE, GROUP 3, 8b-11 (430-60)

Plate 18



SYRACUSE, GROUP 3, 12a-c (462-86)



SYRACUSE, GROUP 3, 12a-c (487-515)

Plate 20



SYRACUSE, GROUP 3, 12a-c (516-24); GROUP 4, 13 (525-31); GROUP 4, 14a (532-39)