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COLIN M. KRAAY (†)

A MID-FIFTH CENTURY HOARD FROM SOUTH ITALY

Introduction

After his untimely death Dr. Kraay's papers were given by his widow to the Heberden Coin Room in the Ashmolean Museum. A preliminary examination of the material revealed that virtually all of the projects on which he had worked in recent years were either finished and published or in the first stages of preparation. It came as a considerable surprise, therefore, to discover as a result of a recent query by Dr. Paolo Visonà that Dr. Kraay had been working on a large coin hoard from South Italy which he had intended to publish but in fact never had. A search of the archives led to the discovery of a completed typescript of his analysis of the hoard and catalogue of its contents. In it reference was made to photographs supplied by Silvia Hurter but these could not be found.

In the circumstances it seemed desirable to try and publish Dr. Kraay's manuscript since it provides not only a record of these coins but his views on the dates of various South Italian coinages contained in it. Mrs. Hurter was able to supply fresh photographs with the weights of the coins from all mints except Croton. Dr. Rick Williams in Australia who had previously received photographs of the Croton coins and their weights generously photocopied his record cards and sent this material to the Ashmolean. The fact that virtually all of the photographs had their weights associated with them greatly facilitated labelling them with their correct catalogue number.

In the course of matching photographs and catalogue numbers it was discovered that at a number of mints the total number of photographs re-supplied by Mrs. Hurter was greater than the number originally seen and identified by Dr. Kraay. These new coins have been added to the catalogue and where possible the dies have been identified. In a few instances coins listed by Dr. Kraay have not been included in the recent set of photographs but his catalogue entry remains since it seems clear that he saw and correctly identified these coins.

Only a small number of coins have been included on the plates but a complete set of photographs of nearly all of the coins in the hoard is on deposit in the Ashmolean Museum where they can be consulted.

The decision to work through the contents of this hoard again and to publish it was dictated not only by the value of its contribution to the study of Greek numismatics but by the affection and gratitude all of us who participated felt towards Dr. Kraay as a scholar and a friend.

C.E. King
Heberden Coin Room
Ashmolean Museum
Oxford GB

The sequences of issues at most of the mints of South Italy down to c. 400 B.C. is by now fairly well understood, but the chronological relationships between mints are less clearly defined. In the sixth and the early fifth centuries the incuse fabric, common to several mints, provides a unifying element, for at first that fabric seems to have developed in the same way and at about the same time in all the mints which employed it. But from about 480, or even earlier, this uniformity begins to break up, for it is now clear from the evidence of many hoards that although the incuse fabric was retained, albeit in a modified form, at Croton and Metapontum until at least the middle of the century, the double-relief fabric had already been adopted by Poseidonia and Caulonia before c. 470. With the passage of time the picture is further complicated by the emergence of new mints (Cumae, Terina, Thurium, Laus) or by the rise to the first rank of others which had previously been of only secondary importance (Velia, Taras, Neapolis).

Such is the variety from mint to mint that types and style cannot usually alone serve to relate the issues of one mint to its contemporaries elsewhere. The vital evidence is here provided by those hoards which offer a cross-section through two or more mints at the moment of loss. A small hoard, especially if incompletely recorded, may yield a defective picture, but a large hoard or a number of consistent smaller hoards should provide a reliable series of inter-connexions between the component mints. It can be objected that conclusions based on the contents of hoards may be invalidated by the operation of factors now quite unsuspected, which may have caused the exclusion of issues which otherwise would have been present. To this it can only be answered that, though the operation of such factors can never be wholly excluded, the total corpus of hoards from South Italy suggests that all issues on the same weight standard were equally acceptable and that distance from the point of origin often had no marked effect on the proportion of coins from the more prolific mints included in a hoard.

The analysis of the contents of a hoard will provide a relative chronology for two or more mints, which may be quite precise for the terminal period of that hoard, but which will become progressively vaguer for earlier issues. Ideally, therefore, a series of hoards is required to provide successive cross-sections which will relate the sequences of issues at different mints at several periods. Absolute chronology, which depends ultimately on those dated historical events which can be presumed to have influenced the stream of coinage, will normally remain approximate, but should become progressively more accurate as the number of reliable cross-sections increases. For South Italy in the sixth, fifth and early fourth centuries such dated events are few, but they will include the foundation of Velia (c. 540), the destruction of Sybaris (510), the refoundation of Sybaris (453), the foundation of Thurium (443), the foundation of Heraclea (433/432), and the destruction of Caulonia (388). Overstrikes or the presence of imported coins may occasionally bring support from external chronologies. From these relatively secure points the date of the latest issues in a hoard (and the probable date of its loss) must be estimated in the light of additional factors – the number of issues present (or, in the case of a large hoard, absent), states of wear, style, form of legend, lettering, and the historical situation, if known.

The hoard here described is reported to have been found about 1971 to the east of Taranto, near S. Giovanni Ionico in the neighbourhood of Carosino; its precise original size is not known, but it certainly contained more than the 716 coins described below; a further lot of some 300 coins is understood to exist, though no details are available of its com-

position. The account given here is based on a series of excellent photographs (with weights) provided by Mrs. Silvia Hurter of Zürich, to whose generosity I am indebted for the opportunity to work on this important body of material. Despite the high quality of the photographs, the record of dies and of die-links is certainly incomplete, for a number of the coins were still covered with the products of corrosion. Nevertheless this is certainly the most complete record of a major hoard that has yet become available for study, and it provides an exceptionally detailed picture of the coinage of South Italy from the two or three decades preceding its burial soon after the middle of the fifth century.

Summary of Contents

	Incuse	Double-relief	Total
Caulonia	20	112	132
Croton	194	3	197
Laus	3	11	14
Metapontum	129	–	129
Poseidonia	2	150	152
Sybaris I	1	–	11
Sybaris III	–	2	2
Taras	1	89	90
Velia	–	2	2
		Total	716

The vast majority were staters; a very few smaller denominations were included from Caulonia (1), Metapontum (3), Sybaris I (1) and Taras (8).

Caulonia (132)¹

Incuse issues: Noe Groups A–D (20)

1	N 2	7.89	10	N 34	7.90
2	N 6	7.81	11–12	N 44	7.91, 7.68
3–4	N 10	7.82, 7.73	13	N 48	7.95
5	Cf. N 17–19	but different rev. 7.90	14–16	N 51	7.87, 7.61, 7.38
6	N 19	7.97	17–18	N 60	7.99, 7.83
7	N 20	7.94	19	Cf. N 61	but KAYAO down-wards retrograde 7.61
8	N 23	7.79			Drachma 2.54
9	Cf. N 23	7.86	20	N 201?	

Double-relief issues (112)

Noe Group E (14)

21–23	N 62	8.07, 8.03, 8.01	29–31	N 65	7.90, 7.89, 7.88
24–25	N 63	8.03, 8.00	32	N 67	8.18
26–27	N 64	8.17, 7.83	33–34	Obv. N. –	Rev. N 64 8.13, 8.03
28	N 64?	8.02			

¹References to S.P. Noe, *The coinage of Caulonia*, *ANS Numismatic Studies* 9, 1958.

Noe Group F (95)

35-36 N 79	8.05 (2)	88-95 N 92	8.59 ³ , 8.17, 8.13, 8.09, 8.02, 7.98 (2), 7.95
37-40 N 80	8.15, 8.06, 8.04, 8.01		
41 Obv. Cf.	N 81/82 ²	96-97 Obv. N -	Rev. N 92 8.23, 8.10
	Rev. N 93/94 8.13	98-107 N 93	8.19, 8.18, 8.07, 8.05, 8.04 (2), 8.01, 7.98 (2), 7.90
42-51 N 83	8.16, 8.12, 7.99, 7.98, 7.95, 7.94 (3), 7.90 (2)		
52-57 N 84	8.22, 8.11, 8.03 (2), 7.98, 7.90	108 N 94	8.00
58-61 N 85	8.20, 8.15, 8.14, 7.88	109-116 N 96	8.15, 8.13, 8.12 (rev. uncertain), 8.10, 8.07, 7.99, 7.93, 7.83
62-63 N 86	8.14, 8.02		
64-70 N 87	8.16, 8.13, 8.12, 8.03, 8.02, 7.97, 7.73	117 Obv. N 96	Rev. N 99 8.14
71-72 Obv. N 87	Rev. N 99 8.10, 8.08	118-121 N 97	8.18, 8.07, 7.98, 7.97
73-79 N 88	8.13, 8.09, 7.99 (2), 7.94, 7.93, 7.77	122-126 N 98	8.23, 8.17, 8.16, 7.99, 7.93
80-81 N 89	8.05, 7.65	127 N 97/8	8.10 (rev. corroded)
81a Obv. 88-9	Rev. - 8.24	128 N 99	7.96
82-84 N 90	7.82, 7.77, 7.61	129 N 101	7.90
85-87 N 91	8.16, 8.12, 7.80		

Noe Group I (1)

130 N 150	7.71 (details of rev. uncertain)
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Noe Group J (1)

131 N 163	7.72
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The pattern of the above list is clear. By the date of its conclusion the incuse issues were already in the somewhat distant past, accounting for less than a sixth of the total number of coins of Caulonia in the hoard; they had also suffered some loss of weight by wear for not a single example attains the weight of 8.00 g, whereas this figure is surpassed by well over half the double-relief coins⁴. Of the first double-relief issues (Group E) only sporadic varieties are included, though most of those that are present are represented by more than one example. Of Group F (N 78-101), however, almost every known die combination is represented by up to ten examples.

The presence of the later varieties N 150 (Noe Group I) and N 163 (Noe Group J) both in worn condition, is puzzling. Noe places them in his ultimate and penultimate groups of Caulonia's coinage, but his classification is certainly somewhat unreliable at this point⁵. Allowing for the substantial intervening Group G these two varieties can hardly have been

² Possibly this die reworked.

³ The weight was recorded thus, but it is probably an error for 8.19 or 8.09.

⁴ Within Group E the weights of N 65 which is linked through its obverse die to the incuse series (NC 1960, 53 f.) are notably lower than those of the other varieties in the Group.

⁵ Revised in C.M. Kraay, *Caulonia and South Italian problems*, NC 1960, 56 f. and, *The chronology of Caulonia - once again*, AIN 25, 1978, 9-21.

minted less than twenty years after the end of Group F, and their condition implies at least a further decade of circulation before they were buried. Since the circumstances and the precise location of the discovery of this hoard are unknown, these two anomalous coins can perhaps be regarded as intrinsic site-finds from the general area in which the hoard was discovered.

In a previous study I had suggested that Group F might have terminated c. 440⁶, but as the terminal date of this hoard appears to be c. 450/45, by which time all the varieties of Group F had been issued, the date formerly proposed appears to have been about ten years too late. I now suggest that Group F belongs to the 450's and Group E, therefore, to the 460's⁷.

Since most of the substantial number of coins from Groups E and F (109) appear to have been buried little more than a decade after issue, they will have not undergone severe wear. Their weights, therefore, should give some indication of the prescribed standard, and of the degree of variation tolerated in what were still comparatively new coins. For comparison the distribution of all weights for Group F known to Noe is included below; this shows a similar diffuse range for the higher weights but at a lower level, from 8.04 to 7.80 g, a very much larger proportion of coins ranging down below 7.80 g.

E and F			Noe Group F		
820 +	5	3	7.99–7.95	17	8
8.19–8.15	14	1	7.94–7.90	13	19
8.14–8.10	18	9	7.89–7.85	3	13
8.09–8.05	12	8	7.84–7.80	4	11
8.04–8.00	18	16	Below 7.80	5	24

Within the range 8.14–7.95 g no significant peak can be discerned; the standard intended, therefore, appears to be somewhat above 8.00 g.

Croton (197)⁸

Obv. Tripod. Rev. Tripod incuse, unless otherwise stated.

Spread incuse issues (14)

a)	No symbol (7)	
1	Obv. Double spirals between legs; snakes between feet; on l., (inward); die of SNG ANS 238	7.72
2	Obv. Snakes on rim; $\Phi\text{P}\text{O}$ (inward); die of Ratto (Lugano) 4 April 1927, 285. Rev. Snakes on rim	7.77
2a	Obv. die of 2.	7.94

⁶ NC 1960, 62 ff.

⁷ Cf. AIIN 25 (above, n. 5).

⁸ In the following catalogue «outward» and «inward» refer to the directions from which the legends are to be read.

3-5	Similar to no. 2.	No weight, 8.20, 8.17
6	As last, but obv. on r. TON (inward); die of H. Weber 996	7.72
b)	Heron symbol on obv.	
7	Obv. Symbol on r. (inward); on l., $\varphi\rho\circ$ (inward).	7.81
8	Obv. Heron on l. stg. on O; on r., φ ; in ex., φ ; die of SNG ANS 252.	7.90
c)	Crab symbol on obv. (5)	
9	Obv. Double spirals between legs; snakes on rim and between feet; on l., $\varphi\rho\circ$ (inward); on r., crab; die of SNG ANS 243 (without crab). Rev. As obv. but $\varphi\rho\circ$ (inward). Dies of H. Weber 998.	7.87
9a-10	Obv. Snakes on rim; ex. hatched; on l., $\varphi\rho\circ$ (inward); on r., crab. Rev. On l., crab; on r., $\varphi\rho\circ$ (outward). Dies of SNG Forbat 78.	8.10, 8.06
11	Obv. As no. 10 but $\varphi\rho\circ$ retrograde (inward). Rev. On l., crab; ; on r., $\varphi\rho\circ$ (inward). Dies of SNG Lockett 600.	8.19
12	Obv. Double spirals between legs; snakes on rim and between feet; on l., crab; on r., $\varphi\rho\circ$ retrograde (inward). Rev. On l., crab altered in die to lyre; on r., $\varphi\rho\circ$ retrograde (inward). Dies of Naples, Santangelo 6204.	7.93

Medium incuse issues (33)

a)	Heron symbol on obv. (15)	
13	Obv. On l., heron; on r., $\varphi\rho\circ$ retrograde (outward)	7.96
14-15	Obv. As 13; die of SNG ANS 259.	8.09, 8.06
15a	Obv. Die of 16-17.	8.07
16-17	Obv. As 13; die of MMAG 52, 55.	7.95 (2)
17a-23	Obv. On r., heron; on l., $\varphi\rho\circ$ (inward); all specimens have a flaw partly filling space between r. and central legs of tripod; die of SNG ANS 257. Rev. At least two dies are used.	8.11, 8.05, 8.01, 8.00, 7.98, 7.97, 7.93
24	Obv. On r., heron; on l., $\varphi\rho\circ$ (inward); die of Glendining, 13 Dec. 1963, 83. Rev. $\varphi\rho\circ$ - TON (both inward).	7.94
25	Obv. As 24; probably die of Münzh. Basel 8, 82. Rev. On l., $\varphi\rho\circ$ (inward)	8.01
b)	Crab symbol on obv. (11)	
26-29	Obv. Double spirals between legs; ex. hatched; on l., crab; on r., $\varphi\rho\circ$ retrograde (inward). Rev. On l., lyre; on r., $\varphi\rho\circ$ retrograde (inward). Dies of SNG Lloyd 594.	7.99, 7.92, 7.88, 7.78
30	As nos. 26-29. Dies of de Luynes 705.	7.69
31	Obv. Snakes between feet; on l., crab; on r., $\varphi\rho\circ$ (outward). Rev. On l., $\varphi\rho\circ$ (inward); on r., crab.	7.93
31a-33	Obv. On l., $\varphi\rho\circ$ retrograde (outward); on r., crab. Rev. As 31. Dies of SNG Ashmolean 1466	8.40, 8.20 (overstruck on Gela, Jenkins 23?). 7.86
34	Obv. As 31. Rev. On l., crab; on r., $\varphi\rho\circ$ (outward)	7.93

35	Obv. Snakes between feet; on l., φPO (inward); on r., crab. Rev. On l., φPO retrograde (inward); on r., dolphin (?) engraved over φPO ⁹	7.99
c)	Rev. Eagle flying r., incuse (7)	
36	Obv. On l., φAO (inward); on r., TON (inward). Dies of SNG Lockett, 607.	7.99
37	Obv. On r., φAO (outward); on l., TON (outward). Dies of SNG Forbat 81.	8.02
38-40	Obv. On l., φAO (inward); on r., TO (inward). Die of SNG ANS 286. Rev. Dies different.	8.10, 8.07, 8.04
41	Obv. On l., φPO retrograde (outward); die of SNG Lockett 609. Dies of Nanteuil 218.	8.04
41a	Obv. On r., φPO (outward).	7.91
<i>Dumpy incuse issues (147)</i>		
a)	Heron symbol on obv. (124)	
1)	Heron on l. (55)	
42-47	Obv. On r., φPO retrograde outward; on some examples a flaw has developed filling part of space between the r. and central legs of tripod; die of Nanteuil 216. Rev. At least three different dies are used.	8.29, 8.05, 8.02 (2), 8.01, 7.54
48-51	Obv. On r., φPO (outward); die of SNG ANS 264.	7.97 (2), 7.95, 7.92
52-53	Obv. Same die as 48-51. Rev. Different die.	7.94 (2)
53a	Obv. Same die as 48-51. Rev. Different die.	8.08
54	Obv. On r., φPO retrograde (inward). Rev. Row of pellets below tripod; die of 97-98.	8.20
55-62	Obv. On r., φAO (outward); flaw between left and central legs of tripod. Rev. At least three dies used.	8.08, 8.06 (2), 8.04 (2), 7.98, 7.96, 7.91
63-65	Obv. On r., φPO retrograde (outward); die of SNG Fitzwilliam 753.	8.00, 7.93, 7.92
66-67	Obv. At least. Rev. Die of Magnaguti 237 (of which obv. is die of 63-65).	7.94, 7.93
68-71	Obv. On r., φPO retrograde (inward); die of SNG Fitzwilliam 756. Rev. Two dies used.	8.22 (2), 8.08, 7.81
72-76	Obv. On r., φPO retrograde (outward); channels between tripod legs filling with flaws; all same die. Rev. Same die on all examples.	8.07 (2), 8.01, 7.99, 7.98
77-84	Obv. On r., φPO (sic) (outward); die of AC 16, 327. Rev. Two dies (one = AC 16, 327).	8.21, 8.13, 8.10, 8.09, 8.05, 8.02, 7.97, 7.96
85-86	Obv. On r., φPO retrograde (outward).	8.15, 8.08
87-88	Similar to 85-86.	8.08, 8.06
89	Similar.	8.11
90	Similar, but legend off flan.	7.55
91	Similar.	8.07

⁹ The area is corroded and the details therefore uncertain.

92	Similar, but legend uncertain.	8.06
93	Similar (corroded); $\varphi\rho\circ$ (outward).	7.90
93a-94	Obv. Details uncertain.	8.08, 7.99
2)	Heron on r. (69)	
95-96	Obv. On l., $\varphi\eta\phi\circ$ retrograde (outward); the third letter appears to the remains of an earlier legend in the die; die of Glend. 5 March 1970, 18.	8.12, 8.08
97-98	Obv. Same die as 95-96. Rev. Row of pellets below tripod; die of no. 54. Dies of Glen. 5 March 1970, 18.	8.11, 8.09
99-102	Obv. On l., $\varphi\eta\circ$ retrograde (outward). Rev. Two dies used.	8.04, 8.00, 7.98, 7.92
103	Obv. On l., $\varphi\rho\circ$ (inward); possibly the die of SNG ANS 257	7.94
104-105	Obv. On l., $\varphi\rho\circ$ retrograde (outward); die of SNG ANS 269. Rev. Two dies used.	7.94, 7.85
106-114	Obv. On l., $\varphi\rho\circ$ (outward); die of SNG Ashmolean 1471. Rev. Several dies used.	8.14, 8.11, 8.06, 8.04, 8.03, 8.01, 7.94, 7.93, 7.86
115-124	Obv. As last. Rev. Several dies used. (overstruck on didr. of Syracuse, Boehr 51; now in Oxford).	8.30, 8.20, 8.17, 8.10 8.07, 8.04, 8.03, 8.02 (2), 7.99
125-127	Obv. On l., $\varphi\rho\circ$ retrograde (outward). Rev. Three dies used.	8.07, 8.04 (2)
128	Obv. On l., $\varphi\eta\circ$ (outward). Rev. Same die as 125.	8.04
129	Obv. On l., $\varphi\rho\circ$ (outward); die of H. Weber 1001. Rev. Obscured by corrosion.	8.03
130-135	Obv. As last. Rev. Probably all same die.	8.24, 8.07, 8.03, 8.01, 7.97, 7.83
136-141	Obv. As last; heron's head usually obliterated by die flaw. Rev. Three dies used.	8.16, 8.11, 8.10, 8.06, 8.03, 8.01
142-145	Obv. $\varphi\eta\circ$ retrograde (outward); die of SNG ANS 270. Rev. Two dies used.	8.06, 8.05, 8.01, 7.86
146-147	Obv. $\varphi\rho\circ$ retrograde (outward). Rev. Both same die.	8.09, 8.01
148-149	Obv. As last. Rev. Two dies used.	7.96, 7.60
150-152a	Obv. As last. Dies of SNG ANS 271.	8.10, 8.00, 7.98 (2)
153-156	Obv. As last; die of SNG Ashmolean 1477. Rev. Three dies used.	8.01, 7.98, 7.87, 7.81
157-158	Obv. Both same die; legend uncertain. (over-struck on didr. of Acragias)	8.18, 8.04
159	Obv. On l., $\varphi\eta\circ$ retrograde (outward).	8.04
160-161	Details uncertain.	8.18, 8.01, 7.89
b)	Crab on obv.; no radiate striations in rev. border (5)	
162-164	Obv. On r., $\varphi\rho\circ$ retrograde (inward); on l., crab. Rev. On l., $\varphi\rho\circ$ retrograde (inward); on r., dolphin. Dies of SNG ANS 279.	8.17, 7.94, 7.89
165	As last. Dies of SNG ANS 280.	7.57
166	Obv. On l., $\varphi\rho$ retrograde (inward); on r., crab. Die of de Luynes 706. Rev. Same die as 162-4.	7.76

c) Rev. Eagle flying r. or l., incuse (16)

167-170	Obv. On r., $\varphi\rho\omicron$ (<i>omicron</i> large) retrograde (outward); die of SNG ANS 294, 297. Rev. Eagle r.; four different dies.	8.08, 8.07 (2), 8.01
171	Obv. Obscured by corrosion. Rev. Eagle r.	8.10
172-173	Obv. On l., $\varphi\rho\omicron$ retrograde (outward). Rev. Eagle r. Dies different on obv. and rev.	8.13, 8.12
173a-174	Obv. On l., $\varphi\rho\omicron$ (inward). Rev. Eagle r.	8.06, 6.12 (sic) ¹⁰
175	Obv. On l., $\varphi\rho\omicron$ retrograde (outward); die of SNG ANS 289. Rev. Eagle r.	8.04
176	Obv. Same die as 175. Rev. Eagle l. Dies of SNG Lloyd 598.	8.05 (overstruck)
177-178	Obv. As 175; die of SNG ANS 292. Rev. Eagle l. (two dies).	8.03, 7.99 (overstruck)
179	Obv. Obscured by corrosion. Rev. Same die as 178.	7.98
180	Obv. On r., $\varphi\rho\omicron$ (outward); die of AC 15, 237. Rev. Eagle l.	8.02
181	Obv. On l., $\varphi\rho\omicron$ (inward). Rev. Eagle l. Dies of SNG Ashmolean 1491	8.19

Uncertain (2)

181a-b	Obv. Obscured by corrosion. Rev. Obscured by corrosion.	8.23, 7.55
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Double relief issues Rev. Corinthian helmet (3)

182-184	Obv. On l., $\varphi\rho\omicron$ retrograde (outward); on r., $\tau\epsilon$ retrograde (outward). Rev. Below, $\varphi\rho\omicron$ retrograde. Dies of SNG ANS 448.	8.17, 8.01, 7.90
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In this substantial number of coins of Croton the spread and medium phases of the incuse fabric are very thinly represented compared to the large number of dumpy incuse issues. The latest class of dumpy incuse, however, in which the tripod is represented in relief outline within the incuse, is wholly absent from the hoard, and must, therefore, be later than the date of its burial. Since the date of burial appears to have been soon after the middle of the century, this final phase of the incuse fabric of Croton must have started in the 440's and probably lasted into the 430's. The three double-relief coins (nos. 182-4) are all worn, and are not, therefore, among the latest issues in the hoard. If $\tau\epsilon$ or $\tau\epsilon\mu$ stands for Temesa, they can be attributed to a subsidiary mint on the west coast, where double-relief coinage had been in fashion at Laus and Terina since c. 480/70¹¹. As is usually the case, the great majority of coins are marked with a heron, a symbol which persists throughout the incuse series and into the earliest double-relief issues. The two other series, one signed with a crab on obverse, the other with a flying eagle on reverse, occur in comparatively small numbers only, though both endure throughout the incuse period¹². They probably represent subsidiary mints intended to serve outlying or dependent areas.

¹⁰ Coins in good condition and apparently regular apart from their very low weight occur at Croton from time to time: Cf. SNG Ashmolean 1462 (6.38), 1484 (6.19) and McClean 1645 (6.09), 1669 (6.08). The aberrant style of this coin, however, strongly suggests it is a forgery.

¹¹ The Oecist Hoard (IGCH 1900), buried c.420, likewise included only three double-relief coins of Croton (tripod/tripod), but style and module were quite different from the metropolitan series, and condition indicated that they were not among the latest issues in the hoard.

¹² The hoard contains no example of the very rare spread incuse issue with eagle reverse.

A frequency table of the weights of the dumpy incuse issues yields a picture very similar to that at Caulonia:

8.20 +	8	7.94-7.90	15
8.19-8.15	7	7.89-7.85	6
8.14-8.10	14	7.84-7.80	3
8.09-8.05	28	Below 7.80	6
8.04-8.00	35		

Few coins fall outside the range 8.14-7.90, with the great majority lying between 8.09 and 8.00.

*LAUS (14)*¹³

Incuse (3)

1-2a St. 1 7.97 (2), 7.81

Double-relief (11)

3-4 St. 5 8.04, 8.02
 5 St. 8 8.05
 6-8 St. 9 8.10, 8.08, 8.03, 8.01
 9 St. 10 8.09
 10-11 St. 15 8.03 (2)
 12 St. 10 (?) 7.72 (very worn)

The incuse staters of Laus, struck from a single pair of dies, are usually thought to reflect the arrival of refugees from the destruction of Sybaris (Her. vi,21), and are dated, therefore, c. 500. The subsequent double-relief issues, requiring five obverse dies, can probably be comfortably accommodated within the bracket 480-460. The last issue was probably that with an acorn in the obverse exergue, of which two examples were included in the hoard (nos. 11-12). All the hoard specimens show pronounced wear, and one coin (no. 12) is very worn indeed. A terminal date for the hoard well after 460 is thus indicated.

The weight standard at Laus evidently conforms precisely with that already met with at Caulonia and Croton.

¹³ See H.-R. Sternberg, *Die Silberprägung von Laos*, Actes 8^e Cong. Int. Num. 1973 (1976), 143-62 (quoted as St.).

METAPONTUM (129)^{13a}

Spread incuse issues (31)

1-2a	Noe Class I: 2?(7.85), 16(7.98), 21(8.13)
3-5	Noe Class II: 41(7.92), 43(7.94), cf. 150 (Cl. VIII, 7.46)
6-12	Noe Class I-II: 8.26, 8.12, 8.10, 8.05, 7.90, 7.88, 2.57(dr.)
13-15	Noe Class III: unc.(7.91), 79-83(2.60, 2.59, dr., both same obverse die)
16	Noe Class IV: 97(8.03)
17-27	Noe Class VI: 115(8.12), 116(7.94), cf. 120(8.14), 122(8.13, 8.10, 7.96), cf. 123 ¹⁴ (7.99), 132(7.99), cf. 134(8.06), 135(8.00), unc.(8.00, 7.95).
28-29	Noe Class VII: 136(7.87), 143(8.14).

Medium incuse issues (58)

30-80a	Noe Class IX: 157(8.05), 160(7.95), 164(7.93), 167(8.05), 171(7.91), 173(8.08), 179(8.09), 185(8.06), 189(8.08, 8.04, 7.93), 191(8.07, 8.01, 7.93), 192(8.04), 195?(7.93), 197(7.99), 203(7.90), 204(8.05), 205(8.17, 7.85), 205?(8.10), 206(7.86), uncertain 8.18, 8.17, 8.14, 8.12, 8.09, 8.08(2), 8.07, 8.06(2), 8.05(4), 8.03(2), 8.02(3), 8.01(2), 8.00, 7.99(2), 7.98, 7.97, 7.95(3), 7.90.
81-85	Noe Class X: 211(8.05, 8.01, 7.87), 216(8.05, 7.92).

Dumpy incuse issues (40)

86-93	Noe Class X ¹⁵ : 220(8.19), 222(7.98, 7.97 overstruck on Acragas), 223(8.14, 8.07, 7.97), 228(8.15, 8.08)
94-121	Noe Class XI: 244(8.04), 246(8.14), 250(7.96), 253(8.05), 255(7.88), cf. 255(8.09); uncertain 8.15, 8.14, 8.13, 8.10(2), 8.09(2), 8.08, 8.07, 8.06, 8.05, 8.03, 8.02(2), 8.01, 8.00, 7.99, 7.98, 7.93, 7.90, 7.85, 7.80.
121a-124	Noe Class XII: 258(8.04, 7.99, 7.98, 7.96).

A frequency table of the medium and dumpy incuse issues of Metapontum yields almost exactly the same result as for Caulonia and Croton.

8.20 +	-	7.99-7.95	18
8.19-8.15	6	7.94-7.90	10
8.14-8.10	9	7.89-7.85	5
8.09-8.05	30	7.84-7.80	1
8.04-8.00	18	Below 7.80	-

Once again there is a distinct peak at 8.09-8.05 g with very few coins falling below 7.90 g.

It is perhaps surprising that, if the hoard was buried near Taras, the local mints, Metapontum and Taras, should be less well represented than the more distant Caulonia,

^{13a} References to S.P. Noe, *The coinage of Metapontum I*, NNM 32 (1927).

¹⁴ Noe 116.

¹⁵ From a different source, but probably from the same hoard, comes an example of Noe 227; the symbol looks more like a snail's shell seen from above than a ram's head.

Croton and Poseidonia. The figures for the two mints, Croton and Metapontum, which are most readily comparable because of their retention of the incuse fabric, raise a chronological problem:

	Spread incuse	Medium incuse	Dumpy incuse	Total
Croton	14	33	147	194
Metapontum	31	58	40	129

Prima facie these figures suggest that as a mint Metapontum predominated over Croton in the first two periods, but that the position was decisively reversed in the third. For the spread incuse phase, though it must be remembered that figures drawn from a mid-fifth century hoard may no longer be representative for the sixth century, other earlier hoards (IGCH 1873-4, 1877) do suggest that Metapontum was then the more prolific mint. Equally the predominance of Croton seems incontestable for the dumpy incuse phase in the second quarter of the fifth century. In the medium incuse phase the apparent predominance of Metapontum depends upon the assumption, and it is at present no more than an assumption, that this phase was of equal and parallel duration at both mints; the assumption of parallel development is demonstrably untrue in the case of Caulonia, where the double-relief fabric was adopted long before the incuse fabric was abandoned at Croton and Metapontum. Supposing the medium incuse phase had lasted longer at Metapontum than at Croton, in that case the relative importance of Metapontum as a mint would appear to have declined from the beginning of the century instead of only in its second quarter.

In principle this problem could be solved by the evidence of hoards, but most hoards are either too small or have been recorded in insufficient detail to provide a decisive answer. The one exception is the substantial Curinga Hoard (IGCH 1881) in which the medium incuse issues of Caulonia, Croton and Metapontum were all well represented. At Metapontum the entire medium incuse range up to N 215 is said to have been present, with an example of N 253 (early in the dumpy phase) in addition. If this transition from medium to dumpy incuse took place sometime later at Metapontum (say c. 460) than at Croton (say c. 480), then this hoard ought to contain some of the dumpy incuse issues from Croton. Since there are none, it follows that both mints changed from medium to incuse at about the same time, and that only in the second quarter of the century did Croton overtake Metapontum as the major mint of S. Italy. The argument is somewhat tenuous, but should be stated, so that it can be tested when further evidence becomes available.

POSEIDONIA (152)

Incuse issues (2)

Obv. Poseidon r.

Rev. Poseidon l., incuse

- | | | |
|---|---|------|
| 1 | Obv. and rev. ΠΟΜ retrograde. Dies of SNG ANS 613. No weight. | |
| 2 | Similar but obv. ΠΟΜ and necklace in l. hand of Poseidon. Dies of Paris, BN 1271. | 7.34 |

Double-relief issues (150)

Group A1 (6)

Obv. Small stocky figure of Poseidon with drapery hanging in two narrow vertical bands; to r., ΠΟΜΕ (inward).

Rev. Bull l., head raised; forelegs together; above, ΠΟΜΕ retrograde.

- | | | |
|-----|---|------------------|
| 3-5 | Dies of SNG Ashmolean 821. | 8.12, 8.06, 7.98 |
| 6 | Dies of Annali 9-11, pl. 3, 12. | 8.08 |
| 7 | Similar but on rev. ΠΟΜ[?] retrograde. | 8.06 |
| 8 | Similar, but on rev. right foreleg advanced. Dies of Glasgow, Coats 2805. | 8.01 |

Nos. 3-8 all show pronounced wear.

Group A2 (32)

Obv. As last but small neat figures of Poseidon.

Rev. As last, but foreleg usually advanced.

- | | | |
|-------|---|---------------------------------|
| 9-13 | Obv. All examples have dot-like flaw behind r. thigh of Poseidon; die of Zancani, pl. 51, 59 ¹⁶ and SNG München 1057. Rev. Three dies used.
8.06, 8.04 (same rev. die); 7.98; 8.13, 8.11 (same rev. die) | |
| 14-17 | Obv. All examples have a number of dot-like flaws clustered behind thigh and buttock of Poseidon; die of Zancani, pl. 51, 61 and Helbing, 8 Nov. 1928, 3377. Rev. ΠΟΜΕΣ retrograde: two dies used; one (Zancani, pl. 51, 61) has linear flaw or guide-line running through legend; the other (Zancani, pl. 51, 58) has diagonal crack bottom r.
8.07, 8.04, 7.99 (same rev. die); 8.07 | |
| 18-20 | Obv. Similar. Rev. Similar, but probably ΠΟΜΕ retrograde; two dies used.
8.10; 8.07, 8.00 (same rev. die) | |
| 21-23 | Similar. Rev. ΠΟΜΕ retrograde | 8.07, 8.02, 7.90 (all same die) |
| 24-27 | Similar. Rev. ΠΟΜΕ retrograde. Dies of SNG Ashmolean 822.
8.13, 8.12, 8.10, 8.04 | |
| 28-32 | Obv. Die of Nav. 1 (Pozzi), 207. Rev. ΠΟΜΕ retrograde; three dies used.
8.08, 8.06, 8.01 (same rev. die); 8.03; 8.14 (ground line wavy; die of Pozzi 207) | |
| 33-36 | Obv. Die of SNG Cop. 1279 and Nav. 5, 513. Rev. ΠΟΜΕ retrograde; three dies used.
8.08; 7.99; 8.11, 7.98 (same rev. die) | |

¹⁶ P. Zancani Montuoro, L'edificio quadrato nello Heraion alle foce del Sela, AttiMemSocMagnaGrecia 6-7, 1965-6, 23-196, esp. 171-195 (monete).

37	Obv. Large flaw below drapery to r.; die of Zancani, pl. 51, 51.	8.04
38-39	Similar. Rev. ΠΟΜΕΣ retrograde; two dies used.	8.07; 8.00
40	Similar	8.05

Group A3a (20)

Obv. Small detailed figures; pendent drapery tends to be triangular, with folds shown internally; ΠΟΜΕΣ, sometimes retrograde.

Rev. Bull usually r.; head raised; foreleg advanced; ΠΟΜΕΣ retrograde; small dies with circumference comfortably within flan.

41-49	Obv. Linear flaw across bottom of l. drapery develops into a major defect; die of SNG München 1056. Rev. Three dies used.	8.08 (2), 8.07, 8.05, 8.02, 8.01 (same rev. die); 8.08; 8.07, 8.01 (same rev. die)
50-51	Similar.	8.08, 8.02
52	Similar. Rev. Horizontal flaw behind left foreleg. Same dies in Vienna.	8.06
53	Obv. ΠΟΜΕΣ retrograde. Die of SNG Cop. 1277. Rev. Die of no. 52, with flaw «improved», so that foreleg now appears to be pawing ground.	7.99
54	Obv. Die of no. 53. Dies of SNG Cop. 1277.	8.08
55	Obv. ΠΟΜΕΣ retrograde; same die as 56-9. Rev. Bull with head lowered.	8.01
56-59	Obv. Same die as 55. Rev. Bull l., head raised; two dies used.	8.08; 8.08, 8.05, 8.02 (same rev. die)
60	Obv. ΠΟΜΕ retrograde. Rev. Bull r.; ground-line dotted. Dies of SNG Fitzwilliam 544.	8.05

Group A3b (10)

Obv. Similar to A3a, but legend always ΠΟΜΕΣ retrograde.

Rev. Bull r., foreleg advanced, head lowered; ΠΟΜΕΣ retrograde; small dies as before.

61-67	Rev. Four dies used.	8.14, 8.13, 8.06 (same rev. die); 8.08, 8.02 (same rev. die); 8.07; 8.01
68-70	Rev. Two dies used.	8.08; 8.09, 8.04 (same rev. die)

Group A4 (signed ΑΣ on obv. and/or rev.). (18)

Obv. Figure and drapery as before; ΠΟΜΕΣ retrograde.

Rev. Bull r., foreleg raised; head lowered; ΠΟΜΕΣ retrograde; small dies as before.

71-73	Obv. ΑΣ retrograde between legs; die of 74-77.	8.10, 8.05, 7.98
74-75	Obv. Die of 71-73, 76-77. Rev. ΑΣ retrograde in ex.	8.08 (2)
76-77	Obv. Die of 71-75. Rev. ΑΣ retrograde under belly.	7.98, 7.91
78-85	Obv. Die of McClean, pl. 36, 9 and Jameson 339. Rev. Three dies used.	8.09, 8.07, 8.02 (ΑΣ retrograde below belly); 8.05 (2), 8.00 (ΑΣ retrograde in ex.; rev. die of McClean, pl. 36, 9); 8.11, 8.09 [ΑΣ retrograde in ex.]; rev. die of Jameson 339)

86-87	Obv. AΣ retrograde under l. drapery; die of H. Weber 812 and SNG ANS 649. Rev. Two dies, both with dotted groundline. 8.11 (no AΣ); 7.97 (AΣ retrograde in ex.; die of H. Weber 812 and SNG ANS 649)	
88	Obv. AΣ retrograde between legs. Rev. AΣ retrograde in ex.	8.07

Group A5 (17)

Obv. Figure and drapery as before; ΠΙΟΜΕΣ.

Rev. Bull usually r., foreleg advanced; head raised; usually ΠΙΟΜΕΣ (sometimes retrograde); dies larger with part of circumference tending to be off flan.

89-90	Dies of SNG ANS 647.	8.12, 7.93
91	Rev. Die of SNG ANS 647.	8.04
92	Rev. Die of SNG ANS 647.	8.07
93-97	Obv. Die of Zancani, pl. 52, 70. Rev. Two dies used. 8.05, 8.03 (same rev. die; die of Zancani, pl. 52, 70); 8.08, 8.06, 7.99 (same rev. die)	
98-100	Dies of Zancani, pl. 52, 75.	8.09, 8.01, 7.98
101	Similar.	8.06
102	Obv. Die of 103. Rev. Bull l.; ΠΙΟΜΕ retrograde; two scrolls in ex. Dies of Münzh. Basel 4, 332.	8.01
103	Obv. Die of 102. Rev. Bull l.; ΠΙΟΜΕΣ retrograde. Dies of Zancani, pl. 51, 66; pl. 52, 74.	7.98
104	Obv. ΠΙΟΜΕ; die of 105. Rev. Bull l.; ΠΙΟΜΕ retrograde.	7.71
105	Obv. Die of 104. Rev. Die of 103.	7.65

Group A6 (23)

Obv. Lanky and badly articulated figures; pendent drapery tends to be thin and without detail; drapery between body and forearms rendered by two or more parallel linear arcs; ΠΙΟΜΕΣ

Rev. Bull usually l., head raised; foreleg advanced; usually ΠΙΟΜΕΣ

106	Rev. Die of 107. Dies of SNG ANS 659 and SNG Fitzwilliam 547.	8.02
107	Obv. ΠΙΟΜ on l. outside drapery; die of Nav. 5, 111 and SNG Cop. 1280. Rev. Die of 106.	8.05
108	Obv. Die of 107.	8.03
109-110	Obv. Die of 107; linear cracks in l. field. Dies of Nav. 5, 111 and SNG Cop. 1280.	8.03, 7.92
111-112	Rev. Die of 109-10. Dies of Oxf. (ex. Malter)	8.09, 8.05
113	Obv. Die of 114. Rev. Bull r.; die of 115	7.83
114	Obv. Die of 113. Rev. Bull l.; die of 116-120	8.09
115	Obv. Die of 116. Rev. Die of 113. Dies of Kraay, pl. 48, 4 (Naples) ¹⁷ .	8.08
116	Obv. Die of 115. Rev. Die of 114, 117-120	7.96
117	Rev. Die of 114, 116, 118-120	8.09

¹⁷ C.M. Kraay, Gli stateri a doppio rilievo di Poseidonia, AttiMemSocMagnaGrecia 8, 1967.

118-120	Obv. Die of 121-3. Rev. Die of 114, 116-117.	8.05, 8.03, 7.97
121	Obv. Die of 118-120, 122-123. Rev. Type 1.; foreleg raised; ΠΟΜΕΣ retrograde. Dies of Zancani, pl. 51, 55.	7.97
122-123	Obv. Die of 118-121. Rev. As 121, but with double linear groundline.	8.01, 7.99

The five following coins, for the most part not well preserved, are tentatively associated with Group A6.

124	Obv. ΠΟΜ-? Rev. Bull l.; ΠΟΜ-? retrograde	8.04
125	Rev. Bull r. Dies of McClean, pl. 36, 8	8.08
126	Obv. ΠΟΜΕΣ Rev. Bull r., head raised; ΠΟΜΕΣ	8.03
127	Rev. Bull l., head raised, foreleg advanced; ΠΟΜΕ-? retrograde.	8.00
128	Rev. Bull l.	8.02

Group A7 (signed ΜΕΙΒΑ on obv.) (12)

Obv. Well-proportioned figure with carefully detailed drapery; on l., ΜΕΙΒΑ retrograde; on r., ΠΟΜΕΣ retrograde.

Rev. Bull r. or l.; ΠΟΜΕΣ retrograde.

129	Rev. Bull r., head lowered; foreleg advanced; double linear groundline; die of 130-132.	8.10
130-132	Obv. ΠΟΜΕΣ has been lightly engraved in the die on both l. and r. before the final legends were added; dotted border. Rev. Die of 129.	8.12, 8.10, 8.01
133-140	Obv. Similar with dotted border. Rev. Bull l., head raised; foreleg raised; dotted groundline. Dies of Nav.-Ars Classica 12, 448; Jameson 338; SNG Fitzwilliam 541-542.	8.09, 8.07, 8.06, 8.02, 8.01, 8.00, 7.95, 7.90

Group A8 (3)

This group comprises two varieties which do not conform to the groups already described, but yet cannot be included in series B.

141	Obv. ΠΟΜΕΣ (on l.) ΔΑΝΣΑ (on r.). Rev. Bull l., head raised, foreleg raised; ΠΟΜΕΣ retrograde. Dies of Zancani, pl. 52, 69. 8.03 (overstruck on Corinthian type; now Oxford). The bull resembles 130-140 of Group A7.	
142-143	Obv. ΠΟΜΕΣ retrograde; linear border. Rev. Bull r., head raised; foreleg advanced; ΠΟΜ; dotted groundline; small die. Dies of SNG ANS 645 and McClean, pl. 36, 7.	8.12, 8.02

Group B (3)

144	Obv. Highly detailed figure of Poseidon; on r., ΠΟΜΕΣΔΑ, on l., ΝΣΑΤΑΜ; dotted border. Rev. Large bull l., head raised, foreleg advanced; dotted groundline; ΠΟΜΕΣΔΑ retrograde. Dies of BM, Principal Coins, pl. 13, 10.	8.15
145	Obv. Poseidon on dotted groundlines; ΠΟΜ. Rev. Large bull l., head raised, foreleg advanced; ΠΟΜ retrograde; die of 146.	8.08

146	Obv. Lanky Poseidon; short drapery; on l., ΠΟΜ[-?] retrograde; dotted border between two linear borders. Rev. Die of 145. Dies of Zancani, pl. 52, 76	8.11
147-151	Unidentifiable through corrosion	8.15 (2), 8.08, 8.06, 8.04
152	Ancient forgery	8.63 (sic)

Of the 152 staters of Poseidonia here recorded all but two are struck in the double-relief fabric; this meagre representation of the sixth century incuse issues, compared with the more substantial numbers from Croton and Metapontum, reflects the use of the Phocaeian standard at Poseidonia (c. 7.5 g) in the sixth century; subsequently for the double-relief issues Poseidonia adopted the standard of Taras and the Achaean colonies of the South (c. 8.1 g). At Poseidonia the incuse fabric never underwent any reduction in diameter, and the coinage in this fabric is usually supposed to have been discontinued c. 500, perhaps as a consequence of the destruction of Sybaris in 510 and the dislocation of the economic system of which she was the centre. Whether the double-relief coinage (on a new standard) was initiated immediately or only after the lapse of some decades, is still a matter of dispute, but in either case the great majority of the coins in this hoard will have been minted between 500 and the terminal date of the hoard soon after the middle of the century.

From this substantial consignment it should be possible to reconstruct tentatively the first phases of the double-relief coinage, which have hitherto been neglected; though individual dies are no doubt missing, it is unlikely that any significant phase has escaped representation in so large a batch. Since none of the double-relief coins show any point of contact with the incuse except in the use of Poseidon as obverse type, it will be most convenient to start with the latest issues in the hoard, and thence to work back to the earliest.

Wholly absent from the hoard is the series studied by Noe¹⁸, in which either obverses and reverses are marked with sequence letters or the reverses are signed with a shell. But his series is only the final phase of a larger group of issues which I have previously designated «B»¹⁹. This whole group is distinguished by the following principal features:

- a) on obverse the presence of composite linear and/or dotted borders,
- b) on reverse the presence of elaborated ground-lines under the bull,
- c) a tendency for the reverse legend to expand from ΠΟΜΕΣ (retrograde) to ΠΟΜΕΣΔΑΝ (retrograde),
- d) the almost invariable direction of the reverse type to the left²⁰,
- e) the ampler size of the dies and the consequently larger scale of the types.

In the hoard three coins only, nos. 144-146, can be directly associated with Group B, though only one of them, no. 144, is really typical of that group. Immediately preceding them should be Groups A7 and 8 in which the occasional occurrence of borders on the obverse and elaborated ground-lines on the reverse gives them a transitional character between A and B.

¹⁸ S.P. Noe, A group of die-sequences at Poseidonia, MN 5, 1952, 9 ff.

¹⁹ Kraay (above, n. 17) 126.

²⁰ Almost the only exception appears to be the reverse signed A in Noe's series. In the 4th cent. left remains predominant though a number of bulls to the right appear towards the end of the series.

Among the remaining coins there are a number of features which can form the basis of a classification:

- a) the treatment of Poseidon and his drapery;
- b) the direction of the obverse legend; this is normally written vertically beside the r. drapery of Poseidon, but may be read either inwardly or outwardly (i.e. retrograde);
- c) the direction of the reverse type;
- d) the stance of the bull, with either forelegs together, or foreleg advanced, or foreleg raised; the head may be raised or lowered;
- e) the direction of the reverse legend;
- f) the length (ΠΙΟΜΕ or ΠΙΟΜΕΣ) of obverse and reverse legends²¹;
- g) the diameter of the reverse die, and the consequent size of the reverse type.

No wholly logical and consistent scheme emerges for die-links sometimes unite two different treatments. Nevertheless there is clearly a tendency for a particular feature or combination of features to be employed at the same time, and a number of die-links provide welcome confirmation in several cases. For example all nine reverse dies in Group A4 (signed on obverse or reverse ΑΣ) have bull to right with head lowered and foreleg raised. It therefore seems reasonable to place in an immediately adjacent group (A3 b) two sequences of reverse dies essentially similar except that all but one have foreleg advanced instead of raised.

Within Group A as a whole, there comes a point at the end of A4 when small punch-like reverse dies, with the whole circumference on the flan gives way to broader dies of which part the circumference runs off the flan. At the same time small, elongated, low-slung bulls, often with heads lowered, are replaced by large, upstanding creatures, and legends, hitherto in small and sometimes minute letters, become bolder.

In the earlier phase of Group A four sub-divisions can be distinguished – A1 and 2 in which the bull invariably faces left and the legend is ΠΙΟΜΕ and A3 and 4 with the bull facing right and ΠΙΟΜΕΣ. The priority of A1 is assured by the generally worn condition of its coins, and by the static character of most of its bulls. In A2 more movement is introduced into the forelegs and Poseidon's drapery is rendered in progressively more detail leading up to the triangular drapery with folds found on some dies of A3. As already noted, the second phase of A3 is closely related to A4, the coherence of which is assured by the signature ΑΣ; both groups have retrograde legends throughout, whereas previously the obverse legend had normally been inscribed from left to right.

The beginning of A5 is marked by the introduction of ampler reverse dies with larger, upstanding bulls, at first facing right as in A3 and 4, but tending to become variable in direction. At the same time the legends, retrograde in A3 and 4, are usually now written from left to right, a fashion which persists throughout A6. The nucleus of A6 is constituted by two sequences of two and five obverse dies respectively, in which lanky Poseidons predominate with drapery curving from shoulder to shoulder in parallel linear arcs. On one reverse die a double linear ground line is introduced beneath the bull, a device repeated once in A7 and from time to time thereafter. Group A7 (signed Μεγyl) is placed last because a border is for the first time introduced on two of its obverse dies²², and both

²¹ Though there is a distinct tendency for legends to lengthen from ΠΙΟΜΕ or ΠΙΟΜΕΣ in group A to the full ethnic in the fourth century, the legend ΠΙΟΜ (nos. 142–143, 145) on double-relief issues is not a sign of early date; it is perhaps an archaising revival of the legend of the incuse coinage.

²² The third obverse die is present in one specimen only and the border, if any, is off the flan.

its reverse dies have elaborated ground-lines. In this group all legends are once again inscribed retrograde, which was to be the prevailing practice in Group B and in Noe's lettered sequence for nearly all reverses and for some obverses.

Chronology

As already observed all the double-relief issues of Poseidonia represented in the hoard must fall between c. 500 and the terminal date of the hoard soon after the middle of the century. A more detailed chronology can rest at present only on the relationship to this series of the Sybarite stater with Poseidoniatic types, firmly attributed to the refoundation of 453, and on a number of overstrikes.

It has usually been supposed that the deity on the obverse of the Sybarite stater is still Poseidon²³, but even on the very clear and well preserved specimen in this hoard there is no trace of prongs on the weapon carried by the striding figure. The shaft stops short over the forward shoulder, and the action with the right arm fully extended backwards suggests a spear-thrower's stance rather than the bent rigid arm required for thrusting or stabbing with a trident. But whatever the identity of this beardless figure there can be no doubt that both obverse and reverse types were inspired by those of Poseidonia.

The prototype of the Sybarite stater is clearly to be sought within Group A, for the characteristics of Group B are wholly absent except for the double ground-lines (dotted) on reverse, a feature which had already appeared in A7. Equally clearly the prototype must be found in the second half of Group A (A5-7), for the stocky bull with head raised is unrelated to the elongated, low-slung beasts of A1-4. A bull of comparable type is to be found in nos. 114 and 116 of A6, and it is within this same die sequence that the double ground-line appears for the first time (nos. 122-123), to be repeated in the next group (nos. 129-132). If the Sybarite stater is to be dated 453 or a year or two later, Group A at Poseidonia should fall in the middle fifties, with Group 7 following in the later fifties or early forties.

With this conclusion the few observed overstrikes are not in conflict. An example of no. 115 (A6) is struck upon a coin of Messana with four-barred sigma in the ethnic, a feature thought to date from c. 461²⁴. Another stater of group A6 (dies of no. 126) is overstruck upon a coin of Cumae²⁵ but this yields no close date. Finally a coin of group A4 (dies of no. 87) is overstruck upon a dumpy incuse of Metapontum²⁶. Group A4 could be attributed to about the middle or later sixties and the undertype to sometime during the preceding fifteen years.

²³ E.g. C.M. Kraay, *The coinage of Sybaris after 510 B.C.*, NC 1958, 23; SNG Fitzwilliam 580; L. Breglia, *Le monete delle quattro Sibari*, AIN 2, 1955, 13.

²⁴ This coin in Naples was published and discussed in NC 1958, 19 and n. 4.

²⁵ SNG Lloyd 435.

²⁶ SNG ANS 649; cf. NC 1958, 19 f.

The ample contents of our hoard go some way towards defining the stage which the coinage of Poseidonia had reached by the middle of the century; by exclusion they indicate that all issues showing the characteristics of Group B must belong to the second half of the century, despite the doubts which have sometimes been felt²⁷. From the sequence thus established it follows that the clumsily executed staters of Group A1 are the earliest double relief coins of Poseidonia. On their absolute date our hoard provides no direct evidence, but the total divergence of this group from the incuse issues in fabric, style, legend, reverse type and weight standard – in all, in fact, except the theme of Poseidon on obverse – can reasonably be held to imply a separation in time. The hoard thus brings some indirect support to the view that the double-relief issues were not the immediate successors of the incuse, but followed only after a substantial interval²⁸. Had the double-relief issues followed the incuse immediately in the first decade of the fifth century they would surely have been struck on the relatively broad flans (c. 23 mm) employed at that time everywhere (except at Velia), irrespective of whether the fabric was incuse or double-relief. The new weight-standard was derived from the south; the use of the bull as reverse type is clearly related to that of the stag at Caulonia; the same area presumably provided the model for the thick, contracted (c. 17 mm) flans of the earliest double-relief issues – and this implies a date after c.480.

A frequency table of weights yields the now expected result:

8.20 +	1	7.99–7.95	17
8.19–8.15	4	7.94–7.90	5
8.14–8.10	19	7.89–7.85	–
8.09–8.05	59	7.84–7.80	1
8.04–8.00	42	Below 7.80	2

Two-thirds of the total fall between 8.09 and 8.00 with the majority in the upper half of the bracket. Since some of the older issues are visibly worn, and have circulated for over twenty years by the time of burial, it looks as though some deliberate selection of the heavier pieces for hoarding may have been made.

SYBARIS (13)

SYBARIS I (11)

Incuse

1–2	Obv. Bull; above, YM	8.20, 7.94
3–9	Obv. Bull; in ex. YM	8.30, 8.04, 7.99, 7.90, 7.84, 7.73, 7.69, 7.04
10	Obv. Bull; legend uncertain	Tetrobol 1.81

²⁷ Cf. Zancani (above, n. 16) 179 f.

²⁸ Kraay (above, n. 23), 18 ff.

SYBARIS III (2)

Double-relief

11-12	Obv. Poseidon; to r., bird in flight, to l., MYBA retrograde. Rev. Bull r. on double groundline; in ex., MYB retrograde.	8.00, no weight ²⁹ .
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As is to be expected, the incuse issues all show marked wear. If the weight of the small piece is correctly recorded, it appears to be a denomination hitherto unknown among the incuse issues of Sybaris, and indeed unusual in South Italy, although its half, the diobol, is common enough.

The presence of staters of the short-lived Sybaris III, founded 453 provides a welcome *terminus post quem* for the closing date of the hoard. The only example available in photograph shows very little wear. The issue as a whole, apparently from a single pair of dies, has many points of contact with the bulk of the Poseidoniata staters included in the hoard, though those signed MEIVA, with dotted border on obverse, are probably slightly later than the prototypes of the staters of Sybaris III (see above p.000).

TARAS (90)³⁰

First issue: incuse coinage (1)

1	Vl. 68 Rev. Dolphin rider incuse	7.90
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Second issue: large hippocamp (13)

2, 2a, 2b	Vl. 108	8.04, 7.95, 7.82
3	BMC 44	7.91
4	Obv. Jameson 89, rev. Vl. 119	8.14
5-6	Vl. 113	8.09, 7.94
6a	Obv. Vl. 113	8.14
7-8	Vl. 115	8.13 (attribution uncertain) 8.07
9	SNG Lockett 121	7.98
10	Vl. 129	7.99
11	Vl. 127	8.08

Third issue: small hippocamp (18)

12-13	Vl. 122	8.15, 8.05
14-15a	Vl. 125	8.13, 8.10, 7.99
16	Vl. 123	8.10
17-18	Cf. Côte 26, but different rev. die	8.08, 8.04
19	Vl. -; obv. Vl. 119/120, rev. Vl. 122 (in late state)	8.15
20-21	Vl. 117	8.17, 7.95
22	Vl. 118	8.09

²⁹ The second specimen is said to have been among the lot of 300 coins about which no further information is at present available.

³⁰ The classification and sequence is that proposed by H.A. Cahn, *Early Tarentine chronology*, Essays in Greek coinage presented to Stanley Robinson (1968), 59 ff. References are to O.E. Ravel, *Catalogue of the Collection of Tarentine coins formed by M.P. Vlasto* (1947) (quoted as Vl.).

23	VI. 102	8.12
24-27	VI. 104	8.24, 8.15, 8.00, 7.95
28	Leu 12?	7.68

Fourth issue: wheel (25)

29-30	VI. 73	8.18, 7.99
31	VI. 80-81	8.06 (rev. identity uncertain)
32	VI. 75? Obv. obscured by corrosion	8.02
33	SNG Lloyd 110	8.03
34-36	VI. 89	8.11 (2), 8.05
37	VI. 84	8.07
38-41	SNG Fitzwilliam 227	8.16, 8.13, 8.08, 8.00
42	VI. 82	8.11
43	VI. 74	8.03
43a-47	Obv. VI. 74 Rev. uncertain	8.17, 8.13, 8.09, 8.06, 7.96
48-49	VI. 93	8.12, 8.11
50	VI. 94	8.07
51	VI. 92	8.13
52	VI. - Obv. VI. 92; rev. SNG Cop. 768?	8.12

Fifth issue: «Satyra» head (2)

53	Jameson 91	No weight
54	VI. 150	8.06

Sixth issue: late hippocamp or «Satyra» head (20)

55-56	VI. 131 (rev. hippocamp)	8.07, 8.00
57-59	VI. 132 (rev. hippocamp)	8.08, 8.06 (2)
60-63	VI. 133 (rev. hippocamp)	8.16, 8.14, 8.13, 8.11
63a	VI. 134 (rev. hippocamp)	8.11
64-65	VI. 136 (rev. hippocamp)	8.20, 8.14, 8.06
66-67	VI. 137 (rev. hippocamp)	8.19, 8.09
68	VI. 137 (obv. only) (rev. hippocamp)	8.10
69	VI. 152 (rev. «Satyra»)	7.96
70-72	VI. - Obv. VI. 152 Rev. «Satyra» head as Leu 2, 1972, 16.	8.20, 8.13 (Leu 2), 8.09

Hemistaters contemporary with sixth issue (11)

Obv. Forepart of hippocamp.

Rev. Female head.

73, 73a	VI. 155	4.03, 4.00
74-75	VI. 157/158	3.95, 3.88, 3.74
76-77	VI. 156 Obv. Die of 78-80	3.69, 3.65
78-80	VI. 161 Obv. Die of 76-77	3.93, 3.88, 3.86, no weight.

All the main varieties of the double-relief coinage of Taras which preceded the Oecist issues are here represented, with a notable concentration of specimens in the sixth and final issue and its accompanying hemistaters. The first and very rare Oecist issue, proba-

bly minted some twenty years earlier than the terminus of the hoard, is no doubt absent by chance from this portion of the hoard. The date proposed by Cahn (op. cit. above) for the sixth issue was 470–460; since the presence of coins of Sybaris III indicates a terminal date not before the middle of the century, it seems possible that the date of the sixth issue ought to be lowered by about ten years, unless an interval without coinage is to be postulated at Taras at this time. Since the hoard is reported to have been found near Taranto, it appears to provide evidence that the main Oecist issues did not appear before the middle of the century.

The frequency table of all issues shows a weight standard marginally higher than that at Crôton and Metapontum with a peak from 8.14–8.09 g rather than 8.09–8.00 g. This higher peak, however, is well within the rather more widely diffused range of weights of Caulonia. Once again, there is no significant number of widely distributed lower weights suggesting the presence of old and battered coins.

8.20 +	3	7.99–7.95	8
8.19–8.15	9	7.94–7.90	4
8.14–8.10	23	7.89–7.85	–
8.09–8.05	21	7.84–7.80	1
8.04–8.00	8	Below 7.80	1

VELIA (2)

The small representation of Velia, which is no more distant from the area of burial than Poseidonia, must be explained by the difference in weight standard. For her double-relief coinage Poseidonia adhered to the southern standard of 8.10–8.00 g. At Velia the standard seems to have been set somewhat lower, though until the mid-fifth century a number of both staters and halves attain or even exceed a standard of 8 g, which puts them on an equal footing with the products of the southern mints; one of the two staters included, weighing 8.01 g, belongs to this class³¹. The second coin, at the anomalous weight of 5.62 g is probably plated; it appears to be an ancient forgery copying one of the earliest two-type issues (e.g. SNG Ashmolean 1085).

Obv. Lion r.

Rev. Head of nymph r.

1	Obv. Above, A. Rev. Below head, YEΛH. Dies not traced	8.01
2	Obv. In ex., YEAE C	5.62

The present hoard is not only the largest known from South Italy, but, thanks to the photographic record taken before dispersal, one of the best recorded; this combination of size and record makes it one of the most informative. It is in many respects comparable to the Oecist Hoard (IGCH 1900), which was of a similar size and also came from the neighbourhood of Taranto. The range of mints there represented is nearly the same apart from the additions of Thurium and Heraclea which were to be expected in a later hoard. Consistent with this later date of burial (c.425/20) was the full range of the Oecist issues from Taras, as

³¹ After the middle of the century very few staters of Velia even attain the range 7.70–7.60 g.

well as a number of the earliest Horsemen. Otherwise the main difference in composition between the two hoards is the small number of Poseidonia in the Oecist hoard compared with the very large consignment in the present hoard.

From such a large hoard the total absence both of the coinage of Thurium and of the Oecists of Taras provides convincing evidence of a terminal date before 440. Nevertheless the inclusion of staters of Sybaris III does not allow the date to be very much earlier; minted necessarily between 453 and 450, when that settlement was again destroyed by Croton, they could reasonably have been included in fresh condition in a hoard terminating c.445. With such a terminal date most other series in the hoard are not in conflict. Caulonia is represented to the end of Group F, for which a previous study has suggested a date about 440³². For Croton and Metapontum evidence has long been accumulating that at these two mints the incuse fabric lasted at least until the middle of the century³³. Laus was a minor mint, and its few silver issues have always been dated in the first half of the century³⁴. The same period suits the earlier double-relief issues of Poseidonia. Only at Taras does a difficulty arise. The full series is present down to the end of Issue 6, namely the point at which the main Oecist series begins, and a recent study has dated the sixth issue to 470–460³⁵. If this date is to be maintained, then an interruption of some fifteen years must be postulated in the coinage of Taras before the beginning of the main Oecist series, yet such an interruption does not seem consistent with the fresh condition of the latest Tarentine issues in the hoard. An alternative is to lower the terminal date of the sixth issue by about a decade, which would bring Taras into line with Caulonia and Sybaris III. A conspectus of the development of Southern Italy coinage down to c.440 is given on p. 33.

Though other hoards were no doubt buried at about the same time soon after the middle of the century, lack of a detailed record has usually prevented close dating. The nearest is perhaps IGCH 1891 discovered in Calabria in 1833; apart from a group of tetradrachms from Sicily and Rhegium, characteristic of the area, the remaining contents appear to have been very similar to those of our hoard, though the information available would not exclude a slightly earlier date.

A hoard of this size and character is not only a numismatic document, but a document of political and economic history as well; interpretation, however, is difficult because of the poverty of the historical context in which it has to be set³⁶. It illustrates, as do many other hoards, the total interchangeability in S. Italy in the fifth century of issues of civic staters, provided that they were struck upon a common standard; the Taranto hoard (IGCH 874) shows that this interchangeability was already established by the late sixth century; earlier than this adequate evidence is lacking³⁷. In S. Italy in this general period hoards composed predominantly of the staters of a single mint are rather rare, being confined to one Sybarite hoard (IGCH 1872) and a few from Paestum (IGCH 1876, 1892–93) and Taras (IGCH,

³² Kraay (above, n. 5), 57 ff.

³³ Kraay (above, n. 5), 61 ff.

³⁴ See Sternberg (above, n. 13), 147 f.

³⁵ Cahn (above, n. 30), 65.

³⁶ L. Breglia has recently given a stimulating example of this kind of interpretation: *Lettura storica di una sequenza monetaria*, Studi Miscellanei 15, 1970, 15 ff.

³⁷ In Sicily the earliest hoards tend to be confined to one or two local mints, but the establishment in the early fifth century of three major tyrannies, linked by family ties, facilitated the free interchange of their coinages minted on a common standard.

1901, 1903). From the mixed hoards the issues of Rhegium, Velia, Cumae and the incuse issues of Poseidonia are for the most part excluded because of divergent weight standards. Terina, striking to the S. Italian standard, is an apparent exception, but her early issues were probably so small that their absence has no significance, for it is only in the last third of the century that her coinage begins to make any impact on the hoards (IGCH 1898, 1900, 1904 – Terina omitted from listing)³⁸.

It is this interchangeability of coinages that makes Poseidonia's change of standard so interesting. In the sixth century there was a degree of uniformity in coinage in S. Italy such as is not found for example in the early coinages of Sicily. Sybaris, Metapontum, Croton and Caulonia (later to be joined by Taras) all adopted the peculiar incuse technique and all employed the same weight standard. From these Poseidonia stood somewhat apart: though adopting the incuse technique and a type very similar to that of Caulonia, the coinage was minted on a local standard. In consequence few coins of Poseidonia found their way into the great Taranto hoard (IGCH 1874) among several hundreds from the southern cities.

By adopting the standard of the southern cities for her double relief issues Poseidonia placed herself squarely in their orbit and ensured the acceptance of her coinage alongside their own. What is perhaps surprising is that in so doing Poseidonia did not resume striking the incuse fabric which was still current at the major mints of Croton and Metapontum, but chose the double-relief fabric characteristic of the minor mint of Caulonia; the parallelism between the types of the two mints was also preserved. There seems to be here evidence for an otherwise unrecorded connexion between these two cities, and it would be interesting to know which provided the model for the other. At Caulonia the development from incuse to double-relief followed the same course as at Croton and Metapontum except that the final incuse stage was abbreviated and succeeded by double-relief at least twenty-five years earlier than elsewhere. At Poseidonia the transition from spread incuse to double-relief was abrupt, implying an interval between the two techniques, and was accompanied by a change of standard. In these circumstances Caulonia would appear to have been the innovator whose example was followed by Poseidonia. If this argument is valid, it implies an interruption lasting about a generation in the coinage of Poseidonia.

Of great economic interest is the fact that not only in the hoards but also in these coinages as a whole fractions of the stater are very uncommon. In an exhaustive study of Caulonia Noe was able to assemble nearly five hundred staters to the end of Group F, but only some forty-five drachms and a mere three smaller fractions from the same period. At Croton and Sybaris fractions are hardly more numerous, while there seem to be virtually none accompanying the earlier double-relief staters of Poseidonia. The pattern of denominations in S. Italy appears to be similar to that in Sicily, and though there was hardly any exchange of currency between the two areas, the general character and behaviour of coinage and therefore its method of use, is the same on both sides of the Straits of Messina.

Finally the very larger number of well preserved coins throws some light on the metrology of the area. The uniformity of standard between Caulonia, Croton, Metapontum and Poseidonia is remarkable; only Taras appears to have aimed at a marginally higher figure than the others. Equally remarkable is the very small number of coins which falls significantly below the standard as can be seen in the consolidated frequency table of all the coins from the major mints, except the sixth century spread incuse issues.

³⁸ The rare first issue may be no earlier than 460; cf. G.K. Jenkins, *The coinage of Gela* (1970), 71, n. 3.

	Caulonia E and F	Croton Med. and Dumpy Incuse	Metapontum Med. and Dumpy Incuse	Poseidonia Double-relief	Taras All issues	Total
8.20 +	5	8	–	1	3	17
8.19–8.15	14	7	6	4	9	40
8.14–8.10	18	14	9	19	23	83
8.09–8.05	12	28	30	59	21	150
8.04–8.00	18	35	18	42	8	121
7.99–7.95	17	18	18	17	8	78
7.94–7.90	13	15	10	5	4	47
7.89–7.85	3	6	5	–	–	14
7.84–7.80	4	3	1	1	1	10
Below 7.80	5	6	–	2	1	14
						514

If the theoretical standard lay between 8.09 and 8.00 g, nearly half the coins fall within this range; though a substantial number (123) fall within the next one-tenth of a gramme below this range (7.99–7.90), these are more than counterbalanced by the 135 coins which exceed the standard range. Below 7.90 g there are only 38 coins, about 6,5 % of the total of which weights are available, and in explanation of these it must be remembered that though the great majority of coins in the hoard roughly date from the two decades preceding the burial, many others will have been in circulation for much longer.

Sources of obverse die-statistics on Fig. 1

Caulonia:	S.P. Noe, <i>The coinage of Caulonia</i> (New York, 1956).
Croton:	medium and dumpy incuse: dies in the present hoard.
Laus:	H.-R. Sternberg, <i>Actes 8^e Cong. Int. Num. 1973</i> (Paris-Bâle, 1976), 143–162.
Metapontum:	S.P. Noe, <i>The coinage of Metapontum I.</i> , NNM 32 (1927).
Poseidonia:	incuse, L. Breglia, <i>Numismatica</i> 5, 1964, 4.
Poseidonia:	double relief A, dies in the present hoard.
Sybaris:	spread incuse, figure kindly communicated by Dr. H.-R. Sternberg.
Taras:	H.A. Cahn, <i>Essays in Greek coinage presented to Stanley Robinson</i> (Oxford, 1968), 61 ff.

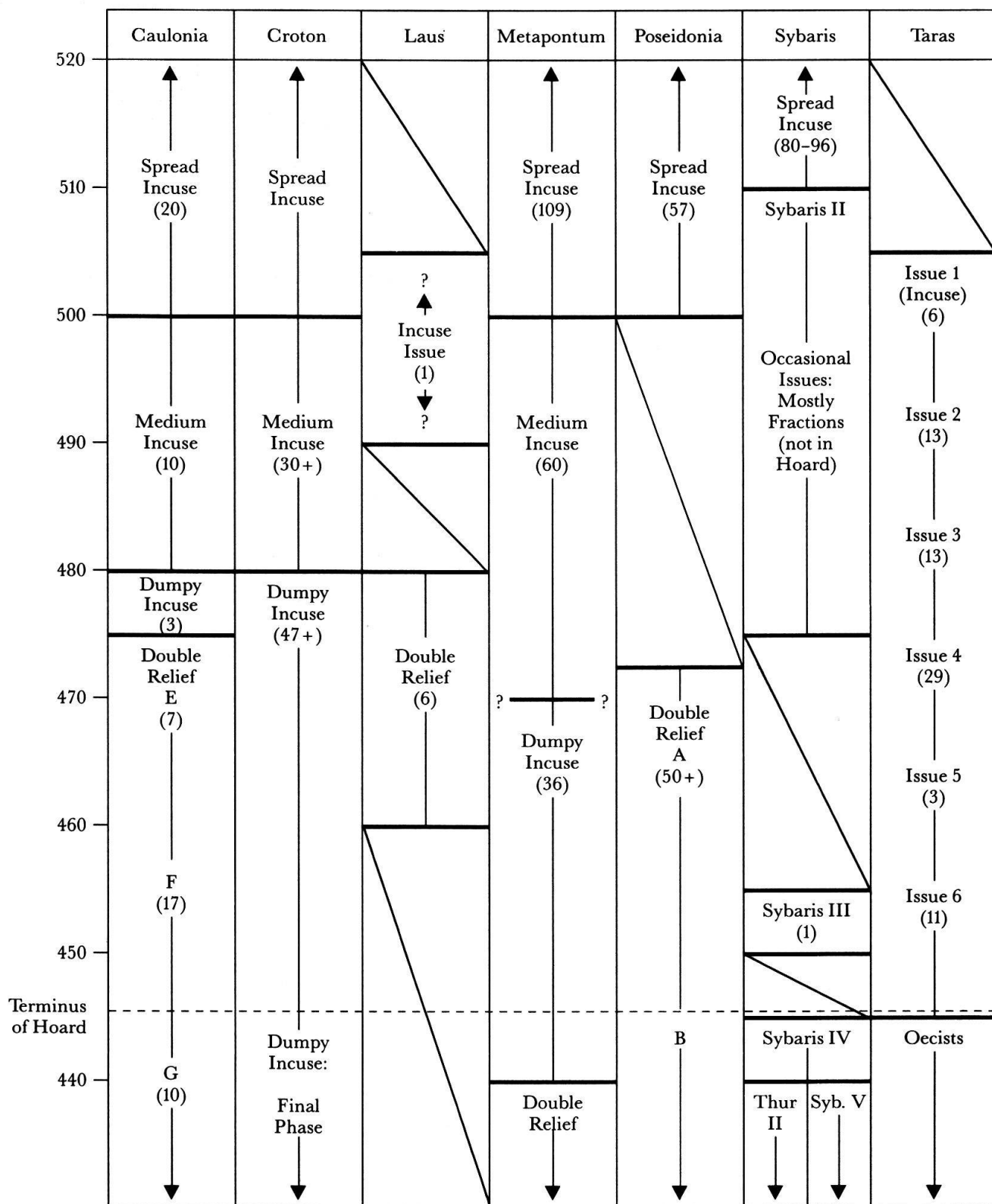


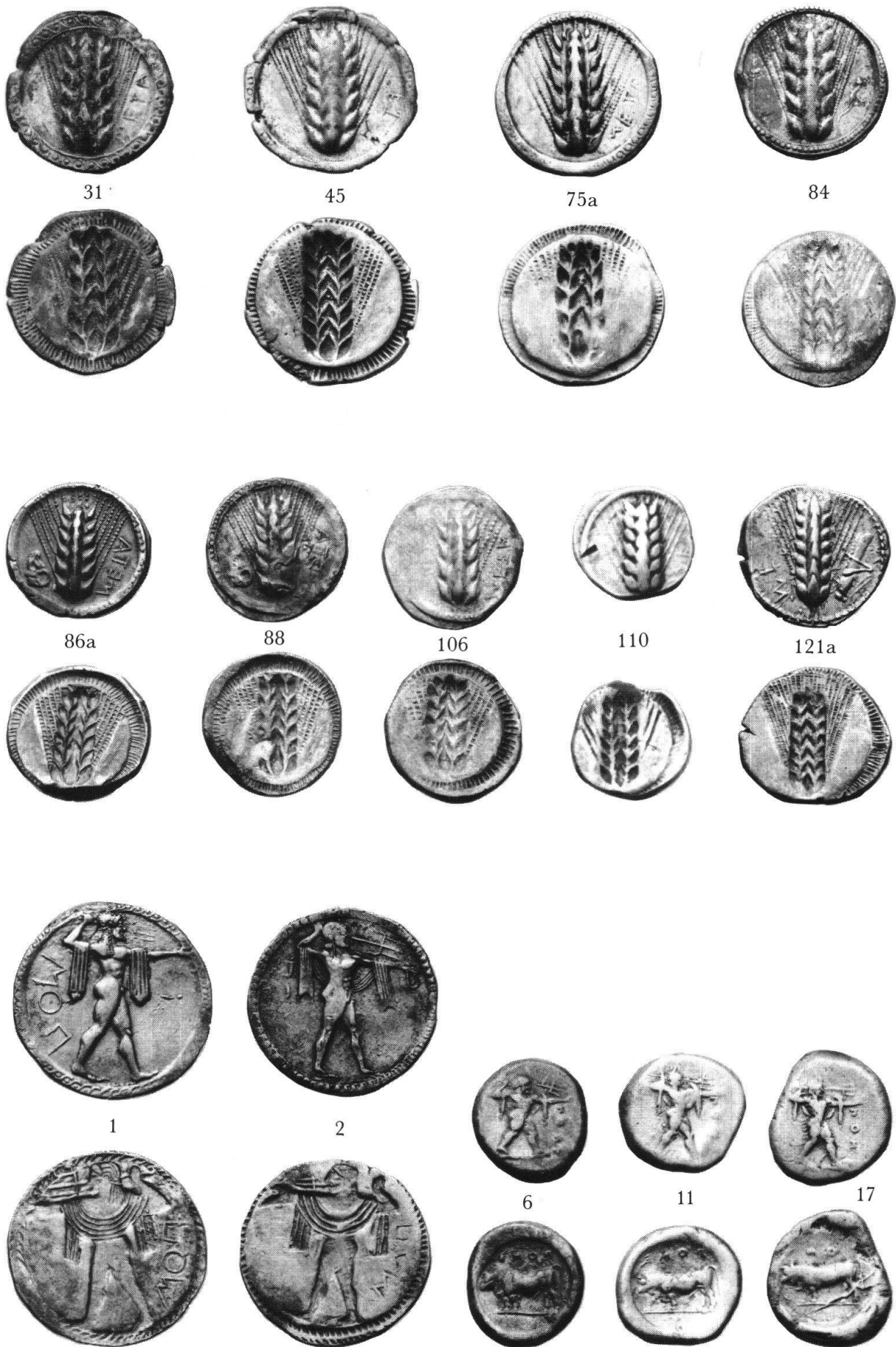
Fig. 1 Figures in brackets give numbers of obverse dies for staters (for sources see p. 32).
The development of S. Italian coinage to c. 440 B.C.



Colin M. Kraay (†) ed. C. E. King, A mid-fifth century hoard from South Italy



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Colin M. Kraay (†) ed. C. E. King, A mid-fifth century hoard from South Italy



1



2a



5



9a



40



15a



17a



31a



41a



152a



173a



182



