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HAVING SERVED FOR ALEXANDER III
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ROMAN ARMY**

FRANÇOIS DE CALLATAÿ

ОТНОСНО РАЗМЕРА НА ДВАТА МАСИВНИ
ПОТОКА НА МОНЕТИЗИРАНИ БЛАГОРОДНИ
МЕТАЛИ В ЗЕМИТЕ НА ДНЕСНА БЪЛГАРИЯ
СЛЕД ЗАВРЪЩАНЕТО НА ТРАКИЙСКИТЕ ВОИНИ,
СЛУЖИЛИ ПРИ АЛЕКСАНДЪР III И ДИАДОХИТЕ,
КАКТО И В РИМСКАТА АРМИЯ

ФРАНСОА ДЬО КАЛАТАЙ

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On the size of the two massive inflows of monetized precious metals in present day Bulgaria after the return of the Thracians having served for Alexander III and the Diadochi, as well as in the Roman army

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Относно размера на двата масивни потока на монетизирани благородни метали в земите на днешна България след завръщането на тракийските воини, служили при Александър III и Диадохите, както и в римската армия

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Abstract: From a monetary point of view Bulgaria proves to be surprisingly rich. In the full statistics by countries for Roman hoards Bulgaria comes in fifth position (out of 34) with one hoard for every 130 sq. km. The mid-3rd century is truly the summit of non-recovered deposits in Bulgaria. No less than three quarters (600 out of 800) of all Roman coin hoards found in Bulgaria were buried during the 3rd century. Looking at hoards buried in Bulgaria during Greek times (**Fig. 5**), one finds two peaks: one during the 4th century BCE, but actually concentrated at the end of the century, which may be linked with the return of Thracian auxiliaries having served in the army of Alexander the Great, and a second one, more spectacular, at the end of the 2nd century and the first half of the 1st century, which may be linked with the return of Thracian auxiliaries having served primarily in the Roman Republican army. With more than 150 hoards in a few decades, the last third of the 4th century BCE is thus the first massive phenomenon of hoarding in Bulgaria. It came with Alexander the Great, first through his northern campaign but much more through the Thracian auxiliaries which came back in their homelands at the end of their services. For the last part of the 4th century BCE, Bulgaria and Romania absorbed nearly one half (44%) of all the occurrences for gold Alexander the Great's coin hoards, more than three times what could be found for Macedonia or continental Greece. Thracian auxiliaries at that time preferred gold with the two Hellenistic mints of Abydos and

Lampsacus favouring the production of staters while the mints of Asia Minor concentrated on drachms. The second moment of major flow of monetized precious metals into Bulgaria came two centuries later with a peak during the last decade of the 2nd century and the three first decades of the 1st century BCE. It includes a variety of coinages: the explicitly Roman tetradrachms of the First Meris of Macedonia and those in the name of Aesillas, the civic tetradrachms of Thasos and Maroneia, the drachms of Dyrachion and Apollonia, the Athenian stephanephoroï. The circulation pattern differs from one coinage to another: the tetradrachms of the First Meris of Macedonia were found in the western north as the Roman Republican denarii (Vratsa Province) while the tetradrachms in the name of the Thasians were massively found in the provinces of Shumen and Stara Zagora. None is concentrated on the seashore.

To sum up, modern Bulgaria is this area which has three times produced an accumulation of coin deposits like no other region at the same time and for which a military cause can each time be clearly identified. These three massive burials have been caused by: 1) the return of Thracian auxiliaries having served under Alexander the Great and later on – the Diadochi; 2) the return of Thracian auxiliaries having served the Roman Republican army, and 3) the unrest of the 240s culminating in the battle of Abritus in 251 CE. These coinages have been extensively studied and we do have a die-study for most of them (**Table 1**). This allows to settle the original number of obverse dies, how much it makes in talents for an average productivity of 20,000 coins per obverse die, and the yearly average in talents. Thereafter, some estimations of the size of the inflow of monetized precious metals brought by Thracian auxiliaries could be suggested: ca. 50,000 talents of Attic silver reached the area in the early Hellenistic times (**Fig. 11**), and for the late Hellenistic, as a working hypothesis, ca. 15,000 talents, adding the Roman Republican denarii and the drachms of Apollonia (**Fig. 12**).

Keywords: Gold and Silver Coin Hoards, Coin circulation in Thrace, Hellenistic Period, Roman Period, Thracian mercenaries and auxiliaries



Modern Bulgaria has often been described as a land of treasures, with a natural reference to the magnificent Thracian treasures. And indeed, some of the heaviest gold artefacts ever recovered in modern times come from the northern Aegean area. For the Mediterranean world *lato sensu*, the gold larnax of Vergina (11 kg) and the Panagyurishte hoard (6.2 kg) are only superseded by the sarcophagus of Tutankhamun (Callataÿ 2017c). From a monetary point of view too, Bulgaria proves to be surprisingly rich. We owe to Nikolay Teodossiev a recent conspectus of all coin hoards ever discovered whatever the period (Teodossiev 2017). With a grand total of ca. 3,400 coin deposits for Bulgaria i.e., a territory of ca 110 000 sq.km, it gives an average of one deposit for every 32 sq.km which compares favourably with what has been gathered by the Portable Antiquities Scheme for Great Britain, another area reputed for its vast quantity of coin hoards (Callataÿ 2017b).

The monograph of Teodossiev gives for each of the 27 administrative provinces the number of hoards for each period as well as general maps of density which allow to follow how hoard clusters moved through time (**Fig 1a**).

In a most recent paper, Roger Bland gives the full statistics by countries for Roman hoards (Bland 2019, 121, Table 1, 122, Fig. 1). With one hoard for every 130 sq. km, Bulgaria comes in fifth position (out of 34). Behind the inaccessible Luxemburg, Britain and Wales, Israel and Belgium. But with more than twice the density of France (1 hoard per 285 sq.km) and more than five times what was found in Italy (1 hoard per 777 sq. km) (**Fig 1b**). A small methodological comment here to underline some biases with the most documented countries: Luxemburg because the astonishing activity of Raymond Weiller and Israel because the tremendous activities of the Israel Antiquities Authority.

Табл. 1. Плътност на находките по области и епохи, брой на 1000 km²

Област	Общ брой ¹	Средна плът.	Елиптич. епоха	Рим. рен. ²	Рим. имп.	Средно-вековне	Късно-среднов.
Благоевград	129	20.00	6.20	0.46	2.95	7.60	2.64
Бургас	213	27.49	11.49	0.13	5.81	6.07	3.48
Варна	156	40.84	9.69	0.52	11.26	13.09	6.02
Велико Търново	270	57.92	9.01	-	18.88	22.31	7.29
Видин	93	30.66	0.99	0.66	10.88	7.25	10.22
Враца	148	40.89	10.50	3.59	15.75	4.97	6.08
Габрово	44	21.75	2.47	0.99	8.90	6.43	2.47
Добрич	110	23.31	2.54	0.42	9.32	8.69	2.19
Кърджали	44	13.71	6.23	-	3.12	4.05	0.31
Кюстендил	135	44.24	8.85	0.66	13.11	12.45	8.52
Ловеч	129	31.24	8.72	0.48	14.53	6.54	0.97
Монтана	90	24.76	4.95	3.85	9.08	1.93	4.95
Пазарджик	135	30.29	6.28	0.22	7.40	10.54	5.61
Перник	68	28.40	9.61	1.25	7.10	8.35	2.09
Плевен	188	40.40	9.45	1.29	14.83	6.66	8.17
Пловдив	211	35.33	9.04	0.50	10.38	8.71	6.53
Разград	87	32.96	8.71	-	17.81	3.79	2.27
Русе	101	36.03	8.92	0.36	11.77	10.70	3.57
Силистра	80	28.11	5.62	0.35	5.97	14.40	1.41
Сливен	86	24.26	9.59	-	7.34	5.08	2.26
Смолня	50	15.66	7.83	0.31	3.76	2.82	0.63
София	199	23.66	2.97	0.59	8.56	5.35	5.59
Стара Загора	167	32.42	10.68	0.58	9.51	8.54	2.91
Търговище	103	40.26	6.64	0.78	20.32	10.16	1.56
Хасково	89	16.08	6.69	-	5.60	2.35	1.44
Шумен	227	66.97	13.57	0.88	20.95	21.83	9.44
Ямбол	52	15.50	5.66	-	3.87	2.98	2.68
Средна стойност		31.22	7.51	0.70	10.32	8.28	4.13

1) Включително домонетните форми, находките с неопределено местонамиране и тези, които са открити извън територията на България. Поради малкия си брой тези три групи не присъстват в следващите колонии на таблицата.
2) Включени са само хомогенните находки.

Table 1. Number of Roman coin hoards on CHRE database by country (for Germany, Hungary and the Netherlands only hoards from within the Roman Empire are included)

Country	No. of hoards	Area (km ²)	Km ² per hoard
Luxembourg	84	2,566	30.8
England (south of Hadrian's Wall) and Wales	3,219	149,361	46.4
Israel	347	20,073	57.8
Belgium	395	30,510	77.2
Bulgaria	861	110,994	128.9
Netherlands (within Empire)	139	18,778	135.1
Switzerland	304	41,450	136.3
Slovenia	103	20,273	196.8
France	1,938	551,695	284.7
Hungary (within Empire)	105	36,615	348.7
Austria	186	83,858	450.8
Germany (within Empire)	78	47,705	611.6
Greece	214	131,940	616.5
Lebanon	15	10,452	696.8
Italy	388	301,338	776.6
Croatia	62	56,594	912.8
Romania	240	238,397	993.3
Portugal	91	91,658	1007.2
Serbia	63	77,453	1229.4
Cyprus	5	9,251	1850.2
Macedonia	13	25,713	1977.9
Spain	218	498,468	2286.6
Slovakia	21	49,036	2335.0
Syria	72	185,180	2571.9
Tunisia	46	163,610	3556.7
Bosnia	10	51,129	5112.9
Egypt	180	1,001,449	5563.6
Turkey	137	783,562	5719.4
Jordan	12	89,342	7445.2
Albania	3	28,748	9582.7
Montenegro	1	13,812	13812.0
Morocco	19	446,550	23502.6
Algeria	99	2,381,741	24058.0
Libya	27	1,759,540	65168.1

Fig. 1. Coin hoard density estimation: a) for Bulgaria (from Teodossiev 2017, 12); b) in Europe (from Bland 2019, 119-132).

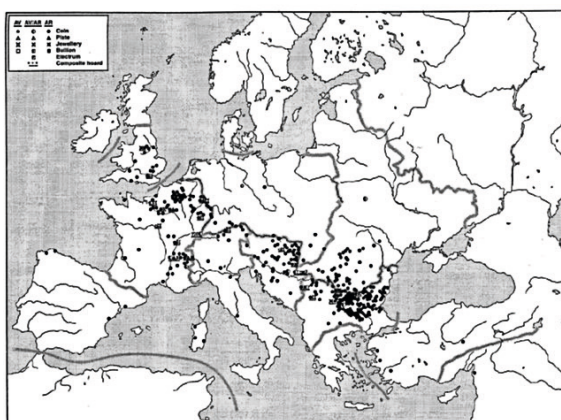


Fig. 11. Precious-metal deposits of 275-96 (Hobbs 2006).

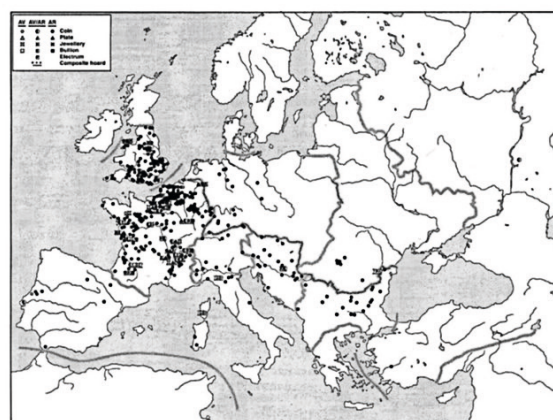


Fig. 12. Precious-metal deposits of 260-74 (Hobbs 2006) showing major barbarian invasions (after Jones and Mattingly 2002, map 5.6).

238-259 CE



Fig. 13. Precious-metal deposits of 275-96 (Hobbs 2006).

275-296 CE

260-274 CE

Fig. 2. Precious metal deposits 238-296 CE (after Hobbs 2006, Fig. 11-13).

As vividly illustrated by the maps produced by Richard Hobbs for precious metal deposits buried in the Roman Empire from 238 to 296 CE (**Fig. 2**), there is a remarkable correlation between these precious metal deposits and the limes or areas with military activities, and conversely a remarkable paucity of hoards in the inner parts of the Empire (Hobbs 2006; Bland 2013, 225-227), with a clear move from east (Bulgaria) to west (England) during the two last thirds of the 3rd century.

The mid-3rd century CE is truly the summit of non-recovered deposits in Bulgaria. All in all, no less than three quarters (600 out of 800) of all Roman coin hoards found in Bulgaria were buried during the 3rd century (**Fig. 3a**). This is a maximal concentration not reached anywhere else at any other Roman time.

But what appears as truly dramatic is the huge chronological concentration inside the 3rd century with 400 hoards out of 600 hundreds (1 for twenty if considered the full Roman Empire) reputed to have been buried during the same decade – the 240s – in the most troubled years before the battle near Atritus where Trajan Decius was killed in 251 CE. (**Fig. 3b**; see Teodossiev 2017, 958). The link between hoards and military unrest is here beyond any question.

More broadly, if we compare Bulgaria with Great-Britain on the long term, it turns out that, except for the noticeable peak reached during Roman imperial times (in the third century for Bulgaria while in the fourth for Great-Britain), other peaks differ but the general explanation remains the same and is linked with political instability: wars, above all civil wars as illustrated by the English Civil War and its spectacular peak in the years 1642-1651 (**Fig. 4 a - b**).

This is in line with the broad assessment got from 10 highly documented cases for which we do possess hundreds of hoards for several centuries (Callataï 2017a). All in all, approximately two thirds of the recovered buried hoards seem attributable to military conflicts as exemplified here with Hellenistic Syria, Roman Republic, and French modern times.

Looking at hoards buried in Bulgaria during Greek times (**Fig. 5**), one finds two peaks: one during the 4th century BCE, but actually concentrated at the end of the century, which may be linked with the return of Thracian auxiliaries having served in the army of Alexander the Great, and a second one, more spectacular, during the 1st century BCE, actually more at the end of the 2nd century and the first half of the 1st century, which may be linked with the return of Thracian auxiliaries having served primarily in the Roman Republican army.

If we consider the value of what was buried, it is clear that the peak was not reached during Roman times whose findings are dominated by debased *antoniniani* and bronzes, but well in Greek times with the gold staters of Alexander the Great or the Hellenistic silver tetradrachms brought back by Thracian auxiliaries mostly in the first decades of the 1st century BCE. The graph given here (see **Fig. 6**) is intuitive (it doesn't give the proper result of all implied multiplications). And it possibly underestimates the real difference of value which may be higher in favour of Greek times. But as such, it gives some visual measure of what was really put on earth.

Table 3a. Analysis of Roman hoards within the Empire on CHRE database by region and by century (percentages)

Country/countries	No. of hoards	Percentages				
		1st cent.	2nd cent.	3rd cent.	4th cent.	5th cent.
England & Wales	2,579	15.90	14.77	31.72	37.50	0.12
Belgium & Luxembourg	431	3.25	15.08	66.13	14.85	0.70
Netherlands (within Empire)	113	17.70	15.04	37.17	25.66	4.42
France	1,603	7.17	12.16	61.95	17.72	1.00
Germany (within Empire)	76	6.58	6.58	53.95	27.63	5.26
Switzerland	231	14.29	17.75	38.53	27.71	1.73
Austria	169	4.14	18.93	42.60	32.54	1.78
Hungary (within Empire)	97	2.06	10.31	60.82	24.74	2.06
Former Yugoslavia	248	8.47	19.35	43.55	25.40	3.23
Romania	235	8.94	24.68	48.51	14.89	2.98
Bulgaria	800	2.38	11.13	79.50	2.75	4.25
Greece	212	9.91	16.04	59.91	14.15	0.00
Italy	355	43.10	10.14	25.07	13.24	8.45
Spain & Portugal	296	24.66	10.81	51.35	9.46	3.72
Morocco, Algeria, Tunisia	156	4.49	10.90	41.67	28.21	14.74
Egypt & Libya	179	12.85	20.67	50.28	15.08	1.12
Turkey	112	15.18	7.14	52.68	18.75	6.25
Cyprus, Israel, Jordan, Lebanon, Syria	376	25.80	24.73	24.20	19.68	5.59
Overall	8,268	12.80	14.49	47.53	22.97	2.21



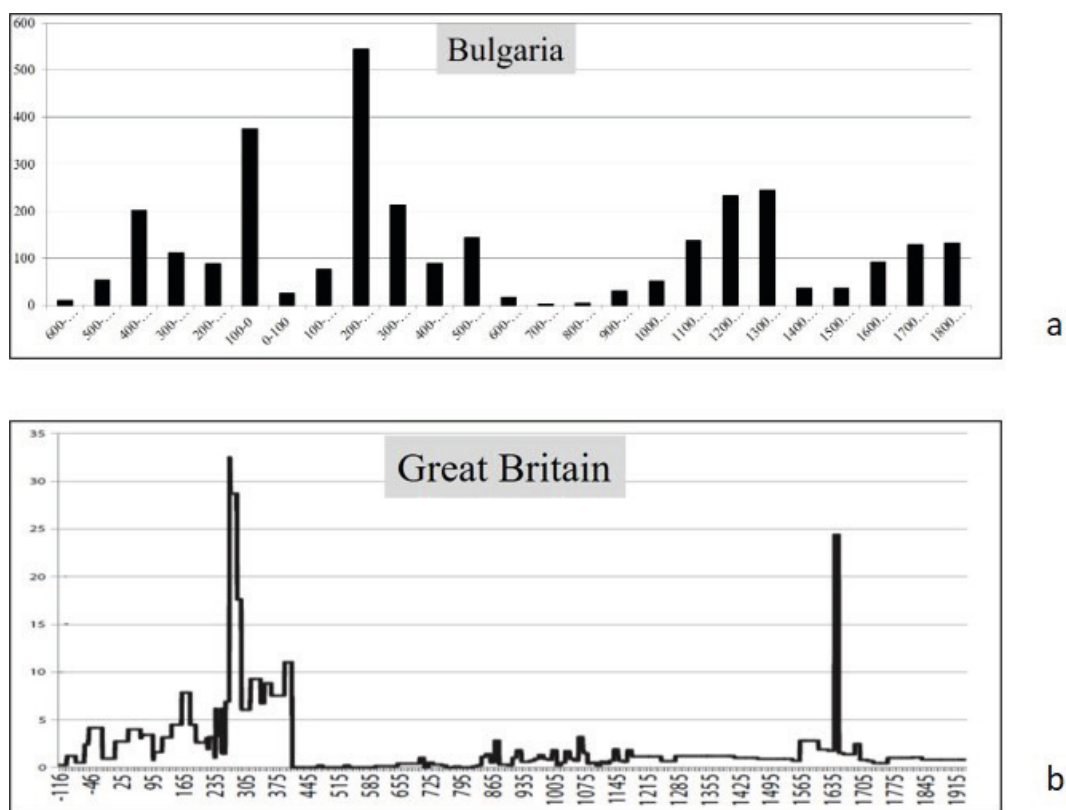


Fig. 4. Numbers of coin hoards deposited: a) per century in Bulgaria 600 BCE-1900CE (from Callataÿ 2018, after Teodosiev 2017); b. per annum for England and Wales, 120 BCE-CE1937 (from Bland 2013, 217, Fig. 2).

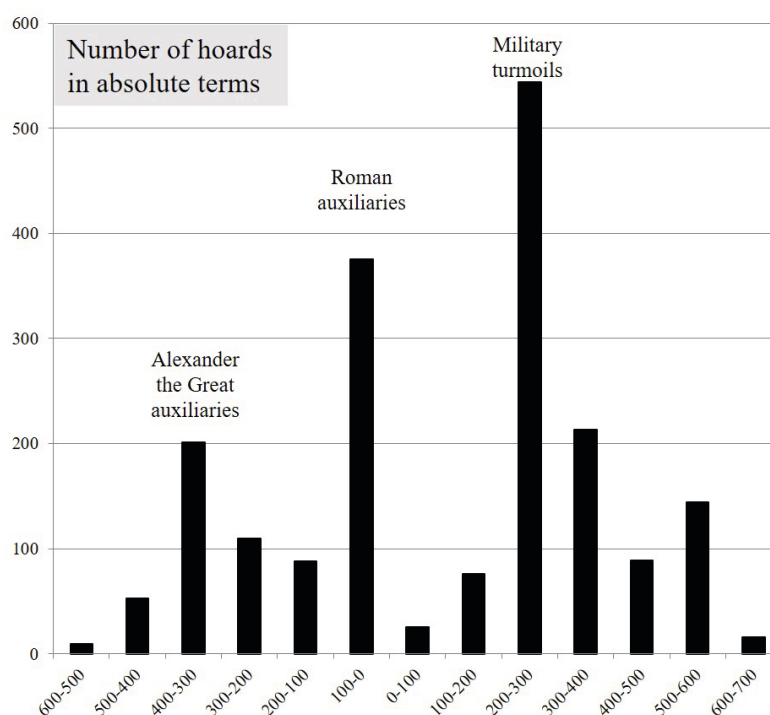


Fig. 5. Numbers of coin hoards deposited per century in Bulgaria 600 BCE-1900CE (from Callataÿ 2017b: 459, after Teodosiev 2017).

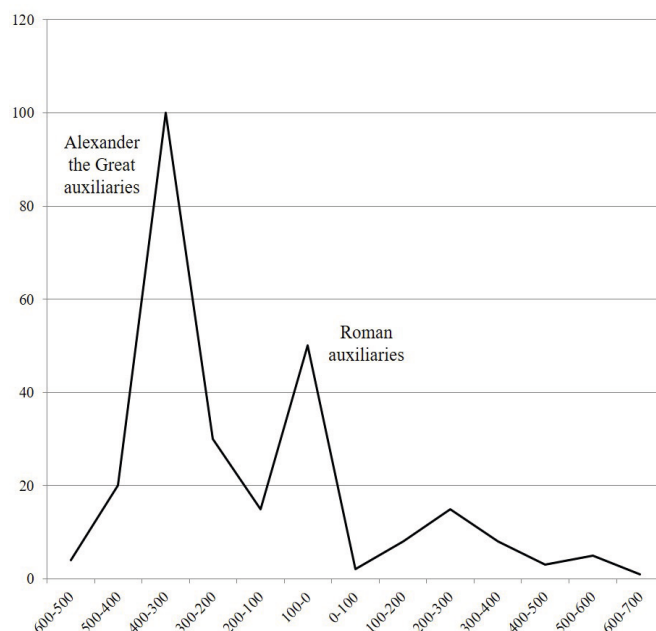


Fig. 6. Estimates of the cumulative value by centuries (with 100 for the 4th century BCE).

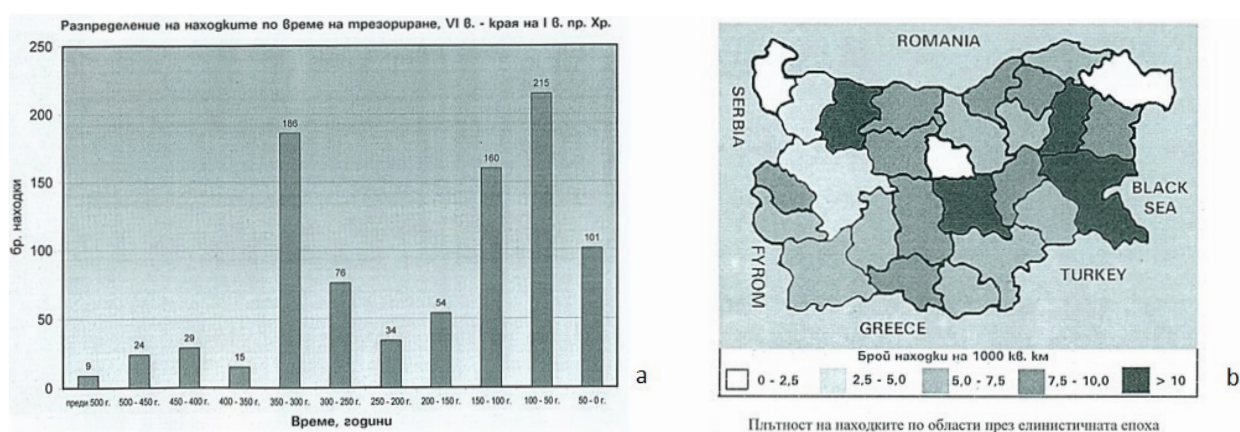


Fig. 7. Distribution of the coin find:

- a) chronological distribution by half century (from Teodossiev 2017, 955);
 b) map with relative densities (from Teodossiev 2017, 12).

Nikolay Teodossiev provides a more precise chronological distribution by half century (**Fig. 7a**). He also gives a general map for each period with relative densities for every administrative province (**Fig. 7b**). The trend is clear for Roman Republican denarii, mostly found in north-western Bulgaria, and even clearer for Roman imperial coinages with an almost perfect logic: the closer to the Danube, the more treasures.

The pattern is not so clear for Hellenistic times. The highest concentrations are met in the provinces of Shumen, Stara Zagora, Vratsa and Burgas. The Black Sea coast with the Greek cities is clearly much more attractive here and the only province where Greek hoards are twice as numerous as Roman hoards is Burgas.

With more than 150 hoards in a few decades, the last third of the 4th century BCE is thus the first massive phenomenon of hoarding in Bulgaria. It came with Alexander the Great, first through his northern campaign but much more through the Thracian auxiliaries which came back in their homelands at the end of their services (as an illustration: the hoard of Pistiros). Putting deposits

of gold coins of Alexander in perspective, it turns out that Bulgaria is the area with the highest concentration (Callataÿ 2019).

For the last part of the 4th century BCE, Bulgaria and Romania absorbed nearly one half (44%) of all the occurrences for gold Alexander the Great's coin hoards, more than three times what could be found for Macedonia or continental Greece (**Fig. 8**).

	332-300	299-250	Total 331-250	After 250	Total
Sicily and South Italy	3 (6%)	3 (19%)	6 (9%)	-	6 (8%)
Continental Greece	7 (14%)	4 (25%)	11 (17%)	-	11 (14%)
Macedonia	7 (14%)	3 (19%)	10 (15%)	-	10 (13%)
Bulgaria + Romania	22 (44%)	4 (25%)	26 (39%)	1 (10%)	27 (36%)
Asia Minor	4 (8%)	-	4 (6%)	3 (30%)	7 (9%)
Cyprus and Phoenicia	3 (6%)	1	4 (6%)	-	4 (5%)
Egypt	2 (4%)	-	2 (3%)	-	2 (3%)
Ukraine and Georgia	-	-	-	5 (50%)	5 (7%)
Undetermined	2 (4%)	1 (12%)	3 (5%)	1 (10%)	4 (5%)
Total	50 (65.8%)	16 (21.1%)	66 (86.8%)	10 (13.2%)	76 (100%)

Fig. 8. Distribution by periods of 50 years of hoards with gold alexanders depending of their provenances and their presumed burial dates (see Annex 1).

The pivotal role of Bulgaria for Alexander's tetradrachms is also conspicuous although less dominant (Touratsoglou 1998, 83, Map 3). Both gold and silver coins in the name of Alexander were predominantly found north of the Stara Planina (**Fig. 9**).

This comes as no surprise since, as brilliantly argued by Margaret Thompson, Thracian auxiliaries at that time preferred gold with the two Hellenistic mints of Abydus and Lampsacus favouring the production of staters while the mints of Asia Minor concentrated on drachms (Thompson 1984, 241-247, pl. 38-39).

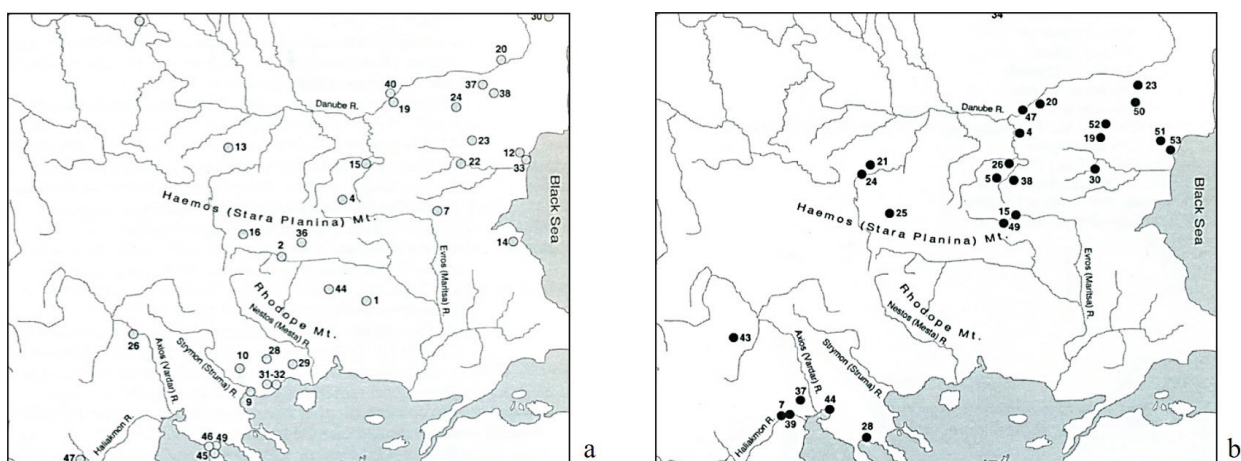


Fig. 9. Hoards with Alexander the Great's coins:

- a) gold staters (from 332 BCE to 280-270 BCE), (from Touratsoglou 1998, 80, Map 1);
- b) tetradrachms (from 332 BCE to 275 BCE), (from Touratsoglou 1998 83, Map 3).

The second moment of major flow of monetized precious metals into Bulgaria came two centuries later with a peak during the last decade of the 2nd century and the three first decades of the 1st century BCE. It includes a variety of coinages. Some are explicitly Roman as the tetradrachms of the First Meris of Macedonia, those in the name of Aesillas. Others have long been taken as purely civic as the tetradrachms of Thasos and Maroneia or the drachms of Dyrrachion and Apollonia and not forgetting the Athenian *stephanephoroi* whose production was during four consecutive years mostly directed to the northern Aegean area. Ilya Prokopov is the one who has the most contributed to settle the general frame of these coinages by gathering a large database and producing several die-studies (Prokopov 2006; 2009; 2012). It is now accepted that all these coinages were mostly struck during these decades for the Romans and their auxiliaries even if the civic coinages pre-existed the Roman rule. They were civic. They became pseudo-civic and they were produced to sustain a military effort far from the mint. As they replaced Roman Republican denarii which were not used in the east for a long time, Peter Thonemann is speaking of “surrogated” coinages (cf. Thonemann 2015, 60).

The circulation pattern differs from one coinage to another but none is concentrated on the seashore. Tetradrachms of the First Meris of Macedonia were found in the western north as the Roman Republican denarii (Vratsa Province) while the tetradrachms in the name of the Thasians were massively found in the provinces of Shumen and Stara Zagora (Prokopov 2006; 2012).

I have myself devoted many papers to these pseudo-civic coinages in general and several to this pattern observed at the turn of the 2nd and 1st century BCE in the west-Pontic area. If taking into account the 515 recorded silver hoards in the IGCH (out of 2387 = ca. 22%) buried in between 150 and 30 BCE, it turns out that – out of this number – 228 (44%) have been found on the territory of modern Bulgaria and Romania (Callataÿ 2016a). In other words, one Greek hoard out of 10 ever found from Spain to Indus and from Early Archaic to Late Hellenistic time whatever the metal belongs to this exceptional landscape. There is no similar or even approaching phenomenon for the whole Greek numismatics.

Put on a map, these 228 silver hoards are surrounded by nearly empty areas: only 10 hoards for ex-Yugoslavia and Albania, 11 hoards for Macedonia, or 10 hoards for Ukraine and South Russia (Fig. 10).

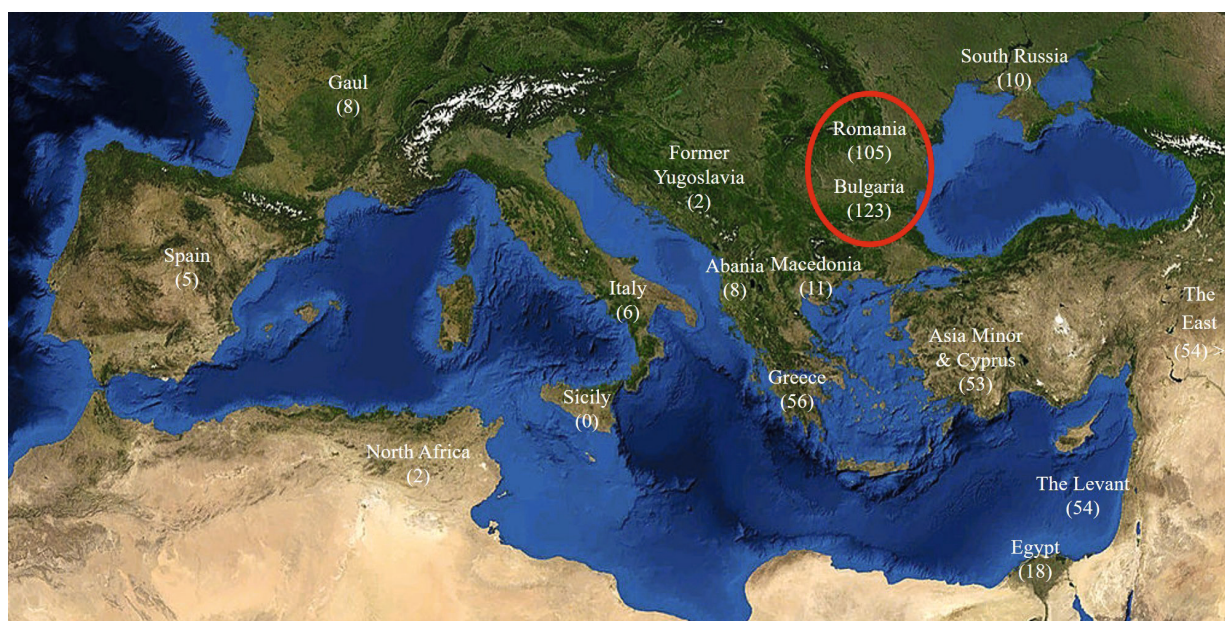


Fig. 10. Number of silver hoards recorded by the IGCH with a burial date estimated after 150BC and before 30 BC.

To sum up, modern Bulgaria is this area which has three times produced an accumulation of coin deposits like no other region at the same time and for which a military cause can each time be clearly identified. These three massive burials have been caused by: 1) the return of Thracian auxiliaries having served under Alexander the Great and later on the Diadochi; 2) the return of Thracian auxiliaries having served the Roman Republican army, and 3) the unrest of the 240s culminating in the battle of Abritus in 251 CE. Each time, the scale of the accumulation reached a substantial part of the total. For Hellenistic times, there is no other area in the ancient western world which could claim having achieved something similar.

The contrast cannot be stronger between this repetitive massive inflow on one side and the fact that inner Bulgaria is an area deprived of any mint as reminded by the (slightly outdated) map provided by David R. Sear in 1978 (Sear 1978, 130). With the minor exception of Cabyle (Draganov 1993), monetary production was located in the Greek mints along the seashore.

These coinages have been extensively studied and we do have a die-study for most of them. For each coinage in precious metals, **Table 1** provides the approximate date, the denomination, the reference – if existing – to the Recueil quantitatifs, the weight, the original number of obverse dies (O), the equivalent in Obverse dies for Attic Drachm (OAD), how much it makes in talents for an average productivity of 20,000 coins per obverse die, and – that is the most important here – the yearly average in talents. The original number of obverses is not submitted to a great level of uncertainty since we have discarded the weak ratios as in Byzantium. The average of 20,000 coins per obverse is likely to fit better for Hellenistic tetradrachms than for Archaic tetrobols but, considering the systematic good coherency of what has been done so far, there is good reason to hope that such an exercise could provide much more precise results than the right order of magnitude.

Table 1. Die-studies.

Chronology	Denomination	N° RQEM	Weight	O (original number of obverses)	OAD	Talents (20,000)	Yearly talents	Yearly talents
Istros (Callataÿ 2007)								
Dima 2014 gives a detailed typology but no die-study for the large silver coinage of Istros								
c. 100-72	G staters (Lysi)	57	c. 8.2g	c. 1	c. 20	67	c. 2.3	c. 2.3
Tomis (Callataÿ 2007)								
c. 110-72	G staters (Lysi)	59	c. 8.2g	c. 7	c. 140	467	c. 12.3	c. 12.3
Callatis (Callataÿ 2007)								
c. 250-225	tetradrachms (Alexanders)	- ¹	c. 17.1g	c. 13	c. 52	172	c. 5.7	c. 5.7
c. 120-72	G staters (Lysi)	58	c. 8.2g	c. 6	c. 120	400	c. 8.3	c. 8.3
'Dionysopolis'²								
c. 250-225	tetradrachms	-	c. 16.8g	c. 2	c. 8	27	c. 0.9	c. 0.9
Odessos (Callataÿ 1994)								
c. 275-225	tetradrachms (Alexanders)	- ³	c. 16.8g	c. 12	c. 47	156	c. 3.1	c. 3.1
c. 130-80	tetradrachms (Alexanders)	61	c. 16.4g	c. 39	c. 149	496	c. 9.9	c. 9.9
Cabyle (Draganov 1993)								
c. 230-200	tetradrachms (Alexanders)	79	16.8g	c. 11	c. 43	143	c. 4.8	c. 4.8

¹ Marinescu, Lorber 2012, 199-201 (11 obverse dies for 49 coins).

² Marinescu, Lorber 2012, 202-203 (2 obverse dies for 26 coins).

³ Marinescu, Lorber 2012, 208-213 (12 obverse dies for 123 coins).

King Kavaros (Kabyle)								
c. 218	tetradrachms (Alexanders)	- ⁴	16.8g	c. 1	c. 4	13	c. 13	c. 13
King Skostokos (near Plovdiv ?) ⁵								
c. 290-281	tetradrachms (Lysimachus)	90	c. 16.9g	c. 14	c. 55	183	c. 20.4	c. 20.4
Mesembria								
c. 450-350	diobols	- ⁶	c. 1.3g	(100)	c. 30	101	c. 1.0	c. 1.0
c. 275-225	tetradrachms (Alexanders)	- ⁷	c. 16.8g	c. 6	c. 23	78	c. 1.6	c. 1.6
c. 160-80	tetradrachms (Alexanders)	60	c. 16.4g	c. 53	c. 202	674	c. 8.4	c. 8.4
Apollonia								
c. 442-405	tetradrachms	- ⁸	c. 17.0g	c. 25	c. 99	329	c. 8.9	c. 8.9
King Mostis								
(c. 150-130)	tetradrachms (Lysimachus)	- ⁹	c. 16.6g	c. 9	c. 35	116	c. 5.8	c. 5.8
Byzantion (Schönert-Geiss 1970)								
Data for Archaic and Classical times not robust enough to be used (ratio n/o below 2)								
c. 250-220	tetradrachms	66	c. 13.6g	c. 36	c. 114	380	c. 12.7	c. 15.4
	octobols	67	c. 5.3g	(20)	c. 25	82	c. 2.7	
c. 120-72	G staters (Lysi)	73	c. 8.3g	(17)	(340)	1,133	c. 23.6	c. 110.7
	Tetradrachms (Lysimachus)	74	c. 16.5g	327	c1,255	4,182	c. 87.1	
Selymbria (Schönert-Geiss 1975)								
c. 492-470	drachms	144	c. 4.2g	c. 12	c. 12	39	c. 1.8	c. 1.8
Perinthos (Schönert-Geiss 1965)								
c. 357-338	didrachms	142	c. 10.5g	c. 1	c. 2	7	c. 0.3	c. 0.3
Bisanthe (Schönert-Geiss 1975)								
Data not robust enough to be used (ratio n/o below 2)								
Miltiades (Kardia) (Davis, Sheedy 2019)								
c. 478-466	Tri-siglos	-	c. 16.2g	c. 8	c. 30	100	c. 8.4	c. 8.4
Ainos (May 1950)								
c. 474-408	tetradrachms	110	c. 16.3g	c. 64	c. 243	809	c. 12.3	c. 14.9
c. 431-406	tetrobols	111	c. 2.7g	c. 7	c. 4	15	c. 0.6	
c. 469-406	diobols	112	c. 1.3g	c. 185	c. 56	186	c. 3.0	
c. 405-356	tetradrachms	113	c. 15.4g	c. 48	c. 172	573	c. 11.7	c. 13.2
c. 405-359	tetrobols	114	c. 2.4g	c. 38	c. 21	71	c. 1.5	
c. 405-399	diobols	115	c. 1.3g	c. 17	c. 5	17	c. 2.9	
c. 357-342	drachms	116	c. 3.8g	c. 62	c. 55	183	c. 12.2	c. 12.2
Maroneia (Schönert-Geiss 1987)								
c. 510-495	drachms	132	c. 3.5g	c. 18	c. 15	50	c. 3.3	c. 3.3

⁴ Gerassimov 1957.⁵ Fischer-Bossert 2005 (13 obverse dies, 27 reverse dies for 83 coins) (see before Dimitrov 1984).⁶ Karayotov 1994, 79-82 (54 obverse dies for 102 coins).⁷ Marinescu, Lorber 2012, 203-208 (6 obverse dies for 97 coins).⁸ Paunov 2017 (18 obverse dies, 54 reverse dies for 57 coins); see also Draganov, Paunov 2017 (for the chronology).⁹ CallataÏ 2016b (7 obverse dies for 55 coins) after Yordanov, Agre 2016.

c. 495-449	didrachms	133	c. 7.3g	c. 9	c. 15	51	c. 1.1	c. 2.7
	drachms	134	c. 3.5g	c. 27	c. 22	73	c. 1.6	
c. 436-410	tetradrachms	135	c. 13.9g	c. 63	c. 204	679	c. 26.1	c. 26.1
c. 410-398	staters	136	c. 12.8g	(52)	(155)	(516)	(43.0)	(43)
c. 398-385	triobols	137	c. 2.7g	c. 97	c. 61	203	c. 15.6	c. 15.8
c. 386-348	tridrachms	138	c. 16.5g	c. 19	c. 73	243	c. 6.4	c. 19.0
	Staters	139	c. 10.9g	c. 48	c. 122	406	c. 10.7	
	triobols	140	c. 2.4g	c. 38	c. 21	71	c. 1.9	
c. 189-60 bulk 90-70	tetradrachms	80	c. 16.4g	c. 120	c. 458	1,526	c. 11.7	c. 50 bulk
Abdera (May 1966)								
c. 540-492	octodrachms	101	c. 29.8g	c. 70	c. 485	1,616	c. 33.7	c. 38.5
	tetradrachms	102	c. 14.9g	c. 20	c. 69	230	c. 4.8	
c. 492-449	tetradrachms	103	c. 14.9g	c. 135	c. 468	1,559	c. 36.3	c. 37.1
	drachms	104	c. 3.3g	c. 13	c. 10	33	c. 0.8	
c. 439-410	tetradrachms	105	c. 13.9g	c. 25	c. 81	27	c. 0.9	c. 0.9
c. 410-386	staters	106	c. 12.4g	c. 48	c. 27	89	c. 3.7	c. 7.2
	tetrobols	107	c. 2.8g	c. 39	c. 25	85	c. 3.5	
c. 386-360	staters	108	c. 11.2g	c. 15	c. 39	130	c. 5.0	c. 9.5
	drachms	109	c. 2.7g	c. 56	c. 35	117	c. 4.5	
Thasos (Prokopov 2006)								
c. 180-70 bulk in 90-70	tetradrachms	-	c. 16.8g	c. 425	c. 1,660	5,534	c. 50.3	Bulk c. 150
Macedonia (LEG MAKEΔONΩN) (MacKay 1968)								
c. 148-147	tetradrachms	132	c. 16.8g	c. 7	c. 27	182	c. 91.2	c. 91.2
Macedonia (First Meris) (Prokopov 2012)								
c. 148-90	tetradrachms	133	c. 16.8g	c. 170	c. 664	2,213	c. 38.2	c. 38.2
Aesillas (Bauslaugh 2000)								
c. 90-60	tetradrachms	134	c. 16.8g	c. 105	c. 410	1,367	c. 45.5	c. 45.5
Dyrrachion (Meta 2015)								
c. 270-120	drachms	-	c. 3.3g	(900)	c. 691	2,302	c. 15.3	c. 15.3
c. 120-55	drachms	-	c. 3.3g	c. 1465	c. 1,124	3,748	c. 57.7	c. 57.7
Athens (the 4 consecutive years driven to Macedonia)								
c. 126-123	tetradrachms	-	c. 16.7g	c. 64	c. 249	829	c. 207	c. 207.1

Although out of scope here, it is interesting to see how monetary production was distributed in Archaic and Classical times. Silver coinages were struck along the Aegean seashore with a minor activity along the West Pontic seashore (**Fig. 11a**). The pattern is different for Hellenistic times, with a reverse of predominance between the Aegean and the Pontic seashores, much greater especially in late Hellenistic times (**Fig. 11b**). Taking all the production together (but it is here very misleading to disconnect Thrace from Macedonia), monetary production could be roughly estimated for both landscapes to some 10,000-15,000 talents, hence an average of some 60 talents per year.

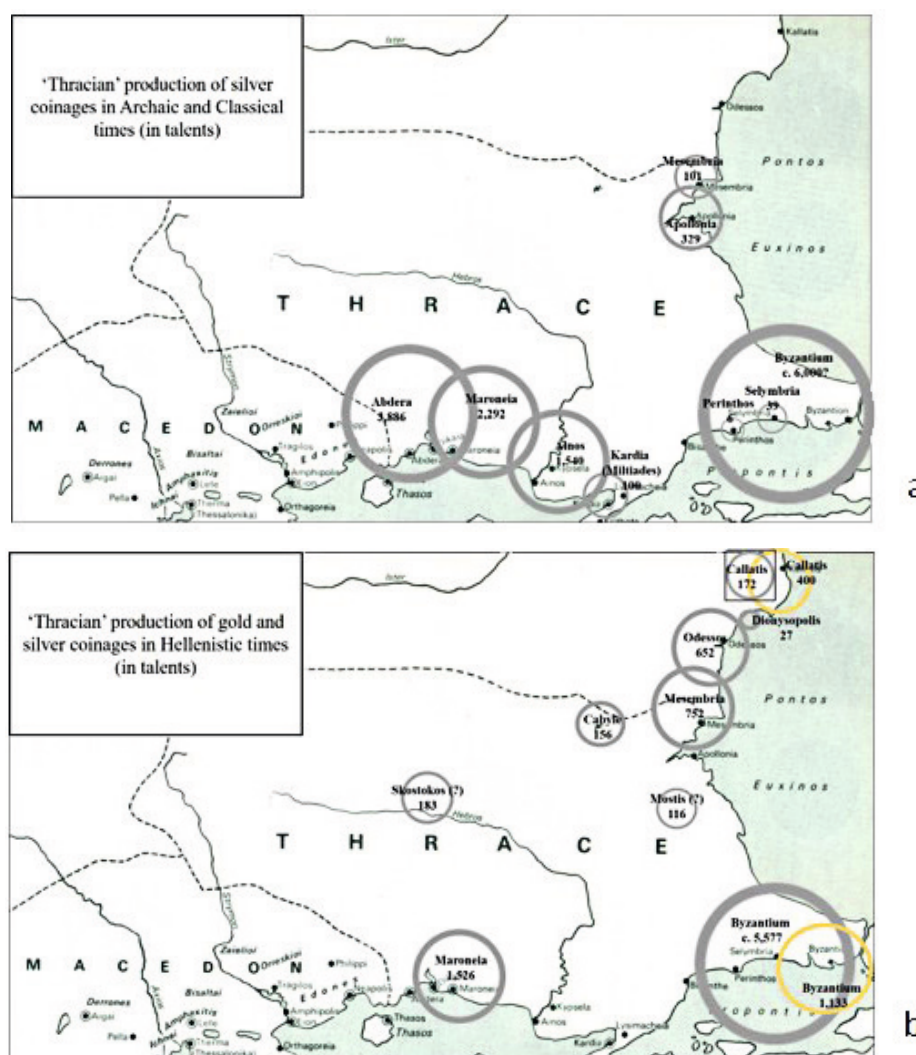


Fig. 11. 'Thracian' production:

- a) of silver coins in Archaic and Classical times (in talents);
 b) of gold and silver coins in Hellenistic times (in talents).

How this compares with the two massive inflows of monetized precious metals under study? We do have good estimates about the total production of coins in the name of Alexander the Great. For gold coins, production for the last three decades of the 4th century is in the range of 1,000 obverse dies for staters, which make 20,000 equivalent of obverse dies for Attic drachms, which makes no less than 66,666 talents if accepting an average of 20,000 coins per die (for which we do have die-studies for approximately two thirds, see **Table 2**).

Table 2. Die-studies for gold Alexander coinages.

Gold coinage	Date	RQ	Denomination	Weight	O	OAD	Talents
Macedonia (Troxell 1997)	332-323	-	Distasters	17,20 g	24	960	3,200
Macedonia	332-323	-	Staters	8,60 g	134	2,680	8,933
"Corinth" (Newell, Noe 1950)	325-318	165	Distasters	17,20 g	10	400	1,333
"Corinth"	325-318	166	Staters	8,60 g	9	180	600
Lampsakos (Thompson 1991)	329-302	200	Staters	8,55 g	111	2,220	7,400
Abydos	325-302	204	Staters	8,55 g	91	1,820	6,067
Sardis (Thompson 1983)	325-298	213	Staters	8,55 g	69	1,380	4,600
Miletos	325-294	223	Staters	8,55 g	53	1,060	3,533

Gold coinage	Date	RQ	Denomination	Weight	O	OAD	Talents
Tarsos (Newell 1918)	332-319	268	Staters	8,55 g	22	440	1,467
Arados (Duyrat 2005)	332-320	-	Staters	8,55 g	14	280	933
Ecbatana (Boillet 2009)	312-290	-	Staters	8,55 g	24	480	1,600
Total						11,900	39,666

A rather similar result is got for silver with ca. 3,000 obverse dies for tetradrachms and 3,300 for drachms which make a grand total of ca. 15,300 equivalent of obverse dies for Attic drachms and thus 51,000 Attic talents if one wishes to go there (Callataÿ 1989; 1993, 13-18). All together, adding the gold and silver coinages of Philip II and Lysimachus struck till the end of the 4th century, it has been estimated that ca. 50,000 OAD have been issued in the form of royal Hellenistic gold or silver coins which makes ca. 167,000 talents, a sum not too far with the ca. 180,000 talents reputed to have been taken by Alexander the Great in the Persian treasuries.

If we admit that ca. 30% of this grand total reached Bulgaria and Romania (ca. 40% for gold and ca. 20% for silver), we have to assume by way of consequences that ca. 50,000 talents of Attic silver reached the area. Out of which perhaps 30,000 attic talents only for Bulgaria, brought in a couple of decades, instead of a maximum of 15,000 struck by all the mints in the area during three centuries. We are here dealing with different orders of magnitude with during 30 years a yearly inflow 20 times larger than the average production of the area.

We are also well documented about the large issues struck for the Romans at the end of the 2nd and the beginning of the 1st century BCE for which we do have a die-study for each coinage (**Table 3**).

Table 3. Die-studies of late Hellenistic coinages struck for the Romans in the Northern Aegean area.

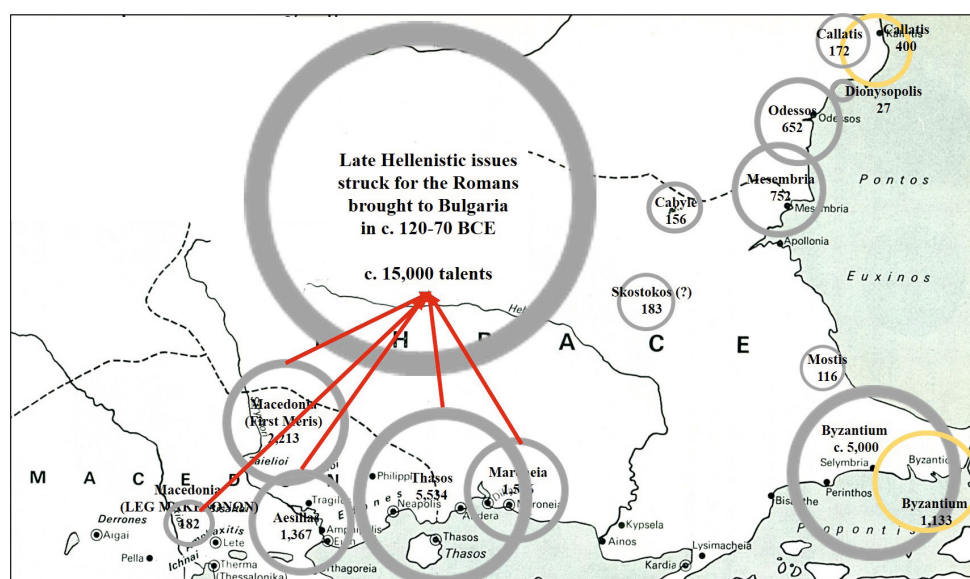
Chronology	Denomination	Weight	O	OAD	Talents (20,000)	Yearly talents
Maroneia						
c. 110-70 bulk	tetradrachms	c. 16.4g	c. 90	c. 343	1,144	c. 28.6
Thasos						
c. 110-70 bulk	tetradrachms	c. 16.8g	c. 300	c. 1,172	3,907	c. 97.7
Macedonia (First Meris)						
c. 148-90	tetradrachms	c. 16.8g	c. 170	c. 664	2,213	c. 38.2
Aesillas						
c. 90-60	tetradrachms	c. 16.8g	c. 105	c. 410	1,367	c. 45.5
Dyrrachion						
c. 120-55	drachms	c. 3.3g	c. 1465	c. 1,124	3,748	c. 57.7
Athens (the 4 consecutive years driven to Macedonia)						
c. 126-123	tetradrachms	c. 16.7g	c. 64	c. 249	829	c. 207.1
Total (c. 148-55)				c. 3,962	13,208	c. 142,0

All in all, it represents more than 13,000 talents not taking into account the Roman Republican *denarii*. It is interesting to cross these results produced by die-studies with the numbers for circulation gathered in the large database built by Ilya Prokopov (**Table 4**). The proportion "4:1" between Thasos and Maroneia is respected. The correlation obtained for the four consecutive years of Athenian stephanephoroi driven to the North is in the line. Dyrrachion and Apollonia are much less present in Bulgaria to compare with the size of their production but that is because they are mostly found in Romania. Tetradrachms of the First Meris of Macedonia are a bit underrepresented but not as much as the tetradrachms of Aesillas whose severe underrepresentation is likely to be partly at least explained by a major phenomenon of overstrikes (on this see Callataÿ 2017d and Callataÿ 2018).

Table 4. Number of coins recorded in the database of I. Prokopov.

Coinage	Denomination	Weight	South Bulgaria	North Bulgaria	Total	%	AD	AD %	OAD
Republican denarii	Denarii	3.9g	700	12,000	12,700	48.0%	12,700	23.9%	-
Dyrrachion/ Apollonia	Drachms	3.3g	-	4,900	4,900	18.5%	4,900	9.2%	1,124
Macedonia First Meris	Tetradrachms	16.8g	20	1,600	1,620	6.1%	6,480	12.2%	664
Aesillas	Tetradrachms	16.8g	250	-	250	0.9%	1,000	1.9%	410
Thasos	Tetradrachms	16.8g	4,200	1,600	5,800	21.9%	23,200	43.7%	1,172
Maroneia	Tetradrachms	16.8g	1,100	100	1,200	4.5%	4,800	9.0%	343
Athens	Tetradrachms	16.8g	1,100	21	1,121		4,484		249
Total					26,470	99.9%	53,080	99.9%	

So, limiting our scope to modern Bulgaria, what was the size of the inflow of monetized precious metals brought by Thracian auxiliaries having served in the Roman army? From the grand total of 13,000 talents got for all the considered coinages except Roman Republican denarii and the pseudo-civic production of Apollonia, we have to remove a fair percentage which went to Romania (above all drachms from Dyrrachion). But then adding the Roman Republican denarii and (to a minor extend) the drachms of Apollonia, I would dare to propose 15,000 talents as our best guess working hypothesis (**Fig. 12**).

**Fig. 12.** Late Hellenistic issues struck for the Romans brought to Bulgaria in c. 120-70 BCE.

This is comparatively less – about one half – of what was brought by the veterans of Alexander's armies but still remains a gigantic transfer of monetized precious metals. To conclude with some *comparanda* helping to take the measure of the phenomenon, suffice is to say that 30,000 talents equal 777 tons of silver. To give some numismatic equivalents, it corresponds to 9,024 obverse dies for Attic drachms (OAD), which is nearly twice the full production of Athenian *stephanephoroi* during one century and half (5,328 OAD), 20 times the full production of Miletos for nearly three centuries (451 OAD; c. 294-84 BCE) or 30 times the full production of Chalcis for two centuries and half (305 OAD; c. 338-87 BCE).

If one wishes to measure differently, these 777 tons of monetized silver would occupy a cube of pure silver of a bit larger than 4 meters on each side (74 m³ – silver specific gravity = 10.5). But at the same time, this is an amount of money which corresponds to 2 full years of revenues for

the Seleucid or the Ptolemaic empire (c. 10,000/15,000 talents), which could have served to build about 300 temples of the size of those of Poseidonia (average cost: 100 talents), or 150 as in Selinunt (average cost: 200 talents), and at least 15 Parthenon's including the chryselephantine statue of Phidias (estimated cost: 2,000 talents), (Martin 1987, 536). Or, ultimately and to venture in the frustrating game to put a contemporary figure on a past expense, these 30,000 talents are in the range of 9 billion contemporary euros (for an ancient daily wage of 1 drachm and a modern daily wage of 50 euros).

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