CHAPTER I

The Evidence of Coin Hoards

> It was a strange collection, like Billy Bones's hoard for the diversity of coinage, but so much larger and so much varied that I think I never had more pleasure than in sorting them. English, French, Spanish, Portuguese, Georges and Louises, doubloons and double guineas and moidores and sequins, the picture of all the kings of Europe for the last hundred years, strange Oriental pieces stamped with what looked like wisps of string or bits of spider's web, round pieces and square pieces, and pieces bored through the middle, as if to wear them round your neck – nearly every variety of money in the world must, I think, have found a place in that collection; and for number, I am sure they were like autumn leaves, so that my back ached with stooping and my fingers with sorting them out.
>
> (Robert Louis Stevenson, *Treasure Island*)

'Hoard', 'treasure' may immediately evoke vivid pictures of a wooden chest full of gold coins, jewellery and precious stones, secretly buried in an isolated island only known by pirates and now – found by the instructions in a brownish, half-burned, blood-stained document – lying glittering in the moonlight, feverishly being watched by eager eyes, behind which lurk insidious plans for getting sole possession of this large fortune. Readers who expect this book to be about such exciting stories should turn instead to Robert Stevenson's *Treasure Island*. Scholarly research is seldom so exciting!

Preamble

This chapter is no exhaustive treatment of the coin hoard evidence in general, nor of all the theoretical and methodological problems connected with investigation into it as a historical source. In order to be so, much more documentation and many more examples ought to have been induced. Nor does it bring new theories or sweeping new points of view. I will pose questions, and when discussing possible answers I will mainly take my examples from the period I know best, that is the Roman world before Diocletian's reforms.

The chapter is meant as a preamble to the following description and discussions of the hoard evidence from Roman Egypt, since that should be viewed in the light of the ongoing debate about ancient coinage in general, and the hoard evidence and the Roman coinage in particular. How far *Coinage in Roman Egypt* may contribute to this debate will be clear – I hope – from the chapters that follow.

By 'hoard' is meant 'at least two coins (or at least one coin and another object of value) apparently purposely buried together'[1] or lost – and preferably found together.[2] Most scholars today agree on such a definition,[3] which clearly distinguishes 'hoards' from 'stray finds', i.e. single coins lost by accident (or sacrifice).

There may be modifications to this definition. A single gold coin lost or buried by its owner may have represented his whole fortune and therefore a past treasure. Generally, however, stray finds represent less valuable coins, lost 'from the pocket' and not regained since the owner did not notice the loss or did not bother to retrieve it. Groups of stray-found coins may therefore offer a picture of small change used for daily transactions in a given area at a given period of time.

Others have argued for 'accumulated' losses as hoards of a specific category.[4] Undoubtedly, many single coins found at one place may provide an interesting picture of coins lost or sacrificed for centuries. Yet, they are unintentional accumulations – which were neither deposited nor lost as a whole – and therefore not hoards. Contrary to hoards, they do not provide their own chronological context.

A more important modification is the existence of 'composite' hoards, i.e. hoards to which later additions have been made. Thus the pirate could have returned to his island's treasure in order to refill his chest with newly robbed booty or to get some ready cash. Yet, what matters to us is the composition of the hoard when it last was found and therefore as it was at the latest time of its disposal, when it ceased to be at the owner's hand.

A composite hoard may be an 'encapsulated' or an 'extended' hoard. The encapsulated hoard is, by definition, not a hoard typical of the time of final burial, whereas an extended hoard may reflect older coinage still considered to be of value or be the result of additions made in a modern period.

We also have 'secondary' hoards, that is, groups of coins deposited or lost together in a modern period and not in their original past.

A definition of 'coin' is also needed:

Coins are defined as 'small struck pieces of metal carrying a value commonly accepted within the area of a 'ruler' or 'state' whose government is responsible for their production and whose authority guarantees their value'.[5]

It may be that neither the value nor the authority are explicitly stated on the coin

itself, and therefore are questions for scholarly debate. What matters, however, is that people in a certain area ('city-state', country, empire, or province) at a certain period accepted the coin's value in the confidence that other people – and the government itself! – would do the same. All forms of money depend on confidence. Coins represent a practical way of ensuring such confidence, based on confidence in the sovereign's authority. The Euro, for example, makes no difference, since confidence relies on a shared sovereignty and combined authority.

There may be 'private' coins as well. At times with an insufficient supply of ordinary coinage, private people may have made their own coins, which were accepted by other people although not by the government, at least not officially. This unofficial coinage does not distract from the fundamental notion that coins are – and have always been – a mark of authority. The punishment for producing forgeries has always been severe. In the later Roman Empire counterfeiting coins was a 'sacrilege' in the same way as melting coins, and therefore a 'capital offence'[6] (meaning the death sentence).

Quite another story applies to coins that left their place of origin. Such 'foreigners' may have been accepted for many reasons, which will not be discussed here as they do not distract from the definition offered, based as it is on the 'homeland'.

A definition of coins will demonstrate quite clearly that coins are a specific form of money and in principle not different from, for example, cowrie shells in 'primitive' societies. Even in a society that made regular use of coins, such as the Greco-Roman world, other objects may also have served as money, being either a means of payment, a means of storing wealth, or merely accounting devices/reckoning units. Furthermore, we should not be surprised to find coin terms expressing a means of accounting and not actual coins in use. The former British 'guinea' (21 shillings) and the former Danish 'daler' (2 kroner) are well-known modern examples of this widespread phenomenon, but even terms for existing coins may be used as accounting units, whereas the actual sum was paid in an equivalent amount of other coins or merely represented an entry of credit or debit.

Reasons for hoarding

In *theory* at least, there are three main groups of hoards: 'savings hoards', 'emergency hoards', and 'accidentally lost hoards' (or 'purse hoards'). Their evidence may be said to differ as much as reasons for their hoarding.

A 'savings hoard' will represent the owner's conscious selection of the best coins available and not needed for daily use. The coins would have been set aside in readiness for later and perhaps larger transactions, or deposited on loan with another person,

thus testifying to the most valuable coins available at the time of the hoard's disposal. It may even be a 'treasure', the value of which would depend on the saver: perhaps it is a child's moneybox or a tycoon's ready cash.

An 'emergency hoard' will represent the coins the owner was able to hide when in fear of theft, robbery, or looting. He may have been in hurry and therefore gathered as many coins as he could, some pieces being of considerable value, others less so. Partly a 'savings hoard', it may also testify to coins used for daily needs at the time of disposal, but in what proportions will be difficult to decide. A special version of this is a 'crisis hoard' resulting, for instance, from the – perhaps vain – efforts of an owner to rescue his fortune if his house caught fire.

An 'accidentally lost hoard' will represent the coins an owner carried with him when shopping, travelling, or the like. It may well be the contents of his saving box taken to the market, probably indicating coins for both smaller and larger transactions, and therefore is the best evidence we have for coins as a means of payment: in other words the circulation of coins at the time of loss of the hoard.

In *practice*, however, the distinctions are often blurred. The original owner took fright, sampled his best coins (now a 'savings hoard') or gathered all the coins he could (now an 'emergency hoard'), then, when fleeing, lost or was robbed of his 'purse of coins' (now an 'accidentally lost hoard'). The robber may then have hidden his booty for later use ('savings hoard'), hastily having buried it in fear of being caught ('emergency hoard'), or perhaps he lost it when running away from the place of misdeed ('accidentally lost hoard'), etc., etc.

By saying this, I am not trying to decry the theoretical distinction between such hoards, but merely to warn against any rigorous application of it. Even when circumstances of the find are well-known and the hoard was well contained (in a sealed pot, e.g.) – which quite often is not the case, we can rarely say which category we are dealing with, and a vicious circle of argument is near: hoard X contains many valuable coins, hoard X is a 'savings hoard', hoard X is yet another proof that 'savings hoards' consist of the most valuable coins at the time. Theory may be illuminating but also distorting!

There is a fourth group of hoards, which may be difficult to classify among the three main groups. We may call them 'debasement hoards' or 'waste hoards'. This group of coins has become almost worthless. Perhaps these coins were simply thrown away or given to children to play with. Perhaps, by accident, they were brought home from abroad, laid aside and forgotten without being exchanged into valid currency.

In this regard, one particular type of hoard would be of immense interest to us: for example, a new currency has been introduced by decree and all previous coins declared invalid. People in possession of such coins are ordered to bring them to a money-changer. Unfortunately, the money has been earned in an illegal way, and in order not

to be discovered, it has been hidden away, perhaps in the hope that the government will rescind the decree at a later time. This happened in many European countries after World War II, and it goes without saying how much such a hoard could tell us, not only about the previous currency, but also about the effects of the decree. But again, how can we tell that this was the case?

Another category of hoards is clearer. Called 'deposit hoards' (or 'sacrificial hoards'), we find them in temples as offerings to the gods, in building foundations for commemoration, or in a grave as coins for the afterlife. The wider conclusions are less satisfying. Coins needed by the gods in their eternal life (if any?) or by the dead for display in the underworld entail little exact information about coinage needed in the earthly world, and however much foundation coins can be revealing in matters of dating, little more can be expected.

When the 'Lohe Hoard' was found in Stockholm, Carl-Frederik Palmstierna in 1938 gave the ingenious explanation that the owner of the house, count Conrad Lohe had buried the hoard 'to avoid its passing by inheritance into the hands of a much-hated nephew'.[7] The explanation was soon discarded, but on the whole 'disinheritance hoards' cannot be excluded from consideration and tell us that only imagination limits possible interpretations.

This being so, it is understandable why many an excavator has offered a vivid interpretation of the hoard under publication.[8] But caution is needed: we do not know what hoarders were thinking!

Recovery of hoards

It may seem a truism – although at times insufficiently attended to – that hoards of the past were not meant for us. In most cases, the original owner's intention was to regain the buried or lost hoard, but for some reason or another was not able to do so. Even 'deposit hoards' were not meant for an inquisitive posterity, apart perhaps from 'foundation' coins.

Actually, most hoards will have been found again either by the owner or by another. Although a few ended up in 'composite hoards', we only have the tip of an original iceberg, and this tip may not even be representative of the original hoarding pattern.

Anyone who has studied hoard evidence on a larger than one scale will deplore the fact that so many original hoards have vanished without a trace, apart perhaps from rumours. Many hoards have been – and still are – totally dispersed, many others have only been given a brief note or notice.

Compared to the many hoards known – not to speak of many hoards probably still lying unearthed – scholarly interest in their evidence is a newcomer, and it will cause

no surprise to find Theodor Mommsen as one of the pioneers.[9] Until the middle of the 19th century even serious museum curators were thinking in terms of treasure or merely wanted to pick up rare specimens or new types not already present in the existing collection. Not only worn specimens but also common coins of good preservation were dispersed without due registration or with no registration at all. This we can deplore but not remedy, and it is – as always in history – useless to blame our predecessors for their attitudes.

More deplorable and difficult to remedy is the fact that treasure hunting is still going on – in some countries more than others. Even today, a finder of a hoard can profit from his find by selling it on the market. He can select the best specimens, one by one or group by group, and offer them at a high (and 'special') price to tourists or amateur collectors who are unaware of their provenance, or to antiquities dealers who, at best, pretend not to know. In some countries some of these finds will be detected and confiscated by the police according to law, hopefully complete. On the other hand, less experienced finders may be offered a fixed price for each and every specimen and therefore try to increase their profit by adding some other coins found in another context. If confiscated, such finds will cause problems for even a well-educated numismatist.

In recent years, metal detectors have increased the number of hoards found. Fortunately, many such finds have been reported to local museums or the like, but sadly, not always.

Our greatest concern is a full and reliable description not only of the hoard, but also of the find circumstances. Many hoard publications, especially of an earlier age, are defective in both respects. All necessary information may not have been available or not sufficiently explored.

Even archaeological excavations have not always produced the clear evidence we expect. Some excavators may not have the necessary training for handling coins. Such was the case at least some decades ago. We even have cases where archaeologists were not interested in coins not considered relevant to a specific excavation – and therefore discarded them! While no educated archaeologist would behave like that today, even the best modern excavations depend on what sites and layers are accessible for their results. Their accessibility might be due to concession or accident, or the threat of new construction plans, but due to present or past conditions some sites will offer promising hoards in a very good condition, others none at all, or perhaps only items in a hopelessly conserved condition.

An archaeological excavation should preferably result in a publication that is useful to others. Unfortunately, though, some publications – especially those of an earlier age – may not comprise a full description of the coins found, or indeed may not mention them at all, since the expedition had other aims.

Some readers may find this too pessimistic or even superfluous. I think not. I do think, however, that the lesson to learn – and not always learned – is that even under the most favourable conditions we must be well aware of all the defects and fallacies in recovery of the hoards we have at our disposal.

Making use of the hoards

Many coin hoards found in one area or from one period may leave the impression of prosperity or flourishing trade (which may not be the same). This may or may not be true. Prosperity may be contingent on other objects. Coins may be gifts and tributes offered from outside. They may even imply, for reasons we do not know, nothing but a high-standing status. Commercial transactions can generally be performed by other means of payment, even worthless tokens, or by systems of credit.

On the other hand, many coins found in hoards as well as stray finds, may testify to a widespread use of coins, which may reflect prosperity and trade, and few coins or no coins at all may reflect economic poverty and dwindling trade. However, as always, what has to be remembered is that absence of evidence is no evidence of absence. We do not need to explain the absence of hoards. We need to explain their existence.

Many years ago, Sture Bolin claimed that numerous hoards from a certain period did not prove a country to be prosperous, but rather was evidence of warfare and disturbances.[10] Not only did more people try to hide their fortunes in such vexed times, but fewer of them would have regained their hoards when peace arrived.

Bolin's thesis has gained much support from later investigations,[11] but caution is needed. Unless corroborated by other evidence, such as traces of fire or written communications, a large number of hoards not recovered in the past are not in themselves proof of warfare and devastation. Other modifications are at hand. Many hoards may just as well be the result of people leaving their fortunes at home when leaving to participate in warfare and disturbances abroad, from which they never returned, as Michael Crawford pointed out with regard to Italy during the late Roman republic.[12]

From other areas and periods other reasons might apply: a long-lasting plague with its death-toll; heavy exactions of extra burdens which the inhabitants tried to evade by concealing their valuables, never found again; or perhaps disturbances in the coinage system, to which people reacted by laying aside the coins they had (awaiting a change for the better?). And again, we cannot conclude that the absence of hoards today is clear evidence of peace and stability in the past. The concealed hoards may have been found again or not found at all.

Patterns of coin circulation in towns may differ from the countryside, or there again be similar. The hoard evidence is insufficient for discussing such questions, due

to later circumstances. Hoards found in the countryside, not to speak of ruined towns, may be more easily discovered by posterity than hoards found in towns and cities with a continued existence. Nor can we exclude the possibility that a hoard found in the countryside was deposited by a nearby town dweller who considered it to be a more secure hiding-place, whereas most hoards originally deposited in town houses would have been regained in antiquity.

Stray finds constitute better evidence. At least from the many scattered coin finds in, for example, far remote Roman Britain,[13] it can be said with certainty today that the use of coins in the countryside was much more widespread than the previous *communis opinio* claimed.[14]

Theoretically at least, it is easy to distinguish between town and country, even in formal terms for the Roman period. This said, we might generally suppose that town dwellers needed small change for their many petty transactions. It is also tempting to suppose a picture of farmers, dependant or not, taking their harvested produce to the market, selling it for cash, spending some money on commodities normally bought in town, plus on immediate pleasure, and then taking the rest home to be saved for future payments of rents, taxes, dowries, and so on.[15] If in any way true, this may be what is reflected in the coin hoards found in the countryside, but then again the circulation of coins in the towns may also reflect the peasants.

A credit system may pose limits to the need for and use of currency, yet without excluding it. Credit, however, is not possible unless you are a known and trustworthy person; for example, a local resident of good reputation. To make an extreme case: a soldier cannot buy services in a brothel on credit! Any credit-system must be based on the confidence that the sum owed will be paid as agreed or on demand.

A further implication is that the existence of a credit-system relies on confidence in the current means of payment. Suppose a pattern of a higher number of coins in the urban sites than in the countryside. The explanation may be that people had no – or had lost – confidence in the existing coins. Townspeople preferred immediate cash, which they could just as quickly dispose of, whereas in the countryside larger payments were made in kind. Thus seen, neither a low nor a high amount of circulating coins is cogent proof of a sophisticated economy.

Apart from such general conclusions, hoards may be used to answer more specific questions. Hoards and sequences of hoards have been useful for establishing a relative chronology for coins and coin-series not otherwise datable.

Hoards and groups of single finds may be valuable for dating an archaeological site, or the archaeological surroundings may offer certain evidence for dating burial of a hoard. If the circumstances of find are unknown, we have generally to assume that the burial date is not much later than the latest datable coin in the hoard (even including illegible coins).[16] This may not always be true, of course, but unless we have certain

clues for another date, it is – apart from pure guesswork – the only possible way of dating.

Ancient numismatists can only envy our colleagues in medieval numismatics who have access to royal charters on minting rights and the like, and – from the late medieval age – even mint accounts, listing coin outputs and so on.[17] We can only rely on the number of coins found when looking for the original coin production and possible fluctuations.

It may seem very simple. Just a mere glimpse may show various numbers of types and series of coins in a hoard. If we then take a selection of hoards – count totals and compare results – we may see patterns of some issues dominating totals, others being present in moderate or small numbers, and yet others rarely at all.[18]

However, it is rarely as easy as that. We have to ascertain – or presume – that the present hoard evidence is a representative sample of the original number of coins, pay due attention to survival rates and the possible withdrawal of coins. Having done this, we may suppose not to be far from having clues to factual variations in the original production of coins, and from this set about making statistics that show relative distribution in percentages.

The worry here is that such studies are based on the assumption that the hoard evidence does reflect the original production of coins in spite of possible and various preferences for hoarding in the past. To go 'behind' this assumption we need to study dies, and it is here that problems turn up.

Few, and even few of the completely known and fully described hoards, are preserved in their entirety today. To rely on one hoard will not be enough. In the extreme, it may be – or contain – a group of coins which, coming fresh from the mint, did not reach its destination without some loss. On a more general line, common sense will warn against drawing firm conclusions from a group of older coins in a hoard deposited very much later. Recently, Kris Lockyear has even argued for the paradox that 'it is much more informative when examining the coinage pool to have several hoards in the 100-300 range than it is to have a single hoard over, say, the 1,000 or 2,000 coin mark.'[19]

To make die studies of a large number of hoards – or even just the existing remains – may be an insurmountable affair. I willingly offer my own studies of Nero's Alexandrian billon coins as an example. I had to give up studying each of the 759 specimens in Toronto with reverse type Alexandria year 12, and ended with a stop-gap solution,[20] which proved to be less convincing than I thought it to be.[21]

Perhaps, computer technology will be the way out, but only perhaps. We still have to see if it can reveal the original details behind worn dies and worn coins. The simulated striking of ancient coins, published by L. Beer,[22] remains an admonitory illustration of how the continued use of a die can radically distort the impressions on the flan.

Attempting to work out estimates of the original size of any coin production from the number of dies found, presents even more serious problems. Most serious is the fact that we do not know with any certainty how many coins an ancient die was able to strike, nor can we know how many coins an actual die struck before it broke or was taken out of use. It may even differ from time to time, from mint to mint, and metal to metal, and we are not always better off with the better-documented medieval age.[23]

For such reasons T.V. Buttrey has disclaimed any such attempts as being based on uncertain, fictitious, and even wrong premises.[24] To some extent I agree. We cannot claim that any calculations represent the truth of the original number of coins struck and sent into circulation. To demand truth, however, is to demand too much. The 'scientific world is always a world of best guesses', to quote F. de Callataÿ from his convincing attempt to argue that the existence of bad calculations should not make us discard calculations which may be better founded.[25] Furthermore, as also argued by Adr. Savio[26] and – apparently – Kris Lockyear,[27] we may at least to some extent claim comparable estimates if our calculations are based on the same set of premises and variables. And that – at least to me – will suffice.

Certainly, we cannot make such estimates for every part of a long range of coinage and therefore have to rely on the sheer evidence of the hoards, which after all may be reliable for relative numbers and comparable sizes. At least, we should not forget that Bengt Thordeman proved a close relation between the known records of the coinage from the 17-18th centuries year by year, and not only the Lohe Hoard, but as many as 'about 30 coin-finds from different periods'.[28] From this he drew his famous 'law' that 'the content of each coin-find stands in a certain ratio to the amount of the coinage during the period covered by the find, and that … this proportion reaches increasing agreement the larger the find is numerically'.[29]

Taking the precautions Thordeman outlined concerning the same area, period, and monetary system, and considering the difference between 17-18th century Sweden as a single country and the multifarious Roman Empire, we cannot just exclude from consideration that this law may also apply to the ancient world (from which we have no similar documentary evidence); in other words, that the hoard evidence of ancient coins under *specific conditions* may give us a reliable picture of the original coinage. In practice, there are many problems to overcome in each particular case, but the end result will anyway be relative numbers, which can be compared to each other.

If such analyses show heavy fluctuations between, say, different Roman emperors, we are tempted to ask why apparently some emperors struck not only a higher number of coins than others, but even – as it seems – an extremely higher amount. We are thereby taken into a much more interesting question: which political and fiscal motives caused such effects?

Why did the Romans strike coins?

In 1990, C. Howgego published a stimulating article, entitled 'Why did Ancient States strike Coins?'[30] My concern in this section is to ask if – and if so, how far – the hoard evidence can make contributions to this discussion regarding the Roman world before Diocletian's reforms.

During the imperial period, the emperor (or other high ranking members of his family) was depicted on almost every obverse all over the Roman Empire. The intention must have been to make the emperor and his coin known, and at least we know from the New Testament that it worked. Otherwise, Jesus' famous saying: 'render unto Caesar what is Caesar's'[31] makes no sense. He knew, and the Pharisees and the readers of the Scripture knew the emperor from the denarii they had to use for paying some of their taxes to him. It is tempting to think that the emperor himself had to approve the effigy before it was brought into use. So at least it was – and still is today – the royal prerogative in European monarchies. Casually, the biography of Severus Alexander among the *Scriptores* tells us that 'he had himself depicted on many of his coins in the costume of Alexander the Great',[32] which is difficult to recognize from the existing coins.

A personal interest in the designs may also be inferred from Suetonius, according to whom Augustus 'issued a silver coin stamped with the sign of the constellation Capricorn, under which he was born',[33] and Nero 'had a coin struck', representing him in 'the guise of a lyre-player'.[34] These coins are recognizable today, but it does not follow that the emperor generally decided on the designs of his coinage.

There has been a vivid discussion about the choice and meaning of the reverse types. I still conclude that, as a rule, the Roman emperors did not mint coins to produce a message. It is the other way round: when they – for some reason or another – had decided to strike a coinage, they (or whoever it was) made a deliberate choice of which types to use.[35] Events created types, but we should not let types create events that are not otherwise documented.

There are exceptions. *Adventus* can be taken to mean a coin struck to celebrate the emperor's visit or expected visit to the town or the province, even if we have no other confirmation.[36] There are similar, albeit few, other cases. Anyway, what do large or small numbers of such coins found (in hoards or as stray finds) tell us about such an event, its scope of celebration, expenditure needed, or popularity?

If a relatively high number of such coins is found, it may be a product of local preferences for use or hoarding, which presupposes that a certain amount was available in circulation and had been struck, or the coins may merely have been kept as mementos. If another type is rarely found, does it mean that few people liked it – some even detested it? Or was it actually produced on a small scale?

This does not apply to specific 'event coins' only. In contrast to the rather stereotyped coinage of the classical Greek world, the early Roman Empire is characterized by a rich variety of reverse types. What do relative numbers in coin finds generally tell us about production, supply, circulation, and preferences? Were some types or group of types struck in high numbers or merely more popular than others and therefore more available or preferred for hoarding, whereas others were avoided? Do we find regional differences and therefore different attitudes among the subjects? Did the ordinary man know about the reverses in the same way as Jesus and his contemporaries immediately recognized the emperor on the obverse? Recognizing 'the Emperor' does not necessarily mean recognizing the actual ruling emperor.

A type or design may have had general connotations or specific importance, and the message may be obvious or hidden, either for contemporaries or for us. Furthermore, if a type is rarely found, how far can we talk about a message, if indeed a message was meant? The questions are legion. The answers may not be 'blowing in the wind', but are certainly more difficult to find than numerical proportions of the original coin production.

Some 25 years ago Michael Crawford, based on hoard evidence and die studies, argued for a close relationship between warfare and the irregular production of coins during the late Roman republic.[37] He earlier claimed that 'state payments' were the sole reason why the Romans struck coins.[38] Without denying the importance of public expenditure, Howgego's article, referred to above, was a forceful encounter with this influential view.

Crawford's general view seems more tenable for the republic than his critics will allow. At least the general connection between military events and the striking of denarii is too evident to be denied. For the imperial period, we may generally assume that military expenses were a great – probably even the greatest – part of public expenditure, as also claimed by some ancient authors (although mostly regarding the eventful 3rd century).[39]

There are, however, some major differences that must not be overlooked. Compared to the endemic warfare and conquests during the republic, the imperial period was a peaceful time until the reign of Marcus Aurelius. With Trajan's wars and the Jewish revolts during his and Hadrian's reign as outstanding exceptions, the imperial government's main concern was to feed a standing army not at war. How expensive this enormous task was and how far it was met by requisitions in kind or payment in cash has not been taken under systematic investigation, and perhaps cannot be.

Astonishingly, one thing seems to have been overlooked in the way military expenditure has been dealt with in recent research. According to military accounts in the papyri, soldiers in the imperial army did not receive their ordinary pay during service.[40] They received on request a small quantity of 'pocket-money' from time to time, and

this – together with the expenses covering weapons, food and clothing – was deducted from the final and largest amount which was paid to the soldier when he *left the army* (after twenty years service for a legionary). Since, therefore, a soldier (or his heir) first received the bulk of his pay on leaving service, it is futile – not to say absurd – to include in any modern reconstruction of a possible imperial budget, exact amounts of yearly payments in coins to a supposed number of soldiers!

Of course, sufficient coins had to be ready when the soldiers retired, in addition to retirement bounties for veterans, but we do not know if they were stored with the legions or were sent on demand. Nor do we have sufficient records to enumerate when these requirements were met, and unless we make the preposterous assumption that all legionary soldiers were enlisted at one time and therefore discharged (apart from those dead in the meantime) at precise intervals of twenty years, we are left with the unhappy and irremediable situation that we cannot make any possible estimate of the amounts of coins actually needed and paid for this purpose each year.

Perhaps, the imperial government did not know either. Presumably, the soldiers were enlisted in groups as required, and from a modern point of view, we would expect an imperial bookkeeping capable of predicting the sums needed in advance. This may not have been necessary if the treasury had plenty of coins, or the mint could just be instructed to strike the amount of coins needed. No one can tell!

According to Suetonius,[41] Augustus' will, read in the Senate, included three rolls, one of which contained 'a summary of the conditions of the whole empire, how many soldiers there were in active service in all parts of it, how much money there was in the public treasury and in the privy-purse, and what revenues were in arrears. He added, besides, the names of the freedmen and slaves from whom the details could be demanded.' According to the summary accompanying his *Acts* (or Augustus' *Res Gestae)*, Appendix 1, he spent a total of 600,000,000 denarii on payments to 'the treasury, to the Roman plebs or to discharged soldiers'.

The implications could be that Augustus – and his successors – had gross accounts of general expenditure. Whether such expenditure was made from their 'private' purse or the 'public' treasury is hardly relevant as a modern concept. Likewise, then, they presumably had some estimates of expected income.

Therefore, a crucial question for our theme will be if, and to what extent, they could estimate expected items of expenditure. Perhaps they did not need to do so. The prevailing principle was that expenditure should not exceed income. However sound this may be, it could easily be circumvented. An emperor might easily seem to increase his income by striking new coins from bullion at hand (bars in the treasury, magnificent equipment and adornment, or intensified mining). This was the way many kings of a later period 'converted assets into cash' (to phrase it in modern terms) if required. Their only problem was that they could not just continue to do so endlessly.

As long as the reserves were – or were considered to be – sufficient for the present needs, the emperors would have had no worries about a future monetary policy.[42] We cannot tell how Roman emperors reacted to a threatening deficit, but 'bad' emperors (like Nero) were vehemently blamed for tightening the tax screw,[43] whereas false parsimony was among the alleged accusations against Galba.[44] If true, both attitudes may be symptoms of the same financial thinking, not far from a hand to mouth economy.

Apart from ordinary payments, military expenditure comprised occasional rewards and donations, the bulk of which may even have been paid in cash to the soldiers (and spent on the spot?). We do have some coins, types and inscriptions, which may be indicative of the actual coins paid to the legions on such occasions, for example, LEGIO II TRAIANA. As far as I know, no systematic survey of these coins has been undertaken, but they seem to appear in less numbers than we would expect to find, reading the literary sources, even before AD 245.[45] During the unruly late 3rd century, though, their frequency and amounts may have been higher. However, this is of little relevance, as the soldiers may have been paid instead – or also – in other coins.

New coins for old?

This will take us to a vital point in the ongoing debate on coinage in the ancient world.[46] We do not know if the imperial government 'recognized some political responsibility… to maintain in circulation an adequate supply of the full range of denominations', as claimed by Dominic Rathbone.[47] Few today will subscribe to Parker's harsh judgement on the 'selfish and short-sighted policy of the emperors' for not supplying the trade with 'its necessary medium of exchange'.[48] Trade may flourish without coinage. On the other hand, once payments in coins to and from the government had been introduced, the same government would need to ensure that a sufficient amount was available to keep the system running. The effect would be that coinage was also available for private transactions, including trade. Public expenditure might, however, be defrayed by disbursing existing coinage, unless the government for some reason or another wanted – or needed – to strike new coins.

Coin hoards may be of much avail here. If, say, an emperor's coinage makes up a disproportionately high part of the evidence, it is tempting to conclude that the original production of coins also was disproportionately high. If, furthermore, some periods (or even years) show a very high proportion compared to others, and the literary sources tell about warfare going on or being planned during the same time, it seems obvious to claim this to be the reason.

There is more to that. If by comparison, the previous coinage constitutes a lower and even much lower proportion, the new coins may either have replaced the existing

coinage or have been added to the pool. If a sequence of hoards shows the number of previous coins to be dwindling or even disappearing, the former explanation is the most evident, but nevertheless the amount of new coins may also have increased the pool as well. This latter explanation may be given further confirmation if the evidence shows that the new coinage has remained in substantial numbers during the following period, especially if that period is marked by low numbers of contemporary coins.

If the production of coins had been augmented on a very large scale, modern economic theories will tell us to look for repercussions on the economy, and even inflation, should production remain at the same level. However, it is not necessarily so. The coins may have been spent beyond the borders, financing trade, tributes to enemies for keeping peace, and even outright expenses for warfare abroad. Economies of the past were not as closely linked as the economies of present day societies.

The expected effects may also be absent even if all the coins were sent into circulation within the borders. Warfare may have increased the production or caused new exactions to be paid in coins. Such exactions may have provoked angry protests, but this does not imply an economic crisis.

An increased amount of coins may merely have been hoarded by wealthy people, but if sent into circulation may cause nothing more – or nothing less – than an increased monetization, meaning that the use of coins became more widespread for paying daily needs or storing wealth, compared to previous periods when other means of payment were common or a credit system prevailed. *Vice versa*, a heavy decrease in coin production may not have produced disastrous effects on the economy as such, but simply caused a reversal or change of habits. Anyway, what matters is not the actual amount of coins, but the prevailing impression of the monetary situation. Coinage is a part of the economy, and economy is not always ruled by crude facts.

Ancient coinage was minted in metals of an intrinsic value. So at least were the gold coins and originally the silver coins as well. If a government did not have the bullion needed for producing coins, it might decide on, or be forced to, debasement. This may have been caused by new and perhaps unexpected expenditure. It may also have been caused by a sheer wish to reap a profit, in order to increase the 'reserves' or make use of the metals for other purposes, such as jewellery or the exquisite ornamentation of palaces.

Debasement of coins is well attested from medieval Europe, called *renovatio monetae*, and Peter Spufford has claimed the following ideal conditions for it to succeed: 1) a government strong enough to enforce it; 2) a sufficiently developed coin-using economy; 3) a sufficiently small amount of coins in circulation; 4) no foreign coins allowed to circulate; 5) new types distinctly different from the previous.[49]

Condition No. 5 will have to be investigated in each particular case, and condition No. 3 is doubtful with regard to the Roman Empire (how can we measure 'sufficiently

small'?). The other conditions do apply, however. Even in a weakened position the emperor was powerful and, with the precautions already stated, Roman society enjoyed a widespread use of coins. Without any doubt the emperor's coinages – or their equivalent – were valid currency all over the Empire and no foreign coinage was available for competitive use within the borders.

Coinage debasement was often met with opposition during the middle ages, and a somewhat similar attitude seems to have been taken by the senatorial aristocracy in Rome, although the evidence is scanty and only part of the story.[50] Pliny the Elder has a neutral remark on Nero's debasement of coins.[51] Dio Cassius merely states that Trajan 'caused all the money that was badly worn to be melted down'.[52] Dio's critical judgement of Caracalla's coinage is known in two abridged versions:[53] 'The gold that he gave them (sc. the barbarians) was of course genuine, whereas the silver and gold currency that he furnished to the Romans was debased; for he manufactured the one kind out of lead plated with silver and the other out of copper plated with gold' (LXXVIII.14.4). 'With Antoninus the coinage as well as everything was debased, both the silver and the gold that he furnished us' (LXXVIII.15.1).

Domitian's restoration of the silver denarius increased his financial difficulties,[54] not his popularity, whereas the subsequent debasement by Trajan[55] does not seem to have infringed his reputation as one of the 'good emperors'. Neither event is explicitly mentioned by our literary sources.

Our knowledge about coin debasements in the imperial period is almost exclusively based on modern measurements, and we cannot tell to what extent they were known among the Romans. Scholars seem to have overlooked the observation made by Sture Bolin many years ago that the specific weights of silver and copper lie so close together that the metallic content of the silver coins cannot be measured in that way.[56] In other words, if an ordinary Roman wanted to ascertain the intrinsic value, he had to melt down the coin. Paulus the jurist, writing shortly after AD 200, has a threatening warning about the terrible punishments for doing so (or in any other way damaging the emperor's gold or silver coin). It deserves to be quoted in full:

> … quiue nummos aureos argenteos adulterauerit lauerit conflauerit raserit corruperit uitiauerit, uultuue principum signatam monetam praetor adulterinam reprobauerit: honestiores quidem in insulam deportantur, humiliores autem in metallam dantur aut in crucem tolluntur: serui autem post admissum manumissi capite puniuntur.[57]

It may be argued that the existence of this provision shows us that melting down the silver coins did take place, and we cannot exclude that some dared the risk, for some reason or another, of being 'deported', 'sent to the mines', 'crucified', or 'decapitated' for being caught in and convicted of 'damaging' an emperor's gold or silver coin. It

was hardly common within the empire, for which the emperor had an exclusive coin monopoly, also meaning that nothing could prevent him from debasing the coinage, as long as the soldiers and the other populace kept confidence in it.

How much this confidence depended on the actual silver value of the coins, and how much the Roman government cared for the relation to the market value of silver, is a matter of dispute. Contrary to Lo Cascio, according to whom it was an important determinant for the whole imperial period,[58] Dominic Rathbone has declared that it was of minor importance – even when the silver coins during the 3rd century had become a token coinage in relation to gold – as long as the government accepted its own coinage for tax payments 'at the same face value as it had been issued'.[59]

On the last assumption, a coin debasement – with or without an increase of the coinage – might even spiral the economy, and some may have profited if, for example, rents were paid in new coins at the same nominal value as the old. On the other hand, there can be no doubt that debasement had its limits. In the extreme, the Roman government could not, either by decree or in practice, force a population that was used to silver coins to accept mere leaden tokens in their stead. The consequences would have wrought chaos. As it was, successive and repeated reductions of weight and size might – in the long run at least – have caused uneasiness. Be that as it may, it should not be overlooked that, in the short run, adding other metals to a piece of silver may have the effect that the silver will concentrate on the outer surface,[60] thus making the new coin appear more lustrous than the old. However, if the coin ended up having a mere silver wash covering the surface which could easily be worn off, this deceit would be quite obvious to everyone and the psychological effects may perhaps be similar to those caused by the decisions taken between World War I and II to abandon the formal gold standard.

The coin evidence may be of greater worth in this regard than in the discussion of a possible increase in coins for expenditure. If a sequence of hoards shows an abrupt fissure between old and new coins, it may be reasonable to conclude that a debasement has taken place. If the new coins have a lower metal content, and/or lower weight, and are even of smaller size, there seems to be no doubt that a new standard drove good coins out for bad, according to Gresham's famous law, and probably back to the public treasury.

If many hoards were deposited at the same time, they can be interpreted as a reaction to the new coinage: in other words, they represent 'debasement hoards' (as mentioned above). If, furthermore, the new coins continue to dominate hoards of the following period, the debasement can be said to have worked. If, on the contrary, substantial numbers of later coins appear in hoards from the following period, they can be 'follow-up' coins, or be indications of new debasements that were effective to a greater or lesser extent.

We should not forget, however, that Gresham's law may also mean that bad coins

may drive good coins into hoards. If, therefore, more than one hoard also contains a substantial – or even greater – number of older coins, the debasement may not have had its full effect. Whereas the new coins were spent on ordinary transactions, some people managed to keep older and better coins for a better bargain.

Ideal prescriptions

If we want a full survey of the variety of types or series from the past, we must go to the coin collections. Some coins are rarely, or not at all, found in the hoards, whereas almost every collection has been built up by the stamp-collecting principle. From that follows, however, what I have earlier claimed as a rule of thumb: 'The higher the number of coins of a given reign in collections, compared to their numbers in hoards, the scarcer the coinage will be'.[61]

If, therefore, we are interested in questions such as the original coin production and varying output, coin circulation and use of coins, public expenditure defrayed in coins and consequences for the economy, possible debasements and so on, we cannot rely on the collections but have to base our investigations on the coin finds, including the hoards.

Contrary to the history of medieval Europe, we have little or no documentary evidence with regard to these questions and therefore have to rely on the coins themselves.

Unfortunately, the hoard evidence suffers from grave defects caused by various infections found in original motives and preferences for hoarding, later survival rates and discoveries. We cannot cure these malaises, but we can remedy their effects by strict adherence to the following, ideal prescriptions:

1. Any investigation must be based upon all completely known and completely described hoards relevant in time and space.
2. Even incomplete evidence must be included, although with caution.
3. The hoards must vary in type and size and all the coins be correctly identified.
4. The hoards must have been deposited in various localities within the region in question and at different times within the investigated period.
5. The hoards must have been diligently retrieved from various sites and at different times of posterity.

Although it is seldom that all of these ideal prescriptions can be fulfilled, some of them may be fulfilled to a greater extent than others. The more these prescriptions are ad-

hered to, the more we can offer possible answers to our questions. The less they are adhered to, the more cautious our answers should be.

One swallow doesn't make a summer, however beautiful it may be. One coin hoard allows no grand conclusions, however convincing they may seem.

Notes

1. Christiansen (1985), p. 78, based on Mørkholm (1976), p. 102.
2. My additions. An original hoard may have been scattered by later accident or found piecemeal, meaning that the possible reconstruction has to be made with care.
3. See, e.g., Casey (1986), p. 51 and Grinder-Hansen (1992), p. 119. This chapter owes very much to their excellent treatment of the subject, although details and some conclusions may differ.
4. For example, Grierson (1965), pp. If.
5. Adapted from Thomsen (1994), p. 9; cf. also Casey (1986), pp. 11f.
6. *Codex Theodosianus* IX.23.1.
7. Thordeman (1948), p. 192.
8. No one mentioned, no one hurt.
9. Cf. Crawford (1990).
10. Bolin (1926), pp. 179ff.
11. For example, Blanchet (1936) generally; or Skovmand (1942) on Jutland during the Danish-Swedish wars in the 17th century, to mention just two.
12. Crawford (1969), pp. 76ff.
13. Reece (1987), pp. 71ff.
14. As Crawford (1970), p. 45.
15. Cf. Spufford (1988), pp. 382ff. for such a pattern in 13th century Europe.
16. Cf. Crawford (1969), p. 77, now generally accepted.
17. Thus, see Spufford (1988), *passim*.
18. See, e.g., Christiansen (1973/76).
19. Lockyear (1999), p. 220.
20. Christiansen (1988) II, p. 107.
21. Christiansen (1996), p. 93.
22. Beer (1979).
23. See Spufford (1988), p. 30.
24. Buttrey (1993) and (1994).
25. Calletaÿ (1995), quotation on p. 302.
26. Savio (1997).
27. Lockyear (1999). 'Apparently', since I do not understand a word of the underlying mathematics.

28. Thordeman (1948), esp. p. 200.
29. Same, p. 201.
30. Howgego (1990).
31. Luke 20.25, Mark 12.17; Matthew 22.21.
32. Scriptores, *Severus Alexander* XXV.9.
33. Suetonius, *The Deified Augustus* XCIV.12.
34. Suetonius, *Nero* XXV.2.
35. Christiansen (1988) I, pp. 98f.
36. As concluded by Casey (1986), p. 41. Some of his other cases are less convincing to me, but we seem to agree on the general line of argument.
37. Crawford (1974).
38. Crawford (1970), esp. p. 46.
39. Thus, Dio Cassius LII.6.5. and 28.1. Hopkins (1980), pp. 116f. with further references; restated by Hopkins (1995/96), p. 46. See recently Wolters (1999), pp. 211ff.
40. Fink (1971), pp. 241ff.; cf. Christiansen (1984), pp. 279f. See now also Wolters (1999), pp. 216ff. (although without the consequences drawn here).
41. Suetonius, *The Deified Augustus* CI.4.
42. For more details, yet in the same vein, see Wolters (1999), pp. 202ff. Cf. also Rathbone in *CAH*2 X, p. 319.
43. Thus, see Tacitus, *Annales* XV.45 and Suetonius, *Nero* XXXVIII.
44. Tacitus, *Historiae* I.37.
45. See Campbell (1984), pp. 165ff.
46. See esp. Howgego (1992), to which I am much in debt for the following.
47. Rathbone in *CAH*² X, p. 319.
48. Parker (1935/1958), p. 280. Admittedly only criticizing Carausius and Allectus, but probably implying that other emperors had a 'better' policy.
49. Spufford (1988), p.94, cf. also p. 93.
50. See, generally, Walker's remarks in III (1978), pp. 107ff., esp. pp. 109f.
51. Pliny, *Naturalis Historiae* XXXIII.13: 'and most recently Nero brought it (sc. the weight of the gold denarius) down to 45 denarii to the pound.'
52. Dio Cassius LXVIII.15.3.
53. Cf. comments by Walker III (1978), p. 63.
54. Cf. Walker III (1978), pp. 117ff.
55. Walker II (1977), pp. 55f.
56. Bolin (1958), p. 197, note 2.
57. Paulus, *Sententiae* V.25.1, quoted from *Fontes iuris Romani antejustiniani* II. Florentinae 1940.
58. Lo Cascio (1981).
59. Rathbone (1993/96), pp. 324f. more or less restated in *CAH*² X, p. 119.
60. So, at least, is the case for the Alexandrian billon coins; see Christiansen (1988) I, p. 13 with references II, p. 29 note 48.
61. Christiansen (1983-84), p. 13.