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A Hoard of Folles from Northern Sinai

C. E. KING AND A. SPAER

[PLATES 1–2]

ALTHOUGH hoards of tetrarchic argentiferous bronze coins have been extensively and meticulously recorded in the West, particularly in recent years, hoards of known Eastern provenance have not only been much less frequently recorded but have tended to be only briefly noted. This has created difficulties for anyone attempting to study the sequence of Eastern issues, their metrology, or their geographical composition, i.e. the relative numbers of coins from each mint, in order to establish the pattern of money supply and circulation in the later Roman empire.[1] It is impossible, for example, at the present time to determine the influence of trade or political events on the flow of money throughout the empire since we are not yet certain what the normal distribution pattern of coins was for the various parts of the empire.

The portion of a hoard from northern Sinai that we have recorded consists of over 4,000 pieces, the majority of them from mints located in the Eastern half of the empire, most of which (86 per cent) were produced in the years 295–307. Although the hoard offers little that is new by way of variant mintmarks, types, etc. its evidence does support the arrangement of issues in *RIC* VI. Its geographical composition parallels that of hoards from Syria, Ankara, and Antalya as will be discussed below.[2] Perhaps the most interesting aspect of the mint distribution of Eastern hoards is what appears to be a disproportionately high percentage of pieces from the Central mints (Rome, Carthage, Aquileia, and Siscia) which in view of their distance from the burial site demands an explanation. Whether this resulted from trade or was a deliberate policy of supplying areas not immediately adjacent to the mint of origin is as yet undetermined but the data suggest that a more detailed analysis of trading patterns in the later empire would repay study.

Only a small proportion of the coins in the North Sinai hoard fall in the period after the weight reduction in the East (308–11) but their evidence supports the dating of the reduction to c. 308, i.e. after the debasement at the Western and Central mints. The follis dropped from c. 9–10 g to 6·75 g,

[1] J. P. Callu, *Politique Monétaire*, pp. 389 ff., has a bibliography of hoards up to c. 311. D. Kienast, *JNG* 1962, 65 ff., has discussed these problems in some detail.

[2] For Ankara and Antalya see Kienast, op. cit.; for three contemporary Syrian hoards (Lebanon, Aleppo, Homs) see P. Bastien, *RN* 1967, 165 ff.

TABLE 1A. *Average weights of folles from hoards: Western mints*

Date	TICINUM		AQUILEIA		ROME		CARTHAGE		SISCIA		
	N. Sinai	Čentur	N. Sinai	Čentur	N. Sinai	Čentur	N. Sinai	Čentur	N. Sinai	Ankara	Čentur
295–9	9·68	—	9·72	—	9·74	—	9·91	—	10·01	—	—
No. of coins	10		31		49		40		48		
300–5	9·80	—	9·93	—	9·82	—	9·22	—	10·05	—	—
No. of coins	54		57		67		26		24		
295–306/7	9·80	9·69	9·94	9·76	9·76	9·75	9·63	9·66	9·94	—	—
No. of coins	65	112	120	82	141	53	99	46	85		
308–11	—	—	—	—	4·95	—	—	—	6·77	6·62	—
No. of coins					1				7	57	

TABLE 1B. *Average weights of folles from hoards: Eastern mints*

Date	SERDICA		THESSALONICA		HERACLEA		NICOMEDIA		CYZICUS		ANTIOCH		ALEXANDRIA	
	N. Sinai	Ankara	N. Sinai	Ankara	N. Sinai	Ankara	N. Sinai	Ankara	N. Sinai	Ankara	N. Sinai	Ankara	N. Sinai	Ankara
295–9	—	—	9·79	—	9·87	—	10·15	—	9·76	—	9·86	—	9·92	—
No. of coins			20		108		6		90		39		18	
300–5	9·46	—	9·91	—	9·69	—	10·12	—	9·85	—	9·96	—	10·23	—
No. of coins	9		44		45		15		40		186		37	
295–307	9·54	9·62	9·87	9·66	9·82	10·09	10·13	—	9·79	9·84	9·89	10·55	10·10	—
No. of coins	40	21	64	23	153	38	20		130	76	225	15	57	
308–11	7·02	6·54	6·78	6·68	6·78	6·38	6·77	6·50	6·29	6·68	7·03	—	6·73	—
No. of coins	4	2	17	6	24	33	30	40	33	17	22		34	

which meant that 48 pieces were thereafter struck to the Roman pound as opposed to 32 between 295 and 307.

Some attempt has been made to assess the degree to which mints in a given area may have functioned as a group. The Balkan mints from 295 to 308 seem never to have produced coin simultaneously. Instead, issues occurred successively at Heraclea, Thessalonica, and Serdica which seems to reflect a regional policy. The Central mints demonstrate a different sort of regional pattern; mint organization at Carthage, Rome, Aquileia, and Ticinum was very similar in its allocation of specific types and officinae to rulers, a practice not found elsewhere. This may therefore have been the result of deliberate policy on the part of whoever controlled those mints.

Although no single hoard can provide definitive answers to the problems briefly sketched here, it is hoped that this one will supply a substantial body of information which will help to establish patterns of money supply and distribution, the degree of central as compared with regional control, and the nature of fiscal policy in the late third and early fourth centuries.

CIRCUMSTANCES OF THE FIND

The North Sinai hoard has unfortunately had a somewhat chequered career. It was apparently found a year or two before the Six Day War of 1967 at a tel just to the west of the village of esh-Sheikh Zuweid. The site of the tel, on the ancient Via Maris, has been identified with the Beth Tappuah (i.e. House of the Apple), known in Greek as Boutaphion. It is on the coast c. 15 km south-west of Rafah towards El Arish, which in 1965 was the capital of Egyptian Sinai. Owing to close Egyptian surveillance of the border between the Gaza Strip and Sinai the finders of the hoard were unable at the time of its discovery to get it into the Gaza Strip and so concealed it until some time in 1969 or early 1970, when it was transferred to Gaza and marketed from there in large lots throughout Israel (which had been in control of Sinai and the Gaza Strip since 1967).

Regrettably the hoard was dispersed before its contents could be recorded. It may originally have contained as many as 32,000 pieces although more reliable estimates put the figure between 10,000 and 15,000 coins.[3]

We are able to record 4,473 specimens and to obtain weights for about 1,300. However, before the coins could be listed most of the original parcels had been sifted by collectors and as a result many of the rarer types had already been removed. Part of the hoard was sold in the Peus Auction of 25–6 October 1971 at Frankfort am Main and these have been included in the

[3] The figure of 14,000 coins is most generally mentioned and may be accepted with caution. It has also been reported that about 1963 16,000 antoniniani were found in the same area. We cannot, however, now learn precisely where these pieces were found and the hoard is long-since dispersed.

present catalogue.[4] References to the hoard can be found in Spink's *Numismatic Circular* and the *Schweizer Münzblatter* but these are necessarily brief.[5]

At the time when most of the specimens were listed in Israel in the early 1970s it was not possible to weigh the coins but the diameters of the pieces were recorded, being measured across the dotted border on the obverse.[6] Two lots of coins from the hoard were weighed in 1975 in Switzerland, namely a smaller group which had formed part of those originally listed in Israel and a larger group consisting of previously unrecorded pieces.

The bulk of the hoard was assembled before 311 since most issues end even at the Eastern mints in 310–11.[7] Several coins of later date are included: (1) pieces from Alexandria datable to 311/12, 312/13, and 314/15 respectively (cat. nos. 4460–72) and one of Nicomedia c. 313–17 (cat. no. 2737). The coins after 313 may be genuinely part of the hoard or, as is less likely, intrusions but the Alexandrian pieces suggest a burial date after 312, possibly c. 314–15. One Greek imperial coin of Valerian I issued at Nysa may also have formed part of the original hoard (cat. no. 4473).

TABLE 2A

Proportions of coins of different mints in Eastern hoards

MINT	HOARDS											
	N. Sinai		Ankara		Antalya		Lebanon		Aleppo		Homs	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
London	—	—	—	—	—	—	—	—	—	—	—	—
Lyons	41	0·9	—	—	—	—	4	2·2	11	0·8	4	0·3
Trier	45	1·0	—	—	—	—	3	1·6	10	0·8	6	0·5
Ticinum	190	4·2	6	1·9	3	0·8	7	3·8	51	3·9	28	2·7
Aquileia	302	6·7	8	2·6	7	2·0	8	4·4	65	5·0	45	4·4
Rome	475	10·6	14	4·6	5	1·4	23	12·6	125	9·7	115	11·3
Carthage	307	6·9	8	2·6	4	1·1	14	7·7	88	6·8	60	5·9
Ostia	3	0·06	—	—	—	—	—	—	—	—	—	—
Siscia	258	5·8	11	3·6	4	1·1	13	7·1	57	4·4	56	5·5
Serdica	132	2·9	23	7·5	6	1·7	—	—	23	1·8	16	1·6
Thessalonica	257	5·7	29	9·4	14	4·0	4	2·2	43	3·3	41	4·1
Heraclea	543	12·1	71	23·1	28	8·1	11	6·0	119	9·2	107	10·5
Nicomedia	184	4·1	45	14·6	11	3·2	2	1·1	25	2·0	19	1·9
Cyzicus	490	10·9	63	20·5	45	13·0	9	4·9	92	7·1	85	8·3
Antioch	910	20·3	19	6·2	193	56·0	77	42·3	504	39·1	376	37·0
Alexandria	335	7·4	10	3·2	25	7·2	7	3·8	74	5·7	52	5·1
?	—	—	—	—	—	—	—	—	1	0·7	9	0·7
Total	4,472		307		345		182		1,288		1,017	

[4] Cat. no. 277, nos. 348–481; see also Sotheby Sale Catalogue 14 Dec. 1973, nos. 31–62.

[5] C. E. Rowe, *NCirc.* 1972, 57, and ibid. 1973, 144. J. Schwartz, *SM* 24, 94, p. 45.

[6] The coins listed here came from no less than seven lots in Israel and we would like to express our gratitude to those individuals who allowed us to record these pieces. We should also like to thank Münzen und Medaillen in Basel and Art Numismatique in Geneva who also allowed us to list the North Sinai coins in their possession and to weigh them. 199 pieces could not be identified by ruler or mint and have not been included in this study.

[7] The date of the bulk of the Ankara coins also falls before c. 310/11 and Kienast has argued that its burial date is probably c. 313 (loc. cit., p. 66).

TABLE 2B

Proportions of coins of different mints in Eastern hoards: 295–305

MINT	HOARDS											
	N. Sinai		Ankara		Antalya		Lebanon		Aleppo		Homs	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
London	—	—	—	—	—	—	—	—	—	—	—	—
Lyons	36	*1·1*	—	—	—	—	3	*2·0*	11	*1·1*	4	*0·5*
Trier	32	*0·9*	—	—	—	—	3	*2·0*	10	*1·0*	6	*0·8*
Ticinum	171	*5·3*	6	*4·1*	7	*13·0*	7	*4·7*	48	*4·8*	27	*3·5*
Aquileia	241	*7·5*	7	*4·8*	4	*7·4*	6	*4·0*	61	*6·1*	42	*5·4*
Rome	438	*13·7*	14	*9·5*	5	*9·2*	22	*14·9*	116	*11·6*	111	*14·3*
Carthage	238	*7·4*	8	*5·4*	3	*5·5*	12	*8·1*	79	*7·9*	53	*6·8*
Ostia	—	—	—	—	—	—	—	—	—	—	—	—
Siscia	226	*7·0*	11	*7·5*	4	*7·4*	12	*8·1*	51	*5·1*	49	*6·3*
Serdica	41	*1·3*	6	*4·1*	3	*5·5*	—	—	8	*0·8*	2	*0·2*
Thessalonica	216	*6·7*	23	*15·6*	8	*14·8*	4	*2·7*	43	*4·3*	41	*5·3*
Heraclea	355	*11·1*	20	*13·6*	6	*11·1*	11	*7·4*	86	*8·6*	78	*10·1*
Nicomedia	39	*1·2*	2	*1·3*	2	*3·7*	2	*1·3*	14	*1·4*	14	*1·8*
Cyzicus	317	*9·9*	26	*17·6*	8	*14·8*	8	*5·4*	65	*6·5*	65	*8·4*
Antioch	665	*20·7*	15	*10·2*	3	*5·6*	51	*34·9*	339	*33·9*	235	*30·4*
Alexandria	188	*5·9*	9	*6·1*	1	*1·8*	7	*4·7*	69	*6·9*	47	*6·1*
Total and % of hoard	3,203	*71·6*	147	*47·8*	54	*15·6*	148	*81·3*	1,000	*77·6*	774	*76·1*

TABLE 2C

Proportions of coins of different mints in Eastern hoards: 305–11

MINT	HOARDS											
	N. Sinai		Ankara		Antalya		Lebanon		Aleppo		Homs	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
London	—	—	—	—	—	—	—	—	—	—	—	—
Lyons	5	*0·4*	—	—	—	—	1	*2·9*	—	—	—	—
Trier	13	*1·0*	—	—	—	—	—	—	—	—	—	—
Ticinum	19	*1·5*	—	—	—	—	—	—	3	*1·0*	1	*0·4*
Aquileia	61	*4·8*	1	*0·6*	—	—	2	*5·9*	4	*1·4*	3	*1·3*
Rome	37	*2·9*	—	—	—	—	1	*2·9*	9	*3·1*	4	*1·7*
Carthage	69	*5·4*	—	—	—	—	2	*5·9*	9	*3·1*	7	*3·0*
Ostia	3	*0·2*	—	—	—	—	—	—	—	—	—	—
Siscia	32	*2·5*	—	—	—	—	1	*2·9*	6	*2·1*	7	*3·0*
Serdica	91	*7·2*	17	*10·6*	3	*1·0*	—	—	15	*5·2*	14	*5·9*
Thessalonica	41	*3·2*	6	*3·7*	6	*2·1*	—	—	—	—	—	—
Heraclea	188	*14·8*	51	*31·9*	22	*7·6*	—	—	33	*11·5*	29	*12·3*
Nicomedia	145	*11·4*	43	*26·9*	9	*3·1*	—	—	11	*3·8*	5	*2·1*
Cyzicus	173	*13·6*	37	*23·1*	37	*12·7*	1	*2·9*	27	*9·4*	20	*8·5*
Antioch	245	*19·3*	4	*2·5*	190	*65·2*	26	*76·4*	165	*57·5*	141	*59·7*
Alexandria	147	*11·5*	1	*0·6*	24	*8·2*	—	—	5	*1·7*	5	*2·1*
Total and % of hoard	1,269	*28·3*	160	*52·1*	291	*84·3*	34	*18·7*	287	*22·3*	236	*23·2*

CLASSIFICATION AND CHRONOLOGY

Coins have been listed in the catalogue by *RIC* numbers and dates. Revisions to the chronology published after the appearance of *RIC* VI are discussed under the individual mints as are also new types, variants, etc.

TABLE 2D

Proportions of coins of different mints in Eastern hoards: 308–11

MINT	HOARDS							
	N. Sinai		Ankara		Aleppo		Homs	
	No.	%	No.	%	No.	%	No.	%
London	—	—	—	—	—	—	—	—
Lyons	—	—	—	—	—	—	—	—
Trier	—	—	—	—	—	—	—	—
Ticinum	—	—	—	—	—	—	—	—
Aquileia	1	*0·1*	—	—	—	—	—	—
Rome	1	*0·1*	—	—	—	—	—	—
Carthage	—	—	—	—	—	—	—	—
Ostia	3	*0·5*	—	—	—	—	—	—
Siscia	17	*2·7*	—	—	—	—	—	—
Serdica	9	*1·4*	2	*1·9*	—	—	—	—
Thessalonica	41	*6·4*	6	*5·8*	—	—	—	—
Heraclea	94	*14·8*	33	*32·0*	—	—	—	—
Nicomedia	138	*21·7*	41	*39·8*	8	*47·0*	3	*23·1*
Cyzicus	90	*14·1*	17	*16·5*	2	*11·7*	4	*30·7*
Antioch	98	*15·4*	3	*2·9*	6	*35·3*	1	*7·7*
Alexandria	143	*22·5*	1	*1·0*	1	*5·8*	5	*38·5*
Total and % of hoard	635	*14·2*	103	*33·5*	17	*1·2*	13	*1·3*

THE WESTERN MINTS

Only 86 coins of Western provenance have been recorded, 41 from Lyons and 36 from Trier; there are none from London. The Western pieces form only 1·9 per cent of the hoard total. If the pieces marked $\frac{\text{S}\quad\text{F}}{\text{KA}}{\text{PTR}}$, now reattributed to an Eastern mint, are excluded (cat. nos. 76–86), the western mints contributed only 1·6 per cent.

At Lyons the earliest coin is found in the second mark $\frac{\text{A}}{\text{LA}}$ datable to c. 295 and only eight fall in the period 295–300. Twenty-eight were produced between 300–5, 5 between 305–7, the last being a reduced piece in the $\frac{\text{N}}{\text{PLG}}$ mark (cat. no. 41).

In the $\frac{\text{A}}{\text{PLG}}$ mark there is an obverse for Diocletian, IMP DIOCLETIANVS AVG (cat. no. 9) with a left, laureate, cuirassed bust, a combination not listed in *RIC*; and one for Maximian, IMP C MAXIMIANVS AVG who is depicted facing right, laureate and cuirassed. Given the variety of busts recorded for this emission (38) it is not surprising to find new combinations of legend and bust, and one may reasonably expect to discover more in future.

The number of specimens was too few to permit a useful statistical analysis of the weight

distribution but this has been more than adequately established for the Western mints in recent years by Bastien and others.[8]

At Trier as at Lyons the earliest coins are not the first emission in 294 but the second dated to 295 in the $\frac{A}{TR}$ mark (cat. nos. 42–4). Nineteen of the coins can be dated to 295–9; 13 to 300–5, and 2 to 305–7. There are no new types or variants.

TABLE 2E

Proportions of coins of different mints in Eastern hoards. Summary by regions and periods

	HOARDS					
	N. Sinai %	Ankara %	Antalya %	Lebanon %	Aleppo %	Homs %
Western mints	1·9	0	0	3·8	1·6	0·8
Central mints	28·5	11·7	5·3	28·5	25·4	24·3
Balkan mints	26·3	43·6	14·9	15·3	18·7	21·6
Eastern mints	42·7	44·5	79·4	52·1	53·9	52·3
			295–305			
Western mints	2·0	0	0	4·0	2·1	1·3
Central mints	33·9	23·8	35·1	31·7	30·0	30·0
Balkan mints	26·1	40·8	38·8	18·2	18·8	21·0
Eastern mints	37·7	35·2	25·9	45·8	48·7	46·7
			305–311			
Western mints	1·4	0	0	2·9	0	0
Central mints	14·8	0·1	0	14·7	8·6	6·4
Balkan mints	27·7	14·3	3·1	2·9	18·8	21·2
Eastern mints	70·6	85·0	96·9	79·3	72·4	72·4
			308–311			
Western mints	0	0	0	0	0	0
Central mints	0·7	0	0	0	0	0
Balkan mints	14·8	39·7	0	0	0	0
Eastern mints	73·7	60·2	0	0	100·0	100·0

In the catalogue a small group of post-abdication pieces for Diocletian and Maximian (nos. 76–86) with the mint-mark $\frac{\text{S F}}{\text{K}\Delta\text{PTR}}$ have been listed after the Trier coins for purposes of convenience since they are so listed in *RIC* VI. On the basis of hoard evidence and stylistic affinities, however, there is no doubt that these pieces originated in the East, most probably from Cyzicus.[9]

The significance of PTR in the exergue if it is accepted that it does not emanate from

[8] See, for example, P. Bastien and F. Vasselle, *Le trésor monétaire de Domqueur* (*Somme*), Wetteren, 1965, pp. 14 (Trier), 22 (Lyons), 28 (London); ibid., *Les trésors monétaires de Fresnoy-lès-Roye* (*Somme*) Amiens, 1971, p. 29 (Lyons).

[9] See A. Jeločnik, *Čentur Hoard* (= *Situla* XII), 1973, 159 attributing them to Cyzicus; P. Bastien, *Mélanges de travaux offerts à M^e Tricou*, Lyon, 1972, pp. 23 ff., cites the early bibliography and also opts for Cyzicus as does Kienast, loc. cit., in his discussion of the Ankara hoard pieces.

Trier is much less clear. Bastien argues that it refers to the city for which the coins were intended or could even represent an ephemeral issue put out by Cyzicus engravers temporarily transferred elsewhere.[10] However, the identification of the city remains open to question, although it is generally conceded to be in Asia Minor.

THE CENTRAL MINTS

A relatively high proportion of coins from the Central mints (28·5 per cent) occurs in the North Sinai hoard and this phenomenon is paralleled by the Syrian hoards and to a lesser extent by the Ankara and Antalya finds, particularly for the years 295–305.[11] In the North Sinai hoard Rome is most heavily represented with 475 pieces, followed by Aquileia with 302 and Carthage with 307, while Ticinum has only 190. The publication of the Čentur hoard has led to some minor changes in the dating and chronology from the central mints, which will be discussed below.

Ticinum. The majority of the 190 coins of Ticinum belong in the period 295–305 (171), 18 are datable to 305/7 and one to 308/11. No new types or variants have been recorded.

The arrangement of issues from the mint of Ticinum particularly after 305 has been the subject of controversy for a considerable period.[12] There is no disagreement, however, about the sequence of mint-marks from 295 to 299 all of which are represented by relatively few specimens in the Gaza Strip hoard, a phenomenon paralleled in the Čentur hoard (see Table below). Whether this reflects relatively small emissions in these years or some irregularity in the hoarding process is conjectural but a comparison with the output of the Čentur hoard does suggest that emissions c. A.D. 300–5 were larger than those of 295–9. Further, the largest single issue from both mints seems to be dated to 300–3.

Very little is known about how the size of issues was determined or for that matter about what constituted an issue. If a new issue is signalled by a change of mint- and/or field-marks then it is necessary to explain the varying size and length of emissions both from the same or different mints. On the other hand, if changes in style, type, legend, and so on are accepted as the definitive factors, then one must not only demonstrate them plainly but also find some acceptable means of fitting field and exergue signs into the scheme. It is conceivable they might have been some form of control marks but in the present state of knowledge the problem is one in need of re-examination.

RELATIVE EMISSION SIZE—TICINUM 295–305

Date	*Mark*	*N. Sinai hoard*	*Čentur hoard*	*Date*	*Mark*	*N. Sinai hoard*	*Čentur hoard*
294/5	T	3	0	300/3	PT•	112	3
					*		47
295/6	PT	4	0	304/5	PT	20	19
	*						
296/7	PT	18	2	305	PT•	9	0
	*						
298/9	PT•	14	1	305	PṪ	0	0

From 295 to 299 Ticinum worked in one officina in the first issue and then in two. From 300 onwards the number was increased to three. By and large the output from the three officinae was comparable with workshop T having slightly fewer pieces, a distribution

[10] Bastien, op. cit., pp. 26–7. He discusses the possible location of the mint without reaching a conclusion satisfactory to him (pp. 27–8).

[11] For the Ankara hoard see Kienast, loc. cit., 65 ff., where he has also recorded the geographical distribution of the Antalya Hoard.

[12] See O. Voetter, *Katalog der Sammlung Gerin* (1921, 316 ff.; C. H. V. Sutherland, *NC* 1955, 68 ff.; J. Maurice *Num Const.* II, 212 ff.; R. A. G. Carson and J. P. C. Kent, *NC* 1956, 105 ff.; *RIC* VI, 268 ff. The existence of the mint-mark PṪ discussed by Jeločnik is now beyond question although it has very rarely been noted (only six specimens known). Whether it is a variant of related mint-marks or an indication of a separate issue as Jeločnik argues (p. 114) remains open to question. If the latter, the issue was very small.

similar to that of the Čentur hoard.[13] The number of coins struck for each ruler was also approximately the same to judge from the one issue large enough to permit analysis.[14] The average weight of the pre-reform pieces (295–307) is 9·80 g, slightly higher than that of the Čentur coins (9·69 g) (see Table 1A).

Aquileia. At Aquileia as at Ticinum the bulk of the 302 coins were minted in the years 295–305 (241). Sixty were minted between 305 and 307 and there is one reduced weight specimen c. 308–9. No new types or variants were recorded. The average weight of the pre-reform coins is 9·89 g (see Table 1A).

The sequence of the coins is much less controversial than at Ticinum. Voetter postulated six issues while *RIC* has nine, an arrangement which Jeločnik has followed.[15] Jeločnik has suggested on the basis of the relatively small percentage of coins in the Čentur hoard datable to 295–305 that Aquileia may have begun working at a later date than the other central mints and postulates late 295 or early 296 for the start of production.[16] Certainly coins of the early issues (AQ, AQA) are rare; there are none in the Čentur hoard and only one AQ piece in the North Sinai hoard. The extent to which the size of an issue can be accepted as an indication of its duration is, however, open to debate. Not only could large issues be produced in a short space of time but it is conceivable that the early issues from Aquileia were small for purely administrative reasons. The similarities of portrait style between Rome, Ticinum, and Aquileia have led Jeločnik to argue that personnel from the two former were transferred to the latter.

Aquileia initially worked in one officina increasing to three in the AQP issue (cat. nos. 278 ff.) at which time output also became more common. Shortly after the expansion to three workshops the pattern was established of reserving officinae P and S for the Augusti and Γ for the Caesars, which continued throughout the first tetrarchy.[17] After 305 there was a further division which allocated specific types, as well as officinae, to the Augusti (Fides) Caesars (Virtus), and Seniores (Providentia).[18]

Within the period of the first tetrarchy the mint appears to have struck fairly equally for the two Augusti (74 and 79), and somewhat less so for the Caesars (38 for Constantius and 50 for Galerius). The officina distribution (P—92, S—64, Γ—84) in the same period shows the predominance of workshops P and Γ.

The last coins are three Maxentian pieces of the reduced weight series with the CONSERV VRB SVAE reverse datable to c. 310.

Rome. Of the 475 pieces from the Rome mint in the North Sinai hoard 438 (92·2 per cent) fall in the years 295–305 and 37 in the years 305–11, but only one of the latter is datable to 308 or later. (See Tables 2A–C.) There are no new types and most of the variants recorded are new officina marks for specific rulers. The average weight of the unreduced pieces is 9·76 g (Table 1).

The sequence of issues is based on the work of Voetter followed by Sutherland in *RIC* and Jeločnik.[19] In the $\frac{RS}{A}$ series (cat. nos. 634–60) there is a new obverse legend: IMP C

[13] PT. (112 specimens) cat. nos. 126–237; Off. P—39, S—41, T—32, Čentur hoard, pp. 194 ff. PT• (47 specimens) (cat. nos. 101–12); P—22, S—14, T—11. The number of Čentur coins is too few to be certain if officina P is predominant only by chance, but it seems likely.

[14] North Sinai: PT• (112) D 27, M 35, Cs 21, G 29; Čentur: PT• (47) D 15, M 13, Cs 7, G 12.

[15] Voetter *NZ* LVI (1923), 1 ff.; *RIC* VI, 301 ff.; Jeločnik, *Čentur*, 101 ff. The issues have been decided on stylistic grounds, change of type, titulature, etc. which in some instances coincide with a change of mint-mark.

[16] Jeločnik, *Čentur*, 101. See his notes 7–10 which list the bibliography.

[17] *RIC* VI, 313 ff. The pattern is not absolute and exceptions although infrequent do exist (*RIC* VI, 314, no. 25a for example).

[18] *RIC* VI, 319 ff.

[19] Voetter, *NZ* 1925, 9 ff.; *RIC* VI, 329 ff.; Jeločnik, *Čentur*, 126 ff.

MAXIMIANVS PF AVG and a number of variant officina marks have also been noted.[20]

In the $\frac{*}{RP}$ issue (cat. nos. 833–920) a variant mint-mark (RS) was recorded for *RIC* 105b.[21]

Rome demonstrates a pattern of mint organization similar to that of Aquileia and Ticinum. The first issue at all three mints was produced in a single officina which was followed in the case of Ticinum and Aquileia by a rise to two and three officinae respectively while Rome increased to nine for the second issue and thereafter dropped to four (changing from Greek to Latin officina marks c. 299). This remained the number in use during the first tetrarchy. Aquileia in 297/8 and Rome in 299 also allocated specific officinae to individual rulers.[22] After 305 all three mints followed a pattern of assigning different types to the Augusti and Caesars, a practice not found elsewhere in the second tetrarchy but employed from 308 onwards by Balkan and Eastern mints. The same pattern of organization is also found at Carthage which strongly suggests that these four mints were under the same authority, which in this instance operated regionally. Regional control at the prefectural level, for example, has been difficult to demonstrate since the date of the emergence of the prefectures has not yet been fully established nor has the existence of a regional fiscal control over minting.[23] None the less, the degree of coincidence in the organizational pattern of the central mints does imply that some sort of regionalized control was operating in 295–307.[24]

Despite variations from issue to issue, the number of coins struck for each ruler was more or less evenly distributed during the first tetrarchy (Diocletian 118, Maximian 114, Constantius 100, and Galerius 95). The workshops also maintained a relatively even output.

Ostia. The three coins from the mint of Ostia (cat. nos. 1054–6) are all datable to the years 309–12. The numbers are too few to permit much comment although they are as late as the latest in date from the Central mints.

Carthage. The mint of Carthage opened c. 296/7 and worked for about ten years. Of the 307 North Sinai pieces (6·9 per cent), 238 belong in the period 295–305 and 69 to the years 305–7. Interestingly this is significantly higher than the number found in the Čentur hoard (95 = 1·8 per cent). The reasons for the imbalance remain unclear.[25] It does suggest that coin produced within a given administrative region enjoyed wide geographical circulation and that coins from Africa found their way readily to the East either by means of trade or direct supply.

The average weight of the unreduced folles is 9·63 g, which is comparable to that of the Čentur hoard (9·66 g) (Table 1A). Only one variant was noted, a plain mint-mark Δ in place of $\frac{I}{\Delta}$ in the $\frac{H}{A}$ series datable to 303 (cat. nos. 1295–1355).

As mentioned above the organization of the mint of Carthage was very like that of the other Central mints. The earliest issue worked in three officinae increasing to four in 297,

[20] See, for example, cat. nos. 757–75 (*RIC* 100b) where off. P and T. have been recorded for Maximian (normally found with S only); cat. nos. 938–1016 where Q has been used for Maximian, S for Constantius, and T for Galerius.

[21] Mentioned by Sutherland in *RIC* VI, 362 n. 3. Whether a sufficient number exist to suggest that these coins formed a separate issue remains to be verified. None occurred in the Čentur hoard.

[22] At Aquileia P—Diocletian, S—Maximian, Γ—Caesars; at Rome P—Diocletian, S—Maximian, T—Constantius, Q—Galerius.

[23] Hendy has suggested that there may have been parallel structures on the diocesan level. See *JRS* 1972, 75 ff.; *NC* 1972, 117 ff. The difficulty, however, in trying to correlate diocesan and fiscal structure is that some dioceses had two mints (Italy, Oriens) and some had none (Spain) others had one only briefly (Africa). It is conceivable that fiscal regions were somewhat differently organized than along strict diocesan lines and that the roots of the mint system lie in the developments of the third century particularly after 260.

[24] Sutherland, *RIC* VI groups Siscia with the Central mints but in some respects its pattern is more like the Balkan mints as will be discussed below.

[25] *Čentur*, pp. 138 ff.

at which time each ruler was given a specific officina mark, a practice which continued until 307. Carthage was atypical, however, in producing a unique range of reverses on which all four rulers were represented. These have been linked to the military campaign of Maximian in Africa which probably occasioned the mint's opening.[26] Between 295 and 305 three of the four workshops seem to have produced about the same number of pieces with the third predominant. The four rulers were not equally represented (Diocletian 53, Maximian 78, Constantius 59, Galerius 38): rather, the Western Augustus and his Caesar seem to have been favoured.[27]

Siscia. In *RIC* VI Sutherland has grouped Siscia with the Central mints, where it clearly belongs on administrative grounds. The organization and functioning of the mint, however, differs from that of the Italian mints and Carthage while paralleling in a very general way the pattern displayed by the Balkan mints.[28]

Siscia follows the pattern of the Central mints in its choice and change of reverse types in the first tetrarchy and the correspondence of certain field-marks, for example with Aquileia (V, VI). On the organizational level it has several affinities with the Balkan mints, but whether this diversity can be interpreted as two different levels of control is conjectural.

Of the 258 Siscian folles (5·8 per cent), 226 (89 per cent) were minted in the years 295–305 and 32 between 305 and 311. The weight average of the unreduced folles is 9·94 g (Table 1A). No new types or variants were recorded except for two officina marks not previously noted.[29] The mint had three workshops from 295 to 305 except for a brief issue in 296 $\left(\frac{A}{*SIS}\right)$ when the number was increased to four and output from the three was relatively even.[30] Significantly more obverses were produced of Diocletian and Galerius in the years 295–305 (72 and 81 respectively) than for Maximian (42) or Constantius (31).[31] Little light can be shed by the North Sinai coins on the complicated and still disputed chronology of the issues of the first tetrarchy which not even the recent discussion of Jeločnik has settled.[32]

In the second tetrarchy (305–6) Siscia initially continued to produce the SACRA MONET reverse but slightly later began to mint separate reverses not found elsewhere for the Augusti (HERCVLI VICTORI) and Caesars (CONCORDIA IMPERII) with PERPETVITAS AVGG and IOVI CONSERVAT being found for all Augusti and Caesars. At some time in 307 coinage ceased at Siscia until after Licinius gained control of the mint in 308, by which time the weight of the follis had been reduced to c. 6·50 g.[33]

THE BALKAN MINTS

The Balkan mints show signs of having functioned as a regional group quite different from those discussed for the Central mints. Officina marks and types are found indiscriminately for all four rulers in the first tetrarchy, and these mints do not reflect the type change in 300 from the Genio reverse to SACRA MONETA AVGG ET CAESS NN.[34]

[26] *RIC* VI, 413.

[27] The officina distribution is as follows: P (A) 52, S (B)–79, T (Γ) 59, Q (Δ) 48. Between 305 and 307 the distribution was P (A) 19, S (B) 15 T (Γ) 17, Q (Δ) 18.

[28] *RIC* VI, 43 ff.

[29] See notes for cat nos. 1500–8; 1510–17.

[30] Officina distribution: A 78, B 74, Γ 71, Δ 3.

[31] Whether this is a chance phenomenon or the result of deliberate policy cannot be assessed on the basis of this evidence; more comparative material is needed. The Čentur hoard unfortunately has only eleven folles for the years 295–305. The same pattern for Siscia occurs in the Aleppo and Homs hoards, *RN* 1967, 74 f.: Aleppo: D 17, M 10, Cs 10, G 14; Homs: D 17, M 8, Cs 6, and G 18. This may suggest that the imbalance is more than chance.

[32] *Čentur*, 149 ff. where he also summarizes and assesses previous arrangements.

[33] *RIC* VI, 449 ff. For a discussion of the date when Siscia began minting reduced-weight folles see Jeločnik, *Čentur*, pp. 152 ff.

[34] Found at Aquileia, Ticinum and Rome with various shorter forms as well and a variant at Trier (MONETA SACRA AVGG ET CAESS).

Output at individual Balkan mints in this period v
Heraclea producing bronze c. 294–8, Thessalonica 298
suggests that although three mints could emit bronze in th
at a time. This contrasts strongly with Siscia, Antioch, an
had an almost continuous output.[35]

Serdica. Serdica operated only in the years 303–8 and th
moneyers who had been transferred from Thessalonica.[36]
pieces, 41 (31 per cent) belong in the first tetrarchy wit
Of these only nine are reduced folles. The average weight
which is comparable to the average of the Ankara pieces
mint-mark was recorded $\left(\frac{A}{\cdot SM \cdot SD \cdot}\right)$ in the $\frac{A}{SM \cdot SD \cdot}$ issu
there were no new types. Serdica worked in five officinae a
from all workshops throughout.[37]

In the first tetrarchy, obverses of Diocletian (16) and
numbered those of Maximian (6) and Constantius (2). A
the years 305–7, Galerius predominating with 34, Diocl
Maximian 6, and Constantius 5. Constantius had only a br
so that this cannot be the reason for the imbalance.[38] Serd
after the time when Licinius gained control of it.

Thessalonica. The mint of Thessalonica was open in th
it was replaced by Serdica until 308 when it was reopened
Serdica.[39] Of the North Sinai coins 257 (5·7 per cent) v
(84 per cent) are datable to 298–303. No new types or va

The classification and arrangement of the early issues p
dates. Apparently the first two issues (TSA, ·TSA·) were
only, while the next two issues $\left(\frac{\Gamma}{TS}\frac{\Gamma}{TS\cdot}\right)$ were minted in Γ·€
legends and reverse type. The problem is thus whether on
series and a method of mint organization not practiced els
explanation, or whether the plain and dotted series were pa
$\frac{\Gamma}{\cdot TS\cdot}$) and formed two rather than four issues.[41] If this n
explain why the two halves of both issues had workshop
tunately at the present time it is not possible to decide wh
on stylistic or metrological grounds, nor is the chronolo
larities of the four issues suggest that they were produced
beyond this little can be said. On the basis of the North Si
roughly the same number of coins (61, 55, and 52 respe
prolific (26, 22).

In the reduced weight series struck c. 308–10 the organi
to have allocated specific rulers to given workshops, i.e.

[35] See *RIC* VI, 79 ff.

[36] *RIC* VI, 486.

[37] Totals: A 14, B 20, Γ 13, Δ 17, E 16, ? 2.

[38] Unfortunately the Serdican coins from the Anka
hoards are too few to support or negate this pattern.

[39] *RIC* VI, 81 ff., 501 ff.

[40] Ibid. 503 ff. He suggests on the basis of the fact tha
Γ issues that they are later in date. However, there is no
judge by the coins in the Ashmolean.

[41] Serdica as noted above worked in all five officinae in

[42] *RIC* VI, 501, 503 ff., where Sutherland expresses u
assigned to these issues.