AN ANALYSIS OF THE SERIES X OR WODAN MONSTER SCEATTAS: SOME IMPLICATIONS FOR TRADE AND EXCHANGE IN THE 8TH CENTURY AD.

BY

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VOLUME I

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ABSTRACT

The work of the historian Henri Pirenne in the early years of this century sparked a debate concerning the nature and extent of trade and exchange in Early Medieval Europe which still reverberates today. The paucity of the historical evidence for the period soon led to the use of numismatic evidence although this too was used to argue opposing views. The archaeological evidence for trade and the development of towns in Early Medieval Europe has increased enormously in the last forty years. Archaeologists were also increasingly aware of the work of economic anthropologists who believed in the different character of 'the economy' in non capitalist societies and its importance in the social system as a whole. These concerns were first brought to the study of the Early Medieval economy by Grierson but more recently Hodges has developed a model of which sees trade as a major factor in the development and changing nature of society in this period. Numismatic evidence has been widely used by all concerned with these problems. Yet the major source of numismatic information for the 8th century has never been studied in detail. A number of large hoards of 8th century coins, the sceatta series of coinages, were found in the Low Countries in the 19th century, to date none of these hoards have been analysed in detail or published. It is the aim of this thesis to analyse in detail one of the series of sceattas, series X, and to attempt to relate the results of this analysis to the specific and more general problems associated with the 8th century coinage.

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INTRODUCTION

The study of the history and economy of western Europe in the centuries following the collapse of the Roman Empire has been dominated by the work of Henri Pirenne. The Pirenne 'Thesis', as his ideas have become known, has generated a vast literature and a debate, sometimes acrimonious, which still reverberates today. Pirenne's essential thesis maintained that, contrary to the traditional view, the Germanic tribes which entered the Western Provinces of the Roman Empire from the later 4th century, sought to preserve what they could of classical civilisation rather than to destroy it (Pirenne 1925; 1939). He argued in particular that relations between the Frankish kingdoms and the Mediterranean world continued and that the Merovingian rulers, along with the Church, made determined efforts to preserve classical culture and institutions.

The second part of Pirenne's thesis concluded that it was the Arab conquests of the Eastern Mediterranean and Spain during the 7th and 8th centuries which cut off the Frankish kingdoms from the Eastern Empire. These changes isolated the Merovingian kings and allowed the rise of the Carolingian dynasty, whose centre of power was far removed from the Mediterranean and who were not economically dependent on the continuing trade contacts

with the East. The closure of these trade links led to the collapse of urban life and the disappearance of the commercial classes who inhabited the towns. Wealth became based on the control of land and there developed a closed economy where trade was of small importance, utilising a poor silver currency rather than the gold of the preceding period (1925; 1939; Hodges and Whitehouse 1983:1-5).

Pirenne's ideas produced a vigorous debate and extensive literature and are still discussed and reviewed today. It soon became clear, however, that the documentary evidence that he had utilised was poor, particularly with regards to trade, and Pirenne was also criticised for emphasising some aspects at the expense of others (Hodges and Whitehouse 1983:5). Because of the paucity of the documentary evidence, the evidence provided by numismatics was soon drawn into the debate.

Two studies in particular argued that, contrary to Pirenne's thesis, the economy of Europe recovered because of contact with the Arab world. Bolin writing in 1952 argued from the evidence of the Arabic silver hoards found in Scandinavia and Russia that the weights of the Frankish denier were influenced by the Arabic silver coins and that the coin reforms instituted by the Carolingians were following similar reforms in the Arab caliphates. Bolin also pointed to the increasing evidence for trade around the coasts of north-west

Europe as evidence of these economic connections (Bolin 1952; Hodges and Whitehouse 1983B-7). Lombard too saw trade with the Arab world as being responsible for the hoards of Arabic silver coins from the late 8th century and that this trade was responsible for the economic revival in the west (Lombard 1947). These interpretations were not universally accepted because of the basic lack of Arabic coins in western Europe and the fact that hoards of Arab silver of 8th century date are much less common than those of 10th century date. Morrison, for example, argued strongly for a lack of trade in the Carolingian world (1963).

The archaeological evidence for trade in the Early Medieval period has grown increasingly in the last forty years. The finds of exotic imported goods found in cemeteries of the 6th and 7th centuries has been studied by Werner (1961) and indicate trade routes crossing the Alps into Northern Europe. Excavations at sites such as Southampton and Dorestad, and more recently Ribe and other sites in Scandinavia, have demonstrated the existence of large trading and manufacturing sites from the 7th-9th centuries (Hodges and Hobley 1988). As well as a variety of traded artifacts, considerable numbers of late 7th-8th century coins called sceattas have been found on these sites and elsewhere. Chapter 1 of this thesis outlines the historical background of the major areas which feature in this study and also summarises the historical and archaeological evidence for trade.

The sceatta coinages have been known and studied since the 17th century (Hill and Metcalf 1984) but their great variety of design and small size made them problematical to study and it was the later Anglo Saxon and Carolingian coinages which received most attention from numismatists. There were a number of sizeable hoards of sceattas, however, which were recovered in the 19th century in Frisia, but these never received proper attention and have never been analysed or published. The study of the sceattas was put on a new footing by Rigold when he recognised a group of interlinked types of sceattas as being early and these he grouped into a number of 'series', a much more flexible concept than that of types which had previously been utilised (Rigold 1961). He eventually extended this concept to take in most of the known sceatta types. This system is now widely used and has provided the framework for the study of these coinages in the last twenty years or so (Rigold 1977). The history and development of the coinage from the 6th-9th centuries is summarised in Chapter 2 to form, with the preceding chapter, a comprehensive background to the more specific problems which will be examined in Chapters 4 and 5.

The work of Bolin and Lombard and their critics still used a traditional economic approach. This changed with the publication of a paper by Philip Grierson

(1959) which drew attention to the social importance of trade, particularly the phenomenon known as 'gift exchange'. Grierson also drew attention to the various means by which goods could be exchanged, other than in commercial exchange, as well as the other non commercial way in which coins themselves could be used.

Grierson was clearly influenced in this interpretation by the work of the anthropologists Malinowski and Mauss whose studies of primitive economies had demonstrated the importance of the 'Gift' and the dubious validity of studying traditional economies using the methods of formal economics which had been developed for the study of capitalist economies in the west. The work of these two men gave rise to a school of economic anthropology call the 'substantivist school', the tenets of which were developed by the likes of Polanyi (1957; 1963) and more recently Dalton (1975; 1977) and Sahlins (1974).

The substantivist ideas greatly influenced archaeologists in the 1970's as an interest in the importance and nature of trade and exchange in prehistoric and early historic societies developed (Sabloff and Lamberg Karlovsky 1975). In a series of books and articles Richard Hodges has recently approached the problems of trade, the development of markets and the role played by the elites in Early Medieval Europe. His approach stemmed from an essentially substantivist basis but utilises a series of

models developed by archaeologists, anthropologists and geographers to explain the changing nature of society and the importance of trade in Early Medieval Europe. In Chapter 3 Hodges' interpretation of the development of the coinage, which he developed as part of his wider model, is discussed, as is the more numismatic interpretation of the development of the 8th century coinage presented by Michael Metcalf, perhaps the most prolific writer on the subject.

It is against the background of these debates over the nature extent and function of trade and exchange and the role of coinage that this thesis is set. As noted above the sceatta coinages of the late 7th-8th centuries have been the subject of increased interest and study in recent years. They are closely associated with the large trading sites or emporia, which have been located around the coast of north-west Europe and clearly had a role in the activities which took place at these sites. Whilst many new coins have been discovered, both through controlled excavation of sites as well as the activities of metal detectors, the major hoards of the period have never been adequately analysed.

The original aim of the research presented here was to look at all of these hoards, namely those from Franeker, Hallum, Kloster Barthe and Terwispel, as well as other finds of the series found in the the hoards. It soon became clear that this was a task beyond the scope of

one thesis and attention was directed at one particular series, namely series X, the Wodan Monster sceattas. This series was chosen because it was a more manageable task but also because, in addition to the hoards from Hallum and Terwispel which contained largely series X coins, there were also newly excavated examples from both Hamwic (Saxon Southampton) and Ribe in Denmark. There was also some considerable debate over both the date of the series and its place of origin. These arguments and the various alternative explanations are discussed in Chapter 4. The primary aim of the thesis is to present a detailed die analysis of the series X coins to attempt to determine whether the results of such an exercise can provide insights, not only on the problems of chronology and origin of the coins, but about the internal arrangement and minting organisation of the series. The detailed analysis is presented in Chapter 5 and in a series of figures, appendices and plates. In the final chapter the results of the analysis are considered in relation to the specific problems just outlined, as well as trying to determine whether the results can contribute to the more general and wide ranging problems of coinage and exchange in this period.

CHAPTER 1

TRADE AND EXCHANGE IN NORTH-WEST EUROPE: THE HISTORICAL AND ARCHAEOLOGICAL CONTEXT.

The primary aim of this thesis is to present a detailed numismatic analysis of a single series of 8th century sceattas, using the results to examine two particular problems. The first relates specifically to the series X sceattas and concerns their organisation, chronology and place of origin. The second concerns the more general aspect of the function of coinage during the 8th century and its role in trade and exchange. In order to achieve this, the historical context of north-west Europe in the Early Middle Ages must be considered, as well as the debate which has raged for much of this century between historians and, more recently, archaeologists over the nature, extent and importance of trade and exchange in Early Medieval Europe. It is not the intention of this chapter to attempt a comprehensive review either of the historical evidence or indeed the archaeological evidence for trade and exchange in Early Medieval Europe. The historical literature on Early Medieval Europe and on the debate which has developed from the so called Pirenne Thesis is enormous. The first part of this chapter is intended only to paint a broad

picture of the historical background and to touch upon some of the main points in the historical debate over the nature and extent of trade.

In the years since the Second World War the archaeological evidence for the development of Europe in the centuries following the end of the Roman Empire has grown tremendously, especially with regard to the rebirth of towns and the evidence for trade. Again it is not intended that this chapter should comprehensively summarise this vast amount of material but rather set the general context in which coinage was functioning and highlight the sites where coins are most commonly found.

As mentioned above, the first part of this chapter will briefly sketch the the historical framework of north-west Europe at this time. The historical narrative of the Merovingian and Carolingian periods in France has been adequately covered on numerous occasions (Deanesly 1956; James 1982; McKitterick 1983) and excellent accounts of Anglo-Saxon England are also available (eg. Stenton 1971; Campbell 1982). On the other hand documentary history for Frisia and particularly Denmark, important in any consideration of the series X sceattas, is slight in the case of Frisia and virtually non-existent prior to c.800 in the case of Denmark.

Since the early decades of this century the nature of the economy, the role of trade and the decline and rebirth of towns in north-west Europe has been the

subject of intense debate amongst historians, who have often utilised the same texts to argue opposing points of view. More recently, archaeologists have utilised the increasing amount of archaeological evidence to address the same concerns. Numismatic evidence has been a constant thread throughout these debates and the role and nature of coinage in the 7th-8th centuries cannot be appreciated without some understanding of them. The second part of this chapter will consider these various debates in brief. Finally the archaeological evidence will be considered, especially that indicating the main trade routes and the nature and character of the main sites where 7th and 8th century coinage is found.

1.1 THE HISTORICAL BACKGROUND.

1.1.1 The Frankish Kingdom.

The Roman Empire in the west had been in decline for a considerable period before the final blow to the survival of Roman administration was dealt by successive barbarian invasions and settlements in the 5th century (Musset 1975; Dixon 1976). By the mid 5th century the Franks were settled in what is now northern France, Belgium and the lower Rhineland. They were organised in a series of small groups, each with its king, based around centres such as Tournai and Cologne. In the second half of the 5th century, however, one of these petty kings named Clovis (458-511) united the Franks and

embarked on a series of campaigns against his neighbours which resulted in the establishment of a kingdom stretching from the original homelands of the Franks to the Alps and from Thuringia in the east to the Atlantic in the west. In the process he had destroyed the last Roman presence in Gaul and had conquered the Alamanni and defeated the Visigoths. He also converted to Catholicism and established the links with the church which were to be so important. Clovis' great kingdom did not survive him. On his death it was divided between his sons, as was the custom. During the 6th century the kingdom was continually divided and redivided but gradually two important units began to coalesce. In the original lands along the Rhine the kingdom of Austrasia formed, and the lands in the west, the 'new lands', became the kingdom of Neustria. With certain exceptions the power of the Merovingian kings waned through the 7th century as the power of the aristocracy grew. By the later 7th century the two main kingdoms were dominated by the so called 'Mayors of the Palace' which had become almost hereditary titles. Eventually, after various struggles between the two houses, the Austrasians under Charles Martel were successful and he reunited the kingdom in the first half of the 8th century. He conducted various campaigns against Aquitaine, by this time virtually independent of Frankish control, and also defeated the Arab armies at Poitiers in 732. On his death the kingdom was again divided between his sons Pepin and Carloman. Carloman soon retired to a

monastery and Pepin became sole ruler. Up until this time a series of puppet Merovingian kings had 'reigned' under control of the Mayors of the Palace. Pepin, however, decided that the time had come to do away with the charade and, with the Pope's blessing, he deposed the last of the Merovingian kings, Childeric III, in 751 and was himself proclaimed king (Deanesly 1956; Wallace Hadrill 1967; James 1982).

Pepin continued the extension of the Frankish kingdom by conquering Septimania from the Arabs and by finally conquering Aquitaine. He also forced the Bavarians to pay homage and began the campaigns against the Saxons which were to so occupy his successor. Importantly in c.755 Pepin also instituted a reform of the coinage, introducing a larger flan coin on which the name of the king was clearly represented, a feature which had previously only occurred sporadically in the Merovingian and Anglo-Saxon kingdoms with the exception of Northumbria (Grierson and Blackburn 1986).

Pepin was the first of the Carolingians, a dynasty which was to have such a profound effect on Europe in the next century. However not all the old traditions had been swept away with the last Merovingian and on his death in 769 Pepin was succeeded by his two sons Charles and Carloman. They ruled separate parts of the kingdom until Carloman's death in 771 when Charles or Charlemagne became sole ruler of the Frankish kingdoms.

Charlemagne's reign has, of course, generated a vast literature (Bullough 1965; Ganshof 1971; McKitterick 1983). He continued his father's expansion of the kingdom by invading Italy in support of the Pope in 774; he incorporated Bavaria into the kingdom and after thirty years of campaigning finally subdued the Saxons and forcibly converted them to Christianity. During the 790's he destroyed the Avar state centred in present day Hungary and even crossed the Pyrenees and annexed land in Northern Spain. In the year 800 he was crowned Emperor by Pope Leo III, a position that was finally recognised by the Eastern Empire in 812 (Folz 1974). In addition to his military successes, Charlemagne also initiated a series of reforms and a patronage of the church (Ullmann 1969). These were continued into the reign of his son and successor Louis and have become known as the Carolingian Renaissance. The later part of the reign of Charlemagne and that of Louis saw a great flowering of learning and a concerted effort at rebuilding existing churches and monasteries and the founding of new ones. The church was used as a unifying force in what was a huge and disparate territory (Ullman 1969). Trade also expanded and it would seem, as shall be detailed below, that the major period of activity at Dorestat may been attributed to this period. The founding of Haithabu also took place in the first years of the ninth century (Jankuhn 1976).

Charlemagne also instituted important reforms of the

coinage which have been described by Grierson (1965). The reform of the coinage in 794 was probably part of a wider reform of weights which altered the system from one based on the weight of the barley grain to one based on the wheat grain (1965:206). This resulted in the weight of the 'novus denarius ' being increased from c 1.3g to 1.7g. This reform was accompanied by a series of edicts encouraging people to use the new coins. Hodges has interpreted these reforms and edicts as an attempt to encourage people to accept the coins as a reliable means of exchange and as a measure to encourage market exchange within the empire (Hodges and Whitehouse 1983:109). He also points to the fact that considerable supplies of silver would have been needed to facilitate this reform and argues that trade with the Baltic was the source of these. This will be discussed further below when Hodges' model is considered in more detail.

Charlemagne was succeeded by his son Louis the Pious who furthered the process known as the Carolingian Renaissance. His reign, however, was dogged by problems over the succession which were complicated by his marrying twice and at a late date attempting to ensure that his son by this second marriage was included in the partition of the state. As a result civil war broke out in 830 and continued for the next decade, a period which also saw a decline in royal power and a dramatic increase in the attacks of the Vikings along the northern and western coasts of the empire (Jones 1968).

On Louis' death in 840 further conflict ensued but in 843 the three surviving sons of Louis agreed to a division of the kingdom formalised in the Treaty of Verdun signed in that year.

1.1.2 The Anglo-Saxon Kingdoms.

The structure of Roman administration and society broke down more completely in Britain after the withdrawal of the last Roman forces than it did in other parts of the western empire. This process seems to have begun in the 4th century and was more of a gradual decline than the catastrophic event it was previously thought to be an the Roman marketing and monetary system had broken down long before the traditional date for the coming of the Anglo-Saxons (Arnold 1984).

During the 5th and 6th centuries, the Germanic groups which had entered the country, however many they were, gradually coalesced into a series of kingdoms, some of which were of considerable size, particularly Deira and Bernicia in the north (which later joined to form Northumbria) and Mercia, East Anglia, and Wessex in the south. Smaller kingdoms included the no less important Kent, as well as Essex, Middlesex, Lindsey and Sussex (Stenton 1971). Much of the information about the early history of this period stems from the work of the historian Bede. His work is invaluable although, as he was concerned with the history of the church in England and the conversion of the English, these concerns

clearly influenced his account (Wormald 1984). In 597, when Augustine arrived from Italy to bring about the conversion of the English, Kent was ruled by Aethelbert, whose wife, the Frankish princess Bertha, was already Christian. Kent's contacts with the Frankish kingdom were obviously close and important and indeed the Franks may have claimed some kind of authority over the kingdom (Wood 1983). Bede portrayed Aethelbert as the most powerful of the English rulers at that time, although the reality of this is debatable (Wormald 1984). The 7th century saw East Anglia, Northumbria and Mercia competing for overlordship of the other kingdoms. During the 8th century, first Aethelbald and then, in the second half of the century, Offa, extended the power of Mercia, the inland and land-locked kingdom, until it was on the verge of dominating the whole of England.

The power of Mercia waned during the 9th century as the power of Wessex under Egbert grew in the area south of the Thames. In 829 he even, temporarily, succeeded in conquering Mercia. As in the Frankish kingdom, the incursions of the Vikings grew ever more serious. Until the 860's they had been content with raiding but events became more ominous when they started wintering in England (Campbell 1982; Jones 1968). In 865 a great army landed in East Anglia and moved northwards to Northumbria where the kings Osbert and Aelle were defeated in 866 and a puppet king installed. In 869 East Anglia was conquered and by the early 870's Mercia

succumbed. The Vikings began settling in these conquered territories which became known as the Danelaw. Wessex was more resistant to the Vikings and after their defeat by Alfred at Edington in 878 the country was formally partitioned and the Vikings converted to Christianity.

1.1.3 Frisia and Denmark.

Documentary references to these areas are rare before the second half of the 9th century and then are concerned mostly with confusing activities of Danish royal adventurers who, though settled in Frisia, continued to contest the Danish throne. The historical outline of these events has been set out by Boeles (1951), Jellema (1955), Halbertsma (1965-6) and Lebecq (1983) amongst others. The historical accounts stem mainly from the accounts of missionaries attempting the conversion of the Frisians during the 7th and 8th centuries and from references in Frankish annals.

The Frisians were known from the pre-Roman period to have been settled along the coast from the Rhine to the Ems in villages sited on raised mounds or terpen. It is possible that Frisians played some part in the settlement of England in the 5th century and certainly there appears to have been some Anglo-Saxon settlement in Frisia as evidenced by characteristic funerary urns and metalwork from some of the terpen (Boeles 1951:580-581).

The Franks may have inherited from their Roman predecessors some kind of authority up to the Rhine as the former Roman forts of the Limes seem to have been under their domain (Halbertsma 1965-6:70). Under

Dagobert (629-39) the Franks extended their authority into Frisia and succeeded in controlling Dorestat and possibly the old Roman fort at Utrecht. It may have been at this time that the minting of coins at Dorestad under Rimoaldus and Madelinus began (Grierson and Blackburn 1986:137). Also at this period the Frankish church attempted to convert the pagans of this area with little success (Halbertsma 1965-6:71). Some time after 650 the Frisians again began to extend their territory and probably recaptured Utrecht and Dorestat. In 677 Wilfred, bishop of York, landed in Frisia on his way to Rome and was received by one Aldgils, king of Frisia. He was succeeded by Radbod who was rather less sympathetic to the ideas of Christian missionaries as he was apparently struggling to protect the kingdom from the expansionist attentions of Pepin. Pepin defeated Radbod in 688 and again controlled the area of 'Frisia citerior' which probably included Dorestad. He immediately allowed the Anglo-Saxon Willibrord to commence missionary work in the area (Levison 1946). The Franks no doubt saw the church as a way of consolidating their authority as did Radbod, hence his apparent antipathy towards the missionaries. Radbod seems to have been considered a major threat to the Franks as Pepin allowed his son to marry Radbod's daughter Theudesinde.

On Pepin's death in 714 civil strife once again broke out in the Frankish kingdom. The Frisians took advantage

of this to regain the disputed areas, presumably including Dorestad, and even to raid as far as Cologne. Charles Martel soon restored Frankish authority after the death of Radbod in 719 and in 734 he had certainly attacked if not permanently subdued the heartland of the Frisian kingdom east of the Lauwers. The murder of the Anglo-Saxon missionary Boniface in 754 was apparently an excuse to annexe the lands east of the Lauwers and the remaining areas of Frisia were finally subdued by Charlemagne prior to his campaigns against the Saxons.

What effect these various campaigns and shifting control had on Dorestad at the end of the 7th and beginning of the 8th century, the period with which this thesis is most concerned, is difficult to say. The waterfronts were certainly in existence from c.675 as demonstrated by dendrochronology and seem to have undergone major revision c700/725 (Van Es and Verwers 1980; Astill 1985:225). Similarly sceattas were presumably minted at Dorestad at the same time and there was certainly contact with the Baltic as evidenced by coins and artifacts.

Further outbreaks of violence occurred when parts of Frisia allied themselves with Saxons during various revolts in the 790's but the next major events were the first raids of the Vikings in the 830's. Dorestad and Domburg were sacked in 837 as were many other sites around the Frisian coast. In the 820's Louis had ceded lands in Frisia to Danish princes who opposed the ruling

dynasty in their homeland and in the late 830's this policy was continued. This may have been a way of causing internal discord in the Danish kingdom with which the Franks had been in dispute since the time of Charlemagne or, alternatively, an admission of the inability of the Franks to secure Frisia against the raids. The next 50 years saw a confusing story of raids sometimes hindered by the new Viking rulers and other times helped, of rebellions by the Frisians and the sacking of towns (eg Halbertsma 1965-6:75-93). Dorestad presumably finally disappeared during this period, its role taken over by places such as Tiel.

It may be apposite here to add some comments on the importance and role of the Frisians in the trading systems of the Early Middle Ages. The role of the people who inhabited this coastal area has long been discussed and a perhaps disproportionate importance has sometimes been given to their activities and influence. Colonel Belaiew was one of the first to stress the importance of the Frisians, crediting them with the foundation of the kingdoms of the Rus in Kiev and Novgorod and of being influential in virtually all manifestations of trade in the North Sea and Baltic (1931; 1936). Jellema (1955) has published a detailed account of the documentary and numismatic evidence for the Frisians and an account of the Frisian Kingdom was published by Halbertsma in 1965. Boeles in his great study of the Frisians took a more minimal view of their

role, seeing the activities of the Anglo-Saxons as being more influential (1951:368, 379). More recently Lebecq has again published a study in which, like Belaiew, he sees the influence of the Frisians as being paramount in the extension of trade in the North Sea and Baltic areas and being responsible for the founding of 'colonies' in many north European cities (Lebecq 1983).

The truth is probably somewhat less than Belaiew and Lebecq would choose to believe. It is certain that the Frisians engaged in trade to a greater or lesser extent. There are documentary references to Frisian traders; although many of these are 9th century in date, there are nonetheless a few of late 7th to 8th century date. In AD679 Bede refers to a Frisian slave dealer in London in a famous story concerning a young Northumbrian nobleman, Imma, who had been taken captive by the Mercians (E.H. iv, 22). In York a 'colony' of Frisians was resident in the town in AD773 according to the Vita Liudgeri (Lebecq 1983:24). The amount of artifactual material particularly pottery, glassware and coins found around the Frisian coast clearly suggests trade routes via the Frisians but care must be exercised here. It cannot be assumed that because Rhenish pottery or 'Frisian' coins are found in a particular place, these were necessarily transported there by Frisian traders as some authors have implied (Lebecq 1983). Anglo-Saxon traders are certainly known and are referred to at St Denys before the Frisians while the Frankish pottery at Hamwic may indicate the presence of Frankish traders

(Hodges 1982a:90, 60).

The first specific mention of Denmark does not occur until the beginning of the 9th century when Frankish expansion northwards brought them into direct contact with the Danes. A king Godfred is mentioned in 808 attacking the Abrodites, allies of the Franks, and destroying the trading centre of Reric from whence he deliberately moved merchants to Haithabu (eg. Randsborg 1980:14-15; Sawyer 1982:72-3). Godfred is also credited with the building of the Danevirke although evidence is now available which shows that the first phase of this defensive system, which stretches across the Jutland Peninsula, actually dates to c.737 and the original settlement of Haithabu is also 8th century in date (Steuer 1974; Andersen et al 1976). It would seem that Godfred was deliberately attempting to develop an already existing trading settlement and in the process was having to develop and expand the system of fortifications to take account of its growing importance.

1.2 THE HISTORICAL AND ARCHAEOLOGICAL EVIDENCE OF TRADE.

1.2.1 The Historical Debate

The importance and extent of trade and the rebirth of urban life and markets in the Early Middle Ages has been the subject of sometimes acrimonious debate amongst historians of the period. Since the last war archaeologists have also paid a great deal of attention to the problem of the rebirth of urban life and the development of towns in the post-Roman period as well as the nature and extent of exchange, particularly long distance exchange.

The often contradictory interpretations of the period proposed by historians have been partly due to the relative paucity and ambiguous nature of the available written evidence. This is due largely to the fact that much of the written record at this time stemmed from the church and the church was little concerned with documenting the activities of merchants and traders (Sawyer 1977:138; Hodges 1988:75). As a result the same sources have often been used to argue completely different sides in the debate.

The most influential and controversial historian of this period was undoubtedly Henri Pirenne (1925; 1939). Pirenne was one of the first to draw attention to the

importance of economic factors in the change from the the period of the Roman Empire to the rise of the Early Medieval kingdoms of Europe and his thesis has had a fundamental influence on the historical debate. Pirenne's ideas have given rise to a vast literature and a debate which still continues. His essential thesis has been summarised on numerous occasions (eg. Latouche 1967:117-25; Hodges and Whitehouse 1983: 1-19) but the main points are worth repeating.

It was Pirenne's belief that many of the Roman economic institutions survived the Germanic invasions, since the incomimg barbarians were anxious to enjoy the benefits of the classical world rather than destroy it. As a result trade around the Mediterranean continued with the Merovingian courts importing gold and other luxury goods as well as papyrus for the royal scriptoria. The cities also continued to function as markets, especially those in the south where Syrian and Jewish merchants were the main instruments of this trade. Pirenne believed that it was not until the mid 7th century, when the expansion of Islam cut off north-west Europe's contacts with the Mediterranean, that the real end of the classical world in north-west Europe occurred (Pirenne 1925; 1939). Cut off from their supplies of gold and other goods from the south, the Merovingian and later Carolingian courts were forced to develop a new and essentially self-sufficient or 'natural' economy in which trade and commerce played a small part and which utilised a poor

silver currency rather than the gold of the 6th and 7th centuries. This world was most successful under the Emperor Charlemagne but it was not until the impact of the Vikings that the further change necessary for the development of a new urban society occurred (Pirenne 1925:1-37; Hodges 1982a:7).

As Hodges and Whitehouse (1983:5) have described, the importance placed by Pirenne on some of the documentary evidence was soon being criticised. Lopez, for example, demonstrated that the disappearance of gold, exotic textiles, spices and papyrus thought by Pirenne to be important indicators of the disruption of Mediterranean trade '...were not contemporary either with the Arab advance or with each other' (1943:14). Similarly Latouche has argued that the presence of Syrian and Jewish merchants has been exaggerated and that they indicate '.. the inertia of the western peoples and stagnation of their economic life' (1967:123). The evidence also points to the fact that merchants at this time were more often than not the agents of the elite or of the church commissioned to obtain various goods rather than being independent entrepeneurs (Latouche 1967:121; Sawyer 1977; Whittaker 1983). Latouche argues that the Merovingian period saw essentially a long slow decline which was well advanced before the mid 7th century, in fact 'It was not, as is sometimes stated, the continuance of a Mediterranean economy; it was an economy hopelessly and helplessly adrift.' (1967:140).

The evidence provided by coinage was soon introduced into the debate by Bolin (1953) whose intention was to demonstrate that 'one may reiterate Pirenne's paradox that without Mohammed, no Charlemagne but in disagreement, not in accord with his views' (1953:25). By analysis of the available evidence Bolin demonstrated that the design, weight and value of the Frankish denarius was influenced by the Islamic silver coinage of the period and he felt that this demonstrated that the Carolingian Empire followed rather than shunned Islamic Caliphates. Bolin was not the first to put forward the argument that there was close contact between the Carolingians and Islamic world. Early this century the case had been put by various scholars and Bolin's theme was taken up by others who saw Carolingian power bolstered by Arab gold and silver which came to them in their role as middle men between, variously, the Islamic world and Scandinavia and the Islamic world and the Byzantine Empire (Lombard 1947;1948; Doehaerd 1952; Lewis 1958; Morrison 1963).

Although gaining some support from historians, Bolin's view was vehemently opposed by others such as Himly (1955) and the numismatist Karl Morrison who wrote that there was

> 'no numismatic evidence of extensive contact with peoples outside the Carolingian Empire; there is no support for theses which allege preponderent Arab influence on the Carolingian economy. On the other hand, the evidence clearly suggests free circulation of coin within the closed commercial structure of the Empire.'(1963:432).

In support of his argument Morrison pointed out that although there were thousands of Arabic coins in Scandinavia there were very few which had been found in Carolingia. Hodges argues however that Morrison himself had drawn attention to the fact that the Carolingians regularly melted down and reminted foreign coin as it entered the Empire making the lack of Islamic coins perhaps less surprising (Hodges 1982a:8).

To some extent Morrison's argument was supported by Metcalf who, in a series of papers, argued for the prosperity of north-west Europe at this time based on estimates of the size of the coinage which he put at many millions of coins. The methods he used for calculating the numbers of coins in circulation were somewhat contentious and not universally accepted (Metcalf 1965; 1967; Grierson 1965; 1967; Hodges 1982a:9). Metcalf's arguments were put forward in part as a response to a paper by Grierson which has since become fundamental in any consideration of Early Medieval trade (Grierson 1959). In this paper Grierson criticised the view taken by historians and numismatists at the time that 'trade and trade alone was responsible for the distribution of goods and coins' (1959:131). He went on to argue that there were other ways that goods could be circulated such as by plunder and booty, fines, political payments, dowries and gift exchange. In considering the latter, Grierson was influenced by the work of anthropologists Malinowski and Mauss, whose work

had highlighted the importance of gift giving in the formation of social and political alliances in traditional societies in the Pacific (Malinowski 1922; Mauss 1925). In a further paper Grierson (1961) argued that until the 9th century, when it clearly became more closely associated with commerce, coinage was used as much to pay taxes and fines, wergelds and tolls as it was in the exchange of goods. The application of models derived from anthropology have more recently been applied to the problems of Early Medieval trade by Hodges (1982a; 1988) and these will be considered further in Chapter 3.

Pirenne admitted to some trade in north-west Europe in the 8th century, however, as witnessed by the existence of towns such as Quentovic, known from the evidence of its coins and from documentary sources. Similar sites around the North Sea, such as Dorestad on the Rhine and Birka in Sweden, had come to light through archaeological evidence. However this trade was not thought to be important and was restricted to the movement of bulk cargoes such as cloth from Frisia, wine from the Rhine valley, salt and slaves (Pirenne 1925:22-3). To Pirenne, urban life survived through the 8th,9th and 10th centuries only because of the presence of the church in the old classical towns and cities as well as royal or aristocratic residences and the need for defensive places in what were troubled times (1925:39-53).

1.2.2 The Archaeological evidence.

Archaeological evidence for Early Medieval trade had been available since the 19th century. Pirenne himself was aware of the excavations by Holwerda at Dorestad immediately following the First World War (Holwerda 1930) and of the excavations of the cemeteries at Birka by Stolpe between 1871 and 1895 which had produced a range of exotic imported goods, later published by Arbman (1937 and 1940). During the 1930's work also began at Haithabu (Jankuhn 1976) and in the 1950's at another documented trading settlement at Kaupang in Norway (Blindheim 1975). In England after the War and the destruction of the blitz many sites in towns became available for archaeological excavation. In 1946 excavations began in Southampton, the site of the 8th century emporium of Hamwic, where coins and artifacts had been discovered in the 19th century by brickearth diggers. Indeed the decades after the War and particularly since 1960 saw the enormous development in urban archaeology which in turn has led to an intense debate on the nature, function and origin of pre-Conquest towns (eg Biddle 1976; Hodges and Hobley 1988). This increased interest in towns has led to excavations which have demonstrated the early date and trading function of other towns in England such as Ipswich (Wade 1988), and most recently London (Biddle 1984; Vince 1984 and 1988) and York (Kemp 1987).

On the Continent further excavations at Dorestad have revealed the extensive nature of the site and the degree of trade which was generated through the port (Van Es and Verwers 1980; Verwers 1988). More recently in Denmark excavations have revealed evidence of a trading settlement at Danekirke (Thorvildsen 1972) and more importantly the 8th century origins of Ribe (Bencard 1981).

These extensive trading sites are largely a product of the 8th and 9th centuries and will be further discussed below. Evidence for the exchange of goods originating in Italy and the Mediterranean from as early as the 5th century comes in the form of metalwork and pottery often found in graves all across northern Europe, and from earlier trading sites like Gudme in Denmark (Bendixen 1984:154).

During the 5th and 6th centuries metalwork such as the so-called 'coptic bowls', gold jewellery and gold coins of Allemanic, Lombardic and Imperial origin, in addition to cowrie shells,ivory and amethyst amongst other things, were being transported across the Alps and into north-west Europe. This material has been studied by Werner (1961) and indicates a route along the Rhine bringing goods as far as England and Frisia. There are significant concentrations of these goods in the Paris Basin and the Rhineland which has led Hodges to suggest that this exchange was directed at and possibly

controlled by the Neustrian and Austrasian courts and may have been articulated by the Jewish and Syrian merchants who so impressed Pirenne (Hodges 1982a:31). The objects which were being exchanged in this trade were clearly prestige objects and possibly operated in a system of gift exchange as suggested originally by Grierson (1959).

Another route traceable from a study of artifacts, this time particular pottery types, also originated in the Mediterranean but utilised the sea routes around Iberia to the west coast of Britain and Ireland. Excavations at Garranes in Ireland in the 1940's produced sherds of amphorae, known as B ware, which originated in the Mediterranean in the 5th-6th centuries (O'Riordain 1942). Garranes was a known royal site and further excavations at sites in the Celtic west of Britain and Ireland, particularly sites with known royal, aristocratic or monastic connections have produced further finds, not only of B ware but of other types of pottery of similar origin, especially A ware or African Red Slip. Wine may have been a major element in this trade constituting as it did a necessity to the Christian communities of sub-Roman western Britain (Alcock 1971:201-28; Hodges 1982a:33).

These routes originating in Northern Italy and the Mediterranean seem to have ceased to operate at the end of the 6th or early 7th century. Hodges sees the end of these routes as a result of the reconquest of Italy and

North Africa by the Byzantine emperor Justinian in the later 6th century. Objects deposited in graves after this time, such as the Byzantine silver in the Sutton Hoo burial, Hodges sees as being 'heirlooms' or goods still circulating within these northern societies (Hodges 1982a:33-34; Hodges and Whitehouse 1983:90). This is quite significant if true as it would mean a breakdown of contact with the Mediterranean world before the onslaught of the Arabs in the middle of the 7th century.

It was not only exotic goods of Mediterranean origin which were the objects of exchange in the 6th and 7th centuries however. Gold jewellery and wheel-thrown pottery bottles, products of the Frankish kingdoms, were finding their way to southern England, particularly Kent, as well as to Frisia, together with other luxury items such as glass vessels, probably from the Rhineland, crystal balls, amethyst and amber (Huggett 1988). The movement of high class goods was not one way, however, as Kentish jewellery does appear in Frankish graves (Hawkes 1982:72) and amber and gold bracteates from Scandinavia are found along the coast as far south as Normandy as well as in England. The vast majority of these goods have been found in graves and were obviously goods of considerable value and prestige. The possible mechanisms behind this exchange will be further discussed below.

In the 7th century, with the coming of Christianity, and the ending of the practice of depositing grave goods with the dead, the objects which had previously been such useful indicators of the movement of goods are no longer in such evidence. However throughout the 7th century Merovingian coins continued to be imported into England possibly as goods in their own right and partly as a means of articulating a growing exchange system. From c.630-40 Anglo-Saxon gold coins began to be minted but along with the Merovingian coins they suffered serious debasement through the middle decades of the century (Grierson and Blackburn 1986).

From the end of the 6th century evidence of the trading settlements through which this trade is eventually directed begins to appear. Gold coins of Quentovic, for example, begin to be minted from the end of the 6th century (Grierson and Blackburn 1986:134). Quentovic is known from documentary evidence to have been a major mint, toll station and administrative centre of the Neustrian kingdom (Dhondt 1961). Quentovic was almost certainly the port which controlled the trade with Kent although little is known of the site, which has only recently been recognised (Hill et al 1990). The corresponding early ports of Kent are equally unknown although the rich cemeteries at Sarre and Dover which contain rich, predominantly male burials, may indicate the location of these ports (Hodges 1982a:36; Huggett 1988:93). Similarly in the early 7th century the trade flowing from the Austrasian kingdoms along the Rhine was

channelled through Dorestad. The campaigns of Dagobert which led to the capture of Dorestad in 630 may have been as a result of the increasing importance of the site and the desire to control a centre of what may have been a growing trade with East Anglia and the Baltic area. The extensive excavations at Dorestad have as yet revealed nothing of the 7th or early 8th century port but after Dagobert's annexation of the area the moneyers Rimoaldus and Madelinus were moved from Maastricht to Dorestad where they began minting coins bearing the name of the town (Grierson and Blackburn 1986:137). Even after the Merovingians lost control of the area, coins of Madelinus, in an admittedly cruder style continued to be minted. It has generally been considered that these were copies minted further north in Frisia but there is no reason why they could not have continued to have been minted at Dorestad (1986: 137).

Dorestad's links with England seem to have been directed towards East Anglia and particularly Ipswich which also seems to have been founded about this time. Goods emanating from the Rhineland also travelled northwards as indicated by finds of pottery from the Frisian and Baltic coasts and glass vessels from the Vendel period graves in Sweden (Ekholm 1958).

The 7th century also saw an increase in the minting of gold coins initially in the Frankish kingdom where a profusion of mints were in production. As already

noted, from the c.630's coins were produced in England, particularly in Kent, while in Frisia, in addition to the Dorestad coins, other derivative coins were produced including the so called Dronrijp types. A number of hoards of gold coins, including many Merovingian coins, have been found in Frisia, indicating the wealth reaching the area in the 7th century (Boeles 1951; Grierson and Blackburn 1986:124-5).

The gold coinage became increasingly debased throughout the 7th century until it was replaced by an overtly silver coinage initially in the Frankish kingdoms in c.660 and closely followed in England and Frisia (Rigold 1960; Grierson and Blackburn 1986:94). This change to a silver currency was seen by Pirenne as a clear indication of the change from the classical Mediterranean world, with trade based on a gold standard, to the enclosed Germanic world where trade was of little importance and which was to dominate northern Europe until the 11th century (Pirenne 1939). It is debatable ,however, just how useful the gold coinage was for the purpose of exchange. The value of the coins must have been considerable and the various finds of scales in graves presumably meant that their weight was checked. The onset of the debasement of the gold content and the very profusion of mints must again have made the use of the coins as a creditable means of exchange uncertain.

Grierson was the first to point out that the change to

an overtly silver coinage probably indicated the need for a more aceptable coinage as a result of increased trade and exchange rather than less, a view which few would now dispute (Grierson 1961). Certainly the silver coinage of the later 7th and 8th centuries seems intimately connected with exchange as indicated by the quantities of coins associated with the emporia.

1.2.3 The Emporia (Fig 1).

A major result of archaeological fieldwork directed at the problems of urban origins in northern Europe has been an enormous increase in information concerning the coastal and riverine trading settlements of the 7-9th centuries. Several of these have already been mentioned above but the 8th and 9th centuries saw a great expansion in the number of such sites and in the size of those already established. These are briefly described below but some general points are worth making first.

The most immediately noticeable feature about the largest of the emporia is, in fact, their sheer size in comparison with other sites of the period and indeed even with some later Medieval towns. It has been shown that Hamwic covered an area of some 42-45 hectares (Brisbane 1988:102) and Ipswich some 50 hectares (Wade 1988:93). Dorestad extended for at least 2-3km along the old course of the Rhine and seems to have extended some 500m inland in places (Verwers 1988:52-3). Even the limited fieldwork at the site of Quentovic has, so far,

indicated an area of c.40 hectares containing evidence of Early Medieval occupation (Hill et al 1990).

The second feature common to these sites is the vast quantities of artifacts which they produce. Pottery is the most common item, much of it being imported and not of local production. Verwers has recently highlighted the quantities involved at Dorestad where, from an area of approximately 2 hectares, some 18,000 sherds of pottery were recovered, over 70% of which were imported. This can be contrasted with a site of the same period at Kouderkirk where a 1 hectare area produced some 2700 sherds of imported wares. Hamwic too has produced imported wares although they form only c.20% of the total, but these are now seen to be identical to types found at the site of Quentovic (Coutts and Worthington 1986; Timby 1988:73).

More exotic material is also present in quantity at the emporia, such as Rhenish glassware, lava quernstones, amber and jet. Most numerous of all however are the animal bones which are of great importance in demonstrating the huge agricultural surplus which must have been generated locally to provision these settlements and provide raw materials for the industrial activities so common in them (Bourdillion 1988:176-96).

Industrial activity, including metal working, bone and antler working, glass working, the working of amber and

jet and the finishing of quernstones, has been found at many of the emporia sites including Hamwic, Ipswich, Quentovic, Dorestad, Haithabu and Ribe and the Baltic sites of Helgo and Birka (see below for a summary of these and Hodges 1982a, Hodges and Hobley 1988). Clearly this production was not all for export but for local consumption also and the function of these sites as centres of local production and exchange must not be forgotten.

The emporia also produce coins in quantity although, recently other, inland, sites in England are proving equally productive. The development of the coinage in 6th-8th centuries will be considered in detail in the next chapter. Hamwic has produced some 127 sceattas as well as some 50 later silver coins making it the most productive site in the country for coins of the period. Some 50% of the sceattas are of series H which are rarely found outside the emporium and were almost certainly minted there (Metcalf 1988). Until the current excavations in Ipswich, sceattas were rare from the Middle Saxon emporium but recently some 50-60 sceattas of series R have been recovered (Wade pers comm.). The series R are more widely distributed within East Anglia than the series H within the hinterland of Hamwic but it seems likely that these were also a product of the East Anglian emporium.

The largest collection of coins from any of these sites has come from the site of Domburg on the Island of

Walcharen at the mouth of the Rhine. This includes 998 sceattas as well as later Carolingian coins (Op den Velde et al 1984:140-1). These finds are dominated by the series E or Porcupine sceattas followed by the series D or Continental Runics and the series X or Wodan Monsters. In addition, there are considerable numbers of English sceatta types including the early series A,B and C. Sceattas are also known from Dorestad but in far smaller numbers than from Domburg, some 63 sceattas and a few Merovingian denarii being known. This apparent paucity of sceattas may simply be because the main areas of the 7th and early 8th century town have not been excavated. It is certain that sceattas were produced at Dorestad since earlier gold coins were certainly minted there as already noted and the town was again a mint under the Carolingians from c.755. Metcalf has suggested that the series E coins were the product of Dorestad although with the caveat that so many varieties of series E exist that more than one production centre may have been operating.

Ribe has also produced large numbers of 8th century coins from the recent excavations. Thirty of these have been published by Bendixen (1981) but a further 30, almost all of series X, have been found more recently and are as yet unpublished (Bendixen pers comm.). Interestingly there are still no coins of the late 8th or 9th centuries known from Ribe. This may be due to the rise of Haithabu which although in existence in the

8th century only reached real prominence in the 9th century (Jankuhn 1976).

The missing link amongst the emporia in terms of the numismatic data is of course Quentovic. To date only one sceatta (series G) has been recovered during the very limited fieldwork which has been carried out on the site (Hill et al 1990). The numismatic history of the area in the 8th century is unlikely to be fully understood without knowing which series of coins were minted at and used in Quentovic.

Eighth century sceattas are rarely found in the Baltic emporia. Two have been found at Haithabu, one from the early south settlement and one from inside the walled area, both of which were series X coins (Bendixen 1981:66). A further series X was recovered from Holmsland Klit on the west coast of Jutland and an example of series E from Gudme in Denmark (Bendixen 1984:154). Three more series X coins were recovered during excavations at Ahus (Callmer 1984:10-11). The only other find of a sceatta in the Baltic is a series E from a grave mound at Helgo (Bendixen 1984:155).

The western European emporia appear to have come to an end sometime in the 9th century although exactly when and for what reason is not yet generally agreed. The Vikings have often been seen as the major cause of decline of the emporia and Hamwic, Quentovic and Dorestad are all recorded as having been sacked. In the

case of Hamwic, Brisbane sees a gradual decline of population from about 850 with the eventual establishment of a centre on the site of the later Medieval town (1988:103). Dorestad appears also to come to an end c.850 although no particular reason is given (Verwers 1988:55). Hodges, on the other hand, has argued that these trading centres were in decline before the Viking raids began in any serious way in the 840's (Hodges 1982a). This is part of an elaborate and extensive discussion of the whole nature of trade and exchange during this period which will be further considered in the next chapter but at this stage it may be enough to make one or two particular points about the end of the North Sea emporia. Hodges argues for a boom in trade from the Carolingian areas in particular towards the Baltic from c.790's, instigated by Charlemagne. The object of this was to tap into the supplies of Arab silver which began to flood into the Baltic at the end of the 8th century. This was the height of the activity at Dorestad and possibly the reason for the expansion of Haithabu. These silver supplies started to dry up in the 820's (Hodges and Whitehouse 1983:160) and trade to the west consequently suffered. It was the decline of the Arabic silver and resulting trade depression which led to the decline of the emporia in the west. This was followed by the raids of the Vikings which were launched to replace Arab silver gained by trade with western silver gained by raid (Randsborg 1980:159).

1.2.4. Possible inland trading sites.

Most attention has been paid in recent years to the coastal and riverine sites which have been the subject of extensive excavations. However there is evidence of other inland sites which may also have been functioning as centres of exchange. There is documentary evidence of other places being referred to as Portus, the term used to describe Quentovic (Astill 1985:228). For example in 779 the monastery of St Germain des Pres was granted exemption from tolls at the Portus of Rouen, Quentovic, Amiens, Dorestad and Maastricht while Duby refers to others at Dinant, Verdun, Tournai and Huy (Astill 1985:228; Duby 1974:101-11). There is little archaeological evidence from these sites but the fact that they are concentrated in the Meuse Valley may indicate the importance of the region at the time. Maastrict and Huy were early mints and the Meuse appears to have been a centre for the manufacture of metalwork such as bowls, cauldrons and keys (Astill 1985:228). Excavations at Huy have produced evidence of 7th century bone working, metal working and a pottery kiln (Willems 1973: 1-64). In addition, chemical analysis of pottery bottles from Kent indicate that they were produced from clays similar to those used in the kiln at Huy (Evison 1979:96-7). This suggests that the Meuse may have been an important production centre feeding into the system operating through Dorestad. Interestingly these known

sites are all concentrated in the north east and are sited on or near Roman towns (Astill 1985:228). Astill goes on to suggest that these sites may represent a second tier of trading sites on geographical or political boundaries facilitating exchange with the inland regions. Duby noted the apparent lack of Portus in other regions but suggested that elsewhere the function of the emporia were performed by the former Roman towns which had become centres of consumption often in the control of the bishops (Duby 1974:97-111). Hodges pointed out the lack of evidence from these towns but elsewhere the early Medieval foci of towns can be seen to lie outside the former Roman walls. This was true with the famous fairs at St Denys outside the walls of Paris and the Rhenish towns of Cologne, Mainz and Worms show a similar pattern. In addition the emporia at London and York have now been shown to lie outside the walls (Astill 1985:228-9; Vince 1984; Kemp 1987).

Recently evidence has come to light which suggests that inland sites of somewhat different character may have existed in England. To a large extent these sites have been indicated by finds of considerable numbers of 8th century coins, often at sites where little other evidence of occupation has been recovered. Four sites in particular have been discovered by metal detector users: Barham in Suffolk and outside the Roman town of Caistor St Edmunds in Norfolk (T. Gregory pers. comm.; Rigold and Metcalf 1984:260); a site near Royston in

Cambridgeshire (Blackburn and Bonser 1986:65-80) and at Sancton in North Humberside (Booth and Blowers 1983; Booth 1984). A fifth similar site may have been discovered in the same way in 'north Essex' (Metcalf 1986b:5-8).

Groups of sceattas have also been found further west on a number of Iron Age hillforts, particularly Hod Hill and Walbury Camp (Metcalf 1974b; Rigold and Metcalf 1984:252). Little other material has been found at these sites with the exception of some metal work of similar date to the coins at the Royston site although the only site where any excavation has taken place is at Barham (Wade pers comm). The concentration of finds (the number of coins is unknown) at Caistor St Edmunds is particularly interesting, as the location of the site outside the walls of a Roman town parallels the location of the 'wics' at York and London as well as the Early Medieval foci of a number of Continental towns such as Cologne, Mainz and Worms (Astill 1985:229). A further interesting feature is the concentration of these sites in or on the periphery of East Anglia and the possibility that, like some of the emporia sites, they are deliberately sited on the borders of territories. As already noted above, Grierson (1959; 1961) has stressed that coins at this period were used in other non commercial ways and care must be taken not to assume that the presence of coins on these sites automatically indicates the commercial nature of the activities that took place.

Another category of site, in England at least, which produce considerable finds of sceattas are monastic sites (Rigold and Metcalf 1984). The most productive of such sites in England is Reculver in Kent. Some 57 finds are recorded although some of these may come from elsewhere in the Isle of Thanet, with most dating back to the early 18th century when the site was actively suffering from sea erosion (Metcalf 1984c; Rigold and Metcalf 1984:258-60). Reculver, however, may not be typical, since the finds of tremisses from the site predating the foundation of the Minster (Rigold 1975:662) may suggest the establishment of an emporium to which the Minster was attracted. Also in Kent are a number of monastic centres which have produced finds of 8th century coins, in particular Richborough at the southern end of the Wantsum Channel. The finds from here are far fewer than from Reculver but include 9 sceattas as well as later pennies. Seven of the sceattas were from the area of the Anglo-Saxon chapel and may be from graves (Rigold and Metcalf 1984:260-1). Elsewhere in Kent groups of sceattas, particularly primary types are not uncommon from burials. Minster in Thanet and Minster in Sheppey are also monastic sites in Kent which have produced sceattas, as has the city of Canterbury where 12 sceattas have been found, at least some of which were associated with burials (Rigold and Metcalf 1984:249).

Outside Kent there are other monastic sites where coins have been found in particular the monastary at Whitby. There are 17 sceattas in addition to 12 named Northumbrian coins known from the site. Unfortunately these were found during a series of poorly recorded excavations in the 1920's and little is known of their context but some at least may be from burials (Cramp 1976; Metcalf 1984c:265). Coins have also come from another famous Northumbrian monastic site, namely Jarrow (1984c:253). Most recently a coin of Eadberht and one of Beonna as well as a number of stycas have been found at the monastery at Whithorn in Dumfries and Galloway (P. Hill pers comm). Elsewhere sceattas have been found at the monastic sites of Bradwell on Sea (Essex), Burgh Castle (Suffolk), Dover and most recently Repton (Metcalf 1984c; Biddle et al 1986a: Biddle et al 1986b). A considerable number of these coins may have been associated with burials but it does raise the question of how much the church was responsible for the spread of coin use and how directly involved the church was in trade.

1.2.5 The Emporia: a brief description of the main sites.

(Fig1)

Quentovic

As already touched on above there seemed to be separate systems operating from the two Frankish kingdoms of

Neustria and Austrasia and even in the 8th century when the kingdom was united these two systems appeared to continue to operate (Hodges 1982a). From the late 6th century a major centre of the Neustrian system appears to have been Quentovic. Gold coins of Quentovic are known from this period (Grierson and Blackburn 1986: cat no. 471-4) as are silver deniers from the reign of Charlemagne including the famous type with the image of a ship on the reverse (1986: cat no.749). Coins of Quentovic were issued by Charles the Simple (1986: cat no. 998). This type became immobilised in the 10th century and Viking imitations of the 10th century are also known (1986, cat no. 1447). Which coin series were minted c.670-750 at Quentovic is at present unknown as no named coins are known from this period and until recently the site of the emporium was lost. Fieldwork over the last several years in the Canche Valley in northern France has demonstrated the presence of an extensive Early Medieval settlement at least 40 hectares in extent, with evidence of craft activities and such imported goods as amber and jet and an extensive range of pottery (Hill et al 1990). To date only one coin has been found on the site, a sceatta of series G belonging to a group recently discussed by Metcalf (Biddle et al 1986b:19-23). The present ignorance as to which series of sceattas were minted at Quentovic leaves a gaping hole in the numisatic evidence and the monetary history of the period will never be fully understood until this gap is filled. It is to be hoped that further

excavations in the Canche Valley will help to fill the void both in the numismatic sequence and in the evidence of the trading system in general.

Kent

Kent was obviously a focus for much of the trade coming from the Continent from the 5th century onwards but to date no archaeological evidence of a Quentovic or indeed a Hamwic has come to light. However the rich cemeteries at Sarre already referred to, with evidence of traders as indicated by the finds of scales and weights in the graves, would seem to suggest that this site on the Isle of Thanet was certainly one such emporium. There is also some documentary evidence to support this, as on two occasions tolls payable to the Kentish kings were remitted at Sarre in the 8th century (Hodges 1982a:69). A similar reference to the remission of tolls is known from Fordwich on the river Stow a few miles from Canterbury and it is quite likely that this site too was acting as an entry point to the kingdom; unfortunately any archaeological levels are likely to be buried under the present town. Two other sites need to be mentioned, namely the former Roman Saxon Shore forts of Richborough and Reculver situated at either end of the Wantsum Channel. Both have produced 8th century sceattas and indeed Reculver is one of the most productive sites in the country, yet little other evidence of 8th century activity has been discovered. Both were also early monastic sites and, as metioned above, sceattas are

commonly found at such sites (eg. Jarrow, Whitby, Repton and Breedon on the Hill amongst others (Rigold and Metcalf 1984)). Whether this is an indication of market activities taking place at such sites or whether the coins were arriving at these early religious centres by other means is unclear.

Hamwic, Saxon Southampton.

Excavations have been carried out in the Early Medieval town of Hamwic since 1946 but brickearth diggers in the 19th century had already uncovered the remains of the 7th-8th century site including numbers of coins. Much of the early work was reviewed by Addyman and Hill (1968; 1969). Hodges (1981) published an important study of the pottery and he (1979) and Holdsworth (1976) have published general reviews of the evidence to date. More recently a major publication, the first in a series on the recent excavations, has been published containing a new study of the pottery by Timby and the coinage by Metcalf (Andrews 1988) and a further review has been published by Brisbane (1988).

Saxon Southampton, or Hamwic, was sited on the bank of the River Itchen on the east side of the Southampton peninsula between the Rivers Test and Itchen. The town seems to have been founded around the end of the 7th century by King Ine of Wessex (688-726). The site was initially defined by a ditch around the western side of the settlement, which seems to have covered an of c.45

hectares, although this seemed not to have a defensive function as it was soon slighted (Brisbane 1988:102-3). A planned grid of gravelled streets was also an early element of the site as no features such as pits have been discovered below the streets. Evidence of timber buildings fronting these streets has been found, along with a great deal of evidence of manufacturing activity including textile manufacture, metal working, bone comb making, pottery manufacture and possibly glass working. Considerable quantities of imported pottery have also been found, the majority originating in Northern France rather than the Rhineland and much of it not being found elsewhere in this country, which has led Hodges to the suggestion that at least some was brought in by foreign traders unsatisfied with the local hand made wares (1981:91). Glass is also found in some quantity and may have been partly imported as scrap for making beads although it is found extensively in the settlement.

Hamwic is also one of the most productive sites in the country for 8th century coins. The coins from the site have recently been published by Metcalf (1988). To date 127 sceattas have been recovered of which almost 50% are of series H, a series rarely found outside the emporium, which suggests they were certainly minted there. The fact that they are so rarely found elsewhere, unlike the series E or X for example, is curious and raises the question of their role in international exchange.

Other sceatta types include series E in some numbers and, interestingly, series X which will be discussed further below. The coin sequence carries on into the 9th century although it is unclear how long the main period of activity endures. An end in the second quarter of the 9th century has been suggested (Cherry and Hodges 1978) but other have argued for a much longer life (Brisbane 1988). There does seem to be some later pottery occurring on the site (Brisbane 1988:103-4; Timby 1988) but what this represents in terms of activity is unclear.

London

The earliest reference to a Frisian merchant in England occurs in the writings of Bede when he recounts the story of a young Northumbrian nobleman captured in battle who was to be sold as a slave to a Frisian merchant in London in 678. In the 8th century there are various references to tolls on ships being granted to religious houses and by the early 730's Bede could describe London as 'an emporium of many peoples coming by land and sea' (E.H. iv, 22). Gold coins are also known bearing some form of the name of London, as are 8th century sceattas, and it was again a mint in the 9th century. Despite this, so little archaeological evidence was known for this period that Hodges concluded that it indicated only the presence of a number of farms along the Thames. However, the presence of a small amount of imported pottery indicated contacts with the

Rhineland and East Anglia (Hodges 1982a:71) and in 1984 both Biddle and Vince independently postulated that the Middle Saxon centre of London was to be found in the Aldwark area and that the walled city was unoccupied except for the ecclesiastical complex and royal and aristocratic dwellings. These articles were curiously prophetic as shortly afterwards Middle Saxon material, including a sceattas, was discovered in the Covent Garden area (Hobley 1988:73). Further reviews of the evidence for London have been published by Hobley (1988) and Vince (1988). Hopefully further discoveries will help elucidate the role of London in this period.

Ipswich

Ipswich lies on the River Orwell close to the confluence with the River Gipping. The first evidence of Middle Saxon occupation on the site of the present town came from West's excavations at Cox Lane during the 1950's although a rich 7th century cemetery had been discovered to the west of the town in the early part of this century (West 1963, Dunmore et al 1975). Small scale excavations in the town during the 1970's were able to define the extent of the Middle Saxon settlement but it was not until very recently that large scale excavation has been possible. This is proving invaluable in the amount of material which is being revealed. Previously the number of sceattas from the town was surprisingly small but in the recent excavations between 50 and 60 sceattas have come to light, mostly of series R,

generally considered to be a product of Ipswich (K. Wade pers. comm.). The extent of the settlement has been defined by the distribution of Ipswich ware, a locally made pottery but wheel-thrown and proficiently made, unlike most of the other locally produced pottery in England at this time (West 1963; Hodges 1982a:70-1). The distribution of Ipswich ware in the town covers an area of some 100 hectares which would make it one of the largest of the emporia, comparable in size with Dorestad. Rhenish pottery is also found in some quantity as is glass from the same source and, as with the other emporia sites, there is evidence of craft activity in the form of bone and horn working, leather working spinning and weaving (Wade 1988:95). Clearly the evidence from the current excavations in Ipswich is going to be of fundamental importance to the understanding of trade at this formative period.

York

Until recently a similar situation pertained to York as had for London in that there was documentary evidence for a trading settlement at York in the Middle Saxon period but archaeological evidence was distinctly lacking. Groups of Frisians are reported as resident in York both by Alcuin and in Altfrid's life of Liudger (Hodges 1982a:73) and 8th century coins have been found in the city. Recent excavations on the Fishergate site outside the Roman city have brought to light Middle Saxon remains, including coins amongst which were

sceattas of series E, the so-called Porcupine sceattas of Continental origin (Kemp 1987). Again the results of these excavations must be awaited before the extent and nature of the Middle Saxon settlement can be appreciated.

Domburg

Since the 17th century material including coins had been collected from the dunes on the island of Walcheran at the mouth of the Scheldt (De Man 1899; Capelle 1976). By the 20th century all traces of the settlement had been washed away but Marie de Man had amassed a considerable collection of coins of the 7th-9th century. Most important were the almost 1000 sceattas which have been documented (de Boone 1981; Op den Velde et al 1984:141). Some 468 of these are series E but there are 120 series X documented and 169 series D or Continental Runics. Most were simply picked up from the beach but some at least were associated with cemeteries uncovered by the sea. Domburg was clearly a major trading settlement, probably intimately connected with the trade to England. The relationship between Domburg and Dorestad is still unclear.

Westernshouwen

A similar sand dune site to Domburg was discovered on the Island of Schouwen. The evidence consists of objects collected from the shore but again indicates a

probable 8th-9th century site. Rhenish pottery, bone combs and metalwork has been recovered (Capelle 1978; Hodges 1982a:74).

Dorestad

Dorestad lies at the junction of the Rivers Lek and Rhine at a point where what is now central Holland broke up into a series of islands and channels (Hodges 1982a:74). It was well placed, located as it was, to control trade and communications along the Rhine into the heartlands of Austrasia and seawards to the North Sea and thence to England or along the coast to Denmark and the Baltic.

The site was referred to in Early Medieval documents from the 7th century when it is mentioned in the campaigns of Dagobert. It was certainly in existence by the 630's when coins of Madelinus and Rimoaldus were minted at Dorestad and it may have been one object of Dagobert's advance into Frisia at this time. Like Quentovic it presumably minted sceattas although which series is unclear. Coins clearly marked with the name of Dorestad appear again in the reign of Charlemagne when some, again like those from Quentovic, bear the design of a ship (Grierson and Blackburn 1986: cat no.757).

The site of Dorestad was first recognised in the 19th century when a cemetery near the site was excavated. After the First World War Holwerda carried out a series

of excavations which finally revealed the importance of the site and the wealth of evidence, both of wooden structures and of artifacts, which it contained (Holwerda 1930; Hodges 1982a:74). The original focus of the town was probably a Roman fort and the Rhine at this time was probably the boundary, at least in Frankish eyes, of the kingdom.

Extensive excavations in the 1960's and 1970's resulted in the stripping and excavation of over 50 hectares revealing a settlement of at least 40 hectares which extended along the south bank of the Rhine. Extensive dendrochronology has indicated a date range from the c.680's to c.850, the 7th century settlement apparently being elusive. As well as producing vast quantities of finds such large scale excavations have enabled the topography and layout of the town to be revealed. Set back from the shore were clusters of buildings which resembled farm complexes excavated elsewhere in the region and which seemed to be arranged randomly, unlike the buildings in Hamwic which were apparently laid out along the gravelled streets. Closer to the bank of the river were simple rectangular structures inhabited, it has been suggested, by merchants who utilised the long plank walkways which extended out into the river for up to 100m with jetties at their end. Two cemeteries have also been found (van Es et al 1980).

Over 80% of the vast amount of pottery which has been

found comes from the production centres in the Vorgebirge hills and the Mayen region, the remainder being local hand-made wares (Verwers 1988). Lava quern stones from the Niedermendig region were finished off in the town before being exported. Stone mortars from the Ardennes have also been found. Wooden barrels originally used to transport wine were often reused to line wells and these have produced a valuable series of C14 dates. A fine collection of metalwork has also been recovered as have quantities of glass from the Rhineland.

The Dorestad mint has been alluded to already and there is a fine coin series from the town reviewed by Enno van Gelder (1980). This review is particularly concerned with the coin sequence from 750 until the end of the town, c.850. Included are two hoards, one of Pepin and the other containing coins of Charlemagne and Louis the Pious. The sceatta finds have been listed by Op den Velde et al (1984) and it is immediately striking that there are far fewer from Dorestad than from Domburg. Some 55 sceattas and 4 Merovingian deniers are listed, with series E coins being predominant. A range of other series were represented, including English types and 3 examples of series X.

As in the other emporia, evidence of craft activities has been recovered including textile manufacture, metal working, bone working, ship building and wood working. The coin finds at Dorestad drop dramatically after 840

and the town must have declined rapidly thereafter (Van Gelder 1980).

Medemblik

Medemblik is situated on the Zuyder Zee at a point where in the past several waterways, since silted up, probably met. Merovingian material has been found but there appears to have been intensive use in the later 8th and 9th centuries with the recovered material including imported Rhenish pottery as well as local Frisian wares. It is likely that the site was a stopping place on the northerly trade route to Jutland and beyond (Hodges 1982a:77).

Emden

Emden seems to have been a similar site to Medemblik with a Carolingian period setttlement overlying an earlier Frisian village (Hodges 1982a:77).

Hamburg

Hamburg seems to have been an important stopping off place on the route north in the 9th century. There were excavations carried out after World War II but little is known about the layout of the town ((Hodges 1982a:77-8).

Ribe

The town of Ribe is situated on the west side of the Jutland Peninsula, south of Esbjerg. Excavations in the

town have produced evidence of 8th century occupation, including sunken buildings as well as the remains of glass working and metalworking (Bencard 1981). Most importantly, the excavations produced an impressive number of sceattas, the majority of which were of series X. Thirty have been published (Bendixen 1981) and a further 30 or so have since been found but are as yet unpublished (Bendixen pers. comm.).

The nearby site of Danekirke might also be usefully mentioned here. This lies to the south of Ribe and excavations have produced evidence of a trading settlement from the pre-Roman Iron Age to the 8th century at least. Some 13 Early Medieval coins have been found, including two die identical Madelinus coins of Dorestad, English sceatta types, Continental Runic sceattas, one Porcupine and 5 coins of series X (Bendixen 1981:66)

Haithabu/Hedeby

Haithabu lies on Haddeby Noor at the head of the River Schlei at the foot of the Jutland Peninsula. It is well situated to act as a focus for trade routes running into the Baltic and it was also connected to the North Sea via the Rivers Schlei and Troone (Hodges 1982a:78). It has been the focus of extensive excavations since the 1930's (Jankuhn 1976) which have shown that the major period of activity was in the 9th century. The Frankish Annals record that the Danish king Godfred founded

Haithabu in 808 but he was probably expanding or rationalising an already existing settlement, as excavations south of the defended area have produced evidence of an 8th century settlement, including sunken floored huts and one series X sceatta (Steuer 1974). A further series X sceatta has been reported from the inside of the rampart (Bendixen 1981:66).

Kaupang

Kaupang is the site of an emporium in southern Norway which probably dates from the late 8th to the 9th century as suggested by the Arabic, Frankish, Anglo-Saxon and Haithabu minted coins which have been found (Blindheim 1975; Hodges 1982a:81). Rhenish, Frisian and Slavic pottery has also been recovered and there is evidence of soapstone working, glass bead making and metalworking.

Loddekopinge

An extensive 9th-10th century site has been discovered at Loddekopinge in northern Jutland. Some 54 sunken huts have been found. The site appears very large, as much as 25 hectares, and may have been enclosed by a bank or fence (Ohlsson 1975-6; Hodges 1982a:81). The fill of the sunken huts and the comparative lack of pits has led to the suggestion that the site was only occupied on a seasonal basis.

Helgo

Helgo is a small island near the northern shore of Lake Malaren in central Sweden. At the eastern end of the island is a fort which had long been known but in the 1950's the discovery of a Coptic ladle of the type traded to western Europe in the 5th-6th centuries led to a series of excavations which revealed the site of an important trading and manufacturing settlement. A number of sunken huts have been found as well as several houses set on small terraces. A range of metalwork, including jewellery, was produced on the site and several hundred moulds have now been discovered along with fragments of many more in the remains of the workshops. Fragments of gold and silver have also been found as well as weights and hundreds of crucibles. Evidence of glass working, so characteristic of these sites, has also been discovered. In general the finds from the site span the 6th to the 9th centuries and include such exotica as a buddha from northern India and an 8th century bishop's crozier from Ireland, as well as Rhenish pottery and glass. A number of small cemeteries have also been found; in the mound covering one grave was a Porcupine sceatta, the only sceatta from the site (Holmqvist 1975).

Birka

Birka is a very similar site to Helgo, located only a few miles distant on a second island in Lake Malaren. It

seems to have begun to function c.800 and was clearly operating in the trade to the east which was bringing Arab silver into the Baltic in the early 9th century (Ambrosiani 1988:66). It too is dominated by a fort but here the occupation area is surrounded by a rampart although this seems to be of late date (Hodges 1982a:86). A number of cemeteries surround the site and it is these which have been the subject of much of the excavation which has taken place. Over 1100 graves were excavated in the 19th century; they contained a wealth of objects including Arabic and Frankish coins of the late 8th to the late 10th century but few Anglo-Saxon coins. Frankish and Slavic pottery was also found along with a range of jewellery and, unusually, textiles including Chinese silk and garments decorated with gold thread. Many graves contained weights and three contained scales, usually considered to indicate the presence of merchants. These may have been the negociatores mentioned by Rimbert in the life of the 9th century missionary Ansgar who visited the town in 829 and 852 (Hodges 1982a:85). Excavations in the occupation area have been limited but those by Ambrosiani have demonstrated the wealth of the finds (1982a:85). The relationship between Helgo and Birka and the administrative organisation is something of a mystery as they do seem to have been operating at the same time, at least in the late 8th and 9th centuries.

This chapter has attempted to set the historical and

archaeological context of the period with which this thesis is concerned. A brief descripton of the historical background of the major areas considered is given, followed by a brief consideration of the historical debates on trade and exchange during this period, centring on the 'Pirenne Thesis', which has so dominated historical writing on this period. Numismatic evidence has also been drawn into these debates and used on both sides of the conflicting arguments. Archaeological evidence for trade and exchange and the rebirth of urban life in the post-Roman period has increased enormously in the last forty years. Major excavations have revealed a series of extensive trading and manufacturing settlements around the coasts of north-west Europe from France to the Baltic. The evidence for these and for the presence of a similar range of inland centres is summarised. These sites have produced much evidence of trade goods and for craft production on site. They have also produced increasing numbers of coins, particularly 8th century sceattas. These will be considered in some detail in the following chapter as part of a summary of the development of coinage in Early Medieval Europe from the 6th to the 9th centuries.

CHAPTER 2:

COINAGE IN NORTH-WEST EUROPE IN THE 6TH TO 9TH CENTURIES AD.

The intention of this chapter is to outline the development of the coinage of north-west Europe from the 6th to the 9th centuries in order to provide the necessary framework within which the problems and issues discussed in the following chapters can be considered. The first part of the chapter deals with the gold coinage of the 6th and 7th centuries which was superseded in north-west Europe, in the third quarter of 7th century, by a group of generally uninscribed silver coinages. These fall into two basic groups although there is inevitably some overlap. In the Frankish kingdom the debased gold was replaced by coins generally known as deniers and in the Low Countries and England by generally uninscribed coins called sceattas. Until recently no general summary of the coinage of this period was available although the specialist literature is extensive. However this situation has been more than satisfactorily remedied by the publication of the first volume of Medieval European Coinage. (Grierson and Blackburn 1986) which has now provided a masterly overview of the coinage which will remain the standard text for the forseeable future. This chapter draws extensively on this work as well as more specialised works.

2.1 THE GOLD COINAGE.

2.1.1 The Continental Gold Coinage.

On the Continent in what became the Frankish kingdoms the production and use of coins never ceased. This was in contrast to England where, after the collapse of the Roman administration, coins were not minted until the end of the 6th century or beginning of the 7th century. Coins were increasingly imported from the Continent from around the 540's although their function seemed limited. The coinage throughout these centuries was essentially monometallic, initially in gold and then silver, the subsidiary silver and bronze coinages having quickly gone out of use outside Italy. The imperial solidus was the coin most commonly produced initially in the emperor's name although the standard fell short of that maintained in the imperial coinage. Eventually the tremissis or third of a solidus became the most commonly produced coin. This became known as the triens in the Frankish kingdom and thrymsa in England.

With the collapse of the Western Roman Empire the monetary system also collapsed. The circulation of imperial gold coins in the former western provinces continued but with the exception of some small silver coins, the so called *minuti argentei* which were probably struck for symbolic purposes or for distribution as alms, it was not until c.500 that minting began on any

scale in the Frankish Kingdoms (Grierson and Blackburn 1986:111-12). From this time until c.570/80 there were minted imitations of imperial solidi and tremisses in the name of the ruling Emperors. There was also a limited Royal coinage during the sixth century of silver and bronze coins in Provence and Burgundy succeeding the coinage of the Ostrogoths and Burgundians and a gold coinage minted in the name of Theodebert I in the 540's (Grierson and Blackburn 1986:115-7).

From about 570/80 until c.670 the Frankish coinage was one of gold tremisses minted on a reduced standard of c.1.3g or seven siliqua as opposed to the eight siliqua of the imperial standard. Grierson and Blackburn have argued that this represents a shift to a Germanic weight system based on the wheat grain in contrast to the imperial system. The 7th century gold coinages are known as the National or Civic gold coinages (Grierson and Blackburn 1986:117; Kent 1975). Almost without exception the coins have a profile bust as the obverse and a cross of varying design as the reverse and they also generally have the name of the moneyer and mint where the coin was produced. Over 800 mints are known and over 1500 moneyers and as royal issues are again rare, the ordering of the coinage has been fraught with difficulties and uncertainties. The recent summary of the coinage by Grierson and Blackburn breaks the coinage down by regions where distinctions can be made between the series minted in Provence and Burgundy from those of Aquitaine, Neustria, Austrasia and Frisia (1986:135-8).

It is not intended to discuss these in any detail, only as they relate to the problem of the chronology as discussed below and, in the case of the Frisian gold coinage, as a background to the silver coinage which followed.

2.1.2 Sutton Hoo and the Chronology of the Gold Coinage.

The establishment of a chronology for the Continental gold coinage was beset with confusion and uncertainties. Coins were minted in the names of rulers, with mint and/or moneyer's names. Over 800 mints were recorded and what effort was expended on the Merovingian coinage by numismatists tended to be concerned with the identification of mints and moneyers with historically known personages rather than with detailed chronological studies. Indeed prior to 1960 little progress had been made in the field since the great work of Prou in 1892 (Kent 1975:588).

In 1939, shortly before the outbreak of the Second World War, the great ship burial at Sutton Hoo in Suffolk was excavated. Included amongst the extraordinary finds which accompanied the burial was a purse containing 37 Merovingian gold coins, the date of which was obviously going to be of crucial importance in dating the burial. When study of the Sutton Hoo burial began after the war, the accepted opinion was that the coins could not be

dated earlier than c.650 (Grierson 1952; Bruce Mitford 1952). This late dating was determined by Prou (1892:90) who had ascribed a late date to a particular reverse type, the so-called 'croix ancree'. It is unnecessary to go into great detail here, suffice it to say that a particularly elaborate form of this particular reverse, which Prou placed at the head of the 'croix ancree' series, was associated with the moneyer Eligius who was still minting the type after the beginning of the reign of Clovis II in 640. The so-called degenerate forms of the type, examples of which occurred amongst the coins from the Sutton Hoo purse, were placed after this date. Consequently a date of c.650 was arrived at and generally accepted (Kent 1975:589). This dating of the 'croix ancree' type was overturned by Lafaurie in a re-examination of the Escharen hoard published in 1960. In this article he also reviewed the dating of the Sutton Hoo coins and concluded that the hoard had to be redated to c.625 (Lafaurie 1959/60:153-210). This new dating was not universally accepted and some numismatists continued to adhere to the original date. The dating of the coins was so fundamental to any consideration of the burial, however, that such confusion was clearly unacceptable (Bruce Mitford 1975:582).

The confusion encouraged the British Museum, who were publishing the Sutton Hoo discovery, to embark on a review of the chronology of the Merovingian gold coins

using the results of an exhaustive analysis of the gold content of over 700 coins carried out by W.A. Oddy. The results of this review are published in the first volume of the report on the Sutton Hoo Burial (Bruce Mitford 1975:578-88; Kent 1975:588-647; Oddy 1972; Oddy and Hughes 1972; Oddy and Hughes 1975:648-52).

The fineness of the Merovingian gold coinage was known to decline throughout the 7th century but the nature of this decline was unknown in detail. Metcalf had suggested, after milliprobe analysis of a number of gold coins, that a controlled step like debasement had occurred with successive siliquae of gold being replaced by silver. Using a specially developed and highly accurate method of measuring the specifc gravity of gold coins and thus their fineness, Oddy analysed some 700 Merovingian coins which could be dated from the rulers name on the coin . Rigold used these analyses to demonstrate a distinct pattern in the declining gold values of the coinage which can be summarised as follows (Kent 1975:599).

c.580-90	a fineness of over 90% pertained throughout the Merovingian kingdom
c.590-600	a fineness of over 90% continued in Provence but elsewhere this high level was not always maintained

c.600-15	a fineness of over 90% maintained in Provence but no more than 85% was reached elsewhere
c.615-30	fineness dropped slightly below 90% in Provence but dropped as low as 60-70% elsewhere.

After 630, during the reigns of Dagobert I (629-39) and his successor Clovis II (640-57), the decline in the gold content becomes much more rapid. This is discussed by Kent (1975:599-600) and can be briefly summarised here. At the beginning of Dagobert's reign the fineness of his coins actually seems to have risen slightly to c.70-80% but soon fell rapidly to c.50% and continued to fall in succeeding reigns, reaching as low as 27% or even less in the reign of Clovis, until eventually replaced by an overtly silver coinage. Kent suggests that the rise at the beginning of Dagobert's reign could be due to the 200,000 solidi he received as the price of his aid in helping Sisenand (631-6) to the Visigothic throne (1975:600). Thereafter no further such windfalls are recorded while imperial solidi dating to after 630 are rare in the west suggesting that this source of bullion also dried up. The realisation that the fineness of the coins provided an independent basis on which to date the coins was a major advance in coin studies. An analysis of the coins in the Escharen Hoard confirmed Lafaurie's earlier dating, as a majority of the coins, even those from outside Provence, were of a

fineness over 90%, although the decline in the standard dated to the turn of the 7th century was already evident. Lafauries's date of c.600 seemed confirmed.

The Sutton Hoo hoard consisted of 37 coins, three blanks and two ingots of gold. The coins were all Civic issues from different mints suggesting that at some stage the coins had been carefully selected. Grierson made the perceptive suggestion that the hoard represented a symbolic payment for the crew of the ship, the coins and blanks being the payment to the forty rowers and the ingots the greater payment to the steersman (1970). Grierson was not aware of it at the time but the final review of the evidence of the ship concluded that there were indeed forty rowers rather than the thirty eight originally suggested by C.W. Phillips (the evidence for this is discussed by Bruce Mitford (1975:413-20).

The analysis of the coins from Sutton Hoo indicated a generally homogenous group with the fineness of the coins suggesting a date range of 585-615. Of the 37 coins, three were 'outliers' but Kent concluded that these were most likely dated to 615-25 (1975:606). Even the blanks and the ingots fell into this general date range and Kent was firmly convinced that "the last coin to enter the hoard was minted no later than 620-5" (1975:607).

Considerable doubt has been cast on the validity of the

analysis by Kent in recent years and even on the validity of the decline in fineness being in any way controlled or valid as a dating tool. Brown in a reappraisal of the arguments put forward by Kent, accepted the date of Sutton Hoo but severely criticised the analysis and demonstrated the arbitrary grouping of figures and their often misleading statistical treatment (Brown 1981; Grierson and Blackburn 1986:109). Grierson and Blackburn go on to question the validity of using finess as a dating tool other than in a most general way. They point to the varying fineness of coins in individual hoards and suggest that people would have accepted whatever coins came their way except for the most obvious forgeries such as the plated copper tremmissis in the Crondall hoard (1986:109). It is likely that mints, with the exception of some of the larger ones, would also accept and melt down whatever came their way. In addition, plate and jewellery were often turned into coin and these were often of silver gilt or at least less fine than coins. Given these factors, a gradual decrease in fineness was inevitable and not necessarily the result of centralised authority or dictat. Indeed the Merovingians seemed to restrict attempts at controlling the coinage to a general level and certainly did not claim right of minting to themselves. They presumably had some say in the change in weight to a Germanic system in the 6th century and from gold to silver in the later 7th and even in what information was on a coin but at a more detailed level there is little evidence that they intervened (Grierson

and Blackburn 1986:98, 109-110).

2.1.3 Anglo-Saxon gold coinage

Despite the doubts over the analysis presented by Kent, the preferred date of the Sutton Hoo coins is still c.625 rather than c.650. This redating of the Merovingian gold coinage and consequently the coins from Sutton Hoo had obvious effects on the dating of the later 7th century gold coinages in England and on the Continent. It was Sutherland in an important paper (1948) who first reviewed the Anglo-Saxon gold coinage and in particular the only other hoard of gold coins from England, namely that from Crondall in Hampshire. In the first volume of the Sutton Hoo report Rigold (1975) reviewed the finds of gold coinage in England from the 6th century in light of the redating of the Sutton Hoo coins. The Anglo-Saxon gold coins were again reviewed, with the addition of some new finds, by Stewart (1978) and most recently Grierson and Blackburn in their monumental survey of Early Medieval coinage have again reviewed the evidence of the Anglo-Saxon gold coins (1986).

Rigold defined four phases into which the period of dominance of the gold coinage could be defined. The first was from c.545, or perhaps slightly earlier (Grierson and Blackburn 1986:159), when predominantly Merovingian but also imperial, Visigothic, Lombardic and other Germanic series were imported into the south east

of the country, especially Kent.

There are over one hundred Continental coin finds recorded from the 6th and early 7th centuries. This is a comparatively high number and is due to the fact that many of them occur as finds in graves; in addition many were mounted and were primarily used as jewellery. This tends to suggest that these coins were traded as objects in their own right, either to be used as ornaments, or possibly as bullion to furnish the production of the sophisticated gold jewellery often found in cemeteries of the period. Interestingly western Frisia has a similar pattern of coin finds, both in this and the next of Rigold's phases, individual coins from a variety of often distant sources usually utilised as ornaments or as raw material for gold jewellery (Rigold 1975:655). One of the most famous and important of such groups is the St Martin's hoard from Canterbury a grave find consisting entirely of looped coins dating from c.585 (Rigold 1975:655). This group contained possibly the earliest coin struck in England, although it was probably never intended as anything other than an ornament. This is the large looped tremissis in the name of Liudhard [LEVDHARDVS EPS] (Sutherland 1948, pl. 1.1 ; SCBI Merseyside 6). Liudhard is mentioned in Bede as being the Frankish bishop who accompanied the Merovingian princess Bertha when she came to England to marry Aethelbert of Kent in the 570's or early 580's (Grierson and Blackburn 1986:160; Wood 1983:15-16).

From about the same period there is a solidus, which appears to be English in origin and is copied from a coin of Honorius, but inserted into the legend is the word Skanomodu written in runes. As with most other coins of this period it had been looped for suspension for use as an ornament, and indeed may well have been originally made for this purpose (Sutherland 1948, pl. 2.1; Berghaus and Schneider 1967; Grierson and Blackburn 1986:160).

Rigold's second phase in the gold coinage is his 'Sutton Hoo' phase, including the very end of the 6th and the first quarter of the 7th century (1975:658). During this phase the coins were still predominantly Continental in origin but the area of circulation widened to include more of the Thames Valley and East Anglia in addition to the still predominantly east Kentish distribution. Coin ornaments were still common in this phase and it is from the early 7th century that the important grave finds from Sarre and Faversham in Kent are dated (Jessup 1950:118-9). It is in this phase that the first attempts at an Anglo-Saxon coinage were made although 'unsuccessfully' in the sense that very few appear to have been minted and it is not until the next phase that gold coins were minted in England in any numbers. The first of these and possibly the earliest English coin, as opposed to coin-like ornaments, was found at Folkestone in the 18th century and is now known only from an engraving and some later forgeries. The coin appears to be modelled on a tremisses of Corneillan

in south-west France and also bears a name in runes, aniwulufu, which is in fact Eadwulf and is probably a moneyer's name (Grierson and Blackburn 1986:160). A second, very different coin, is also placed in this phase by Grierson and Blackburn (1986:160-1). This appears to be of Frankish workmanship and is similar in style to coins of Theodebert II (595-612). It bears the name of the moneyer Eusebius (EVSEBII MONITA) and the mint, Canterbury, (DOROVERNIS CIVITAS) (Sutherland 1948 pl. 1.2). The placing of both moneyer and mint names on coins is common in the Merovingian coinage but this is the only early English coin which uses this formula, supporting the suggestion that the coin was produced by a Frankish moneyer, presumably in Canterbury. The suggestion has been made by Stewart (1978:150) that two crude imitations of Victory tremisses may also be English coins of this period but Grierson and Blackburn prefer a Frankish origin for these particular pieces (1986:161).

To return briefly to the distribution of Continental finds of this 'Sutton Hoo' phase, Rigold (1975:662-3) points out that even though looped coins still occur, the number of unlooped coins, particularly the 'Civic issues', increases. In this phase there are nine or ten finds known from the Thames estuary, including one from London and probably four from Reculver, which must have been a centre of some importance at this period as it continued to be into the following century. These

finds, along with the possible attempts to establish a coinage in Kent, may indicate an increasing use of coin in a 'monetary' role in this area, restricted though it was. These points will be discussed further below.

Rigold's third phase takes its name from the Crondall hoard, the only one of gold coins known apart from Sutton Hoo, and a possible hoard from Kingston-on-Thames found in the 1848 but only sketchily known (Rigold 1975:665). The hoard was discovered at Crondall in Hampshire in 1828 and contained 101 pieces, 97 coins, three blanks and a plated forgery. One of the pieces was an imperial tremissis which showed evidence of having been mounted and Grierson suggested that the mounted coin had been added at the last moment to replace the plated forgery thus making the hoard a total of 100 coins (1961 and 1970; Stewart 1978:144). Grierson further argued that the hoard was probably intended to be the wergeld of a Kentish ceorl at this time, the gold thrymsas actually representing the shillings of the documents. Crondall is important because it contains most of the known Anglo-Saxon gold coinage and is thus crucial to any understanding of the gold coinage in the second and third quarters of the 7th century.

The Crondall hoard was first published by Sutherland in 1948 and has more recently been discussed by Stewart (1978) and Grierson and Blackburn (1986) as well as briefly by Rigold (1975). Sutherland had originally

dated the hoard to c.660-70 with the succeeding debased pale gold coinages carrying on until the 680's, if not 690, before being replaced by the silver coinages. The redating of the Sutton Hoo coins has of course altered that date and a date of c.650 or even slightly earlier is now accepted (Kent 1975; Rigold 1975:659; Grierson and Blackburn 1986:161). Before discussing the Crondall hoard it is worth mentioning an English type which probably dates from this phase but which is not represented in Crondall. coins of this typeare of finer gold than the Crondall coins (63-73%) and have a legend in runic letters which reads benu:tigo or benu+:tid. Four specimens are known, all die linked, in addition to a fifth in a different style which may be Merovingian (Grierson and Blackburn 1986:161). Only two of the coins have recorded find spots and these are west of the normal distribution of the gold coins, namely Dorchester(Oxon) and Turville (Gloucs) which has led to the suggestion that they may be the products of a mint in the upper Thames Valley, possibly at Dorchester itself (Rigold 1975:663; Grierson and Blackburn 1986:161).

The Crondall hoard contained some 69 Anglo-Saxon coins the remainder being continental types including examples from Paris, Quentovic and Amiens as well as from more easterly Austrasian mints such as Metz, Meurvy and Marsal (Rigold 1975: 654). Also included was a coin of the Dronrijp type from Frisia and a coin of Rodez in the

south-west of the Frankish kingdom.

The Anglo-Saxon coins in the hoard fell into ten basic groups presumably representing the output of a number of mints or workshops although they were struck from a small number of dies (Grierson and Blackburn 1986:161). The extent of the die linkeage in the hoard is very extensive; of the 69 coins there are only 9 which do not have die links with other coins in the hoard. This ought to suggest that Crondall is not representative of the coinage at the time but was drawn from a limited and uncirculated sample. This does not appear to be the case, however, as of the 14 other examples of Crondall types known, presumably all single finds, 11 die link into the hoard suggesting that the coinage at the time of Crondall was very limited in output, circulation and function (1986:161).

One of the earliest coins in the hoard appears to be a coin minted in the name of Eadbald of Kent (616-40), son and successor to Aethelbert. The obverse bears the legend AVDVALDREGES which is comparable with contemporary spellings of the king's name (1986:161). The reverse of the Crondall coin is blundered but a second coin from the same obverse die bears the legend LONDENVS (Sutherland 1948: pl4.22-3), an important piece of evidence suggesting Eadbald's authority extended that far. The fineness of this coin is one of the highest in the hoard, 69%, and the style of the coin led Grierson to suggest it was the work of a Frankish or Italian

diecutter (Stewart 1978:150), perhaps further reflecting the slow progress to a widely produced insular coinage.

The Aydvald coin is the first of three groups attributable to London. The second group has a similar reverse of cross on a globule and the legend LONDINIV around the upper part of the reverse (Sutherland 1948 pl 3.1-7; Grierson and Blackburn 1986:162). Ten coins of the type were present in the Crondall hoard, struck from one obverse and three reverse dies. All the coins had the same 90° die axis, closely regulated weights and varied less than 5% from an average fineness of 64% (1986:162; Stewart 1978: 148). The third London type has elements of the same design particularly the hatched border on the reverse but the inscription is prefixed by a cross, is a blundered form of LONDINIVM and fills the entire border on the reverse (Grierson and Blackburn 1986:162). The fineness of this group is similar to that of the second London group although with slightly more variation. There is also a similarity in the weight range and die axes but the similar high fineness has led Stewart to suggest a date as early as the 630's for these groups (1978:148; Grierson and Blackburn 1986:162). The next largest group in Crondall is the so-called Witmen group, probably of Kentish origin judging by the single finds. The series in Crondall begins with a legible well cut coin bearing the legend WITMEN MONITA but the portrait on the obverse soon becomes stylised and the legend blundered (Sutherland

1948: pl 4 1-14; Grierson and Blackburn 1986:162). The fineness is also reduced from 61-70% to 43-62%. A second rather curious group also appears to have the beginnings of a moneyer's name EAN.. although the rest of the legend is blundered. There are 4 coins of this type in the hoard, all from the same die, but interestingly in each case the die seems progressively recut and, more curiously, the fineness rises from 35% to 63% from the earliest to the latest die (Sutherland 1948: pl 4 24-7; Stewart 1978:148; Grierson and Blackburn 1986:162). The other Anglo-Saxon groups in Crondall copy various Merovingian types and there is one copy of a 4th century Roman coin of Licinius I.

Rigold, in discussing the Crondall hoard, points out that the earliest of the Continental coins is that of Dagobert I dating to the 630's. He further notes that, with the exception of the coins from Quentovic, all of the Continental coins could be early in relation to the Anglo-Saxon coins and postulates that the increase in minting in England could be as a result of the drying up of Continental supplies (1975:659). This interpretation would only be feasible if Stewart's early dating for the London series were pushed slightly later.

Rigold's final phase in the gold coinage is his Post-Crondall phase which saw an increase in the numbers of coins, though not a notable widening of the area of distribution, and a continuing fall in the fineness until finally the gold coinage was replaced by the so-

called sceatta series of silver coins.

There are two groups of coins which do not occur in Crondall but are of a fineness comparable with and in some cases apparently higher than some of the coins in Crondall and may be contemporary with the deposit of the hoard. The first of these is the Wuneetton group, probably derived fron the Witmen group found in Crondall as the coins have a number of elements in common; indeed the portraiture on one of the coins is so similar to the Witmen coins that it could be by the same die cutter (1986:163). Stewart (1978:151) points out that the fineness of the one coin of this type for which a specific gravity measurement is available is 55%, more than the Witmen derivatives in Crondall and consequently speculates as to whether the type could be 'ultra' rather than 'post' Crondall. A second type of similar fineness is a group of coins possibly minted in York, where a group of three were apparently found in 1840's (Sutherland 1948:pl 4. 18-20; Stewart 1978:149; Grierson and Blackburn 1986:163).

The most numerous of these groups is the so called Two Emperors type based on a design taken from a 4th century solidus. Some 22 specimens are known but only three are from known provenances, one each from Reculver, Lymne and Hollingbourne which suggests, as far as three finds can, a Kentish distribution for the type (Grierson and Blackburn 1986:163). Unlike the Crondall coins there

are few die links in the Two Emperor, or indeed any of the post Crondall series. The 22 examples of the Two Emperor series were struck from 17 obverse and 21 reverse dies which suggests a coinage of some numbers. The fineness of the coins was in the 40-20% range in keeping with post-Crondall levels and these coins probably circulated in the period 650-70 ?(1986: 163; Stewart 1978:152).

Two further series appear to be contemporary with the Two Emperors type. Both are known only from a few coins and have a fineness of c. 30%. The first is known fron a single coin found at St Albans (Herts) and is copied from a Roman prototype of Crispus but, as with some other Anglo-Saxon gold coins, has a runic inscription on the reverse, Delaiona retrograde (Sutherland 1948: pl 2. 5; Stewart 1978:152; Grierson and Blackburn 1986:163). The second type appears to be derived, at least the reverse, from the Concordia type of Carausius. Only three examples are known, two of which were found in Kent, at Faversham and Strood, but the type is of interest as it influences the obverse of the sceatta series A, probably the earliest of the specifically silver coins (Sutherland 1948: pl2. 2-3; Stewart 1978:152; Grierson and Blackburn 1986:163).

Two series of coins span the transition from gold to an unequivocably silver coinage, the Pada and Vanimundus series. The Pada coins have a variety of differing

obverse and reverse designs but incorporate on the reverse the name Pada in runes. The name was formerly taken to refer to King Peada of Mercia, who died in 656, but it is unlikely that the coins are so early and philologically the attribution is also apparently untenable; the name therefore is almost certainly that of a moneyer (Rigold 1960:13; Grierson and Blackburn 1986:163). Some 11 specimens are known in gold and 20 in silver; the best of the gold is apparently c.30% fine while some of the silver appear more debased than the succeeding silver sceattas (Rigold 1960:15, 31-2; Grierson and Blackburn 1986:163-4). There are few die links amongst the Pada coins, particularly those in gold, and the coinage may have been more extensive than the relatively few examples would indicate (1986:164) although Stewart (1978:152) has argued that the scarcity plus the stylistic cohesion suggests a period of circulation of not more than 5-10 years. The second of the transitional series also bears a moneyer's name, Vanimundus, but this is copied from a Frankish coin minted at an obscure mint in Austrasia bearing the name of the moneyer Warimundus (Rigold 1966:2; Stewart 1978:153; Grierson and Blackburn 1986:164). The obverse, a helmeted bust, is derived from a 4th century Roman prototype and associated with this are two reverse types. The earliest, a typical Merovingian cross on steps, was replaced by a simple cross in a border. Coins with the later reverse appear to be mainly of silver but at least one appears to be at least 10% of gold (Stewart 1978:153; Grierson and Blackburn

1986:164). The transition from gold to silver appears to have occurred at roughly the same time on the Continent and in England, although there are no equivalent Merovingian series to the Pada and Vanimundus coins in England and to the Madalinus series in Frisia which are minted in both pale gold and silver (see below). The Merovingian silver coinage appears to have been introduced as a distinct denomination rather than as debased tremisses (Grierson and Blackburn 1986:138). The transition was originally dated to the 650's or so, when the Pada coins were associated with King Peada of Mercia, but Rigold placed the change to a silver currency in the 690's and associated it with a single historical event namely the payment of a large wergeld by Wihtred of Kent in compensation for the death of Mul of Wessex (Rigold 1960). The redating of the Crondall hoard clearly pulls back the date of the introduction of the silver coinage to at least 680 (Rigold 1977; Metcalf 1974:236). The chronology of the sceattas will be discussed further below.

2.1.4 The Gold Coinage in Frisia.

For completeness and as background to the discussion of the Continental sceatta series, a brief review of the gold coinages from the Low Countries is necessary. As already mentioned above Rigold noted that the pattern of finds in Frisia was similar to that in Southern England in the 6th and early 7th centuries. The finds of gold coins from Frisia have been listed by Boeles (1951) and more recently by Pol (1978).

There are considerable numbers of imperial solidi often looped for suspension, as in the Wieuwerd hoard which consisted of 39 coin ornaments and pieces of jewellery, the coins being mainly Byzantine or from Marseille (Grierson and Blackburn 1986:124). There was also considerable local minting in Frisia which, as in neighbouring Austrasia, may have been in mints which were irregular even by Merovingian standards (1986:136). Already in the Escharen hoard (Lafaurie 1959/1960), which was deposited c.600/10, there were locally minted coins derived from Provencal prototypes as well as Provencal minted coins. Included in Escharen were two coins of an otherwise unknown ruler named Audulfus which also bore the name of Frisia. Also in Escharen were 14 coins all of the same dies, which had on one side a crude quadruped but no indication of mint or moneyer, and which are presumably also of local manufacture (Grierson and Blackburn 1986:137). There are two, or possibly four, other hoards of gold coins from Frisia

which contain mainly local types. The Dronrijp hoard was found in 1886 and consisted of 28 coins, 3 blanks and a large ingot, all contained in a pot (Dirks 1887; Boeles 1951:315-16). The majority of the coins in this hoard were crude local issues which Boeles later classified and termed 'Dronrijp type'. The hoard also contained some Merovingian types which would date the hoard to c620, but dating is confused by the presence of a possible second hoard supposedly found in the same year. Boeles thought the two hoards were the same and although there is considerable overlap between them, Dronrijp II contained two Dorestad coins of Madelinus which would date it to at least the 630's rather than the 620's, so the possibility that there were indeed two hoards cannot be discounted (Boeles 1951:315-16; Grierson and Blackburn 1986:125). A further hoard was found at Nietap in 1900 and a further group of coins turned up the following year which Boeles (1947) considered to be a separate hoard but which is more likely to be part of the original find (Pol 1977; Grierson and Blackburn 1986: 125). This find also contained coins of Dronrijp type and Boeles's study established the nomenclature of the Dronrijp types. Some Merovingian types including, examples from Maastricht, were present but coins of Madelinus type were absent suggesting a date of around 630 for the deposition of the hoard.

In 1820 a hoard of some 20 coins was found at Mons in Belgium which included five Byzantine coins, two

tremisses of Swinthila which date the hoard to after 630 and 12 coins of local or Frisian origin of which 8 were of the type now called Dronrijp D (Grierson and Blackburn 1986:125-6).

A major mint in the 7th century was the trading town or emporium of Dorestad. The political history of this area is little known but the southern part of Frisia was annexed in the reign of Dagobert in the 630's and it is at this point that Dorestad comes to the fore as a mint. Two moneyers from Maastricht appear to have moved to Dorestad at about this time namely Rimoaldus and the much more important and prolific Madelinus (Op den Velde et al 1984: 122; Grierson and Blackburn 1986:137). The Madelinus coins gave rise to what are usually considered to be local imitations, larger in size and more carlessly made and found in larger numbers than the originals. However Grierson and Blackburn point out that these may still be the products of the 'official' Dorestat mint, merely fashioned by less skilful die cutters (1986:137) and not necessarily unofficial imitations. Interestingly the Madelinus coins are also struck in silver and effectively constitute the first of the sceatta series.

2.2 THE SILVER COINAGES OF NORTH WEST EUROPE C.670-750AD.

The silver coinages which replaced those in gold across north-west Europe in the 670's tend to be divided into the Frankish denarii, circulating in the Frankish kingdoms including Provence, and the English, Frisian and now possibly Danish sceattas. Despite these different terms there is essentially no difference in the coins and indeed it is difficult to determine where some series originate. The term sceatta has been applied to coins of this period in England and Frisia since the 17th century and is in fact a misnomer based on a misreading of the early 7th century law code attributed to Aethelberht of Kent. In the laws the term 'sceat' is used to refer to a weight of gold equivalent to 1/20th of a shilling (Grierson 1961) rather than a coin and as the laws were written at least 60 years before the silver coins began to circulate, it is clearly impossible that the name sceat should be associated with them (Grierson and Blackburn 1986:157). However the term has been used for so long to describe the late 7th and early 8th century coinage that it seems impossible to shift it, despite various attempts (Dolley 1976). It is almost certain that these coins, like their successors, were known as pennies. Pennies are first documented in another set of Anglo-Saxon laws compiled around 690 by King Ine of Wessex. In the laws the shilling, probably equivalent to the gold thrymsa,

no longer minted but still used as a unit of value, was rated at a value of 5 pence in Wessex and 4 in Mercia. In Kent the ratio was and probably always had been 12 pence as the laws of Aethelberht were formulated at a time before the debasement of the gold coinage. The ratio of 1 to 12 was also current in France and was eventually brought into general use by the Normans, the localised lower value shillings being swept away (Grierson and Blackburn 1986: 157-8).

The silver coinages are in some ways more difficult to understand than their predecessors. The sceattas are generally uninscribed and consist of a large number of different types, some derived from preceding gold or Merovingian silver types, others utilising motifs and designs from contemporary Germanic art such as beasts, birds and designs based on the Celtic cross. There are also numerous derivitives, copies and variations amongst the basic types, which caused early scholars great problems in attempting to order the sceattas chronologically and stylistically. A fundamental difference between the gold and silver coinages is the sheer numbers involved, 160 gold coins, including a few post 7th century ones, are known from England against several thousand sceattas now known (Stewart 1978:143). New coins are also coming to light in surprising numbers, at least in England, where new finds, mostly metal detector finds, are now regularly reported (Metcalf 1986b; Blackburn and Bonser 1985;1986). Quantities of coins are also coming to light in

controlled archaeological excavations, particularly in the known trading towns of the period such as London, York and now Ipswich, but also in high status or ecclesiastical sites notably in East Anglia, eg Burrow Hill and Brandon, but also further afield eg. Whithorn in Galloway. Certainly in the case of the sceatta coinages it is a period of active research with an increasing number of numismatists working in the field (Hill and Metcalf 1984).

The following sections will briefly summarise the Frankish denarial coinage, which will not be considered in further detail in this thesis except in the section on the chronology of the sceatta series, for which the hoards from France are of fundamental importance. The sceatta series in England and on the Continent will be considered in more detail as this, along with the discussion in Chapter 4, will form the essential foundation for understanding the series X coinage and its analysis.

2.2.1 The Merovingian Silver Coinage c.670-750.

The standard works on the Merovingian silver coinage for many years were those of Prou (1892) and Blanchet (1912) but these have been largely superseded by the publications of Lafaurie, particularly his introductions to the reconstructions of the various hoards (1963 and

1969) and to the reprint of the publication of the Bais hoard by Prou and Bourget (1907; Lafaurie 1981). More recently there is an important and useful summary by Grierson and Blackburn (1986).

The silver denier was introduced into Neustria probably around 670, or even slightly earlier, as an independent denomination, rather than as a debased tremissis like the Pada and Vanimundus coins in England. In their discussion of this 'monetary revolution' Grierson and Blackburn (1986:94) point out that such a change is highly unlikely to have come about without some central direction, not least because there would need to be guidance on the number of deniers which had to be paid in the settling of debts and obligations, hitherto calculated in solidi or tremisses. Only a Frankish king or his representative, the Mayor of the Palace, was in a position to effect such a change. In the latter half of the 7th century there was no effective single political authority. Neustria, where the denier was first introduced and where it was most closely linked to the preceding gold coinage, was dominated by Ebroin , Mayor of the Palace, and it is to him that Grierson and Blackburn attribute the introduction of the silver coinage. There is no conclusive evidence of this attribution, although there are two coins minted in the name of Ebroin; however the spread of the use of the silver denier follows the extension of Ebroin's authority and, following the battle of Tertry in 687, that of Pepin of Herstal into Austrasia, Burgundy and

Provence. In Provence however the silver coinage was somewhat different being minted on a different weight standard and in the names of the patricians of Marseilles. In Aquitaine the silver deniers were never minted on any scale, presumably because for much of the 7th and 8th centuries Aquitaine was effectively independent of the power of Neustria and Austrasia (Grierson and Blackburn 1986: 94-5).

The design of the coins was generally similar to the gold predecessors in that the mint and moneyer's names were inscribed on the coins although in the northern mints the legends are blundered, having only a few letters or an undecipherable monogram. As a result there are many more coins in the silver series which cannot be attributed to a mint. A bust remained a common obverse design as did a cross on the reverse, but there was an increasing use of letters, monograms and geometric and naturalistic designs (Grierson and Blackburn 1986:138-9). A further feature of the silver coinage is the disappearance of royal names; only one denier is known to have a king's name, that of Childeric II (662-75) (Grierson and Blackburn 1986:139). This period also saw a notable increase in the minting on behalf of bishops and monasteries. Most of these name the monastery or see but the names or monograms of bishops do occur, although the association of many of these with names on episcopal lists should be treated with caution (1986:139). Interestingly there is not a comparable

increase in the minting of coins in the name of the Mayors of the Palace, which might have been expected with the decline of the monarchy in the 7th and 8th centuries. Only two coins of Ebroin are known and none of his Austrasian successors (1986:139). Much reassessment of the Merovingian silver coinage is needed, in terms of mint attribution and the extent of ecclesiastical minting as well as detailed recording of single finds of coins, the latter being such a welcome feature of the study of the sceatta series in England and the Low Countries.

The hoards of this period, so important for understanding the chronology of the coinage, are summarised in fig 2, and discussed in the section on chronology below.

2.2.2 The English Sceatta Series.

Sceattas have been the subject of increasing interest over the last two or three decades amongst numismatists, historians and archaeologists. Despite this interest, considerable debate over such fundamental questions as origin, date and function still remain. A feature of the sceatta coinages is the great multiplicity of designs and types; 109 separate types are listed by Stewart (1984: 22-5).

Engravings of sceattas were published as early as the

17th century but it was not until the middle of the 19th century that study of the these coins was put on any kind of firm footing. The German numismatist Grote acquired hundreds of coins from the largest hoard of sceattas yet found, the Kloster Barthe hoard of 1838, and he distributed many of these to other numismatists throughout Europe, thus bringing the coins to the attention of scholars. Shortly after this, Ruding brought together many of the early references to sceattas in his 'Annals of the Coinage' (1840) again making the information available to scholars (Hill and Metcalf 1984:1). The work which may be regarded as the first modern study and the starting point of a serious study of these coins was written on the Continent by J. Dirks. His interest in the coins was aroused by the discovery of of a number of hoards in his native Friesland in the 1860's; Terwipsel, 1863, Hallum 1866 and Franeker in 1868. He wrote a long essay on these which was originally published in the Revue de la Numismatique Belge and later reprinted as a book (Dirks 1870; Hill and Metcalf 1984:1).

By the later 19th century, the British Museum had acquired a significant collection of sceattas and these were published in 1879 by Keary. He divided the 200 or so coins into 54 types, which became the basis of the B.M.C. classification added to by Hill (1953) and more recently by Stewart (1984:20-5). Other writers were contributing to sceatta studies on the Continent and

these will be discussed below, but in England it was not until 1942 that the next major study was published by Sutherland. Although a large number of different sceatta types had been published, the lack of evidence as to date and affiliation had led to many different dates and attributions (Hill and Metcalf 1984:2). Sutherland discussed the chronology and distribution of the coins and for the first time published a list of stray finds but he ,as previous writers had done, relied heavily on the devolution and affiliation of designs to derive sequences of types. This approach was continued by Hill in the 1950's, who also added new types to Keary's scheme and added further stray finds (1953). The B.M.C. numbering system has continued in use despite the introduction of the concept of series by Rigold and has recently been extended again by Stewart (1984).

The early studies of the sceattas attempted to divide and group them according to stylistic development and derivation, an approach which, although of some value in ordering the various types, never really addressed the fundamental problems of the sceatta coinages (eg, Brooke 1932; de Man 1907; Keary 1879; Sutherland 1942; Hill 1950; 1951; 1952; 1953; 1954; 1955). It was in 1960, however, that the major breakthrough came in the study of the sceatta coinages in a paper by Rigold. From an analysis of hoards and grave finds, Rigold was able to demonstrate that there were a number of related types which were clearly early and which followed on and were related to the pale gold Pada and Vanimundus coins.

These he grouped into 'series' a more neutral and flexible concept than that of 'type' (Hill and Metcalf 1984:2) and one which has revolutionised the study of the sceattas since the publication of his paper in 1960.

Rigold identified two series of sceattas, series A and B, as being early because of their presence in hoards and particularly graves in Kent. He followed this up with a second paper in 1977 which extended the series to cover almost all the known sceatta types. Rigold defined a series as 'The serial or concomitant production of a mint, or of more than one mint, including unofficial or 'imitative' mints, sharing types but generally keeping within a limited group of types' (1977:22). It is this classification, along with the extended B.M.C classification, which has been so important in helping to clarify the 'sceatta problem' and it is now in general use.

In the meantime Michael Metcalf published a number of important papers on the sceattas using the distribution of finds of individual types to attempt to assign them to individual kingdoms and rulers (1966a; 1972; 1974b; 1976a). In addition, he published two studies of the series E or 'Porcupine' sceattas (1966b; 1969) and studies on the metallurgical analysis of the coins (Metcalf et al.1968; Metcalf and Hamblin 1968).

It is not proposed to discuss every series but an

outline of the main features in the sceatta coinage is set out below. There are some 25 hoards and grave finds of sceattas and the relative chronology and development of the coinage is based on these and on the recent excellent summary of the sceattas by Grierson and Blackburn (1986) and, to a lesser extent, that of Stewart (1984) and Metcalf (1984a) The absolute chronology of the sceattas is discussed separately.

The decade since the publication of the first checklist of sceatta finds (Rigold and Metcalf 1977) has seen an enormous increase in the number of new sceatta finds in England, both from controlled excavation and, in particular, from the use of metal detectors. It has also seen a renewed interest in the 'Frisian' or 'Continental' series of sceattas, a subject which had lagged behind somewhat (Op den Velde et al 1984). In the 19th century and early 20th century much had been written on the Continental finds of sceattas, prompted by the discovery of a number of hoards in Frisia and of coins on the beach at Domburg (eg Dirks 1870; de Haan 1866; de Man 1895; 1899; 1907; van der Chijs 1866). A number of scholars at this time postulated a Continental origin, Frisia in particular, for certain of the sceatta types but the idea that they were all of English origin was still widely held (Keary 1879: Brooke 1932). Hill initially held to this view but eventually proposed a Frisian origin for at least some of the Porcupine series as well as the type 31, or Wodan Monster coins (Hill 1954), a view to which Rigold also adhered (1960), but

it was not until 1984 that Metcalf finally proposed a Continental origin for all the Porcupine sceattas, having previously divided the series between England and the Continent (1966; 1984).

The Primary Series of Sceattas

Rigold's Primary series A copied elements of its design from the gold coins, including the Pada coins of which it seems to be a continuation (Rigold 1960; Grierson and Blackburn 1986). Series B similarly appears to succeed the Vanimundus coinage carrying as it does blundered versions of the legend, but other elements of the design appear to be unique, such as the bird on the cross and the serpent headed torc on the reverse. Rigold suggested that both of the two Primary series were minted in Kent but Metcalf (1976a) proposed an East Saxon origin for the series B coins and their predecessors, as most of the finds of the Vanimundus and the early Bx type are in Essex, the exception being a recent find from South Yorkshire (Dolby 1983). The distribution of the succeeding BI coins is slightly wider than the series A types, which would also seem to suggest an East Saxon origin, London being an obvious candidate given its importance both in the preceding gold phase and in the following phases of the silver coinage (Grierson and Blackburn 1986:165).

A third series of sceattas, series C, accompanied the

Primary series in finds from Southend and Birchington in Kent. This is copied from series A, particularly A3, but has Apa, Aepa or Epa in runes in front of the face (Rigold 1960; Grierson and Blackburn 1986). Type C gave rise to an extensive derivative coinage in East Anglia (series R) and influenced the Continental runic series D. Rigold had placed the origin of series C in Kent as sucessor to A, but Metcalf placed it in East Anglia because of the use of runes, a feature of the succeeding East Anglian coinage. Grierson and Blackburn have a more open mind, discussing arguments for both attributions, although Blackburn at least seems to favour the Kentish option rather than the East Anglian (1984:166).

Rigold originally limited the Primary series to three groups of coins but more recent research, especially the increased number of metal analyses, have indicated that other series could be considered to be early. Series F has been put forward on account of its fineness and high gold content (Metcalf 1984a) but its presence in the Aston Rowant hoard in some numbers suggested to Grierson and Blackburn (1986: 166-7) that it was more likely to belong to the following Intermediate phase. The earliest coins from Northumbria can now be confidently assigned to the Primary phase. Seven coins were minted in the name of a king Aldfrith,who is now accepted as being the Northumbrian king of that name who ruled between 685-704. For a time it was considered that the coins could not be this early and they were attributed

to a king Ealdfrith who ruled in Lindsey in the late 8th century (Lyon 1956:229) but recently an example was discovered in early 8th century deposits in Southampton. The coin is remarkable for bearing the king's name in such a clear unequivocal manner and this remained a feature of the Northumbrian coinage, although it was not adopted in the southern kingdoms until the 750's (Archibald 1985; Metcalf 1988:51).

The distribution of the Primary series was restricted in much the same way as the gold coinage, with a concentration in eastern Kent and the Thames Valley with a few outliers in Mercia and Wessex. Examples of series A and B did find their way to the Continent, however, and occur in the finds from Dorestat and Domburg and in all the French hoards (Op den Velde et al 1984; Grierson and Blackburn 1986:185). A further feature of the Primary series is their good weight (c.1.3g or 20 grains) and their very high fineness, often over 95% silver and often with up to 10% gold. The presence of the latter suggests that the coins were minted using bullion derived from the preceeding pale gold coinage.

The Intermediate and Secondary Series of Sceattas

In his 1977 paper, Rigold identified some series as belonging to an 'Intermediate' phase running on from the Primary, with some types continuing, but occurring before the pronounced expansion of types and area of distribution so apparent in the Secondary phase. This Secondary phase has also been accepted and discussed by recent scholars, notably Metcalf (1984a) and Grierson and Blackburn (1986). The Intermediate phase is characterised by an limited expansion of the area of minting into East Anglia, the East Midlands or 'Middle Anglia' and the Upper Thames Valley and by an influx of Continental coins (Grierson and Blackburn 1986:167). In the early Primary phase the weight standard of the coins appears to have been well regulated and struck on a standard similar to that of the late gold coinage, usually between 1.25-1.30 g, presumably meant to be 20 grains. The later Primary and Intermediate series suffered a slight drop in weight to c.1.10-1.25g but maintained a high silver content of c.90-95% (Grierson and Blackburn 1986:168). There was no parallel in the English series to the dramatic decline in standard of the Continental series D.

The best guide at present to the coins circulating in the Intermediate phase are the contents of the Aston Rowant hoard. This is the largest hoard of sceattas found in England but is as yet unpublished apart from the briefest of notes (Kent 1972 and 1975). The hoard

contained 324 coins declared at two different times, including 4 of series A, 26 of B, 46 of C,179 of D, 61 of E and Merovingian types. The earliest note on the coin find (1972) also included 15 of series F although these are not mentioned specifically in the 1975 account (Grierson and Blackburn 1986:167). The full publication of this vital hoard is badly needed but it does serve to show the main types circulating c.710, although the proportions in the hoard may not have been representative of the make-up of the coinage in general. The large number of Continental Runic series D is not paralleled in the stray finds and may represent an uncirculated parcel (1986:167-8). The other Continental series represented is E, the so-called Porcupine type; present in the hoard are the 'VICO' and classes D and G (Metcalf 1966b), the types most common as single finds in England and until recently regarded as English (Metcalf 1984a). Metcalf also sees the earliest arrivals of series X and the appearance of G in the first quarter of the 8th century (1984a) and has recently proposed that series G may be Continental and not an insular type as has been the opinion to date. The Continental sceatta series are described later in this chapter.

The Secondary phase, covering basically the second quarter of the 8th century, saw a further widening of the circulation of the sceattas and an increase in the number of series being produced. The designs of some of these were still based on the preceding series but the

Secondary phase also saw an increase in the use of motifs and designs derived from comtemporary art (Morehart 1970). The area of distribution extended further into the East Anglian kingdom, into Wessex, southern and western Mercia, with a revival in Northumbria, where there appears to have been a hiatus after the coinage of Aldfrith around the turn of the century.

Metcalf has written extensively on various of the Secondary series in an attempt to determine their minting places (1966a, 1972, 1974a, 1976a and 1984a). He has identified local coinages in southern Mercia (series J, and varieties of U and K), in the territory of the Hwicce around Worcester in Western Mercia (varieties of K and L), in West Kent (series W), in Essex (series S), in Middle Anglia (series T) and in Lindsey (series Q). Metcalf's attributions are conditioned by his assumption that the coinages are all regal issues, an assumption not necessarily true. In addition, in some cases the numbers of coins are few and the distributions indistinct, especially in central and south-east England where there appears to have been rapid mixing of coin (Grierson and Blackburn 1986:169).

There are three series which very clearly belong to specific kingdoms and even specific mints, namely series H from Hamwic or Saxon Southampton, series R from East Anglia, possibly minted at Ipswich and series Y, the Northumbrian series, which appears to have been revived

under Eadberht in the late 730's or early 740's. The archaeology of the trading centres or emporia of Hamwic and Ipswich has been discussed in Chapter 1, but some discussion of the coin finds is appropriate here.

Some 150 sceattas, including 23 in the 'Kingsland Hoard', have been discovered at Hamwic since the 19th century, many having been found in controlled modern excavations since the war. This is the largest number of sceattas from any site in England, with almost 50% being of series H, a series almost unknown outside Hamwic (Metcalf 1984a; 1988). Series H consists of three types, 39, 48 and 49, which until recently were considered to be Secondary sceattas belonging to the second quarter of the century. Metcalf has argued recently that type 49 is in fact a tertiary coinage of King Cynewulf and belongs to the third quarter of the century, thus extending the coin sequence at Hamwic unbroken throughout the 8th century, in apparent contrast to the situation elsewhere (Andrews and Metcalf 1984). This will be discussed further in the section on chronology. On the basis of distribution, Metcalf has also cast doubt on the attribution of type 48 to Hamwic, as few have actually been found in the town and, unlike the other types of series H, examples are now turning up in areas well removed from the south coast, such as Alford (Lincs) (Metcalf 1988:28). The restricted distribution of the series H (with the exception of type 48) and the fact that the vast majority of the finds are

single finds and not from hoards has obvious implications as to the function of the coinage in Hamwic and these will be discussed elsewhere. One further point about the series is that the fineness is fairly consistent at around 60-80%, suggesting a date in the middle of the phase rather than the beginning. The weights are rather low, at c.0.9-1.0g, but unlike other series these are maintained throughout the series.

Series R, the East Anglian Runic sceattas, is probably one of the earliest of the Secondary sceatta series. It derived from the Primary series C and began with coins of good weight and fineness but these soon fell. Later coins were often 50% or less and weighed as little as 0.8g. The style of the bust on the obverse also became greatly debased and the standard of the reverse was replaced by new geometric designs. The earliest coins had the name Aepa, Apa or Epa in runes and later coins add the names Tilbert and Wigraed, also in runes, and presumably the names of moneyers. Ipswich has long been considered as the obvious mint for these coins as it was known to be a major trading town of the period but until recently surprisingly few sceattas of any type had been found here, most coins of this type being widely spread in East Anglia (Rigold and Metcalf 1984). The current excavations in Ipswich are changing this pattern, however, as there are now some 50-60 sceattas from the excavations, most of which appear to be of series R (K. Wade pers. comm.).

Other series which occur early in the Secondary phase are J, G, U and possibly W. The weights of the coins in these series are lower than the Primary series, being 1.00-1,2g, but the fineness is still quite high, at 80-90% (Grierson and Blackburn 1986:169). Series J is directly related to the Primary series B and some types retain the profile bust obverse and stylised bird on a cross reverse. Other types have two facing heads and a whirl of four birds on the obverse or, in a rare variant, two wolf whorls (Grierson and Blackburn 1986:169; Stewart 1984:11). The type is quite widely distributed and the original attribution by Rigold to the same, presumably Kentish, mint must be in doubt. Metcalf, on the basis of finds north of the Thames, in the Oxford region, and a lack of finds from the west Midlands, has suggested a mint in southern Mercia (Metcalf 1966a). Series G is also clearly derived from the designs of the Primary series, with a profile bust obverse and standard reverse. The obverse usually has a hand holding a cross in front of the face and the reverse has either four X's surrounding a circle or three X's and a group of pellets. The coins are widely, if sparsely, distributed from the Garton grave find in the north to Selsey in the south. The style and fineness of the type varies greatly, there being a group of well-modelled examples in good quality metal and a group in 'coarse style' in much less fine silver. The examples in coarse style have recently been discussed by Metcalf (1986) who has identified the coarse style of

series G and imitations of types 85 and 36 as possibly being from the hand of the same moneyer. Metcalf further argued that the widespread distribution of the series in England, with no obvious concentration, was more in keeping with a Continental origin and suggested northern France as being a possible source. The obvious candidate for a mint in this area is the port and administrative centre of Quentovic. Coincidentally, during excavations at the site of Quentovic in 1987 a series G sceatta of coarse style was discovered which, while proving nothing, is an interesting addition to the distribution of the series (Hill et al 1990).

Series U is a major series which influences a number of others; it is also the first series to depart from designs derived from the Primary series and ultimately Roman prototypes and to obtain its designs from motifs current in contemporary Germanic art. The obverse consists of a figure standing on a curved line variously interpreted as a dias or ship (Stewart 1984:12). The figure is also wearing some kind of headgear which Metcalf (1976a) has interpreted as the royal Cynehelm but this is based on his assumption that the coinages are under royal control. The obverse is usually a bird pecking berries from a branch, again a not uncommon motif in contemporary art. Both of these designs occur on later series, a figure on series K,L,N,O, a bird on H and Q. Similarly, in the main series U the obverse and reverse do occur with different designs; for example, one coin has a kneeling archer on the obverse.

Two stylistic groups have been identified and attributed to East Kent and the upper Thames (Metcalf 1972 and 1984a:36). Series U seems to have been succeeded by two types, 23a and 23e, originally included in the main series by Rigold, and by series K.

In the mid Secondary phase (c.720) a number of new series were introduced, with a fineness of c.60-80%. These include series H, K, N, T and Z which are present in the hoards from Hallum and Cimiez and the Garton-on-the-Wolds grave find, and probably series M, O and V, which do not occur in hoards (Grierson and Blackburn 1986:171). Series K consists of a number of related types characterised by an obverse of a diademed bust facing right with the ties of the diadem loosely knotted behind the head and with a cross in front of the face, as in series G. The reverse has a wolf in various forms or, in some cases, a hound standing in front of a tree (Grierson and Blackburn 1986:171; Stewart 1984:13-4). The dies are generally well cut and Metcalf (1984a) has identified two stylistic groups which he feels continue on from series U at the same mints, namely in Kent and the Upper Thames, although Stewart (1984:14) seems less certain. Metcalf has also identified a third group which he attributes to the territory of the Hwicce centred on Worcester (1976a; 1984a:36-7).

Series N consists essentially of just one type, type 49, which has as the obverse two standing figures holding

either one cross between them or a cross each, a design which also occurs on examples of series X. The reverse is a beast facing left with its head turned back over its shoulder, very similar to the reverse of series X (Stewart 1984:13; Grierson and Blackburn 1986:171). The outline of the beast on series N is picked out in small pellets in a very similar manner to a coin recently found in Cambridgeshire, which had a facing bust as the obverse, similar to early coins of series X, and which may be the prototype for the main series (Blackburn and Bonser 1986:97 no. 42). The distribution of the series N is generally southern, finds occurring in Kent and Wessex, including two from the hillfort of Walbury Camp (Metcalf 1974a). Series M again consists of a single type with a spiral branch on one face and a hound or wolf on the other; series Z is also a rare type, with a large facing bust on the obverse and a long-legged animal on the reverse. Series V is unusual in that it harks back to a Roman prototype, in this case a 4th century Constantinian coin showing the wolf and twins as a reverse. This design also occurs on 8th century East Anglian coins of Aethelberht but series V would seem once again to have a southern distribution (Stewart 1984:13,17-18; Grierson and Blackburn 1986:171).

Series T is one of the few Secondary sceattas which are inscribed. The coin combines a Porcupine reverse with a diademed bust on the obverse and various inscriptions including LEV, LELUS, T VM and MONITASCORUM. Two examples have E LONDONIM, one of which comes from the

Hallum hoard; this, combined with a fineness of 60-74%, suggests a date for the series quite early in the Secondary phase (Stewart 1984:17; Grierson and Blackburn 1986: 171-2). London could well be one source of coins of series T but the distribution of the few other examples known suggest a more northerly origin, possibly Stamford (Metcalf 1984a:39-40).

The later Secondary phase saw a further debasement and reduction in weight. Some coins are as little as 20% silver and are less than 0.8g in weight. The later coins of series H, K and R probably belong to this later phase as do L,Q,S and Y, the Northumbrian regal coinage in the name of Eadberht, as well as the coinage of Beonna, king of East Anglia (Grierson and Blackburn 1986: 172). In the south, the issues of series K were replaced by L, again with a diademed bust but with DE LONDONIA or blundered versions of it on the obverse. A very debased version of L dominates the few sceatta finds from West Mercia and Metcalf has suggested that these may be a local issue along with some series K coins, minted at Worcester (Metcalf 1976a; 1984a:34; Grierson and Blackburn 1986:172). A number of these have been found further east, however, in London and near Cambridge and they may also be a London issue (1986:172). Generally the series L are concentrated in the Thames Valley and north of the Thames and there are few from Kent or Wessex. Indeed it is difficult to identify the Kentish series due partly to the rapid

circulation of coinage to other areas; however, the later issues of K and O, types 23a and 23e, possibly series S and even some uninscribed coins of L could be considered candidates (1986:172). Series Q also probably originates north of the Thames; a Northumbrian origin has been postulated as has the kingdom of Lindsey but an East or Middle Anglian origin is probable (1986:173).

The tradition of a regal coinage had been established in Northumbria by Aldfrith (685-704) and this was revived by Eadberht (738-58), who minted basically one series with a walking beast, similar to that on the coins of Aldfrith, on one side and the name of the king around a small cross on the other. A second series was produced in association with his brother Ecgbert, archbishop of York, who is depicted as a standing figure holding a crozier or two crosses. Eadberht's issue appears to have been considerable and maintained standards somewhat higher than those in the south. The weight ranged between 0.9-1.10g and the silver content from 50-90% (Booth 1984; Grierson and Blackburn 1986:173).

2.2.3 The Continental Sceatta Series (Plate 1).

There are a number of series of generally uninscribed silver coins which, like the contemporary Anglo-Saxon coinages, are known as sceattas. A number of these series have traditionally been ascribed to "Frisia" but their attribution and chronology are the subject of

continuing debate; some are almost certainly northern French in origin and others have been ascribed to Denmark (Metcalf 1984b).

A further problem lies in the fact that the political control of the area which formed southern Frisia changed frequently during the course of the 7- 8th centuries, as has been described in Chapter 1, and it is possible that some of the coins were minted in Frisia but under Frankish control. There are basically six sceatta types which are, or have been, considered as being of Frisian origin (Grierson and Blackburn 1986:150).

The largest group of coins have come from the site of Domburg which was discussed in Chapter 1. There are, however, a number of large hoards from the same area of Frisia which form a vitally important source of data for the study of the sceatta coinages, but which have never been fully analysed or published. They include the hoards from Hallum and Terwispel, containing mainly coins of series X. These form the subject of the analysis in Chapter 5 where they will be discussed in detail. The other hoards contain mainly series E or Porcupine sceattas and come from Franeker and Kloster Barthe. There is a further, smaller hoard of Porcupines from Lutje Saaksum (Fig 4). For a long time these were considered to contain coins minted in Frisia, and which represented the coinage of the Frisian traders. However these hoards contain many die linked coins, indicating that they were not circulating in exchange for a long

period before they were deposited. Also, very few single finds of coins are found in this area of Frisia, which would be expected if the coins were being minted and used in this region. It is much more likely that these coins were acquired during trading expeditions by the Frisians and that the hoards represent their 'profits'. The origin of the coins will be considered below in Chapter 4, but the hoards still offer valuable information on the chronological arrangement of the sceatta series and the internal arrangement and organisation of the the series represented in the hoards. These points will be more fully explored in Chapters 5 and 6.

The Madelinus Type

The coins bearing the name of the moneyer Madelinus on one side and Dorestad on the other are the earliest of the Continental sceatta series and also the only inscribed series. They were originally struck as gold tremisses, presumably at Dorestad from around 630, where the moneyers Madelinus and Rimoaldus had apparently moved from Maastricht (Lebecq 1983:51-2; Grierson and Blackburn 1986:137), but the type became increasingly stylised and extensively copied north of the Rhine in Frisia and the alloy was reduced until it was pure silver, although examples of the latter are rare (Grierson and Blackburn 1986:151, Lebecq 1983:52, Op den Velde et al 1984:122).

It effectively became an immobilised type, no longer necessarily minted at Dorestad, and continued in production until the third quarter of the 7th century at least (Grierson and Blackburn 1986:151). There were four examples of the Madelinus/Dorestad type in the Wittnauer Horn hoard from Switzerland (Geiger 1980) in association with coins of the Interlace type (see below), a puzzling combination as the Interlace type is generally regarded as being considerably later in date than the Madelinus type. It has been suggested, however, that the Interlace coins could have been added to a group of coins collected at an earlier date (Grierson and Blackburn 1986:151). Two die duplicate examples of the Madelinus type were found in the excavations at Danekirke in Denmark, representing the only other provenanced finds of the type in silver (Bendixen 1981:99).

The Wodan Monster Type or Series X

The Wodan Monster type of is one of the most numerous of the sceatta series, comprising some 25% of the sceattas in Continental collections (Metcalf 1984b). On the obverse is a facing head with radiating hair and a full beard, usually flanked by a cross next to each cheek, although other symbols do occur (Bendixen 1981:64). The reverse consists of an obviously male quadruped, usually facing left with its head turned back over its shoulder to bite its upraised tail. Beneath the animal's head is usually a symbol of some kind, probably a mint or

moneyer's mark. The face on the obverse was traditionally associated with Wodan, although Hill (1952:2) suggested that it was derived from the portrayal of Christ on Byzantine coins while Malmer, more neutrally, termed it the "ray face" (1966:63). Similar facing masks are not uncommon in Germanic art of the period and it may not be necessary to search for an exotic origin. Similarly the 'monster' or 'dragon' on the reverse is part of an extensive array of mythological beasts in Germanic art, and related beasts occur on other sceatta types (Stewart 1984).

The series X coins are also notable in being well made, of regular appearance, size and weight, usually bearing a mint or moneyer's mark and having die axes at 90^{o} intervals, all features which suggest a well organised and tightly controlled coinage. Such metal analyses as have been carried out indicate a large fluctuation in silver content, although the effects of corrosion on the non-hoard coins needs to be considered. Clearly many more analyses are needed, especially on die linked coins, before any firm conclusions can be drawn (Metcalf and Hamblin 1968; Metcalf 1988).

The major finds of the Wodan Monster sceattas are in the area of Frisia (Fig 4) in the form of the hoards from Hallum and Terwispel, which originally totalled 173 and 161 coins respectively (Op den Velde et al 1984:141-2). Over 120 are reported to have been found at Domburg,

about 10% of the total sceatta finds from that site, but only 3 out of 62 recorded sceattas from Dorestad (Op den Velde et al 1984:141) They also occur as single finds from Bolsward, Ferwerd, Maurik, Rotterdam and Schoewen in the Netherlands as well as in northern Germany and along the Rhine Valley, for example from Xanten (Zedelius 1980: 141). The type is present in England but in small numbers and some of these appear to be insular copies differing in detail from the main series (Metcalf 1988;35-6). Apart from three examples from the Cimiez hoard the type is absent from French finds. The finds from Cimiez are of considerable importance in determining the chronological arrangements of the sceatta series and will be discussed further below.

The most interesting recent discoveries of series X have come from Scandinavia and particularly from the excavations at Ribe and Danekirke in Denmark, but finds have also come from Haithabu in Schleswig and Ahus in southern Sweden (Bendixen 1980, Callmer 1983). As early as 1962 a Wodan Monster coin was found in the southern settlement at Haithabu and in 1970-1 a second example was discovered inside the ramparts of the 9th century town. This was apparently a surface find and occasioned some surprise, as sceattas had not previously been found inside the ramparts despite extensive excavations over a number of years (Bendixen 1980;66). Most interesting, however, from the point of view of numismatic and economic history of the period, have been the discoveries of sceattas in the excavations at Ribe and

Danekirke, recently published by Bendixen (1981). The excavations at Danekirke in Vester Vested parish, south of Ribe, produced a total of 13 Merovingian, English and Frisian coins of which 5 were of series X; 30 coins were found at Ribe of which 25 were series X. In 1979 two Wodan Monsters, struck from the same dies, were found at Yngsjo near Ahus in southern Sweden (Callmer 1983).

The Porcupine Type (Series E)

The Porcupine, or series E, sceattas are the most numerous and widespread as well as the most varied in design of all the sceatta series. The name comes from the curious obverse design of a curved line with radiating spines for which no satisfactory explanation has been given, although many suggestions have been made. The Wolf and Twins design has been suggested as a point of origin as have the picture of a galley and a fantastic bird. The most likely derivation is from a debased profile head although no satisfactory prototype has yet been found (Metcalf 1966b;179; Grierson and Blackburn 1986;153).

The place of origin of the Porcupine sceattas has until recently been the subject of debate and changing opinions (Metcalf 1984a). English numismatists long regarded them as being English in origin (Keary 1879; Brooke 1932). Sutherland also considered them to be essentially English but noted that large numbers of them

had found their way to Frisia (1942:60). Hill in his papers on the problem also originally considered them to be of English origin (1951:255) but eventually changed his mind, believing that at least some varieties were more likely to have been minted in Frisia (1954:11-17).

This was a view that had been held, or at least the possibility had been advanced, by Continental scholars from as early as the 19th century as a result of the large hoards containing Porcupine types which had been found in Frisia (Van der Chijs 1860; De Man 1895; Belaiew 1936). Stuart Rigold, in his now classic article on the sceatta problem, upheld a Continental origin (1960:25) and Metcalf, while originally dividing the series between England and the Continent (1966b:204), now also considers them to be solely of Continental origin (1984a:32).

The great variation in design in the Porcupine series has caused difficulty in understanding the series and its associated problems. Various attempts at organising the Porcupines into varieties or typological groups have been made but none have been totally successful. In the British Museum Catalogue, Keary divided them into types 4 and 5, where type 5 lacked a triangle on the reverse. Marie de Man, who did so much for the study of the sceatta coinages by collecting and publishing so many of the finds from Domburg, developed a classification based, as was that of Keary, on the assumption that the design represented a progressively debased head. The

scheme took little account of the reverse dies however, identifying varieties purely on the basis of differences in the obverse or Porcupine die (De Man 1895). Hill recognised the limitations of these schemes and, while not proposing a formal classification, he did note that the reverses could be divided into five main types and five minor types (Hill 1951:255-6). It remained for Metcalf to demonstrate the correspondence between obverse and reverse designs, which he did in a paper published in 1966. In this study he proposed a scheme of classificatiion consisting of 13 varieties based on the obverse and corresponding reverse design. This was a major step forward in the classification and understanding of the Porcupine series but even this scheme does not encompass all the known variations. Metcalf also noted the symbols present in the border of the reverse dies outside the square of the standard. As a rule, the dies of the Porcupine series are larger than the flans on which the coins were struck and these symbols are usually only partially visible but may represent a mint or moneyer's mark (1966b:185).

The Interlace Type

The Interlace type is characterised by an obverse design consisting of a stylised head facing left and an interlace and pellet design on the reverse. It has often been called the 'Maastricht' type in the past but this is erroneous and due to an incorrect attribution in

the 19th century (Grierson and Blackburn 1986:151, Op den Velde et al 1984:138). The type occurs in three northern hoards, Fohr, Franeker and Hallum, as well as in the Wittnauer Horn hoard from Switzerland. It is present among the finds from Domburg and Dorestad but rare as single finds in England and France and absent from hoards in these areas (Grierson and Blackburn 1986;152; Op den Velde et al 1984: 138; Rigold and Metcalf 1984). The type comprises 2% of the finds from Domburg and 14% of those from Dorestad; other finds are known from Krefeld Gellep and Xanten in the Rhine Valley (Op den Velde et al 1984:138, Zedelius 1980:149-50). The characteristic interlace design occurs on coins of Pepin and Charlemagne and the type probably originates in the Lower Rhine area (Grierson and Blackburn 1986:151-2) although Domburg has been suggested (Op den Velde et al 1984:138).

Star of David or Herstal Type

This type, which consists of a Star of David on one face and a cross with radiating lines on the other, was attributed to Herstal by various 19th century writers, based on the assumption that the star was a play on the 8th century name Aristalium. The type appears broadly contemporary with the Interlace type and has a similar distribution, occurring in the Hallum, Franeker and Fohr hoards, but is absent from the English and French hoards with the exception of Cimiez (Grierson and Blackburn 1986:152).

The Continental Runic (series D)

Formerly called the 'Frisian Runic', the series D sceattas are copies of the English Runic or series C coins. The obverse is a direct though often very debased copy of the type C obverse and the reverse consists of a cross with pellets in the four quarters and a variety of blundered letters around it. The series C coins were traditionally attributed to East Anglia, where the use of runic letters on coins persisted, but the series has recently been attributed to Kent (Grierson and Blackburn 1986:166). The origin of the prototype may have some bearing on the minting place of the series D coins, as Metcalf has pointed out in a discussion of the origins of the main Continental sceatta series (1984b). The distribution of the type suggests a place of origin south or west of the Rhine, as they are rare in central or northern Frisia. Quentovic, which still remains an unknown quantity in terms of its coinage, is one possibility and Domburg, where the series D coins comprise over 20% of the total finds, is another. Metcalf favours an East Anglian origin for the series C Runics and argues that it is unlikely that a Merovingian mint would be copying Runic inscribed coins from East Anglia. Domburg, opposite Ipswich, the most likely minting place in East Anglia and probably closely connected with it in trading terms is, he argues, the more likely candidate (Metcalf

1984b:160-1; Grierson and Blackburn 1986: 152-3).

It seems as though, prolific as they were, the series D coins were produced over a comparatively short period and were essentially a Primary and Intermediate coinage. They form the bulk of the coins in the Aston Rowant hoard from England, now dated to c.710 (Blackburn 1984:167) and by this date they had gone through their full development and had suffered a drastic fall in weight from c. 1.25g to c.0.70g although the fineness remained at c.90% (Metcalf 1984b:160; Grierson and Blackburn 1986:152-2). They were then presumably replaced by the various Secondary series, particularly the Porcupines or series E.

2.2.4 Chronology of the Sceatta Series

The relative chronology of the sceatta series has been outlined above. A somewhat more detailed review is necessary, as recent work by Blackburn (1984), expanded in Grierson and Blackburn (1986), has modified the absolute dating of the phases in the currency, which has an obvious bearing on the specific problem considered in this thesis. In addition a detailed appreciation of the chronology is necessary to appreciate the more general problems also being considered.

If there are problems with the relative dating of the sceatta series and the place of various secondary series within it, there are even greater problems in trying to

establish an absolute chronology as there are so few points within the sequence where dates are available from independent sources (Blackburn 1984:168). Rigold (1960) saw the transition from the debased gold coinage to silver occurring c.685, the Primary series A and B starting c.695 and the Secondary series c.725. This chronology was based on the dating of the Crondall hoard to c.670 but the redating of the Merovingian series by Lafaurie (1959/60) and Kent (1975) has pushed Crondall back to the now generally accepted date of c.640/50. Rigold reacted to this by extending the length of the post-Crondall gold coinage, only pushing the beginning of the silver coinage some 5 years earlier (1966:5; 1975: 659-60).

Kent (1961) also placed the beginning of the silver coinage in England at c.680-90 and its end at c.750, with a gap until the introduction of the broad flan penny in the 770's. More recently he seems inclined to an earlier date, pushing a gold shilling of Pada as early as 655-60 (Hawkes et al 1966) and his dating of c.715-20 for the Aston Rowant hoard suggests an earlier end to the Primary phase than Rigold had indicated (Kent 1972; Blackburn 1984:169). Metcalf (1974b) also suggested an earlier beginning for the silver issues and now accepts Blackburn's redating for the coinage as a whole which ended '..in a ruinous situation, probably in the third quarter of the century.' (1988:236). Elsewhere he has, however, suggested that at least one of the Hamwic types continued into the second half of

of the 8th century (Andrews and Metcalf 1984).

Rigold's dating was based on a number of historical events and the dates of Continental hoards, but five in particular were important (Blackburn 1984:169). The first was, of course, the date of the Crondall hoard; the dates of the Hallum and Cimiez hoards were also important. The two crucial historical events, in Rigold's view, were the takeover of London by Aethelbald in c.730 and the payment of a large wergeld by Wihtred of Kent to Ine of Wessex for the death of Mul in 694 (Stenton 1971:73). Rigold considered this massive payment as being so onerous that it exhausted the final issues of the Pada and Vanimundus series, so paving the way for the introduction of series A and B (1960:22-9). The potential scale of the payment is discussed by Blackburn (1984:169) but, as he rightly points out, while the reign of Wihtred may have been an appropriate time for the new currency to develop, the historical association is too uncertain to form a basis of the chronology (1984:169).

Rigold saw the 'watershed' between the Primary/Intermediate and the Secondary phases occurring around 725-30, marked by the appearance of coins of B.M.C. type 12, series L, bearing the inscription <u>De Londonia</u>. The type is unusual in having such a clear legend and Rigold assumed it marked a particularly significant event, in this case the acquisition of administrative control over London by Aethelbald of

Mercia around 732 (Rigold 1960:24). This is based on a reference in Bede but, as Blackburn has discussed, the reference is by no means clear that Aethelbald achieved control over London so suddenly and it is likely that his influence was growing over a considerable period (1984:170). Metcalf has also pointed out that the series L coins are of comparatively poor silver and if silver content is any indication of date then the series L coins cannot belong to the early Secondary phase (1978). Metcalf further proposed that either the historical interpretation should be modified or the beginning of the Secondary phase should be moved earlier. Blackburn prefers the second option, leaving the possibility that series L had some connection with Aethelbald's growing power, although this does not, as he points out, explain the similarly inscribed examples of series T, which are at least a decade earlier (1984:170).

The Continental hoards are important for dating the silver coinages both English and Continental. For two hoards, in particular Hallum in Frisia and Cimiez from Provence, Rigold accepted the traditional dates suggested in the 19th century of 734 and 737 respectively. These dates were based on historically known military expeditions of Charles Martel and, in the case of Cimiez, some dubious attributions to historical personages in the 730's. The attribution of hoards to a single military expedition is simply not acceptable

without independent proof. There were other military expeditions which could have accounted for the hoards, not to mention the fact that hoards were assembled and buried for reasons other than an impending military threat.

Blackburn has reviewed the dates of the two crucial hoards from Hallum and Cimiez. The Hallum hoard, and indeed the other hoards from the Low Countries, although vital in ordering the sceatta series, cannot be independently dated and it is the French hoards, particularly Cimiez, which are so vital for an absolute chronology of the silver coinages (1984:170).

There are six hoards of silver coins of the late 7th or 8th century known from France: St Pierre Les Etieux, Plassac, Nohanant, Bais, Cimiez and Savonnieres. As with the hoards from the Low countries, most of these are not independently datable as so few of the coins carry recognisable inscriptions. The exceptions are the coins of Provence, which carry the names of the patricians, although even these are often not well dated (Grierson and Blackburn 1986: 140). These hoards were all found in the 19th or early 20th centuries and were largely dispersed; however Lafaurie has painstakingly reconstructed them (1963; 1969; 1974; 1981) and ordered them on the basis of coin types, moneyers and condition of fabric (Grierson and Blackburn 1986:140). Although accepting the difficulties of dating the coins, Lafaurie considered them all to belong to the 730's or 740's,

with the exception of Savonnieres, which he felt could be as late as 751 (1969:148-50; 1974:33; 1981:25; Blackburn 1984:172). These hoards are of considerable importance to the chronology of the northern silver coinages as, with the exception of Savonnieres, they all contain sceattas.

In a detailed reappraisal of the Cimiez hoard, Grierson and Blackburn (1986:142-3) argue convincingly that the traditional date of the hoard is too late. They point out that the bulk of the coins are dated c.700-15 and are heavily die linked, suggesting that they were deposited within a short time of minting. Further, the later attributions of some coins made by earlier writers, and hesitantly accepted by Lafaurie, simply do not stand examination. The result of this crucial reappraisal has been to move the date of the Cimiez hoard some 15-20 years earlier to c.715-20. This also means that the other French hoards have to be moved earlier although, as Grierson and Blackburn point out, this is not inconsistent with their internal makeup as the datable coins in all the hoards, with the exception of Savonnieres, are all from the late 7th or first two decades of the 8th century (1984:173).

This redating of the Cimiez hoard, along with the redating of Crondall, gives two reasonably secure dates around which to arrange the sceatta coinages. The beginning of the silver coinage must now be pushed as

early as the 670's, and possibly earlier, echoing the change to silver coins in France in the 660's. The beginning of the Secondary phase can be placed around 715, as Cimiez appears to have contained early Secondary coins (Fig.2). It needs to be pointed out, however, that the Morel Fatio collection, where the bulk of the coins from Cimiez ended up, contained coins from elsewhere and the possibility remains that finds not from Cimiez were mixed with the hoard coins. This is particularly important as two series X coins were included and have generally been held to belong to the hoard.

The period after the deposition of Cimiez to the introduction of the broad flan pennies, probably in the 760's, poses different problems. There seems to have been a marked decline in the currency from the 730's or even earlier, as far fewer types can be attributed to these later stages. There is also a marked decline in fineness and weight (1984:174). This decline may have been the cause of the revival in Northumbrian coinage from c.740 when Eadberht began to mint good quality coins, clearly inscribed in his name.

Kent (1961) argued for an end to the sceatta series around 740, with a long gap until the introduction of the broad flan penny in Kent in the 770's. This will be considered in the next section.

2.3 SILVER COINAGE C.750-800 AD

In both the Frankish and English kingdoms distinct changes occurred in the nature and character of the silver coinage from c.750. In Northumbria, as mentioned above, from c.740 Eadbert began issuing a sceatta coinage of c.70-50% fineness which continued until the end of the century (Booth 1984). The other feature of the Northumbrian coinage is that, as with the earlier coinage of Aldfrith and unlike the other sceatta series, it was a specifically regal coinage. In addition Eadbert also minted coins with his brother Egbert, Archbishop of York. Elsewhere in England minting seems to have ceased, with the exception of East Anglia where Beonna (749-?760) minted coins in his name after the fashion of Northumbria; his coins also carried a moneyer's name as had some earlier East Anglian types. Little was known about the Beonna coins until a decade ago when a hoard containing 53 was found at Middle Harling in Norfolk (Archibald 1985). In addition, a number of others have recently been found as single metal detector finds or from controlled excavations at, for example, Ipswich (Archibald 1985:11) and Burrow Hill in Suffolk (Sherlock 1984) . A corpus of the known coins of Beonna, excepting the coins from Burrow Hill, was included in the report on the Middle Harling hoard (Archibald 1985) which included 62 coins. To this at least one other coin found at the excavations of the monastery of Whithorn in Galloway can be added (Hill pers. comm.) .

Associated with the coins of Beonna in the hoard from Middle Harling were 9 sceattas, mostly of the latest types of series R, but also including a late series L and an archer type also generally considered late Secondary (Archibald 1985:14-5) which suggested at least a continuity in circulation if not in minting. Archibald's detailed analysis of the Beonna coins has demonstrated that it was a comparatively short-lived coinage as all but 4 of the non Middle Harling coins die link into the hoard and there is considerable die linking within the hoard itself. There are four types within the coinage of Beonna, three with moneyer's names and one with an interlace design on the reverse but no moneyer's name. The moneyers are Werferth, Efe and Wilred; as far as they can be ordered chronologically, the rare coins of Werferth would appear to be the earliest as they are certainly the finest of the coins, with some 70% silver as opposed to 50% for the coins of Efe, the better of the Wilreds and the Interlace. The Wilreds vary, however, dropping to c.40% and even 25% in some examples. The size of the flans of the coins vary from sceatta-like to a size similar to that of the reformed coinage of Pepin I and Offa although there does not seem to be a gradual change. The Beonnas do not adopt the reformed weight standard of the Offa or Pepin coins, however, averaging 0.96g as opposed to c 1.25g of the later reformed coinage.

The interest in the Beonnas is how they alter the perception of the progress of the introduction of the broad flan pennies into England. In c.755 Pepin I, the first Carolingian king, reformed the coinage, issuing new broader flan coins at a reformed weight of c.1.25g, i.e. 264 deniers to a pound weight (Grierson and Blackburn 1986:204). Furthermore, presumably to establish his new authority as king, the coins were required to bear some clear recognition of Pepin's new position and the coins are varyingly inscribed with R.P.(for Rex Pippinus), R.F. (for Rex Francorum) or PIPI. This requirement possibly resulted in the change to a broader thinner flan to allow for the inscription. The reverses were left to the imagination of the die sinker and generally no clear indication of mint is given. Pepin's successor Charlemagne (768-812) essentially carried on this type initially with his brother Carloman and then, after Carloman's death, alone (Grierson and Blackburn 1986:208). A major reform of the coinage came in 793 when Charlemagne increased the weight of the deniers to 1.7g and introduced standard obverse and reverse types in contrast to the earlier types where the reverse designs were uncontrolled.

In England it was long believed that the broad flan pennies were first introduced into Kent in the later 760's or 770's, either by two little known Kentish kings who seemed to have freed themselves from Mercian domination or by Offa, who certainly continued minting the new style coins and extended the minting to other

mints and kingdoms (Blunt 1961). With the discovery of the Middle Harling hoard the picture may be changed somewhat and a more continuous pattern may perhaps be discerned.

The name of one of the moneyers on the Beonna coins, Wilred, also appears on two rare coins of the earliest phase of Offa's coinage. While it is possible that these were two different people, the name is an unusual one and the obvious conclusion is that Offa was minting and exerting influence in East Anglia earlier than hitherto thought (Archibald 1985:32-3). It also demonstrates the increasing desire of rulers to have their names clearly marked on the coinage either as an indication of the value of the coins or perhaps due to an increasing realisation of the propaganda value of coins. There are no known coins of Beonna's successor Aethelred but there are three coins of Aethelred's son, Aethelberht, who reigned briefly in the 790's before being murdered by Offa in 794. It has been suggested that the minting of coins was perhaps too strong a manifestation of independence which Offa was not willing to countenance at the end of his life. Certainly on his death the client kingdoms of Kent and East Anglia immediately expressed their independence by rebelling against his successors and by minting coins (Archibald 1985:33-4; Dolley 1964:15-16; Grierson and Blackburn 1986:283).

Although the apparent gap in the sequence of coinage appears on the evidence of the Middle Harling hoard to have shrunk somewhat, there is still the appearance of a distinct monetary slump in the third decade of the 8th century. The early coinage of Offa is comparatively rare and the bulk of his coins seem to belong to the last decade of his reign (Andrews and Metcalf 1984:175). Beorhtric of Wessex (786-802) also struck pennies, like Offa, but these are exceptionally rare (1984:175). As we have seen, however, there is no evidence to suggest a slump in the activities of the trading centres in the 8th century or at least not at Hamwic, the most extensively excavated of the 8th century emporia. In a paper published in 1984, Andrews and Metcalf drew attention to this anomaly and tried to fill this apparent gap in the monetary sequence at Hamwic by placing the type 49 sceattas into the reign of Cynewulf of Wessex (757-86). This is, in some ways, an attractive idea, as it would fill the puzzling gap and would provide a coinage for Cynewulf, an obviously active and presumably successful king, who maintained an independence from Mercia and may have instituted a 'reformed coinage' as the Northumbrian Eadberht did. However, given the changes in coinage in southern England and East Anglia and in the Carolingian kingdom, it is curious that Cynewulf did not use his coinage as a vehicle to declare his kingship, as other rulers were clearly doing. Also the evidence that the type 49 sceattas are late is far from conclusive and much more confirmation is needed before the type can certainly be

attributed to Cynewulf.

This chapter has attempted to summarise the development first of the gold and then of the silver coinages in north-west Europe between the 6th and 9th centuries. The specialist literature on the coinages is very extensive but until the recent publication by Grierson and Blackburn (1986) there was no real overview of this period. This chapter, along with Chapter 1, has provided the necessary background for the more detailed studies of the series X coins in Chapters 4, 5 and 6.

CHAPTER 3

ALTERNATIVE APPROACHES TO EARLY MEDIEVAL COINAGE

The previous two chapters have considered the historical and archaeological evidence of trade and the development of 7th to 9th century coinage. In this chapter the intention is to examine two recently published alternative approaches to the coinage. The first is what may be called the more traditional numismatic interpretation taken by Michael Metcalf (1974b; 1984a) and the second a more theoretical approach adopted by Richard Hodges who examines the development and changes in the coinage as part of a much wider ranging attempt to explain the changing nature of trade and exchange in Early Medieval Europe (1982a; 1988). Both of these authors have concentrated on the evidence of the Anglo-Saxon coinages because of the quality of the evidence but certainly in the 7th and 8th centuries the English and Continental coinages are inextricably linked and the debates presented by Metcalf and Hodges are relevant to the main subject of this thesis.

3.1 A Numismatic Approach.

Metcalf has been the most prolific writer on the subject of the sceattas, particularly the English series, over the last two decades. He has done much to define the distributions of the various series as well as the stylistic developments and groupings within them

(eg.1966a;1966b;1972;1974a;1976a). In addition he has presented more general discussions on the development and character of the 7th and 8th century coinage (1974b revised and reprinted 1988; 1984a). Metcalf has firmly taken the view that the uses of the coinage of the 7th and particularly the 8th centuries is essentially the same as it was in the later Anglo-Saxon period:

" This (ie the sceattas') distribution pattern, focussed on Kent and the Thames estuary and thinning out towards the west country and the west midlands, is entirely characteristic of English monetary circulation up to the eleventh century. Four features of the numismatic evidence, taken in conjunction add up to an argument that the uses of coinage were, already in the first half of the eighth century, essentially the same as they were in the tenth or eleventh. They are

1) the extent of the distribution pattern throughout England, and

2) the scattered character of the finds in the countryside, together with

3) the very large numbers of dies from which the sceattas were struck, and

4) the transfers of substantial amounts of currency between regions within England.

These four features together speak against the view that the use of coins was essentially restricted to prestige or social functions rather than purposes of monetary exchange. Already before 750 the economy was monetised even in the countryside and therefore at quite ordinary levels of society." (1984a:27).

Metcalf sees this 8th century economy as being intimately linked with and fuelled by 'interregional trade'. This took place, he argues, between regions within England and between England and the Continent, and is indicated by the movement of coins (1984a:27).

The early phase of the sceatta coinage from c.675-700, saw a very restricted distribution limited to Kent and the south east (Rigold 1960). Also a number of the Kentish finds of series A and B are grave finds and presumably are some kind of standard payments, perhaps replacing the more traditional grave goods, but as Metcalf says, the 'socio-religious background' remains unclear (1984a:32).

The impetus for the development of this coinage was trade particularly with the area of the Rhine mouths where English Primary phase coins occur at both Domburg and Dorestad as well as in a number of French hoards of the period (Op den Velde et al 1984:126). Metcalf suggests that the fact that these English types do occur on the Continent indicates a 'balance of trade deficit' with the Continent in this early phase, in other words silver in the form of coins was leaving England thus preventing an wider expansion of coinage in England (1984a:30). The period 700-725 saw a widening of the distribution of coinage into the Midlands or Middle Anglia. Series E, the Continental Porcupines, along with East Saxon types, are the coins most commonly found in this new area; Kentish and East Anglian types are notably absent. This, in Metcalf's view, indicates that trade from Frisia via the Thames estuary and London into the Midlands was the catalyst for this expansion, with goods being exported eastwards from the Midlands in exchange for Frisian coin (1984a:30). There are also

Primary period finds from around the east coast which Metcalf interprets as a further branch of the same current of trade running northwards (1984a:32). Compared with the numbers of coins known from the Rhine mouths area and the lack of die links amongst them, suggesting a very large output of coins, England was a 'poor monetary relation' of this area. However this underdeveloped monetary economy was "rapidly benefitting from access to the accumulated resources and entrepreneurship of the North Sea merchants" (1984a:34).

Metcalf interprets the expansion of the area of circulation in the Secondary phase and the proliferation of types, many showing a distinctly regional distribution, as an indication of increasing royal control over minting. Foreign trade was still the impetus behind the coinage, as evidenced by the continuing arrival of Porcupine sceattas, but as coinage accumulated, more exchanges took place within the region and this prompted rulers to begin profiting from these exchanges by levying tolls and minting their own coins (1984a:34).

That some of the sceatta series were the products of certain kingdoms is quite clear from the distributions of the coins. The Northumbrian coins bear the king's name but are also very restricted in distribution to Northumbria and Lindsey; series H from Hamwic rarely occurs anywhere else and the East Anglian Runics are very largely restricted to that kingdom (1984a:34; Booth

1984; Metcalf 1988).

The 'core' area where the Primary series coins circulated is somewhat different. In this area, Middle Anglia, the Thames Valley, Essex and Kent, numerous series of coins circulated. Unlike the other kingdoms, no apparent attempt was made to control these series, which makes the attribution of them to particular kingdoms or mints more difficult (1984a:47). Metcalf maintains that an appreciation of the political situation in which Aethelbald of Mercia, predecessor of Offa, achieved some kind of hegemony over most of southern England by c.731, is essential before the coinage can be understood (1984a:46; Stenton 1971:203).

Metcalf has identified a number of the Secondary series coins (eg. some of series U and K) which represent the coinage of Aethelbald, although the situation is complicated by the fact that he seems to have had both a midland mint and a southern mint, possibly London or possibly in Kent. The situation is complicated further by the fact that there are several series which belong to one or other kingdom but in their interlinked designs they reflect, in Metcalf's view, Aethelbald's supremacy if not the complete dominance achieved by Offa (1984a:34-40,46). There are still a number of types whose attribution is unclear, for example it is not certain which Secondary types belong to Kent. However Metcalf seems to maintain that even the smaller series

were 'regular' series, by which he presumably means royal issues (1984a:45-47).

The Secondary phase was also characterised by a serious decline in the fineness of the sceattas which, as outlined in Chapter 2, finally disappeared in southern England in c. 750. This decline and eventual disappearance is not well understood but it has been attributed to the continuing campaigns against Frisia by the Francs under Charles Martel (Halbertsma 1965-6; Lebecq 1983) which would have disrupted Frisian trade which was the main driving force behind the English coinage (Metcalf 1974c:245). The sceattas were replaced by the new penny coinage although the recent study of the Middle Harling hoard suggests that the period of coinlessness in southern England may have been shorter than previously thought and almost absent in East Anglia (Archibald 1985). Despite this it seems as though the coinage did not take off again until the 780's when Offa's group II and III coins were minted in large numbers (Blunt 1961). This was probably due to a revival of cross-Channel trade and cultural connection, with the Carolingian kingdom where Charlemagne had subdued Frisia and was again exploiting trade with the north through Dorestad (Metcalf 1974b:245; Verwers 1988).

Metcalf argues his case from the numismatic evidence in detail and with great skill but there are a number of points which he does not consider and which may be worth

noting. He suggests that the expansion of the coinage was the result of an accumulation of foreign coin which resulted in increased exchanges within the regions. Presumably these exchanges involved foreign merchants, as Metcalf has also stated that the monetary economy was not sustained by local exchanges, presumably meaning exchange between local inhabitants (1984a:34). If this is the case it must mean that foreign merchants were travelling widely in Middle Anglia and elsewhere to engage in trade. However, it seems likely that merchants and traders were quite closely regulated at this time and may have operated as agents of royal courts, the aristocracy or the church, rather than as freelance 'entrepreneurs' (Sawyer 1977). One of the functions of the emporia was to control and safeguard foreign traders (Sawyer 1977). Similarly if local rulers felt it profitable to control coinage and mint their own coins presumably there was enough local trade to make this worthwhile. It seems unlikely that the activities of foreign traders alone would make this valid. However, having suggested that there must have been local trade, consideration must be given to what was being traded and where. Most people, including the ruling elite, must have been essentially self-sufficient and small scale exchanges could have been carried out easily by barter (Sawyer 1977:146-7). Commodities such as salt were obviously of importance and were widely distributed in often complex ways (1977:147). However there is little evidence outside the emporia for large scale production

of commodities in England, pottery for example seems to have been locally produced and distributed, with the exception of Ipswich ware which appears to have been distributed on a much wider scale (Hodges 1981). Similarly there is little evidence for any permanent markets which are such a feature of later Anglo-Saxon England, although concentrations of coins on otherwise unoccupied sites, some on hillforts like Hod Hill and Walbury camp (Metcalf 1974a, 1984a) or the more recent discoveries by metal detector users in East Anglia and Essex (Blackburn and Bonser 1986; Rigold and Metcalf 1984), may indicate the sites of seasonal or periodic fairs. However these are a far cry from the burghs of the 10th century with their markets and mints (Biddle 1976; Hodges 1982a).

Metcalf is also dismissive of taxation as a major factor in stimulating the monetary economy (1984a:34). Yet much emphasis is placed on the importance of the hegemony of Aethelbald in the middle decades of the 8th century as a major factor in understanding the Secondary sceattas. In such a situation Aethelbald was presumably demanding some form of tribute or taxation and could coinage not be seen as a convenient and flexible way of raising such payments? Until recently Metcalf has emphasised the role of royal authority in the minting of coins. However, the great variety of designs in use in the Secondary phase must surely suggest that minting was being carried out by other than kings. An obvious possibilty is the church. In the Frankish kingdoms

bishoprics and monasteries are known to have minted coins (Grierson and Blackburn 1986:139) is it impossible that some of the numerous Secondary series which seem to belong to Kent could have been ecclesiatical issues? In a recent article Metcalf (1988b:124-6) has argued that the Archbishops of Canterbury could have been awarded the right to mint as early as the late 7th or early 8th centuries.

The point to be made is that it is surely dangerous to see one single factor as the reason for the development and expansion of coinage. That trade with the Rhine mouths was important in the 7th and 8th centuries is beyond doubt but that does not exclude the possible importance of other factors. Coins may have been minted for one reason but functioned for others. Similarly the development of coinage may have proceeded differently in different areas. Why, for example, are the series H coins rarely found outside Hamwic when they are supposed to be used in overseas trade, whereas the East Anglian and Northumbrian coinages are found quite widely spread in their respective territories but rarely beyond? Perhaps a way forward is to identify the differences between the coinages and the societies in which they were operating, by means of historical and archaeological evidence. In this way the importance of different factors may become clearer.

Similarly Metcalf's assumption that coinage functioned

in the same way in the 7th and 8th centuries as it did in the 10th and 11th is based on the similarities in the distributions of the coins of the different periods and seems to assume that society also functioned in the same way which is not necessarily the case. Royal power was very different in the earlier period than the later as was the administrative framework which supported it (Campbell 1982). Metcalf also believes that the sceattas may have been more copious than Offa's coinage, which he considers to have been one of considerable numbers of coins (1974:230). This estimate led to an extensive debate on the size and nature of Early Medieval coinage, particularly with Philip Grierson whose views will be considered in the followiing section. This debate will not be pursued in detail here but the main point made by Grierson was that Metcalf was using figures and estimates from a later period to derive the numbers of coins which could be struck from a die and also assumed that all dies were used fully. Grierson contended that such assumptions were not valid because of the nature of Early Medieval society and the relatively limited use of coinage.

3.2 The Theoretical and Anthropological Approach to Coinage and Exchange.

In 1959 Philip Grierson published a paper entitled Commerce in the Dark Ages: a Critique of the Evidence. This has become a fundamental text in any discussion of

trade in the Early Middle Ages. Grierson's essential point was that goods were circulating in Europe at this time in other than commercial exchanges, indeed 'commerce' was probably of limited importance until the 9th and 10th centuries. He was critical of the approach of previous scholars who tried to amass evidence to indicate that goods were largely distributed as they had been in the preceding Roman period "The whole approach, that of accumulating evidence for the existence of trade instead of trying to form an overall picture of how and to what extent material goods changed ownership, is in itself profoundly misleading and can only result in conclusions that are far from the truth" (1959:125).

Grierson went on to argue that 'theft and gift' played a significant role in the distribution of goods (1959:131). On the one hand plunder and booty must have been extensive in Early Medieval Europe and on the other hand gifts between rulers and embassies or gifts to the church are also well recorded (1959:133-5). Between the extremes were a range of other payments such as ransom, tolls, bridewealth or payments to mercenaries, all of which would have been significant means by which goods could be circulated.

In proposing the importance of gift exchange Grierson was influenced by the works of the anthropologists Malinowski (1922) and Mauss (1925). They had argued that in primitive societies the distribution of goods by gift exchange was an important means of establishing and

maintaining social relationships and that the methods of analysis of formal economics, based on the principles of supply and demand, maximisation and efficiency, were unsuitable for studying such societies. Their work led to the development of a school of economic anthropology known as the substantivist school which has been promoted and developed by Polanyi (1957; 1963), Dalton (eg. 1961; 1965; 1975;1977) and Sahlins (1974) amongst others. The ideas of the substantivists were often vehemently opposed by the formalists and a long and sometimes acrimonious debate ensued. Some sort of consensus between the two sides may eventually be forthcoming as implied by Dowling (1980) who has suggested that they have in fact been arguing past one another and that the two approaches are in fact complementary.

It is not intended to review these debates in any detail here but the substantivist approach is important because of the influence that it has had on archaeology as that discipline became more concerned with the nature and importance of trade in early societies (eg Sabloff and Lamberg Karlovsky 1975). Concepts of gift exchange and of 'prestige goods systems' became familiar in archaeology. The latter referred to systems where an elite, or possibly a single ruler, maintained power by controlling the supply of particular goods which conferred status or were necessary for the establishment of social relationships. Such goods were usually exotic

or luxury goods and were often obtainable only through long distance exchange (Gregory 1982; Renfrew and Shennan 1982).

In a series of recent publications Richard Hodges has approached the problems of trade, urban origins and the development of markets from an essentialy substantivist viewpoint whilst at the same time adopting and using a variety of models developed by anthropologists, archaeologists and geographers. The central work in which Hodges sets out his ideas is Dark Age Economics (1982). They are developed further in Mohammed, Charlemagne and the Origins of Europe, written with Whitehouse (1983) and most recently in Primitive and Peasant Markets (1988). In addition various aspects have been discussed in a series of papers (eg. 1977, 1978, 1982b). Again it is not intended to embark on a detailed review or critique of Hodges' work or the models which he has utilised to develop his interpretation of the role of trade and exchange in the development of post Roman Europe. However, Hodges, like so many other writers on the period, has utilised numismatic evidence extensively and if the results of the analysis presented in Chapter 5 are to have a wider relevance then some of the ideas presented by Hodges should be considered at least briefly and as a contrast to the interpretation of the coinage presented by Metcalf (above). A major critique of Hodges' work to date is that by Astill (1985), which has been drawn on in the following sections. Otherwise medieval

archaeologists seem slow to offer any opinions on Hodges' view of north-west Europe at this period.

In Hodges' thesis the 4th and 5th centuries AD saw the decline and collapse of the Roman marketing system and the end of commodity production and distribution. Within the fragmented territorial groupings which developed in the 5th and 6th centuries, luxury goods still circulated but were controlled by the elite and functioned as prestige goods. This trade was controlled by the various courts, and merchants were attached to them rather than being free agents (Whittaker 1983).

This was the system described by Werner (1961) and discussed above in Chapter 1. During the 7th century, according to the model, trade developed to such an extent that the Frankish and Kentish courts lost control, in the sense that other members of the elite were gaining direct access to the traders and hence the imported goods. Loss of control of these imported items threatened the position of the rulers. In order to overcome this problem the kings restricted trade to specific sites which were under direct royal control, the emporia. From the archaeological evidence it is clear that these sites also became centres for local production of metalwork, textiles and other crafts (Hodges and Hobley 1988).

The Carolingians in Francia tried to increase this

trade, particularly with the Baltic area, in an attempt to stimulate the economy of the regions. Charlemagne in particular was responsible for the reorganisation of the pottery industries in the Rhineland (Hodges 1982a:149). Many of the goods produced were meant for trade with the Baltic area in exchange for the Arab silver which was arriving there via the trade routes through Russia in exchange for furs and other natural products (Hodges and Whitehouse 1983). This silver in turn was used, so the model goes, for the coin reforms instituted by Charlemagne which were designed to further stimulate local exchange and local production. These plans were unsuccessful due to the drying up of supplies of Arab silver to the Baltic, the civil wars in Francia and the increasing Viking raids and settlements. It was not until the 10th century that 'slow agricultural and regional growth' developed the platform from which the urban expansion planned by Charlemagne finally arose (Hodges 1982:189).

Hodges (eg 1982a:18-20) utilises a number of theoretical models to develop this overview, including the distance decay model developed by Renfrew (1975) which attempts to demonstrate that different exchange systems will result in differential distributions of artifacts. Carol Smith (1976) has developed a set of spatial models which outline different settlement patterns which will develop within different systems. The emporia, for example, fall into her 'dendritic central place system' where there is one large settlement on the frontier of a

region, designed to maintain contact with other regions and obtain the prestige goods necessary to maintain the system (Hodges 1982a:16-18; 1988:18-20,45-61). Other concepts such as 'Gateway Community' (Hirth 1978) and 'Port of Trade'(Polanyi 1963) are akin to Smith's 'dendritic central place'.

A further model which Hodges introduced was Wallerstein's 'core periphery' model, the essence of which sees the impetus for change originating in a more advanced or 'core' area which influences the outlying or 'peripheral' areas. Using this approach, Hodges sees Francia as the 'core' area with England and Denmark the 'periphery'. He does adapt these models to some extent particularly as both Smith and Wallerstein see the 'core' as essentially exploiting the periphery with trading centres in peripheral areas being established by the 'core'. In Early Medieval Europe, however, Hodges maintains that this is not the case as the emporia were established by the rulers of the peripheral areas to control long distance trade and the prestige goods this brought to their kingdoms (1988:47).

Hodges uses numismatic evidence extensively in developing his interpretation and introduces some theoretical and anthropological approaches to the subject (1982a:104-17). Coinage may be seen as being indicative of the operation of a market economy but a major tenet of Hodges' thesis is that such a system does

not occur until the development of complex states (1982a:105). Early Medieval coinage, he suggests, is a function of long distance trade as it becomes more organised. It also may have developed as a means of paying blood feud prices or from the trading of bullion used in manufacturing prestige goods. Hodges goes on to describe a model of the evolution of coinage and minting systems formulated by Collis (1971) which is worth noting here, given the results of the analysis of the series X sceattas presented in Chapter 5.

Collis diagramatically sets out his models for the spread of coinage (Fig 5). This represents six systems (territories or kingdoms) which are interrelated. System 1 has already adopted coinage (in this case system 1 would be Francia) which spreads to the whole area including those which overlap with the other systems, 2 and 3. The coinage in the initial area, 1, will undergo change, in weight, typology etc and these changes will be manifested throughout the area including the overlap areas. As a result the coinage which develops in areas 2 and 3 will reflect these changes and may also diverge, adopting different features of the coinage in area 1. In the next phase systems 4 and 5 will adopt coinage but the existing coinages will have developed still further and these changes will be reflected in the newly adopted system. In Collis's model the last system 6 does not adopt coinage but coinages of other systems will obviously occur around the periphery (Collis 1971; Hodges 1982:105-6).

In the case of Early Medieval Europe the changes in Francia will affect the other systems in England, Kent, East Anglia, Wessex, Northumbria, Mercia and those in other adjacent areas, Frisia and Denmark.

The second model proposed by Collis concerns the organisation of minting and is again set out diagramatically in fig 6. This postulates two different societies, one where power is centralised and the other where a number of individuals of equal status may hold power. These different systems will give rise to different minting patterns. In the first, minting will be centralised but it may either be controlled by the central power or uncontrolled. In the second minting will not be centralised but again may be controlled by the elite or a particular individual or be uncontrolled when, in theory, anyone with the resources could produce coins (Collis 1971:74-5; Hodges 1982a:107).

A further theoretical approach to coinage in non-market systems has recently been published by Dalton (1977). He defined three categories which he sees operating in different ways. The first of these he defines as 'primitive valuables' which operated in non-commercial payments such as death payments, bridewealth, and war alliance. 'Primitive money' on the other hand is used in, what Dalton describes as 'peripheral market exchange', which Hodges (1982a:25) equates with with

the dendritic central place system of Smith (1976) being represented by the emporia in Early Medieval Europe. Dalton saw such things as cowrie shells and slabs of salt, items which could not be controlled by any central authority, as primitive money. The final category is 'early cash'. This is seen to be the product of early states and used for the payment of taxes and fines as well as in market exchange. 'Early cash' is a controlled medium which can be graded to tax indirectly when the coinage is marked with the insignia of authority (Dalton 1977:198-9; Hodges 1982a:107-8).

Hodges develops Dalton's system to attempt to describe the changes which might be expected as 'primitive money', which has specific functions, becomes 'early cash' which is multi-purpose. 'Primitive money', according to Hodges, "should be limited in its spatial distribution to those particular groups which require or share this medium. Cash on the other hand should flow more freely in and between the centres in which it is used." (1982a:108). Also as coinage becomes more widely used then the control exercised over it should become more rigorous. As a result the issuing authority will become much more readily identifiable on the coins and there will be a much more rigorous control of alloy and weight as this is crucial if the coinage is going to be generally accepted. The change to 'early cash' therefore "..calls for readily identifiable objects the value of which cannot be in doubt" (Hodges 1982a:108).

These various expectations in the evolution of coinage from primitive money to early cash were developed in terms of a 'cost control model' originally proposed by Rathje (1975). This was discussed at length and applied to the development of the Anglo-Saxon coinage in a paper by Hodges and Cherry (1983) while the main points were summarised by Hodges in a later work (1988:104-24). It is worth outlining some of the main points and expectations of this model as the analysis of the series X seems to suggest that some of these predicted changes were in fact happening earlier than they might have been expected.

At the risk of gross oversimplification, Rathje's model can be said to argue that as systems increase in complexity they need to compensate for the "..exponentially expanding need for information processing and deciding components" (Hodges 1988:106). Essentially what this means is that there will be a ".. trend towards mass production and distribution of commodities based on the principles of standardisation, simplification, efficiency, reduction of energy/material input, and so on." (1988:106-7). The introduction of such techniques will result in a change in the nature of a system from one where the elite maintains its position by means of "high investment products loaded with psychological and ideological values (prestige goods) towards a more direct form of economic intergration in which local small scale production units are superseded

by an overarching production and distribution system" (Hodges 1988:107).

On the basis of this model of the changing nature of systems Hodges and Cherry developed a series of cost control expectations for coinage and attempted to illustrate them by reference to the Anglo-Saxon coinage (Hodges and Cherry 1983; Hodges 1988:108-116):

1. **The total volume of coinage within the system will increase with political complexity.** It is an obvious corollary of the model that a trend to mass production will lead to an increase in output. Coinage functioning as primitive valuables will only exist in small quantities. With the change to an expanding economy and to coinage functioning as early cash there will be increased demand for coinage to facilitate the exchanges.

2. **The size of individual issues will increase with political complexity.** An obvious cost control possibility is to mass produce large numbers of a single coin type. Where coinage is neither circulating in bulk nor issued by a single authority minting will be expedient and sporadic and variation will be greater

3. **Unit variation within the coinage system will increase with political complexity.** The concept behind this expectation is that with increased mass production it will become economical to produce a base metal

coinage (or coins representing fractions of the main unit). This will result in the adoption of a multiple unit system which is necessary if day to day market transactions are to be possible using coin. This is usually characteristic of developed states.

4. **The organisation of coin production will change with increasing political complexity.** The mass production and increased use of coins and the need to provide all localities of a state with identifiable coins will lead to an increase in the numbers of mints and of moneyers and possibly an increase in the numbers of individuals named on coins. Cost control factors would encourage the development of local mints but political factors in terms of increased control over the issue of coin could cause the number of mints to be curtailed or the centralisation of die production in a few centres.

5. **Individual coin issues will become more standardised with increasing political complexity.** Rathje has suggested that mass replication and the distribution of the standardised sets of products characterises the later phases of the material culture trajectory he has described (1975:414 in Hodges 1988:111). The clearest indication of this "..is likely to be a reduction in the standard deviations of the weight and the metallic purity of the coins within an issue" (1988:111). Measures need to be taken to

ensure the weight and purity of the coins if each coin is not to be tested before each transaction. (It may be justified to assume that a logical addition to this expectation is that coins actually develop a value above that of the precious metal they contain. This will be discussed further in Chapter 6).

6. **The use of coins as a vehicle for propaganda will increase with political complexity** In stateless societies the design stamped on coins will not necessarily have any political meaning. Hence designs from external states will be copied without any thought to their possible original meaning. All that was important was that designs differentiated coins from those of other mints or earlier issues. (It may be, however, that issuing authorities of such imitative coins were harking back to a recognised authority and were trying to use that perceived authority). In complex states, on the other hand, the mark of the issuing authority is the guarantee of the worth of the coin. In addition complex states have usually subsumed smaller, previously autonomous, groups which results in "..exponential growth of information exchanges and decision making" (1988:112). Presumably this includes the need to reinforce and justify the position of the ruling elite by various means amongst which is the overt indication of authority on such things as the coinage.

Hodges goes on to suggest that with mass production, standardisation and wider circulation in states coin

types will become more detailed and specific to permit their identification in areas where the purely local symbolism of earlier coin types might not have been understood (1988:112). As a result coins will become more important as a way of "disseminating propaganda and asserting authority throughout the population" (1988:112). (The clear change which happens on medieval coins is of course the abrupt change to the use of kings' names on coins. How much value this had as propaganda is interesting to consider as most of the population would be illiterate.) A further four expectations are postulated by Hogdes with respect to this:

1. Increasingly common depictions of leaders will occur on coins;
2. Designs and inscriptions will become more complex;
3. There will be an increase in the use of privy marks and other accessory symbols solely for the benefit of the administration in checking the authenticity of standardised coinage circulating away from the centre of the realm.
4. There will be an enlargement of the face of the coin to accommodate these changes. (Hodges and Cherry 1983:147-51; Hodges 1988:108-12).

The development of the coinage in north-west Europe has been outlined at some length in Chapter 2 but it may be instructive to see how Hodges interprets the development

in the light of this model. In Chapter 6 the results of the analysis of the series X sceattas will also be considered in light of the expectations outlined by Hodges.

The gold bracteates, discussed in Chapter 2, were the first 'coin-like' objects which circulated in the region after the collapse of the Roman monetary system. These originated in Denmark in the late 5th and 6th centuries and were at least partly influenced by the Byzantine solidi which were appearing in the area at this time (Hodges 1982a:108). The bracteates are found along the coast of northwest Europe as far south as Normandy and Aquitaine and include a concentration in Kent (1982:33). Many of these are mounted as pendants and were obviously exchanged as prestige objects or bullion; they would clearly fall into the category of primitive valuable (Dalton 1977). Hodges sees these as "important elements in the welding of trade partnerships during this migrationary phase" (1988:113). Whether these trade partnerships directly connected Kent and Denmark or Kent and more adjacent parts of the Continent is unstated.

In the second half of the 6th century the minting of gold coins begins in the Frankish kingdoms. Like the bracteates these appear in Kent and Frisia and regularly occur as grave goods. They too were presumably circulating as prestige objects in their own right as well as being a source of gold for the manufacture of other high status goods such as the elaborate jewellery

which occurs at the time. Hodges sees these coins as being transitional between primitive valuables and what he terms primitive currency, presumably the same as Dalton's primitive money (1982a:109). This transformation, Hodges suggests, was at least partly influenced by the church which was responsible for initiating social change and at least a small move towards commodity production, presumably to maximise the benefits available from the land it was amassing (1988:113).

The changes that the coinage and the economy generally were undergoing in the 7th century were clearly complex and are not yet fully understood. There was a huge increase in the numbers of mints producing gold coins in the Merovingian kingdoms and a decline in the fineness of the coins. It has been argued that this decline was a controlled step like debasement (Kent 1975) although recently this has been called into question (Brown 1981). The increase in the numbers of mints may have been a contributory cause of the drop in fineness as more coins were struck from a limited supply of bullion (Kent 1975). The limited gold may have been caused by the failure of the Byzantine trading systems in the Mediterranean (Hodges 1982a:35) and the thesaurisation of gold by the church in the form of altar vessels and other goods which would in a sense be withdrawn from circulation (Grierson and Blackburn 1986:95). Hodges sees the proliferation of mints as an indication that

This increased local demand led to increased local production of goods to exchange, including presumably coin (1982a:38). The use of coin in other areas also seems to become more explicit in the 7th century. The Anglo-Saxon law codes list wergelds in terms of monetary value (Hodges 1988:114) and it has been suggested that the 100 coins of Crondall hoard, one of only two gold hoards from England, in fact represent a wergeld payment (Grierson 1970). How much influence the church had in the expansion of the use of coinage is worth considering. The church introduced the use of written charters to establish rights to land and were also presumably influential in the codefication of the various law codes which state payments for specific injuries and offences which otherwise may have been settled by bloodfeud (Campbell 1982:95-100).

The next significant change in the coinage was, of course, the change to a silver standard, which Hodges links to the change to a Germanic weight system (1982:111). However this metrological change had already occurred when the Germanic kingdoms had begun to mint their own gold coinage (Grierson and Blackburn 1986:13-14). In Hodges' model this change went hand in hand with the establishment of his type B emporia such as Hamwic and the Carolingian phases of Dorestad (1982a:111; 1988:114). Initially he saw the establishment of these centres as primarily concerned with controlling the expanding long distance trade and

the earliest sceattas as having a primary role in that trade (1982a:52, 111). The instigator of this important monetary development was Pepin II, Mayor of the Palace of Austrasia, who, in 687 conquered his rival at the Battle of Tertry and united the two Kingdoms. This reform was supposedly "aimed at controlling exchange from Merovingia centrally, as well as a means of controlling it." (1982a:111). This new coinage went hand in hand with the establishment of a new settlement, or expansion of an existing one, at Dorestad after the annexation of the area by Pepin. Certainly the waterfronts discovered in the recent excavations date from this period (Van Es and Verwers 1980). The establishment of a silver coinage by Pepin soon led to similar changes in Kent and Frisia with the introduction of the Primary sceatta series.

Hodges' thesis, as developed in his various publications sees the role of individual rulers as paramount in instigating various changes and innovations which occur in the economic systems of this period. It seems very likely that a change such as that to a silver coinage must have been instigated by some central authority but in this case Hodges may have backed the wrong Mayor. Grierson and Blackburn in their recent magisterial review of the coinage of Early Medieval Europe (1986) review the evidence for the introduction of the silver coinage in Francia and conclude that the change probably occurred in Neustria and was instigated by Ebroin, Mayor of the Palace of that kingdom. The probability is that

the change was instigated possibly as early as the 660's or 670's; certainly silver deniers were in circulation in the Paris region by 682 (Grierson and Blackburn 1986:92-5).

This, of course, raises certain problems with the model. The reason behind Ebroin's reform of the currency could be the same as that attributed to Pepin and it is also possible that Ebroin may have been attempting to exploit and control trade through the Neustrian port of Quentovic, prior to Pepin attempting the same thing through Dorestad. Alternatively Ebroin, and for that matter Pepin may have been trying to profit from something that was already developing. Wood has interpreted the frequent mention of the royal villa at Crecy-en-Ponthieu in charters concerning Quentovic as evidence of the Merovingians' attempts to tap into the wealth of the port, not necessarily attempts to deliberately foster trade (Wood 1983:18; Astill 1985:221).

The introduction of the sceattas into southern England has also been seen as the action of a particular ruler, in this case Wihtred of Kent. Rigold argued that the debased gold coins were eventually swept away by the huge wergeld paid after the murder of Mul, a member of the royal family of Wessex. Wihtred then introduced the Primary sceattas series A and B in Kent and slightly, later series C was introduced in East Anglia (Rigold

1960). In a recent review of the chronology of the sceattas Blackburn has suggested a date possibly as early as the 670's for the introduction of the Primary sceattas (1984:173-4). Again the attribution of the innovation to Wihtred may be mistaken but the motive behind it may be the same. The distribution of the Primary sceattas and the fact that they are found on the Continent strongly suggests their use in long distance exchange (see map in Op den Velde et al 1984:124).

Saxon Southampton is another of the emporia which Hodges sees being founded as part of this process of monetary change and expanding control of exchange (1988:114). This site is generally considered to be the foundation of king Ina in c.690. The site has been extensively excavated over the last two to three decades see above, (Chapter 1) and the coins from these excavations have recently been published by Metcalf (1988). What is clear from the coin finds is that the Primary English sceattas are virtually absent from the emporium and of the five possible examples, three are imitative and two probably foreign (Metcalf 1988:21). The earliest coins which have been found are in fact some of the series E or Porcupines and series G, both of which may be Continental types. There are only half a dozen of these which may date to c.700-710 (1988:21). It is not until the Intermediate and Secondary phases, after c.710, that the numbers of coins increase and that coins, series H, are minted at Hamwic (Hodges 1988). The archaeological evidence from Hamwic certainly suggests considerable

central planning (Chapter 1) with the boundary ditch and gravelled roads but the setting up of the emporium, if the traditional attribution is correct, does not seem to coincide with the introduction of a new coinage. According to the model proposed by Collis (1971) and outlined above there would be a slight delay between coinage being taken up by a second and third system after its introduction into the first. The corollary of this is that trade could proceed without recourse to coined money, as could the various other craft activities which are characteristic of the emporia, and other forms of cash may have been in use (Astill 1985:225). Care must be taken not to read too much into this evidence. The chronology of the sceattas is not certain and archaeological evidence is often too crude a tool to distinguish between one decade and the next.

As described in Chapter 2 there was a Secondary sceatta phase which saw a great increase in the variety of designs and numbers of coins as well as an expansion in the distribution, at least in England. Coupled with this however, was a gradual fall in the fineness of the coins and an increase in copies and imitations, so that it is difficult in some cases to be sure of the issuing authority although some of the designs may have had political significance (Metcalf 1984a:46).

As already discussed above Metcalf saw the expansion of coin use in the Secondary phase as being made possible initially by an accumulation of coins through long

distance trade and a gradually increasing monetary economy, with more exchanges taking place in the regions. Rulers then took the opportunity to control the currency and profit from it by levying tolls and striking their own coins (1984a:34). Hodges saw the sceattas generally as having a dual function, circulating in the prestige goods exchange networks and being used as "measures within tribal society", presumably as a means of paying tolls, wergelds etc. (Hodges 1988:114). Referring back to expectation 5 (above) he seems to suggest that because the designs used were many and varied there was little control and the use of the sceattas as 'early cash' was not feasible. He further sees the expansion of the secondary phase as a result of imitation, not just by other tribal groupings but by competing elites within some kingdoms (1988:114). This results in "..an anarchic pattern of coins which occur in striking quantities" as predicted in expectation 1 (above) (1988:115). The result of this is a breakdown of the trading partnerships which had articulated the exchange system and the development of "..a much wider network of balanced reciprocity" (1988:115). Eventually the highly centralised economic strategies broke down and the, by now much debased, sceattas disappeared from circulation c.740-50.

As with the other major developments in the coinage the next innovation is generally thought to have originated

in Francia. In 755, after having himself declared king, Pepin instituted a coinage reform which enlarged the size of the flans, which were now stamped out of sheets of silver rather than cast, and ensured that his monogram was used on all coins, although the reverses are still very varied (Grierson and Blackburn 1986:204). It had been thought that these innovations had no effect on the English kingdoms until the 770's when the new penny was introduced into Kent by two little known kings before being taken over by Offa (Blunt 1961). It is now clear from Archibald's study of the coinage of Beonna (1985; chapter 2 above) that in East Anglia at least, there may have been a much more continuous history of coinage than previously thought and that Offa's coinage may have originated there rather than in Kent. Beonna's coinage, with larger flan, explicit statement of issuing authority in the form of the king's name, as well as that of a moneyer, would seem to conform well with Hodge's expectations of the development towards 'early cash'. In this case however it was short lived and not sustainable.

It was Offa who introduced the penny into England and it is particularly with his portrait coins issued from c.790 that Hodges sees the first real appearance of 'early cash' following the reforms introduced by Charlemagne on the Continent. These were aimed at establishing a coinage which could be controlled for use in regional and not just long distance exchange. The

propaganda value of coinage can also be seen in Offa's coinage (expectation 6 above) with the otherwise unprecedented group 2 coins with the portrait bust as well as the fact that coins in the names of the rulers in the other English kingdoms now under the hegemony of Mercia were not permitted. The importance of coins by the end of Offa's reign is perhaps highlighted by the immediate attempts by the rulers of East Anglia and Kent to mint coins in their own names, a practice soon eliminated by Offa's successor (Dolley 1964:14). Coinage is firmly established as early cash in England with the deliberate development of competitive markets after 900 and the control exercised over the later Anglo-Saxon coinage by the kings is well known and will not be discussed further here.

In a review of the expectations which he set out

regarding the transition of coinage from 'primitive money' to 'early cash' Hodges concludes that the cost control model "draws attention to the massive increase in the volume of Anglo-Saxon coinage between 600 and 1066". However, no precise comparisons were possible between the volume of the Middle Saxon and Late Saxon coinages, just as it was not possible to determine the size of particular issues (expectations 1 and 2) (Hodges 1988:117). The third expectation, predicting smaller units in the coinage, is also not borne out, although, cut half pennies do occur in the later coinage presumably indicating a rising, if still limited, demand for smaller denominations. The fourth expectation is

more useful in highlighting the changing organisation of minting between the 7th and 10th centuries. The Primary sceattas can be seen as a centrally controlled coinage (Collis 1971) which degenerates into an uncontrolled and 'moderately' decentralised system. This in turn was centralised (by Offa) around 800 (probably earlier?) before being decentralised, in a highly controlled way, to serve the markets established by deliberate policy in the 10th century (1988:117).

Standardisation was the subject of the 5th expectation. The sceattas, of course, display a great deal of variation which ended abruptly with the introduction of the penny coinage by Offa. The introduction of the use of flans made it easier to standardise production which eventually resulted in the manipulation of the silver content as a form of taxation, illustrating the embeddedness of coin use within the society by this time (1988:118).

The final expectation concerns the increased use of the coins for propaganda purposes. In the original formulation of the cost control model Rathje states: "..as the growing system faces new communication demands, it will place increasing emphasis upon rigid patterning of sets of interactions" (Rathje 1975:414 in Hodges 1988:118). Hodges sees this reflected in the Anglo-Saxon coinage in that the investment in the production of the sceattas is 'inordinately' high. Offa

streamlined the production system, making the production of coins more cost effective but at the same time used the artistic skills available to produce a unique product with, presumably, a major propaganda impact. In contrast, the Late Saxon coins are specifically mass produced functional objects. Hodges concludes "..the cost control model qualitatively emphasises the transitory character of the Anglo-Saxon coinage, and as an expression of the political economy serves to confirm the need to examine numismatic data in its holistic rather than its particular context." (1988:118).

The model set out by Hodges proposes to explain the changes through which the coinage passed, within the context of a much more extensive explanation of economic and social change in Early Medieval Europe. It is not the last word on the subject nor is it probably intended to be. The value of setting up such models is that they allow the data, numismatic in this case, to be tested against an explicit set of expectations and explanations. Doing this should highlight the shortcomings of the data and prompt more rigorous examination as well as prompting questions which may not necessarily have been previously asked of it. Whether the model has any value will only be determined by rigorous testing and such testing can only draw new insights from the data.

CHAPTER 4

THE SERIES X OR WODAN MONSTER SCEATTAS.

The series X or Wodan Monster sceattas have been briefly described above along with the other Continental sceatta series but a more detailed account of the group is needed to establish a sound basis for discussion after analysis of the coins in the following chapter. This is particularly so in light of the recent debate over the date and origin of the series and the recent finds of the type from Scandinavia.

The obverse of the type consists of a facing head with staring eyes and radiating lines forming hair and moustache. The cheeks are flanked by symbols, almost always crosses, although others do occur. In the V formed by the uppermost 'hairs' there is usually one but occasionally two pellets (fig 7). The reverse or 'Monster' consists of a quadruped usually facing left, although occasionally right, with its head turned back over its shoulder to bite its upraised tail. The feet are very feathery in appearance, usually with three toes and the animal is clearly male as indicated by the prominent penis. The reverses are also characterised by a symbol, perhaps indicating mint or moneyer, below the animal's head. This is a most unusual feature on the sceattas and will be discussed further below. Other

features occur on some of the reverse dies; for example in some groups the animal's mane or lappet ends in two pellets instead of the usual one, in one group the animal has a crest and in another a pellet is present at the base of the tail (Fig 8).

The designs on the coins will be discussed in more detail in Chapter 6 but here it will perhaps be valuable to consider some of the more general characteristics of the series X coins and to look at the variants which also occur.

There are perhaps three recognisable groups of Wodan Monster coins. The first is the most common and appears to be a regular or official series minted somewhere on the Continent. There are a few coins which seem to be copies of this regular style but which are clearly closely associated with it. The second group is a type which mostly occurs in England and appears to be an insular imitation of the regular style (Metcalf 1988:35-6). The third group is a series of derivative types and 'mules', most of which are insular in origin. Of these various groups those in the regular style, as it may conveniently be called, are the ones which will be considered in depth in this study.

4.1 THE SERIES X SCEATTAS

4.1.1 The Regular Series.

The vast majority of the series X coins are in the regular style. The coins are very similar in appearance and give the impression of being well made under some considerable control. The dies are clearly and deeply cut and are accurately centred on the flan, unlike other series; the Porcupines in particular often have dies too large for the flans, making it difficult to obtain a complete picture of the design. The alignments of the dies, grouped as they are around the four cardinal points, indicate the use of dies with a square collar, again an unusual feature of the sceatta coinages (Hill 1977). A further indication of the control exercised over the minting of the Wodan Monster sceattas is the fact that there is a 'secret mark' on the reverse below the animal's head presumably indicating a particular mint, or more likely, moneyer. These marks are illustrated and discussed in detail in chapter 5.

The metrology of the series X is also discussed in detail in the following chapter but it may be worth making the point here that the histogram of the weights of the coins from Hallum (fig 15) again strongly suggests a coinage which is well controlled.

There are some coins which appear to be unofficial

copies of the regular style. These are usually somewhat cruder but some at least do imitate regular types, keeping the symbol below the animal's jaw. They are generally lower in weight and lower in silver content. These need to be distinguished from the 'Insular Immitations' discussed below.

4.1.2 The Insular Imitations.

A number of the Wodan Monsters found in Britain appear to be local imitations of the regular style coins and are easily distinguishable from them. They are generally much cruder in style and the dies are less deeply cut and often smaller than the flans. The face is often flanked by annulets rather than crosses and the animal on the reverse often faces right rather than left. The coins of this type from Hamwic which have been analysed are of much poorer quality silver than those in regular style (Metcalf 1988:33-36).

4.1.3 Associated types and 'Mules'.

There are a number of types which carry a similar facing head or similar animal linked with other designs. Some of these seem to form distinct types in themselves but others seem to be 'mules' between the series X and other well defined series. The term 'mule' generally means the use of official dies from official series but as Metcalf has discussed, in the case of the sceatta coinages it generally refers to " opportunist

imitations which try to back the favourite by copying two acceptable types at once - presumably when both were in vogue." (Metcalf 1986a:116). As shall be seen below, however, some of these do appear to be the official output of one mint.

The relationships between these various types and any typological development that can be determined needs to be briefly considered as they may obviously have a bearing on the date and origin of the series. Some writers have seen types such as 30a and 30b as the source of the series X coins in regular style and have used this as evidence of a late date for them (Callmer 1984:18-22). The recent discovery of a series X coin at a site near Royston in Hertfordshire is of particular interest with regard to this problem. The coin (Plate 31) is clearly of Wodan Monster design but is a particularly fine example in a distinctive style and the dies are " among the most detailed and carefully executed in all the Wodan/Monster series" (Blackburn and Bonser 1986:76, no. 42). The coin is also of quite good weight (1.05g) but the silver content is not known. The facing head on the obverse is finely modelled with moustaches and a W shaped beard. The crown of the head is surrounded by pellets from which the hairs spring and each hair ends in a pellet. The crosses flanking the face are also formed of pellets and the whole is enclosed in a border of pellets between two raised lines. The animal on the reverse faces right and the

lappet and tail end in a trefoil of pellets with the body partly outlined in pellets. Again the whole is enclosed in a border of pellets. There are other coins of this type known, although not in such fine style, including one from West Stow in Suffolk (Rigold and Metcalf 1977); this, however, is of light weight and apparently poor metal. There is a further example in the British Museum from the Barnett bequest (Hill 1953:99 type 3, no c) and a second coin from Royston, itself similar in style to the West Stow coin (Blackburn and Bonser 1986:76, no 44).

There are a number of other types which are stylistically similar to the type 31 from Royston described above and which Blackburn and Bonser have suggested may come from the same mint (1986:76,no 44). BMC type 30a has a Wodan head in similar style to the Royston coin but associated with a reverse comprising two standing figures with crosses. This design occurs on coins of type 41b where it is linked with an animal reverse not unlike the animal on the Royston type 31. It is also present on coins of type 51, where it is combined with a standard and saltire of pellets. An example of this type was found at Royston which has a reverse die identical to that on a type 30a coin in the Lockett collection (Blackburn and Bonser 1986:76 no 44). Also from Royston is a coin of type 43 which has a 'dragon' associated with an interlace design. The style of this coin has led to the suggestion that the dies were cut by the same hand as were those of the type 31

from Royston (1986:78 no 45).

The suggestion is that the Royston style type 31 and types 30a,43, 51 and possibly 41b(?) are the product of one mint (1986:76 no 44). In addition to these is a coin of type 81 from Hamwic which has a Wodan head , in clearly similar style to those on the coins already discussed, associated with a reverse consisting of a cross with dotted annulet terminals (Metcalf 1988:51 no 124). This coin has been analysed and is very fine with 91% silver, indicative of an early date. A further coin which falls into this group is from North Ferriby which again has a similar, if not so accomplished, Wodan head obverse linked with a standard (Pirie 1984). Finally there is a coin referred to by Metcalf (1986a:117) which has a similar obverse combined with a standard reverse associated with type 8, the Continental Runic series, which is certainly early in the sceatta series. Blackburn and Bonser have suggested that the Royston type 31 coin in this 'English' style may be the prototype of the Continental series X coins. This point will be discussed later in this chapter and in Chapter 6.

4.3 The Hoard Evidence. (Fig 4 and 7)

There are two hoards of coins made up mostly or entirely of Wodan Monster sceattas, namely the hoards from Hallum and Terwispel. The Hallum hoard forms the basis of the

analysis of the series detailed below. It was found in 1866 during the digging of a terp near the village of Hallum by one Jan Klazes Bakker (de Haan 1866:2; Fig 4 .pl71 and 9). It contained at least 223 sceattas buried in a 'bulbous' pot and 201 of these are now in the Fries Museum in Leeuwarden (Op den Velde et al 1984: 141). The full contents of the hoard, as far as can be reconstructed, are listed by Op den Velde and are those contained in the photographic record prepared by Dr Hill. The hoard is said to have contained 173 series X sceattas; of these, 150 are in the Fries Museum and are included in the analysis given below. Some of the coins appeared in the Stenzel- Pistorius and Fieweger sales, shortly after the discovery (Op den Velde et al 1984:141). Attempts to obtain the catalogues from these sales have been unsuccesful.

The majority of the coins are in good condition and the designs are clearly visible but there are some which were too unclear to be given die identities. Also included in the hoard were a number of other coin types including series E, English varieties of G, J, N and T; Interlace and Star of David types, and 3 Merovingian coins.

The second hoard was discovered in 1863 on the bank of the River Boorn near Terwispel (fig 4). There were apparently 161 coins all of series X, 143 of which are now in the Fries Museum at Leeuwarden (Op den Velde et al 1984: 142). Some were given, by Dirks, to other cabinets and several are in the University of Leiden (Op

den Velde pers. comm. and Appendix 5). The Terwispel hoard suffered from very harsh cleaning after its discovery and much of the surface detail is lost, thus making it of limited value for detailed analyis. However enough detail remains on a number of coins to be able to assign them to a particular obverse and reverse group and in a few instances die links with non Terwispel coins can be postulated.

4.4 Non hoard finds of series X. (Fig 9)

Finds of Wodan Monster sceattas do occur other than in the hoards. Some 120 are reported to have been discovered at various times on the beach at Domburg (Op den Velde et al 1984: 140) of which are now in the Museum at Middleburg. From the various excavations and finds from Dorestad only 3 examples appear to be known (1984:142). Other single finds have been reported from Bolsward and Ferwerd both, of which are 19th century discoveries and regarded as 'dubious' (1984:140-41); examples are also recorded from Maurik (Op den Velde 1982), Rotterdam and Shouwen although the origins of the latter are again said to be 'dubious' (1984:142). Further down the Rhine an example has been found in Xanten Cathedral which probably came from a grave (Zedelius 1980).

The type is absent from French hoards with the exception

of the three examples from Cimiez (Le Gentilhomme 1943). One of these is of regular style but another has annulets at the side of the face and is probably an insular copy. There is some doubt as to whether these .pl70 coins actually belong to the hoard as Morel Fatio, in whose collection much of the hoard ended up, also collected from other sources (Blackburn 1984:168; Metcalf 1986:115).

There are finds of Wodan Monsters from England; while a number appear to be of 'English' style or 'insular imitations' (see above), examples in 'regular' style do occur, particularly from the trading centre at Hamwic (Metcalf 1988). Other finds have been reported from various locations from East Anglia to Dorset (Fig 9) although interestingly to date there are no reported finds from any of the other trading centres of the period such as Ipswich, or York, and there is only one from London, found on the Thames foreshore at Rotherhithe. The only example from east Kent was found in the 18th century and may be an insular copy (Withy and Ryall 1756; Rigold and Metcalf 1984:260). The individual finds are detailed in appendix 00 but one find worth noting is a recent discovery during excavations in Dunbar in Scotland (P. Holdsworth pers comm). This is easily the most northerly find of Continental sceattas in Britain although a Northumbrian sceatta and a coin of Beonna have recently been found in excavations at the monastary at Whithorn in Dumfries and Galloway (P.Hill pers comm).

Perhaps the most interesting discoveries in recent years have been from Scandinavia, where excavations in both Denmark and Sweden have produced coins of series X (Bendixen 1981; Callmer 1984). In 1965 excavations began at Danekirke in Vester Vested parish, south of Ribe. These showed that the site had been occupied from c200 B.C. until at least the 8th century and the presence of imported material demonstrated at least some importance as a trading centre (Thorvildsen 1972; Bendixen 1984:66). In addition to 38 Roman coins of mostly 3rd century date there were 13 Early Medieval coins, including two die identical Madelinus coins of Dorestat probably of late 7th century date. In addition there were 11 sceattas, 2 of English type the rest 'Frisian', including 5 of series X (Bendixen 1981: 99-101). Interestingly the series X coins all show signs of having been scored with a knife, presumably to check the quality of the silver. None of the other coins from Danekirke seem to have been marked in this way, nor were the coins from Ribe.

Although pecking or scoring of coins occurs in the later viking period hoards in Scandinavia and also amongst the Northumbrian coins in the Cuerdale hoard (Grierson and Blackburn 1986:319), it is a practice not generally associated with the sceatta coinages. There are, for example, no obvious cases amongst the photographs of the coins in the major collections, compiled by D.H. Hill.

The exception to this is the Fohr hoard, which is the only Early Medieval from the region, in which almost all of the 82 coins were cut. Interestingly the hoard did not contain any series X, being made up mostly of series E (51), Star of David (14), 'other types' (7) and merovingian deniers (10) (Harz pers comm.). The Fohr coins were presumably tested by whoever amassed the hoard and who was keen only to include coins of good silver. The coins from Danekirke are more difficult to explain given that they are probably a product of a Danish mint, most likely Ribe (see below chapter 5). One possible explanation is that the type was not automatically accepted by foreign traders operating in Ribe. Against this idea however, is the fact that none of the coins from Frisia or England are marked in this way. Also the types represented at Danekirke are of the main series and not obviously particularly early or late types (see below chapter 5). Possibly the traders at Danekirke were from a particular region (to the north or east?) where coinage was not in regular use, although this does not explain why only the series X were scored.

In the 1970's, excavations in Ribe demonstrated the presence of a major 8th century trading centre similar to Hamwic or Dorestat (Bencard 1981). Amongst the finds was a group of 30 sceattas, 25 of which were Wodan Monsters and the remainder Porcupines (Bendixen 1981). This was and still is the largest group of coins from a settlement site in Scandinavia. Two coins of series X

are now known from Haithabu. The first was found during excavations on the South Settlement in 1962 in the fill of a Grubenhaus (Hatz: 1965). The second was found on the surface by a visitor apparently inside the defended area. This is still in private hands but has been seen and referred to by Bendixen (1981:66). These two finds are of some interest as all the other archaeological evidence from the now extensive excavations at Haithabu date the main phase of activity in the town to after 800 AD rather than before. At Krinkberg just north of the Elbe (fig 5), a single series X coin was found, in a grave which also contained a coin hoard of the 790's (Jankuhn 1957). A further single find has come from Holmsland Klit on the west coast of Jutland, along with numerous Medieval and post Medieval coins and even a single Roman coin (Bendixen 1984:154).

Three more series X coins, including two die duplicates were found during excavations at Yngsjo near Ahus on the Helge River in Southern Scania by Callmer (1984: 9-13). The area where the coins were found is an extensive industrial area with evidence of glass, metal and antler working, activities which are consistently found in trading centres of the period. With the exception of a single find of a Porcupine sceatta in the fill of a grave mound at Helgo these are the most easterly known finds of sceattas.

4.5 Origin and Chronology of the Series X sceattas.

In the 19th century Dirks concluded that many of the sceatta types found on the Continent were of English origin. This view, with some reservations from Continental scholars, prevailed until the 1950's when Hill accepted a Continental and specifically Frisian origin for the series X sceattas (Hill 1954). Views on the origin of the series E coins have also changed over the years. Until recently, the prevailing opinion was that the series was divided between England and Frisia, the so called 'Plumed Bird' variety in particular being English in origin. In a paper in 1984 Metcalf came down firmly in favour of all the Porcupines being Continental in origin (1984a:32) and this view seems now to be largely accepted. The discovery of the comparatively large numbers of series X coins in Scandinavia, particularly, Denmark, over the last two decades has once again brought into focus the question of their origin and, most recently, their date of manufacture.

This new debate was opened by Metcalf who, in a short article in 1984 (1984b), re-examined the evidence for the minting places of the three main Continental series, series D (Frisian or Continental Runics), series E (Porcupines) and series X (Wodan Monsters). Until this time they were generally thought of as 'Frisian', based on the fact that they occurred in large hoards in Northern Frisia, without any real debate as to where

they were minted or whether Northern Frisia, without any known major centre at this time, was in fact a likely area for the controlled production of apparently large scale coinages. As will be discussed below, Metcalf has argued for the series E and D to be the products of the emporia lying to the south, Domburg, Dorestad and Quentovic. Similarly he has attributed the series X to Ribe in Denmark, an attribution which will be further argued below. Until an emporium site is located in this area of Frisia, which would could completly change the arguments for the attributions of the various coinages, it is perhaps more likely that these hoards were the accumulated profits of long distance exchange in which the Frisians were engaged. The occurrence of numbers of die linked coins, particularly in the Franeker hoard, could argue for a local origin of the coins. However, there are few finds of coins, other than from the hoards, which suggests that the coins were not cirulating to any extent and this, plus the generally coastal distribution of the finds, could add further weight to the hoards being the result of trade between the north and the Rhine mouths.

Metcalf approached the problem of locating the minting places of the various Continental sceattas by contrasting the percentages of the different series found at the major sites, ie Domburg and Dorestat and in Denmark (1984b: 160-61). The series D coins were most numerous in Domburg (although they still only comprised 27% of the total number of sceattas) and westwards along

the coast and were also present, along with Porcupines, in the French hoards of the period. Metcalf argued that the general distribution of series D suggested a mint west of the Rhine mouths with the as yet little explored but vitally important port of Quentovic being an obvious candidate. The fact that the series D coins are imitations of the East Anglian Runic sceattas, however, was enough to persuade Metcalf that a place of origin would be closer to East Anglia. Domburg, where, as noted above the Series D are most numerous, was an obvious choice. Metcalf did note the recent re-attribution of the series C, the prototype of the series R or Runic sceattas, to Kent by Grierson and Blackburn and the various ramifications each of these (Metcalf 1988a) attributions, if accepted could have on the other. The results of the continuing excavations at the site of Quentovic will obviously be of considerable importance (Hill et al 1990).

Assuming that the Continental Runic sceattas were a Primary series, they appear to have been succeeded at Domburg by Porcupines, which seem to belong largely to the Secondary phase although the implication in Metcalf's article is that these were a product of Dorestad. What coins, if any, followed the series D at the Domburg mint is unclear. At Domburg and Dorestad the series E coins formed almost half of the total assemblages unfortunately not enough work has been done on the multiplicity of types within the series E coins

to determine whether one mint or many is the source for this type but their predominance in the area of the Rhine mouths and the Rhine Valley points strongly to Dorestat and/or Domburg (?) as minting places. Detailed studies of the series E coins are badly needed to attempt to resolve these problems of attribution.

The most controversial attribution postulated by Metcalf was to assign the series X coins to a mint in Denmark. Previously coins were not thought to have been minted in Denmark until the early 9th century and this radical proposal did not meet with universal agreement (eg Grierson and Blackburn 1986:154; Jonsson and Malmer 1986). However Metcalf's argument was again based on the sheer numbers of series X coins amongst the total finds from Scandinavia. These represented 76% of the finds against 14% for the Porcupines and 5% for the Continental Runics This is in contrast to the ratio of 5-12% to 47% for the Wodan Monsters and Porcupines in the Rhine mouths area as well as the uncalculated but heavy predominance of Porcupines in single finds in England. Why, Metcalf rightly asks, if both series X and E originate in Northern Frisia, should the former so dominate the Scandinavian finds but do so poorly westwards and in England? (Metcalf 1984:161-2). In addition he pointed to the the fact that some of the coins of the early 9th century clearly copy the designs of the Wodan Monster coins (Malmer 1966), a fact which has also been used to argue for a late date for the type. This will be discussed below. If the trading

centres of the period, such as Domburg, Dorestat, Hamwic and Ipswich, are considered to be the mints of the various sceatta series, then on present evidence Ribe would appear to be the logical source of the Wodan Monsters, assuming the acceptance of a Danish origin (1984b:162). More recent excavations in Ribe have produced a further 31 Wodan Monsters and 1 Porcupine, details of which are unfortunately not available for inclusion in this study (Bendixen pers. comm.). These additional finds must increase the probability of their being a product of Ribe. Examples have been found at Haithabu but as already noted the rest of the evidence from this important site points to a 9th rather than an 8th century date for the major period of activity (Jankuhn 1976).

A further reason proposed by Metcalf for the predominance of series X coins in Denmark is the practice of compulsory reminting of foreign coins at a place of entry like Ribe (1984b:162). The Fohr hoard, he argues, was a stock of coins moving northwards, which never reached Denmark and hence was not reminted into Wodan Monsters, but which points to a northern trade route up the west coast of Jutland. The reminting of coins implies a considerable degree of central organisation, further indicated by the coins of series X themselves. The detail of the coins amd their minting will be discussed below but the regularity of style in

the vast majority of the coins, the mint or moneyer's marks found on them and the regularity of the die axes of the coins usually at 0°, 90°, 180°, and 270° (Hill 1977:171-2), as well as the regular weights, indicates considerable control over their production. Such control of the coinage, it may be argued, could only take place if minting were concentrated at a limited number of centres. Given the clear importance of the coins in international trade at this time, one of the emporia is a logical centre and on sheer percentage of coins Ribe must be a candidate. Metcalf argues that if the series X coins were a product of 'Frisia' and if, as will be discussed below, they are late in date and succeed the Porcupines the fact that there must have been a radical change in organisation and control in the minting must be explained (Metcalf 1986a:112). Although the design of the series X is clearly more controlled than the multitude of design variations within the Porcupine series, in terms of weight the series E coins seem to be as tightly distributed as the series X and the difference in minting organisation may not have been as radical as the appearance of the coins might suggest (Grierson 1961:354).

Before assuming that a Danish origin is beyond doubt the arguments centring on the coin found at Royston must not be forgotten. If this coin stands as the prototype for the main series (Blackburn and Bonser 1986:76 no 42) it means that a Danish mint was using a relatively rare English type from the East Midlands (?) as a model and

further that, in turn, imitative types of this Danish series were being produced and presumably used in England, including Hamwic (Metcalf 1988:35-6).

A number of Scandinavian scholars also entered the debate on the series X coins. Callmer, writing in 1984 and thus without knowledge of Metcalf's views, published an extensive review of sceattas in the North Sea and Baltic area and their primary role in long distance trade. He assumed, as had previous studies, that the series X sceattas, along with the other Continental series, originated in the area of the Rhine mouths or West Frisia (Callmer 1984:4). Jonsson and Malmer, unlike Callmer, were responding to Metcalf's 1984 paper and its republication in 1985 when they joined the debate. They attempted to refute Metcalf's attribution of the series X to Denmark by arguing that the Wodan Monster sceattas were Frisian but were later than the Porcupines and indeed were a product of the second half of the 8th century. Callmer had also argued for a late date for the Wodan Monsters and it is this question of chronology which must now be reviewed.

Belaiew in his writings saw the Frisian sceattas, including the Wodan Monsters, as having a long life covering much of the 8th century (1935:218). The late dating of the series X is a notion which has persisted and which has been recently argued by both Callmer

(1984) and Jonsson and Malmer (1986). Any consideration of chronology has to start with a consideration of the hoard evidence. This has already been discussed earlier (Chapter 2) but the main points can usefully be reviewed in the course of this section.

As already noted there are three hoards which contain Wodan Monster coins. Of these, Terwispel contains only Wodan Monsters and is of little value in placing the series in any sort of sequence with the rest of the sceattas. The hoard from Hallum contains other sceatta types but none are independently datable (Blackburn 1984:170). This leaves the third hoard, namely the Cimiez hoard, as the only one which can offer any independent evidence for dating the sceatta series.

As already noted in Chapter 2 the redating of the Cimiez hoard has suggested an earlier date for the other major hoards as well (Grierson and Blackburn:142-44 and 187-9). This in turn has produced an earlier date for the beginning of the Secondary sceatta series. However, it should be restated that there is some doubt over the presence of series X coins in Cimiez as the Morel-Fatio collection did contain coins from other sources. It may be worth considering the other sceattas from Cimiez and Hallum to see if they offer any confirmation of an earlier date for Hallum.

Leaving aside the dubious coins of series X, the Cimiez hoard contained eleven other sceatta types, namely

Pa,A,D,E,G,J,N,U,W,Z and Star of David (Grierson and Blackburn 1986:185). Clearly all of these types were in circulation prior to the deposition of Cimiez "...no later than 720" (Blackburn 1984:172). Turning to Hallum, series E,E/N,G,J,N variant, T, Star of David and Interlace were all present (Plates 33-5). Assuming that the E/N and the N variant were contemporary with the main coins of these series, this only leaves the coin of series T and the Interlace coin not represented in Cimiez. Of these the Interlace type is difficult to date independently, although it does occur in two other hoards with series E and Star of David, namely Fohr and Franeker. Series T, however, is now considered to be the precursor to series L and is placed in the 720's (Grierson and Blackburn 1986:186). Grierson and Blackburn placed Hallum slightly earlier than Cimiez at c.715-20 (1986:187) but the presence of the coin of series T may make a slightly later date more acceptable, say 720-25. Also of Intermediate or Early Secondary date are the Plumed Bird Porcupines, but it should be stressed that that these, plus the English types amount to only 9 coins. It is not impossible, for example, that these represent a small parcel of earlier coins added to the main hoard at a later date. If the hoard was of later 720's or 730's, for example, coins of some of the later English series might be expected. Coins of series K were present at Domburg and Dorestad, although admittedly only single examples of each, and series L was also recorded from Domburg (Op den Velde et al

1984). These possibilities must obviously be born in mind and the unpublished evidence from Ribe may alter the picture, but on current evidence a date of 720-25 seems most acceptable for the deposit of Hallum.

At this stage, it is worth briefly summarising the arguments offered by those proposing a late date for the Wodan Monster series and then assessing how this new dating and new archaeological evidence from Hamwic and elsewhere affects these arguments.

Briefly stated, both Callmer (1984) and Jonsson and Malmer (1986) see the Continental sceatta series originating in Frisia or the Rhine mouths area. Jonsson and Malmer do not seem to be specific and Callmer does not appear to think the specific place of minting important, regarding south-east England and the Rhine mouths as a single region in which the type developed (1984:22). Both studies conclude that the series X sceattas stand at the end of a chronological development succeeding the Porcupines, which in turn had followed the Continental Runics. Thus the reason for the predominance of the Wodan Monsters in Denmark is the fact that there were no other sceattas still circulating. The traditional late dating of the Cimiez hoard was also relied on in both papers, with Callmer taking the latest suggested date of 741 as being the acceptable one (1984:16).

As additional evidence for the late date of the series

X, Callmer argued on stylistic grounds that the design was derived from various prototypes in the Secondary sceatta series (1984:18-22). He cites series BZ, N and types 30a and 30b in particular as sources for the design of the Wodan Monsters. However, as has already been discussed above, the evidence of the coin from Royston makes the opposite seem the more likely, making Callmer's prototypes the derivatives . The likelihood of this arrangement is increased when the alloy of the series X is considered. The available analyses suggest that the regular style coins are of good fineness and a weight indicative of the Intermediate phase (Metcalf 1986a :114). In addition, the fact that a Wodan style head is associated with an obverse belonging to series D as well as reverses of series B, both of which belong to the late Primary or early Secondary phase, again indicates an early date (Metcalf 1986a:116-7). The alloy of the coins will be discussed further below. However the conclusion of Callmer's argument was that the series X coins were minted from the 730's for about a decade. They then circulated for a further 20 years or so before being replaced by the earliest Scandinavian coins some of which clearly imitate the Wodan Monster design. He places the introduction of these coins in the 790's (Callmer 1984:29), somewhat earlier than the date suggested by Malmer (1966) which was in the decades after 800.

The paper by Jonsson and Malmer was in response to that

of Metcalf (1985) proposing a Danish origin for the series X coins. Metcalf in turn responded to this counter-argument and in doing so assembled an impressively argued case both for his proposal as regards the origin of the series and, at the same time, effectively demolishing the arguments put forward by Jonsson and Malmer and Callmer for a late 8th century date. His arguments regarding style and alloy have been touched upon already but it is well worth reviewing some of Metcalf's other arguments as these may have a more far reaching relevance. The one fundamental argument against the late dating is the discovery in a clearly early context from Hamwic (Metcalf 1986a:115), of a coin of regular style of reverse type d (Chapter 5) which is well represented in Hallum. This coin (Metcalf 1988:no 116) was discovered in the lowest level of a stratified sequence some 0.5m deep and, in the opinion of the excavator, dates to "the first quarter of the 8th century, and more likely nearer 700 than 725" (Andrews in Metcalf 1986a:116). Close to it was found an insular imitation of the type well represented at Hamwic (Metcalf 1988 no 121). As Metcalf rightly says in regard to this find, one certainly early find is enough to prove an early origin for the series and this the Hamwic coin clearly seems to do (1986a:115).

Metcalf also points out that in Ribe the Wodan Monster sceattas appear to come from phase 2 of the stratification whereas the Porcupines come from the

suceeding phase 3 (1986a:112); Bencard 1981) again suggesting that the series X did not follow the Porcupines. Also, as will be seen below, the types from Ribe are essentially the same as those represented in Hallum; indeed die links do occur so the Ribe coins cannot be late derivatives or imitations.

Returning briefly to the hoard evidence, even if it is the case that the hoards (other than the French ones) are not independently dateable it is still likely that the internal details of the hoards and the types of coins they contain can be significant. The argument for a late date hinges on the fact that the hoard evidence can be seen to indicate a progression from Porcupines to Wodan Monsters. However what these arguments fail to note is that the Porcupines in the Hallum hoard include examples of the Plumed Bird type, which is certainly early in the sequence, whereas the hoard from Franeker contains Porcupines of types E and F, which are possibly late (Metcalf 1986a:117), surely the reverse of what might be expected. As will be seen from the analysis, pretty well the full range of series X types are present in the Hallum hoard associated with Porcupines of Intermediate date and, as these types are also fully represented in Terwispel and Ribe, there is little room for any development. It would seem that the full range of series X types was in production at the same time as the Intermediate Porcupines.

One point which might be seen to argue for a late date is the fact that the Wodan Monster design is copied on coins of Malmer's type KG5 which Malmer dates to the 820's although other scholars have placed them earlier (Callmer 1984:23-29). There is no doubt that the series X was a model, one of a number, for this coinage but, as Grierson and Blackburn point out, that is no reason to assume that the sceattas were still in production or circulating in the late 8th or 9th century (1986:154).

More recently, the excavators of the latest sites in Ribe have suggested that the stratigraphic sequence recovered on Nicolajgade 8 represents a period of about a century, indicating that the series X sceattas were circulating until late in the 8th century (Frandsen and Jensen 1987 and 1988; Frandsen 1989). This proposition has been disputed by Bencard, the excavator of the earlier sites in the town, who argued that the sequence could represent a much shorter period, occuring sometime within the time span 720-800 (Bencard 1988:227).

Without going into the intricacies of the arguments which have been put forward, Frandsen and Jensen argue that on the site at Nicolajgade 8, the stratigraphic sequence which they recovered, spanned a period from c.700 to the first quarter of the 9th century. They arrived at this conclusion largely on the basis of the typological development of the various artifact types which were recovered, particularly the brooch moulds. As series X sceattas were present in all but the

earliest and latest of the layers, they concluded that even if the series had ceased being minted c.755 the coins themselves must have continued circulating at least for a further twenty five years or so (Frandsen 1989:40). Bencard, on the other hand, argued that the nature of the stratigraphy suggests that it could represent a much shorter period of deposition. He points particularly to the fact that the layout of the site does not alter over the period of occupation, with hearths and property boundaries continuing in exactly the same places. He also casts doubt upon the certainty of the dating of the Berdal style brooches, which are so important in the arguments put forward by Frandsen and Jensen (Bencard 1988). However they did strengthen their argument somewhat with their discussion of the other artifact types found on the Nicolajgade 8 site (Frandsen and Jensen 1988).

The evidence from Ribe is obviously of great importance in understanding the problems of the series X sceattas. A dendrochronological date from the timbers of a well on the Dommerhaven site, which was stratigraphically contemporary with the earliest parcelling out of the site, which Bencard and Jorgensen associate with the establishment of the market/workshop, gave dates of 704-710 (Bencard and Jorgensen 1990:578). This clearly indicates a terminus post quem for the appearance of the sceattas in Ribe, which first appear, on the Dommerhaven and Kunstmuseets sites, in phase 2, which immeadiatly overlay the well and its associated layers. A further

dendrochronological date of around 720 has recently become available for this phase. Two further dates are also available for fence posts, which had been hammered into the layers of phase 2. These gave dates of 'after 730' and 'later than 759' (Bencard and Jorgensen 1990:581). However, it is not clear from what level these posts were hammered in, although it is assumed that they are related to phase 3, the main period of the workshops.

The evidence from the Ribe excavations , stratigraphic, numismatic and dendrochronological is obviously of major importance and its continued publication is essential in understanding, not only the chronology of the series X coins, but these early medieval trading and manufacturing centres in general. Already the published discussions and dates lend support to the early start date for the series argued by Metcalf and Blackburn and Grierson. Particularly important is going to be the stratified sequence of coins from Nicolajgade 8, which will be of great interest and importance in ordering the chronological development of the types within the series. The publication of these coins is awaited with interest.

4.6 The alloy of the coins

The question of the alloy of the coins has been touched on briefly in relation to the Wodan Monsters earlier in

this chapter and more generally in Chapter 2 but some further mention here may be appropriate. As discussed in Chapter 2, the sceatta series appear to go through a progressive fall in weight and fineness although this is not regular or universal. The Primary series start off on a weight standard similar to that of the preceding gold coins of c.1.25-1.30g, presumably meant to be 20 grains (Grierson and Blackburn 1986:168). By the late Primary and Intermediate phase the weight had fallen to c.1.10-1.25g, although both heavier and lighter coins do occur (1986:168). The fineness of the coins remained high at 90-95% silver, however, and it was not until the Secondary phase that a noticeable decline in fineness begins. By the late Secondary phase coins weighing 0.8 of a gram or less occur and fineness is as low as 20% in some issues.

There are, however, various problems involved with the analysis of the sceattas which should be noted. To begin with, a number of different methods have been used to analyse the coins. Some have proved less accurate than others, with differing results being obtained for the same coins. Metcalf, with various collaborators has undertaken a considerable amount of analysis over the last two decades (Metcalf et al 1968; Metcalf and Hamblin 1968; Metcalf 1978; Metcalf and Stos Gale 1982). Most of these analyses involved the use of X-Ray Fluoresence (XRF) using a milliprobe but more recently the coins from Hamwic have been analysed using the more refined technique of electron probe micro-analysis,

coupled with wavelength-dispersive spectrometry (EPMA) (Metcalf 1988:31-36). A number of coins from Hamwic originally analysed using XRF, were re-analysed using EPMA and the early results were seen to give too high a reading for the silver content of the coins by up to 10% (Metcalf 1988:32). Callmer has also highlighted this problem in his discussion of the analysis of the three Wodan Monster coins from Ahus (1984:33). Two of the coins appeared to be of almost pure copper but the third was apparently of good silver. Four readings were taken on this coin using an energy-dispersive x-ray spectrometer; two of the readings gave a silver content of 72% silver and 28% copper and the other two a level of 96-97% silver and 3-4% copper. Further random readings along the surface of the coin to determine the copper content gave often abruptly differing readings and led Callmer to cast doubt on analytical results based on a single reading although he did not question the general trend of a declining alloy standard in the sceatta series as a whole (1984:33).

The cause of these problems in analysis is simply the corrosion to which the coins have been subject since their deposition and the varying changes this has caused in the alloy. Silver coins are subject to surface enrichment which can produce high silver levels at the surface of a coin while the core is heavily corroded, as is the case in the Hamwic coins (Metcalf 1988:32). Corrosion can also cause the leaching out of some

constituents of the alloy, such as copper and silver and can have distinct effects on the weight of coins, causing considerable changes. Metcalf points to the Kingsland hoard from Southampton where the coins now weigh less than a third of a gram but on the basis of their type they should be two or three times that and have been so reduced by corrosion and leaching (Metcalf 1984b:162). The lesson to be learned from this is that low weight or poor alloy must not on its own be taken as evidence of late date or imitation. What is badly needed before any conclusions as to fineness are drawn is a comprehensive analysis of the alloy of the coins, using as a basis a die analysis of the type presented below. In this way coins of the same reverse and obverse groups can be analysed, as can die linked coins both from the Hallum hoard and from site finds such as Ribe. Because of the problems already discussed, the conclusions that could be drawn might still be limited, but at least the range of results that might be expected amongst coins of the same type and therefore similar date and place of origin could be determined.

The number of analyses available for the coins of series X are comparatively few but are worth discussing here. The first analyses were published by Rethaan Macare (1838) and were republished by Metcalf and Hamblin (1968). A series X coin was some 84.8% silver and 14.2 % copper. Two further analyses using XRF were also published by Metcalf and Hamblin (1968:33-34) of coins

in the collection of the Ashmolean Museum in Oxford. The first, 0122, was a coin of apparently regular style, although the obverse is of type Cd with three pellets above the head, which is virtually unique. This gave a result of 90-92% silver, 4-6% copper, 1.25% gold, c.1% lead and 2% tin. The second was an unusually heavy coin, weighing 1.32g, but was only 31-36% silver and 61-66% copper but contained 1.25% gold and traces of lead and tin, as would be expected (1968:41). A third coin from Tackley in Oxfordshire showed (at the surface) 80-84% silver (Metcalf 1978).

The most recent and comprehensive analysis of series X coins has been those from the excavations in Hamwic (Metcalf 1988: 31-36). Nine series X coins have been excavated, four of regular style and five copies or imitations. Of these, seven have been analysed (1988:33-36, 50-51) including three of the coins in regular style which proved to be of very good alloy c. 92%, 89% and 87% silver (1988:35). One of the imitations was c.70% silver while the other three were much debased, 38%, 26% and 20%. These results for the coins in regular style, even if there is some doubt about their absolute accuracy, are enough to indicate that the coins are of an alloy which is characteristic of the very early Secondary phase at least.

The coins from Ahus have also been analysed and have been briefly alluded to above. Coin III gave various

readings of 72% and 96-97% silver, in line with other analyses indicating an early date for the series. Coins I and II, which are die duplicates, were almost pure copper, 98-99% (Callmer 1984:33).

In his article Callmer goes on to assert that the series X was effectively a bi-metallic coinage, with numerous coins being minted in copper and circulating with examples of identical design minted in silver (1984:33-35). This appears to be based on the fact that Bendixen pointed out that a number of the Ribe coins seemed corroded and contained a high proportion of bronze. Similarly the Catalogue of coins from Domburg prepared by De Man (1907) contained 47 of series X, 25 of which were described as being of copper. As the two coins from Ahus, which proved on analysis to be virtually pure copper, were also 'coppery' in appearance, Callmer seems to suggest that the coins from Ribe and Domburg were also, therefore, deliberately minted in copper (1984:33-4). While not disputing the results of the analysis of the Ahus coins, what this scenario completely ignores is the 'corrosion factor' briefly discussed above. This is particularly important in the case of the Domburg finds, many of which were picked up off the beach and which must have been subjected to the effects of immersion in seawater for centuries, as well as the abrasive effects of the sand. The Ribe coins may also have suffered the effects of corrosion. As will be described in Chapter 5, there are die links between coins from Hallum and

coins found at Domburg and Ribe and amongst these there are significant differences in weight, probably due to the different conditions in which the coins were deposited. It is simply not possible on the basis of 'ocular impression' (Callmer 1984:33) to assume that numerous coins were deliberatly minted in copper as part of a bi-metalllic coinage. This is not to deny that coins were minted which were of poorer fineness than others. This could be due to deliberate copying; alternatively late coins in the series could have been suffering from the general decline in silver content which occurred during the Secondary phase.

This chapter has attempted to review the current knowledge and theories concerning the series X sceattas. The vast bulk of the coins in this series are of what can be called regular style and are the primary subject of the analysis presented in this thesis. There does appear to be a group of English style coins which can be included in the series as well as a number of types which are possibly derived from them. Additionally there are a small group of coins which have been termed 'Insular imitations' as they seem to be imitating the regular series but are clearly distinguishable from them and are almost exclusively found in England. The debate over place of minting and chronology of the series was also considered. Metcalf has presented a powerful argument for a Danish origin for the coins as well as for a date early, rather than late, in the 8th century for their minting, contradicting the views of both

Callmer and Jonsson and Malmer. The early date is based on the redating of the Cimiez hoard by Blackburn and the find of a series X coin at Hamwic in a demonstrably early context, supported by the high fineness of the coins in regular style which have been analysed. The dendrochronological dates now available from Ribe also argue for an early rather than later date. All of these various points will be further discussed in the following chapters.

CHAPTER 5

THE ANALYSIS

5.1 MATERIAL AND METHODS.

Since the discovery of the large hoards in Frisia in the 19th century the material has been available for detailed numismatic analysis of a number of series of sceattas, yet to date no such analysis has been undertaken. The nature of the coins themselves are probably the main reason for this lack of analysis. On the one hand there is the simple difficulty of comparing large numbers of coins, undistinguished by king's, moneyer's or mint names, which are little more than 1cm in diameter. In the Porcupine series these difficulties are compounded by the range and variety of the abstract designs found on the coins, whereas in the case of the series X it is the similarity of the designs which have, perhaps, been a deterrent to detailed study.

This basic problem was appreciated by D.H.Hill over a decade ago. He attempted to overcome the barrier to detailed analysis by compiling a comprehensive photographic record of the main collections, particularly the Continental ones. Over a period of time the major collections at Middleburg, Leeuwarden, The Hague and Emden were photographed, as well as a number of smaller groups. The photographs were printed

at 2.5 times actual size and mounted on a slip containing all the information known about the coin, provenance, collection, weight, die axis and diameter being the main items (fig 10). These were then photocopied, which meant that details on individual coins could more easily be seen than on the coins themselves and, most usefully, by use of a light table coins could be directly compared one with another to determine die identity.

It is these collections of coin slips and photographs which were used for the analysis presented here. As well as relying on this photographic archive, the collections in Middleburg, Leeuwarden and The Hague were visited in the spring of 1985. Inevitably a number of the photographs were underexposed and although these were usually of coins which were particularly corroded, the opportunity was taken to check the coins to see if any additional detail could be seen. In some cases, the reverse group to which a coin belonged could be identified, but in no case was enough detail noted to warrant giving a coin a die number. In general, then, the photographs proved more than adequate as a basis for the analysis.

The core of the analysis is the Hallum hoard which contained 173 coins of series X (of which 155 are in the museum at Leeuwarden) and it was on this group of coins that the obverse and reverse groups were initially

distinguished. When the analysis of the coins from Hallum was completed other coins of series X were added to the analysis. These included, as far as possible, the coins from the only other hoard of series X sceattas, from Terwispel. Generally the coins from Terwispel could only be assigned to a particular reverse group as their condition was so poor, due to improper cleaning after their discovery (Bendixen 1981:69), but some die links can be suggested. There are 149 coins from the Terwispel hoard included in the analysis (Appendix 5) The series X coins in the Middleburg and The Hague collections were also included, as were the published coins from Ribe and Danekirke (Bendixen 1981) and those recently published from the excavations at Hamwic (Metcalf 1988). In addition, an attempt was made to include all the published coin finds in the final analysis; a list of coins included is given in Appendices 1 and 2. In all a total of 196 additional coins of series X have been included (Appendices 6 and 7); omitted are those Insular imitations referred to in Chapter 4.

The design of the series X coins is very standardised and for the most part the bulk of the coins are very similar in style. The 'Wodan' side, usually considered as the obverse of the coin, consists of a stylised face with prominent eyes and radiating lines forming the hair (fig 7). There are usually three lines representing a moustache and beard which range in character from flat

curves to inverted V shapes. The vast majority of the examples have a cross next to each cheek, the arms of which generally end in pellets although some variation does occur. In the V above the forehead, formed by the uppermost lines representing the hair, is usually a single pellet although in one group there are two and very rarely three . These elements are contained in a raised border outside of which is a further border of pellets.

The 'Monster', or reverse, consists of a beast usually facing left but occasionally right, with its head turned back over its shoulder to bite its upraised tail which has three prongs like a trident, or often a cross, which usually end in pellets. The animal also has a mane or lappet-which again usually ends in a single pellet but in two groups has two. It is obviously male, as indicated by the prominent penis, and finally, and importantly in terms of distinguishing groups within the reverse dies, there is a symbol beneath the animal's head. Bendixen, in her study of the coins from Denmark, first drew attention to these symbols (fig 8).

In addition to these features there are occasionally other elements to the design which help to distinguish individual groups. In one group the animal appears to have a crest on top of its head and in another a single pellet at the base of the tail. All of these various elements in the design, both obverse and reverse, have

been used to distinguish different groups of dies.

In the analysis an attempt has been made to try and identify, or at least suggest, on the basis of style, the work of individual die cutters; if, for example, there seems to be only a limited number of hands responsible for the production of the dies, this would have a significant impact on the length of time the coins were produced and the degree of control exercised over the production.

The analysis will begin with an examination of the Hallum hoard and will present a detailed description of the types contained in it. Following this the non-Hallum coins will be discussed, die links indicated, and finally, the various groups will be discussed as a whole and cross group links and similarities pointed out.

The results of the analyis have been summarised in various ways. The details of the coins, including die identities, were entered on to a database, compiled using DBASE III+, which has been used to generate the Appendices. Appendices 1 and 2 detail the individual finds and collections from which the coins in the analysis have been drawn (see also fig 9). Then in Appendices 3 and 4 the coins from Hallum are listed firstly by reverse die and then by obverse die. Appendix 5 lists the coins from Terwispel by reverse group and 6 and 7 list the non-hoard coins firstly in order of

reverse group then by provenance. The weights of the coins, where known, are also listed and those from Hallum and Terwispel, in addition, are expressed in the form of histograms (Figs 15 and 16 and 17). The die links present amongst the coins in the Hallum hoard are depicted diagramatically in fig 13 and non-Hallum coins in fig 14. An attempt has been made to include photographs of all the series X from Hallum in the plates which are arranged by reverse die group (Plates 2-18). An effort has also been made to include photographs of all the non-hoard coins although some were only available as photocopies. Plates 2-18 illustrate the coins from Hallum, arranged by reverse group and plates 19-31 the non-Halum coins arranged in the same way. Plate 32 illustrates the group of coins of possibly 'English ' style including G1/q1 from Royston.

5.2 THE HALLUM HOARD

5.2.1 The Numbering System.

It is perhaps appropriate to begin this section on the analysis with a brief discussion on the classification system used to distinguish the obverse and reverse dies. The obverse dies are indicated by a capital letter to distinguish each major group, A, B, C etc. Where there are subgroups within a major group, and to date this occurs only in group C, the subgroup is indicated by the addition of a lower case letter; thus Ca, Cb, Cc. Each individual die is then indicated by a number, so Ca01, Cb13, B15 etc. Similarly the individual reverse

groups are indicated by a letter, this time in lower case only and the individual dies are again given a number: c01, d23, g11 etc. An individual coin can then be shown as a combination of obverse and reverse dies, thus Ca15/c01 or Cb02/c02. Where dies are totally illegible a question mark will indicate this; where an obverse or reverse group is identifiable but the coin is not clear enough to confidently assign a number to the die, this will be indicated by giving the relevant upper or lower case letter and adding a question mark, so Cb03/d? or C?/?. Coins will also be referred to by their collection number eg. LFM234, MZG132, HPK312. These refer to the major continental collections in the museums at Leeuwarden (LFM), Middleburg (MZG) and the Hague (HPK); a list of less common abbreviations or collections from which the material is drawn is given in Appendix 2.

5.2.2 Hallum: the Obverse Groups (fig 7).

Three main obverse groups were recognised in the coins from the Hallum hoard. Groups A and B are very small and may represent early types and some copies whereas the vast majority of the coins belong to group C within which there are three subgroups which are all very similar in style (fig 7).

Obverse Group A (Plate 2).

The obverse of group A is characterised by a more naturalistic face than is usual in the series X coins, the face is flanked by crosses as usual but the lines representing the hair end in pellets. It is associated with reverse a, which is described below. There are only two coins of obverse group A in the Hallum hoard, LFM391 and LFM300, and of these the latter is probably a contemporary copy. However Metcalf (1986) considers both of these coins to be copies of the regular style coins; this question will be discussed further in the next chapter.

Obverse Group B (Plate 2)

Obverse group B is characterised by pellets at the base of each hair rather than at the end. B1, like A1, may be an early coin, being much more naturalistically modelled but having the crosses at the side of the face and the pellet above the head. Again it should be noted that Metcalf (1986) considers this coin also to be a copy. The obverse associated with B1, b1, is also better modelled and the animal also faces right as does the animal on reverse a1. This obverse type also continues into the regular style of series X being

associated with reverse group i.

Obverse Group C

Obverse group C contains the vast bulk of the series X coins. Basically the group has the same features as groups A and B but without the pellets at either end of the lines forming the hair. Group C can be subdivided, however, based on the form of the crosses flanking the face and the number of pellets above the head.

subgroup Ca (fig 7)

This is the most common of the subgroups. The stylised face generally has four lines on each side of the head representing the hair and usually three, but sometimes two, lines representing the moustache and beard. Above the head in the V formed by the two uppermost lines of the hair is a single pellet. The crosses are usually formed by two crossed lines ending in pellets or sometimes by closely grouped pellets or a combination of pellets and line. These elements are contained in a raised border outside of which is a further border of pellets.

Subgroup Cb (fig 7)

Subgroup Cb is essentially the same as Ca except for the form of the crosses. In Cb the crosses are formed by four lines radiating from a central pellet. This subgroup is found associated only with reverses of group d.

Subgroup Cc (fig 7)

Subgroup Cc differs from Ca only in that there are two pellets in the V above the head instead of one. This subgroup is found only with reverses of group c. In terms of general style there are great similarities between coins of groups Ca and Cc.

5.2.3. HALLUM: THE REVERSE GROUPS (fig 8; Plates 3-18).

Thirteen reverse groups were identified in the Hallum hoard although two of these may be contemporary copies. These groups were identified primarily on the basis of the symbol beneath the animal's head. Groups a and b are associated with Obverses A and B and may be early in the series or may be copies of the regular series. The regular series coins begin with reverse group c. A breakdown of the numbers of coins in each group is given in fig 11.

Reverse group a (Plate 2).

This is a very rare group in which the animal faces right instead of left and has a single pellet below the jaw as in group c. Only two coins of this type are present in Hallum, LFM300 and LFM391, and of these the former is quite crude in style and is almost certainly a contemporary copy; however it has been numbered and will be discussed further below. In addition to the single pellet below the jaw there is also a pellet at the base of the tail, otherwise only noted in group j (below), and a pellet between the front leg and the body of the animal. The second coin is much more naturalistic in style but unlike any other coin it has no raised border inside the border of pellets and the eye is defined, unlike the regular style of the series. A further detail is the presence of three pellets at the end of the lappet.

Reverse group b (Plate 00).

There is only one coin in this group, again more naturalistic in style than the bulk of the coins. It has been numbered because of the possibility of it being early. The animal has two pellets below the head, like group d, the tail ends in a diamond shape formed of pellets and lines, and the end of the lappet is also unusual in having a forked end.

Reverse group c (Plate 3-4).

Group c is the first of the regular series groups. The animal faces left with its head turned back over its shoulder as if to bite its upraised tail. There is a single pellet below the head, as in reverse group a, although the general style is very different. The lappet ends in a single pellet and, unlike any other reverse group, the animal has a crest on top of the head.

There are 23 coins of group c (16.5%) in the hoard, amongst which 19 reverse dies were recognised associated with 5 obverse dies of subgroup Ca and 16 dies of subgroup Cc. One reverse die, c1, was represented by 2 coins and a second, c2, was represented by three coins (fig 13). As already noted, the style of the series X are in general very similar in appearance but it is possible to see groups of coins which are so similar in appearance and detail that it can be postulated that they might be from the hand of a single die cutter.

There is a group of 4 reverses which are very similar in general appearance, c01, c02, c03,c04, to which can possibly be added 05 and c06. In this group the animal is well proportioned and well placed in the field and the pellet below the jaw is generally placed centrally, although c04 has the pellet set slightly further back towards the angle of the head and neck, and the crest is represented by a rather thin line. The tripartite tail

is generally well depicted and the jaws are opened wide, usually touching the arms of the tail. There are a further 6 reverses c07, c08, c09, c10, c11, c12, which are very similar except that the crest is thicker and rises vertically from the top of the head. An additional two coins c13 and c14 are again generally very similar in appearance but the pellet is located rather further forward towards the lower jaw than in other coins. Whether this group represents the output of a single craftsman or whether the small differences in details noted are indicative of different hands is impossible to say with any certainty but it would seem that these 12 dies were the product of a very limited number of hands at least.

Two further coins would certainly seem to be by a different hand, c15 and c16. These are the same as other dies of the type in basic details but here the pellet is attached to the angle of the head and neck and the tail is poorly and uncertainly represented. There are a further three dies which are all apparently different. Reverse c17 has a relatively small head in relation to the rest of the body and the tail is large and boldly represented although the pellets forming the outer border are small and faint and the coin does not seem well struck.

Reverse c19 once again is very similar to the bulk of the coins just discussed although the pellet is further

forward than normal, similar to c13 and c14, but most noticeable is the fact that the crest is angled backwards pointing to the back of the animal's head instead of forward towards its jaw. The main point of contrast in c18 is the angle at which the head is carried and the resulting angle of the jaw but again in general appearance it is very similar to the bulk of the coins.

As noted already, reverse group c is associated with 5 dies of subgroup Cc and 16 dies of Ca. The main characteristics of these obverse groups is their apparent similarity but, like the reverse dies, differences can be seen which may indicate the hand of different die cutters; differentiating these on clear objective criteria is very difficult however. Certainly differences are clear in the way the crosses are formed but often two different style crosses may occur on the same coin and one type may blend into another. Similarly the angle of the lines forming the beard can vary and, while it is easy to see the difference between examples at either extreme, there is again a great range between the extremes and arranging dies into groups on this basis is very difficult and possibly not valid.

Of the 5 dies of type Ca two, Ca17/c19 and Ca18/c17, are similar in that the face appears smaller and more circular than other dies. The crosses, particularly

those to the left of the face on both coins, are very similar, as in fact are those on the right, that on Ca17 having a slightly longer horizontal bar. But basically the crosses are formed of bars ending in small well defined pellets. On the remaining coins of Ca the face appears to be slightly longer and the crosses, while still essentially being the same type comprised of bars ending in pellets, tend to have slightly longer horizontal bars than vertical (eg Ca16/c14).

The coins of type Cc also broadly fall into these two 'types' with Cc1 (/c2 and /c6) and Cc14/c4 having the small face but the majority were of the 'longer face' type. Differences in detail can be seen, for example Cc11/c3 has crosses comprised of a long horizontal bar with pellets but the vertical bar is virtually non-existent being represented only by the pellets; the left hand cross of Cc2/c2 is very similar. On coin Cc3/c7 the angle of the lines forming the beard appears more angular and acute than is usual. Despite these visible differences in detail the overwhelming impression of the dies both Ca and Cc is their striking similarity .

Reverse group d (Plates 5-6)

Group d has the beast facing left, the lappet has one pellet at the end and there are two pellets below the head. Seventeen reverse dies were recognised associated

with seven obverse dies of type Cb and six dies of type Ca on a total of 18 coins (13%). The reverses linked with obverses of Cb are all very similar with relatively large heads and generally large well defined pellets below the head. Reverse d1 has a somewhat narrower head than usual and d2 has a rather smaller head, similar to the reverses associated with Ca obverses. Die d9 has an animal with a slightly upturned head and, interestingly, the die is generally very similar to h3 (Plate 12). In fact there are other similarities between these reverse groups which will be discussed below. The obverse dies of Cb also fall into two broad groups: Cb2, 4, 5 and 6 have comparatively long faces with correspondingly long crosses; the second group has a correspondingly smaller, more circular face with equal armed crosses or crosses with longer horizontal arms than vertical.

Of the reverses associated with obverses of subgroup Ca, die d13 is very similar to those associated with obverses of subgroup Cb especially d3 or d5. Generally, however, these reverses are slightly different from the majority of those linked with Cb obverses in that the animal's head appears smaller and the pellets are somewhat closer together. Having said this, however, the overwhelming impression is, as usual, their similarity. Only two coins have the same reverse die Ca31/d10 and Ca32/d10.

One die worthy of comment is d17 which, although clearly of group d in all details has the additional detail of a

pellet below the tail of the animal, a detail only associated otherwise with dies of group j (Plates 15-16).

Of the Ca obverses, Ca26 stands out from the others in that the lines forming the beard are essentially very even curves whereas on the other dies associated with group d the second and third lines of the beard are distinctly angled; Ca33/d15 and Ca34/d16 are more acutely angled than usual. The faces on these coins tends to be comparatively small and circular and the dies are generally very similar. Obverse Ca24 occurs on three coins with reverses d11, d12, and d14.

Obverses of type Cb seem to fall into two broad groups, those with relatively large faces and large crosses such as for example Cb2 and Cb4 and those with smaller rounder faces like Cb1 or Cb3.

Reverse group e (Plates 7-8)

In group e the animal as usual faces left, there is one pellet at the end of the lappet and there is a bar, often slightly wedge-shaped with the thicker end to the left, below the head. There are 18 coins (13%) of this group in the hoard associated with thirteen reverse dies and twelve obverse dies of subgroup Ca. As is common within the different groups, two sets of

generally similar dies can be identified although, as is also usually the case, both groups are essentially very similar to each other. The bulk of the coins e1-9 belong to a group, heavily die linked, where the animal has a comparatively large head in relation to the second group of four dies, where the head is smaller or more lozenge shaped (dies e10-13), otherwise the the modelling of the dies is very similar. There are considerable numbers of die links within the reverse group e coins. There are two identical coins of Ca36/e1 and obverse Ca36 also occurs on four other coins, while reverse e2 and e5 occurs twice with two obverses Ca38 and Ca39 (fig 13).

There is little difference in detail between the obverse dies. Ca36 occurs on six coins and its main characteristic is the small cross on the right, which has a longer horizontal line than vertical, and the flat V above the head with the right hand arm at a rather more obtuse angle than that on the left, a feature which occurs on other dies associated with this and other groups. Otherwise it is difficult to distinguish between the dies; Ca36 and Ca44 appear to have slightly longer faces than, for example, Ca47/e6 and Ca42/e11 but in terms of the character of the crosses and flattened V they are very much alike.

There are two dies which are noticeably different in character, Ca40/e9 and Ca45/e3. In both of these dies

the lines forming the beard are much more acutely angled than is usual but once again the crosses and V above the animal's head are very similar to the majority of the obverses associated with group e reverses. These two dies are very similar, though not identical. They are also similar to dies associated with other reverse groups but this will be explored further below. Ca40 is associated with one of the dies where the animal's head appears smaller than is usual (e9), whereas Ca45 is linked with e3, a well cut die belonging to the more numerous group of reverse dies with the 'larger' heads.

Reverse group f (Plates 9-10).

There are 13 coins (9%) in Hallum of reverse group f, in which the animal faces left and the symbol below the head consists of a cross attached to the bottom of the head with the right hand arm ending in a pellet. The lappet ends in two pellets. There are 9 reverse dies associated with 11 obverse dies of sub group Ca. Die f4 occurs twice (Ca51/f4, Ca52/f4), as does f5 (Ca?/f5, Ca53/f5), f7 (Ca55/f7, Ca56/f7) and f9 (Ca49/f9, Ca50/f9).

The bulk of the reverse dies are very similar in style with relatively small heads in proportion to the rest of the animal but essentially well cut, dies f1-f8 in

particular resemble one another. A further die, f9, is rather different in appearance with a somewhat larger head and the die generally appears well cut.

The obverses associated with group f are all of type Ca and, as is so often the case, are all generally very similar in style. One die, Ca27, is unusual in that it has five lines forming hair on the right side of the face as opposed to the normal four. The cross on that side is also unusual in that it is formed of a long horizontal bar with pellets top and bottom without bars. This is a rare form but is paralleled on an obverse of type Cc associated with reverse group c (Cc14/c4). A second obverse worthy of note is Ca48/f2 which has a very round face with a beard formed of very acutely angled lines. This also has parallels in two obverse dies associated with group d (Ca33/d15).

Reverse group g (Plate 11)

The animal faces left and the symbol consists of an L shaped line attached to the bottom of the head ending in a pellet. A further detail which occurs on a number of dies is the presence of a small pellet between the animal's front 'knee' and the rear foot (g1, 2, 3, 5, 6). It appears to be missing from g4, a die which has a narrower head than is usual although it is otherwise very similar to the majority of the dies, see for example the treatment of the tail. In general the

reverse dies of g are very similar indeed and, as is the case in other groups, they could be the product of very few hands. Two dies, g7 and g8, are slightly different in the angle of the animal's head, which appears tilted back slightly, although otherwise they greatly resemble the rest of the dies.

There are also two recognisable styles in the obverse dies. Three, Ca58/g1, Ca59/g1 and Ca63/g7, have a somewhat longer face and the crosses are different in that the vertical line is longer and more prominent than the horizontal, which is sometimes reduced to two pellets. Ca58 and 59 are extremely similar in the details just mentioned and the broad V above the head and could easily be by the same die cutter. The bulk of the obverse dies are extremely similar with small crosses with prominent pellets. The lines forming the beard are generally rather curved but two are drawn at a more acute angle, Ca66 and 67.

There are 12 coins of this group in the hoard (8.5%) and the only die links involve three coins with reverse g1, two of which have the same obverse die, Ca59.

Reverse group h (Plate 12).

The animal faces left as normal and the symbol below the head consists of a 'dumbell' shape of two pellets joined

by a bar and there is one pellet at the end of the lappet. There are a total of 10 coins (7%) including 7 reverse dies associated with 7 obverse dies of subgroup Ca. There are 2 examples of die h4, both associated with obverse Ca71 which is also linked with h5. The general style of the reverse dies is extremely similar and all the 7 dies could easily be the product of the same die cutter. The obverses of reverse group h all belong to subgroup Ca and again they are very similar in appearance and style and, like the reverses, could easily be the product of a single die cutter.

Reverse goup i (Plate 13-14).

The animal faces left. The symbol below the head is a 'pendant' consisting either of a clear vertical line ending in a pellet or a more 'teardrop' shaped symbol, being wider and thicker at the bottom than the top. The lappet has one pellet. Nineteen coins of this type occur in Hallum (13.5%), amongst which there are twelve reverse dies associated with fourteen obverse dies of group B and there is one die associated with an obverse of subgroup Ca (Ca12/i1), which is very similar to dies associated with reverse group j (Plates 15-16). Eight of the dies are extremely similar and may well be by the same hand, i1-8. These are neatly modelled and well proportioned with a comparatively large head and clearly defined tail. The coins are generally well struck although in some the border of pellets is poorly defined (eg. LFM170, B14/i2). There are also a considerable

number of die links within this group (fig 13). Die i2 occurs on seven coins associated with five obverses, B2-5 and B14, of which there are three examples. In addition there are two coins of i5, both with the same obverse, B13.

There are a further four reverse dies which are different in general style from the eight already mentioned, i9-12. Three of these, i10-12, are similar to each other and differ from the bulk of the dies of this group in that the head of the animal is narrower and smaller. In other details they are very like the rest of the dies of group i. On the last die, i9, the head is smaller and more circular than on any of the other dies. Whether these differences can be attributed to different die cutters remains, as always, debatable.

All but one of the coins were associated with dies of obverses type B, the exception being Ca12/i1. Ca12 is a well cut die with regular equal armed crosses flanking the face and is similar to numbers of other dies of type Ca (eg. Ca68/h1 or even Cc1/c6). as well as dies linked with coins of group j. As for the dies of type B, once again the most obvious thing about them is their similarity. The dies seem quite deeply cut with the lines forming hair and beard appearing as quite thick and pronounced lines. The exceptions to this are B5 and B12 which seem to have much finer hairs, although otherwise they are strikingly similar to the other dies.

B8 is the exception and seems less well cut and even slightly off centre in the field, while the lines forming the beard are much more acutely angled. Although it quite clearly belongs to group B, it bears some resemblance to coins of subgroup Ca (Ca40/e9, Ca48/f2) and could be by the same hand.

Reverse group j (Plates 15-17).

The animal faces left and the symbol below the jaw is the same as group i but there are two pellets at the end of the lappet and a pellet at the base of the tail. Unlike group i, group j is only associated with obverses of subgroup Ca; there are 17 obverses and 17 reverses on a total of 18 coins (13%) but only two die linked coins, Ca8/j04 and Ca9/j04, which have the same reverse.

There is a group of nine reverses which are clearly very similar in style and general appearance, j1-9. These are well modelled and the dies well cut. The pellets at the end of the lappet, as in the majority of the type j, coins are very close together or even touching (the exception seems to be LFM247, Ca6/j7 where the pellets are well spaced). The treatment of the tail and the symbol below the jaw is very similar on all the coins and the head is comparatively large in proportion with the rest of the design. On one coin the symbol below the jaw is reduced to a pellet touching the lower jaw

although all the other details are the same. The raised areas of the design on this coin seem very flattened and the pellets forming the border around the right side of the coin are smaller than those in the border near the back of the animal's head, as if the die is worn or the coin poorly struck.

In a further group of five dies, j11-14, the animal's head is noticeably narrower but the other details are very similar to the main group of dies just described: the pellets at the end of the lappet are close together, the treatment of the tail is similar as is the general overall appearance of the animal. A fifth die which is similar to this group is Ca14/j14, the only difference being that, as with j10,the symbol below the jaw is reduced to a single pellet touching the bottom of the animal's jaw. This is due to the restricted space which the die cutter, in this case, left between the back of the animal and the jaw. In every other detail, the two pellets at the end of the lappet and the pellet below the base of the tail, the die belongs to group j.

A further three dies are unlike either of the main groups of type j coins already described. On Ca1/j17 the animal has a much smaller head and the tail divides into two at the end rather than three as is normal; in addition the detail is less clear on the die as if worn or perhaps poorly struck. On die j16, the neck and body of the animal are more thickly drawn than is normal and the tail also, as on j15, ends in a V; the third element

of the tail is represented by a single pellet, however. What is missing on this die is the second pellet at the end of the lappet.

A number of the obverse dies, all of which are of subgroup Ca, have rather small round faces, rather bird-like in appearance and crosses which are quite small and fine, comprised of the usual bars and pellets. Three others, Ca7,8 and 11 have noticeably longer faces and crosses, particularly those on the left side, which have a long vertical bar with a smaller horizontal bar. In the case of Ca7 this is reduced to two pellets. On Ca7 and 11 the left hand cross also shows these characteristics but not so marked. Four other dies stand out as being different in style from the bulk of the obverses in the group. Ca3/j11 Ca1/j17 are similar to each other in that the lines forming the beard are drawn at a more acute angle than is normal. The lines of the hair on Ca1 are also finer than usual, as if the die was not particularly well cut or not well struck, and it is linked with reverse j17, an unusual and less accomplished die than most of the series. It may be queried as to whether this coin is an 'official' issue. Ca75/j16 also has an obverse with acutely angled lines forming the beard, but the coin, both obverse and reverse, has a different 'feel' to the design and tends to stand out from the vast bulk of dies in the series. It may just be the work of a particular die cutter but again the possibility that it is not from the same 'official' source needs to be borne in mind. The same can be said for Ca74/j17 as the style of the obverse

seems much more clumsy and less well cut than the majority of the coins and it is linked with an 'odd' reverse which also seems poorly cut and has no symbol below the jaw. If these symbols are identifying marks then it seems unlikely that an 'official' die which was clearly intended to have a symbol would pass scrutiny and be used without one.

Reverse group k (Plate 18)

The animal faces left, the symbol is a widely spaced reversed V and the lappet ends in a single pellet. There is only one coin of this type in the hoard, associated with an obverse of sub group Ca, Ca97. The style of k1 is similar in general appearance to many of the other regular series X dies. The obverse is also well drawn and cut and similar to a number of other dies.

Reverse goup l (Plate 18).

The animal faces left, the symbol below the jaw is a reversed T- shape and there is a single pellet at the end of the lappet. There are only two reverse dies of this group in the hoard, one of which, l2, is rather crude and 'linear' in style and almost certainly a copy. Both are associated with obverse dies of subgroup Ca, Ca

23/11 and Ca25/12, both of which have a very flat V above the face and rather small crosses more reminiscent of an 'x' than is normal.

Reverse group m. (Plate 18)

The animal faces left, the symbol below the head is L-shaped ending in a pellet as in group g, but reversed. There is a single pellet at the end of the lappet. There are two dies associated with two obverse dies of subgroup Ca. The first, m1, has a rather large head and a fan-shaped tail rather than the usual cross shape. The second is rather linear in appearance with an upturned head and a similar fan-shaped tail to m1. Neither are as accomplished as the main series and again may be copies. The obverses are not badly drawn but are not as accomplished as many of the regular series of type Ca dies. Ca76, associated with m1, is not unlike Ca23 which is linked with 11 and the crosses on Ca77 also have the appearance of x's, as they do on Ca23.

Irregular coins. (Plate 33)

There are several coins which fall into one or other of the groups discussed above but which are somewhat irregular in style or are poorly executed. They may be unofficial copies although they attempt to reproduce one or other of the official groups.

In addition there are two coins which are so different

in style that they are certainly copies and have not been numbered. On the first coin, LFM133, the animal faces right, there is no symbol below the jaw and the lappet ends in a single pellet. This coin is almost certainly a contemporary copy, the style being obviously different from the normal style of the coins. On the obverse there are only three lines on each side of the head forming the hair and two the beard. On both obverse and reverse the pellets in the outer border are much more widely spaced than normal.

The second coin is more like the regular style of series X; however the style is still rather crude in comparison to the majority of the coins. The reverse has no symbol below the jaw and there appear to be three pellets at the end of the lappet. The obverse is also crude in execution and struck off centre on the flan.

5.2.4.HALLUM: THE NON SERIES X COINS.

Most attention has obviously been given to the series X coins in this study but there are other coin types in Hallum which need to be considered.

The Herstal or Sigillum David type (Plate 34-35)

Next to the series X this is the most numerous sceatta type in the hoard. It is traditionally attributed to Herstal, as the design was seen as a punning device on the name (Heri-Stellum) (Stewart 1984:20). Star of David (SD) type is perhaps preferable and will be used here.

Some 24 coins of this type are recorded as being present in Hallum (Op den Velde et al 1984:141) and of these, 21 are recorded on Hill's photographs from Leeuwarden as being from the hoard. The design on the coins is quite simple and geometrical and the dies are quite crudely cut. One side (which will be regarded as the obverse) bears a Star of David design with an equal-armed cross in the centre and varying numbers of large pellets in the angle around the outside. There are commonly five pellets, leaving one of the angles empty, but there are as few as two visible in some cases. The reverse consists of a central equal-armed cross surrounded by radiating lines , anything from eight to twelve, one of which has a horizontal bar turning it into a cross. Again there are varying numbers of large pellets between the radiating lines, usually four but there may be as many as seven.

The dies are often quite crudely and coarsely cut although some are quite neatly done (Plates 34-35). The similarity of the dies and the fact that there is no

obvious 'top' and 'bottom' makes it somewhat frustrating checking for die links. However the Hallum coins only seem to have two reverse dies which occur twice (LFM288 and 388 and LFM286 and 387) giving a total of 21 obverse dies and 19 reverse.

In the Franeker hoard 36 coins of type SD are recorded (Op den Velde et al 1984:141); of these, 34 are included in the photographic records. The coins are very similar in appearance to those from Hallum and in this case no die links were recognised, again implying that a large number of dies were produced. The type was also present in the Fohr hoard but this is not yet published and the information is unavailable. From Domburg 23 examples are recorded, while there are 6 from Dorestad; otherwise there are only two other recorded find spots, namely Rijswik and Namur (Op den Velde et al 1984:141-2). The most recent checklist of English finds does not appear to record any finds (Rigold and Metcalf 1984) nor do the registers of coin finds published in B.N.J. since then (1985, 1986, 1987).

Given the number of dies that were potentially in use, this is a curiously restricted distribution. Place of origin is also uncertain. Domburg has the largest numbers but if the SD were a product of Domburg, why are none found in England? Of course, in this context it is worth remembering the limited distribution of the series H from Hamwic. The distribution of the SD type is similar to that of the so-called Maastricht type, two

examples of which were present in Hallum, and the suggestion has been made that both these types could have been produced by itinerant moneyers (Op den Velde and Boone 1983). The restricted find spots would seem to argue against this, however. The occurrence of the interlace design on the reformed coins of Pepin has led to the suggestion that the Maastricht and SD types are late (Op den Velde et al 1984:138). The presence of both in Hallum, which would now seem to be earlier than previously thought, suggests that they at least began relatively early in the sequence of the sceatta coinage even if they continued in use to the end.

The design of the Star of David is also found on a Merovingian denier (Belfort 5703, Van der Chijs 1866 pl 4, 26; Belfort 5701-2) and, with the interlace design on the Maastricht type occurring on early Carolingian deniers of Pepin (Van Gelder 1980; Op den Velde 1984:138), a place of origin in Frankish controlled areas may be indicated.

The histogram of weights of the SD coins is also potentially interesting. The known weights of the coins from Hallum and Franeker are plotted in fig 18 and there is a suggestion that there are in fact two peaks, one between 1.05-110g and another possibly around 1.20-1.25g; otherwise the weights are evenly spread down to c.0.80g. Whether this represents two periods or two separate mints is unclear and made even more confusing

by the fact that in the two pairs of coins in Hallum with identical reverses, one coin in each pair falls into each of the two weight 'groups' (LFM286 = 1,24g and 387 = 1.08g; LFM388 = 1.25g and 288 = 1.06g). Clearly the SD coins would repay more detailed analysis.

Series E or Porcupine sceattas (PLATE 37)

There are thirteen series E coins, including two of the 'Plumed Bird' type, recorded as being in the hoard (Op den Velde et al 1984:141). In the original photographic coin slips there are two series E coins (LFM410 and 411) which are listed as being from Hallum but which, according to Dr Op den Velde's researches, belong to Franeker. Similarly there are two series E coins listed as being from Franeker which are now believed to be from Hallum (LFM325 and 373) (Op den Velde pers. comm.).

The majority of the Porcupines belong to Metcalf's group A (Metcalf 1966) and they are generally very similar to coins in the Kloster Barthe hoard. This hoard consists entirely of Porcupines, some 750 of them, which are generally considered as 'secondary Porcupines', having a great diversity of designs and variations. In fact there appears to be at least one die link between the two hoards, as the coins LFM373 and ELM143 (Emden Museum) appear to be identical.

The 'Plumed Bird' Porcupines are generally considered

early and until recently were thought to be English in origin, although Metcalf now believes them to be of Continental origin along with the other series E types. There are also two 'Plumed Bird' Porcupines in the Kloster Barthe hoard (ELM737 and 738)

English Sceatta Types. (PLATE 36)

Seven coins of types which are probably English are present in Hallum. There are three examples of series G (type 3a) in good style as opposed to the recently discussed imitative style (Biddle et al 1986). These are probably amongst the earliest of the Secondary series (Blackburn 1984:168), as is series J, one example of which is also in Hallum. There is a single coin of series T (LFM276) which has a Porcupine obverse combined with a reverse of a profile bust with a blundered version of 'LONDONIA' in front, possibly preceding the series L coins (Blackburn 1984:168). A second coin (LFM272) also has a Porcupine obverse, this time associated with a reverse of type 41b (series N). An example of this type was also found in the hoard from Cimiez. The last of the English types is actually unique to Hallum but is generally more like the English series than the Continental. It has as an obverse a diademed bust facing right with a cross and group of six pellets in front. It is similar in general style to the obverse of series G and may be a copy of it. The

reverse is an animal facing right with its head turned back over its shoulder. The head is indicated by a fanciful series of lines and an attempt has been made to pick out the outline of the body in pellets as for example, on coins of series N. It is possible that this is a mule, in Metcalf's sense of combining the designs from two currently circulating types (Metcalf 1986:7).

Maastricht type

Two coins of this type were present in the hoard and have already been referred to in the discussion of the Star of David type. The obverse of the Maastricht type consists of a stylised head, usually very abstract but sometimes more naturalistic; examples of both are in Hallum. The reverse, as already noted, is an interlace design which is also found on the reformed deniers of Pepin and has led to the belief that this may be a late type. The coins are generally restricted to the Low Countries (Op de Velde et al 1984:132, 138) although examples have been found in England and as far south as Switzerland (Geiger 1980).

Merovingian Types

Three coins (LFM277-9) all belonging to the same, presumably Merovingian, type were present. In character, the type is not unlike the Star of David

coins in having abstract designs of lines and pellets. The execution of the dies is often coarse, again like some of the SD dies, and it may be possible that they are from the same mint as the SD type.

5.3 THE TERWISPEL HOARD.

The Terwispel hoard was found in 1863 on the banks of the River Boorn (Fig 9) and consisted of 161 coins and two small silver ingots (Bendixen 1981; Op den Velde *et al* 1986). The coins were very badly cleaned after their discovery and much of the detail has been removed, a fact which has led to the hoard being dismissed as having no value, but a close study of the enlarged photographs does allow some information to be gleaned from this apparently unpromising source. The photographs assembled by Dr Hill include 145 coins said to be from Terwispel, and now in the museum at Leeuwarden. In addition there are two published by Dirks (1863), which do not appear to be amongst the coins now in Leeuwarden, and there are two coins in the Leiden Institute for the History of Art (LIHA) (Op den Velde pers. comm.).

Of the 145 coins in Leeuwarden, 84 could be attributed to a reverse group with some confidence as could one of the coins published by Dirks and the coins from LIHA. In

some cases die links can even be postulated. Examples of all the major groups present in Hallum have been recognised in Terwispel, including k, l and m, all represented by one coin each (fig 12). In addition, one of the coins illustrated by Dirks belongs to a new reverse group, n, which has three pellets in a line below the jaw. This type does occur elsewhere, but is rare, and is not present in the Hallum hoard (fig 8; plate 31).

5.3.1 THE OBVERSE GROUPS.

Obverse group A

One coin has been recognised which seems to belong to this group. LFM96 is poorly preserved but the obverse seems to be very similar to A2, LFM300, and to a number of other coins which will be discussed below. The reverse is poorly preserved and difficult to determine.

Obverse group A/B (Plate 19.)

There is one coin which has a reverse similar in style to group A in particular, but has been termed A/B here as the lines forming the hair have pellets at each end and these lines, five on each side as is the case on obverse A, are very finely and neatly drawn. Similarly the crosses, moustache and beard are also drawn in a way very reminiscent of obverse A1. The reverse is

badly worn and no symbol can be distinguished below the jaw; however, the animal faces left, as it does on the regular series. There is also a pellet at the base of the tail.

5.3.2 The Reverse Groups.

Reverse group c

There are 18 coins (21%) identified as belonging to reverse group c. They are particularly recognisable by the presence of the crest above the head, which is often visible when the pellet below the jaw is not. This may account for the relatively large proportion of coins of group c which have been recognised. As far as can be determined, the Terwispel coins are generally similar in style to those from Hallum.

Reverse group d.

Only 5 coins (6%) of this group were identified amongst the Terwispel coins. This is a much lower percentage than is found in Hallum but given the large number of illegible coins it is not clear what can be concluded from this, as in the non-hoard coins discussed below, group d is the most numerous. At least three of the coins have obverses of type Cb, LFM13, LFM33 and LFM62, and at least one has an obverse of type Ca, LFM124. No coins were well enough preserved to be able to suggest

die links but the general style of the coins was similar to those in Hallum.

Reverse group e

Reverse group e is also well represented among the Terwispel coins, some 19 being recognised (22%). Again this may be at least partly due to the large wedge-shaped symbol below the jaw which probably withstood the unsympathetic treatment meted out to the coins following their discovery rather better than the symbols of some other groups. As a result, along with group c, it may be over-represented, in percentage terms, amongst the identifiable coins. As in the other groups, the coins of group e in Terwispel are very similar in style to those from Hallum. For example LFM7, LFM72 and LFM441 are similar to LFM187 (Ca40/e9) and LFM22 resembles LFM223 (Ca36/e2). Although no die links could be identified, the general similarity visible between the Hallum and Terwispel coins does seem to reinforce the idea that there were few die cutters responsible for the production of these dies.

There is one coin listed as being from Terwispel in the Leiden Institute for the History of Art (LIHA), (Op den Velde pers comm) (Plate 23). This is reasonably well preserved in comparison to the majority of the Terwispel coins and the dies have been numbered, Ca126/e20.

Reverse group f.

There are 10 coins of group f (11.5%) in Terwispel. Again the general style is similar to coins of the group from Hallum. The obverse of LFM437 is very similar to LFM138 (Ca52/f4) from Hallum and the reverse of LFM437 resembles f5 (LFM158 and 245).

Reverse group g.

There are 9 coins (10.5%) of group g among the Terwispel coins. Once again the impression gained from the coins is their general similarity to those of the same group in Hallum. For example LFM222 (Ca63/g7) is similar to LFM78 and LFM444 resembles Ca59/g1, LFM153.

Reverse group h.

Only 3 coins of group h were recognised (3.5%).

Reverse group i.

Nine examples of group i were identified (10.5%) two of which are characterised by small heads, LFM101 and LFM109, and which seem to be identical to a coin in Hallum LFM237 B12/i9. The obverse of LFM101 seems very similar to B12, particularly the character of the lines

forming the moustache and beard, but it is not possible to say if they are the same die. Other coins in this group are generally similar in style to the coins in Hallum. One coin (LFM438) is of some interest in that it appears to have new dies B17/i14. Otherwise where it is possible to tell the style of the coins in Terwispel is generally very similar to those in Hallum, eg LFM52 and B2/i2, LFM298.

Reverse group j.

Eight coins of this group have been identified (9%). As is usual the general style, when enough detail remains, is strikingly similar to the coins in Hallum. LFM90 and LFM104, for example are very similar to Ca20/j3 or Ca4/j5 and LFM64 resembles Ca9/j4. Similarly LFM55 can be compared with LFM291, j2.

Reverse group l (fig 8; Plate 30)

One coin was identified which clearly belongs to group l, a group which was also represented by a single coin in Hallum. The Terwispel coin, LFM49, closely resembles the Hallum coin, LFM296, Ca23/l1, but does not seem to be identical. The obverse of the Terwispel coin is badly worn but it is clearly very different in character from Ca23, particularly in the depiction of the beard;

indeed the whole design seems off centre.

Reverse group m (fig 8; Plate 30)

Again a single coin of this group was identified, (LFM65). It has a very regular appearance, more so in some respects than do the two examples in the Hallum hoard, as it does not appear to have the uncommon 'fan shaped' ending to the tail that both of the Hallum coins do.

Reverse group n (fig 8; Plate 31)

There is one coin in Terwispel which seems to belong to a group not represented in Hallum. This has been designated group n. On the engraving of this coin in the article published by Dirks in Revue Numismatique Belge in 1863, the animal appears to have three pellets below the jaw. The same coin appears to be published with one other in the 1870 publication by Dirks and here there seems to be a bar under the animal's chin, the individual pellets having disappeared. Other coins with three pellets do occur and will be discussed below. It will be assumed for this study that the original 1863 engraving is the correct one and that this is a coin of reverse group n. As far as can be judged from the engraving (in fact from photocopies of the original illustrations) the style is not unlike the usual 'regular' style coins. At first sight, the obverse

associated with this coin of group n is also apparently of regular appearance but on closer inspection it is clear that there are additional lines on both sides of the face, presumably representing hair but cutting across the lines of the cross. This is probably either an error on the the part of the die cutter or on the part of the engraver who was presumably trying to copy the design of a coin which had been as badly treated as others in the hoard.

Reverse group o (fig 8; Plate 31)

There is a further coin in the Terwispel hoard which has three pellets on the reverse but arranged thus :. rather than in a line. It is also associated with a new obverse die group, F. Obverses of group F are characterised by having what look like V's lying horizontally at the side of the face, instead of the crosses, and which seem to have have a pellet at the apex (Fig 7). The coin, LIHA 16, (F01/o01), has a reverse in relatively good style with three clear pellets below the jaw and a single pellet at the end of the lappet. The obverse is clearly of group F but much of the detail has been removed (Plate 31).

5.4 THE NON-HOARD SERIES X COINS.

5.4.1 THE OBVERSE GROUPS

Obverse group A (Plate 19)

There are eight coins from various sites which seem to be of this obverse type. Of these, four are die linked with the two group A coins from Hallum. There are two coins, one in the British Museum (LBM147), the other in the Hague and probably from Domburg (HPK426), which seem to be identical, although the Domburg coin is difficult to judge in detail. The obverse die is identical to A1 from Hallum and the reverses are similar in style but not from the same die as a1. There is a further coin from Domburg which is very crude in style but still belongs stylistically to group A/a (HPK424), it has been numbered A3/a04. In the collection at Middleburg (MZG523) is a coin which seems to belong to this group but it is so poorly preserved that the dies have not been numbered; however, generally the style is crude. A further poorly preserved coin which seems to belong here was found on the Thames foreshore at Rotherhithe (Coin Register, BNJ 57, 1987, no96). The obverse certainly appears to belong to group A and it seems to have three pellets in the V above the head, as does the coin just discussed (HPK424). The reverse is rather different, in that the animal faces left and the tail has the form of a 'trident'. The symbol below the head is not very clear but may be a pendent attached near the angle of the jaw and neck while, more distinctively, the

lappet ends in a diamond shape. The only other place that such a symbol occurs is on the tail of the one coin of reverse group b.

Two further coins are in Middleburg (MZG641) and the Hague (HPK403) and they could both be from Domburg. Both have obverses of die A2, identical to the coin in Hallum, although the reverse dies are very different from a2. The reverses of both coins are similar in style with the animal facing left having a well defined eye and a pendent attached near the angle of the neck and head, in fact more like a1 in style. Both reverses have a fan shaped tail and the Middleburg coin has two lappets as opposed to one on the coin from the Hague. The reverses have been termed p01 (MZG641) and p02 (HPK403) for completeness.

The final coin is published in SCBI 30, no 104 and is similar in style to A2 but is not the same die. The reverse is poorly preserved but the animal faces left and there appears to be a pellet at the base of the tail, as on the reverse a2 and the reverse associated with AB1 (LFM446).

Obverse group D (Fig 7; Plate 23).

This obverse group is very similar in style to the group C obverses except that it has cone-shaped symbols flanking the face instead of crosses. It occurs with

reverse group e, and the few examples will be discussed further below.

Obverse group E (fig 7; Plate 31)

Again this is a rare obverse type, very similar in style to the regular group C coins but with what appear to be back-to-back crescents flanking the face, thus:)(. This group is associated with reverses of group n and will be discussed below.

Obverse group F (fig 7; Plate 31)

Similarly there is a group of three coins with obverses of group F. These have a horizontal V shaped symbol with a pellet at the apex instead of a cross at the side of the head. These are exclusively associated with reverse group o.

Obverse group E/F (fig 7; Plate 31)

There is one coin from Ribe which appears to combine the symbols of groups E and F, although again it is associated with a reverse apparently of group o.

Obverse group G (fig 7;Plate 32)

This is a particularly interesting small group of coins, apparently English in origin, which may in fact be the earliest of the series X dies. The finest of these and the finest of all the series X dies is a coin recently

found near Royston in Cambridgeshire which has already been discussed in chapter 4 (Blackburn and Bonser 1986, no 42) (Plate 00). The face and eyes are well modelled with a well-defined moustache and a beard formed by a 'W' symbol. There are six lines forming the hair on either side of the face which end in pellets at each end, there is a single pellet in the V above the face, and the crosses flanking the face are also formed entirely of pellets. The reverse has been designated as reverse group q but will be described here. It is equally finely modelled, with the animal facing right, although there is no apparent symbol below the head. The lappet ends in a trefoil of three pellets reminiscent of die a1 and the tail also ends in a trefoil of pellets. The body, too, is picked out in pellets. In all, this is a very fine coin, far superior in the quality of the dies to the majority. It has been numbered G1/q1.

There are three other coins which belong to this group. The first, found at the same site as G1/q1, is clearly similar in style although the animal faces left rather than right. The detail on the coin is not easily distinguishable but it has been numbered G2/q2. The second coin is that from West Stow, which appears to be of similar style but again more crudely executed. Finally there is a coin in the British Museum from the Barnett bequest (Hill 1953:99, no 31c) also in the same style.

5.4.2. THE REVERSE GROUPS.

Reverse group c (Plate 20 and 20a)

In addition to the coins from the two hoards already discussed, a further 13 coins of reverse group c were identified. Of these, four were die linked with coins in the Hallum hoard (fig14; Appendix 6). There were two coins, both from the Boogaerts collection and now in the museum at Middleburg (MZG520 and MZG522), which have reverse dies of c4 identical to LFM406. The obverse of MZG520 is corroded but seems very similar in the surviving details to MZG522 which in turn seems to have the same obverse die as is associated with LFM406, Cc14. A coin in the Hague, HPK410, is identical both in reverse and obverse to LFM252 (Ca18/c17), from Hallum.

In addition to those die linked with Hallum, a further six reverse dies were identified (Appendix 6): Ca104/c20 from Ribe, Cc15/c21 and Cc16/c22 (HPK17230 and 17231) from the Hague and a coin discovered at Maurik, Ca19/c23 (Op den Velde 1982:5). The two further coins were from Danekirke (Ca105/c25) and from near Thetford (Ca131/c24) (Plates 20 and 20a). In general the style of these new dies is similar to the majority of the coins in Hallum.

A further four coins appear to belong to group c although they are corroded and it is not possible to give the dies a particular number. Three of these are from excavations at Ribe and one is in the Boogaerts collection in Middleburg. One of the coins from Ribe (Ribe 6) has a rather unusual obverse (Ca121) in the way the beard is depicted. On the left side of the beard there are four lines as opposed to three on the right. The general appearance is similar to B8/i11 as well as to Ca40/e9 or Ca75/e17.

Reverse group d (Plates 21-22)

Some 29 or 30 coins recognisable as group d have been identified from various sources Appendix 6). Of these, eight are so poorly preserved that no attempt has been made to give them a die number, either obverse or reverse. Of the identifiable dies there are two which die link into the Hallum hoard. The first is a coin in the Hunterian and Coates collection (115) which is identical to LFM217, Cb02/d2. The second coin is also from the Hunterian and Coates (113) and appears to have a reverse die identical to LFM154, d16, although the obverse is different.

There are a further 16 coins, with 14 different reverse dies, which do not link with the coins in Hallum. These are from a variety of sources including Hamwic, The Hague and Middleburg collections. In addition there are coins from Maurik in Holland, Ahus in Southern Sweden,

Denmark and the collection in Brussels (Appendices 6 and 7). The reverse die of the Hamwic coin (Metcalf 1988,116) is similar to a number of coins in Hallum, such as LFM239 and 261, and could easily be by the same hand. Similarly the obverse of the Hamwic coin, Cb08, resembles LFM239, Cb01. There is a second coin of this group from Hamwic (119), although this is of much poorer quality than the regular coins, with a very small face on the obverse and a small animal on the reverse. The coin may, in fact, be a contemporary copy (Metcalf 1988:51, pl 7).

There are two coins, both from the Middleburg collection, which, although not well preserved, seem to be identical: MZG330 and 527 (Cb09/d25) (fig 14). There is a third coin which appears to have the same obverse although the reverse is not clear enough to be sure that it, too, is the same, although it is certainly very similar. This is also from the Middleburg collection, MZG333. One of the coins, MZG527, is recorded as being from the Boogaerts collection but all could be from the beach at Domburg.

Two further coins are identical (fig 14), namely those found at Ahus in Southern Sweden (Ca98/d28). They were found with a coin of reverse group g in the excavation of an 8th century industrial and trading site on the bank of the Helge river (Callmer 1984). In the Cabinet de Medailles, Bibliotheque Royale in Brussels is a coin of group d, Ca92/d30, which is extremely similar to

a coin in Hallum, Ca33/d15, and if not from the same dies, they would certainly seem to be by the same die cutter. A coin from Domburg, now in the Hague, HPK397, appears to be more like coins of reverse type 1.

Excavations in a sunken hut in the southern settlement at Haithabu produced a coin of series X which appears to be of group d, although the published photograph is not clear enough to assign die numbers (Hatz 1965:pl 5); however it appears to resemble dies from Hallum such as d3 and d5.

Amongst the obverse dies of type Cb represented in these coins, the two broad groups recognised in Hallum, consisting of coins with larger faces and crosses and those with smaller round faces, were again present. Coins such as MZG330 and MZG527 (Cb09/d25) fall into the first category and Hamwic 116 (Cb08/d18) into the latter. Interestingly there are a number of dies of group Ca which are similar to the 'small face' group of Cb, for example a coin from Maurik (Ca93/d27) or a coin from Dorestad (Ca130/d?). The treatment of the V above the head is similar on these coins to that on Hamwic 116.

There is one coin in Belfort (5776) which is particularly interesting because it appears to combine a group B obverse with a reverse of group d, the only example to date, in fact, where a group B obverse is

associated with any reverse other than i (with the exception of B1/b1). The coin was available only as a photocopy of the original engraving (Op den Velde pers. comm.) and the detail is not accurate enough to warrant giving the dies numbers, but the obverse is similar to B18, particularly in the steep angle of the hairs forming the moustache and beard (Plate 22).

Reverse group e (Plates 23-24)

There are 16 coins of group e from a variety of places and collections, and of these there appears to be one which die links into Hallum (fig 14; Appendices 6 and 7). This is a coin now in the Coin Cabinet of the State Museum in Berlin (SCBI 36). This appears to have dies Ca42/e11 and is identical to LFM256 from Hallum. A coin from Baldock in Essex is very similar to Ca47/e6 and the reverse die seems to be identical(Ca119/e6).

There are two coins in the Hague, HPK40 and HPK406, which appear to be identical, having dies Ca83/e15. The first of these is from the former Van Rede collection and simply provenanced 'Friesland', while the second is from the De Man collection and is probably from Domburg. Four coins of this group have been found in Denmark, three from Ribe and one from Danekirke. The coin from Danekirke (50) appears to have an identical reverse to a coin from Terwispel (e20). The obverses are also similar but it is not certain that they are from the

same die.

The vast majority of the coins of reverse group e have obverse dies of group Ca. The dies are generally very similar in having rather small round faces, and the non-hoard coins are similar in style. However there are two coins of group e associated with a new obverse type, group D. This group is identical to Ca except that, in place of the crosses at the side of the face, there are conical or wedge-shaped symbols with the points facing downwards (fig 7). The first coin is from Ribe (5) and a second coin of this type is published in SCBI 30 (American collections) which seems to be identical to the Ribe coin. The style of the reverse die resembles the other dies, the weight of the coins, at 0.98g and 0.93g, are quite good and the die axes are regular, 90^{o} and 270^{o}. There is no reason to assume that this is not a regular group.

Reverse group f (Plate 25)

Only 6 further coins of this group have been recognised and of these, one is die linked into the Hallum hoard, HPK404 (Ca97/f01) (fig 14; Appendices 6 and 7). Of the other coins there is one each from Hamwic and Ribe and one each in the collections at Middleburg, MZG341 and the Hague, HPK418, the latter probably originating from Domburg.

Reverse group g (Plate 26)

Twelve group g coins have been identified amongst the non-hoard finds and collections (Appendices 6 and 7). These have been recorded from Domburg (HPK398 and 421), Hamwic (115) and Danekirke, Ribe in Denmark and Ahus in southern Sweden There appear to be no die-links with Hallum and only one reverse link has been noted between a coin from Danekirke (51) (Ca107/g13) and a coin from Domburg, LIHA 2, (Ca91/g13). The obverses of these coins are also very similar but do not appear to be identical. A feature of note on reverse die g13 is the presence of two pellets at the end of the lappet, a detail otherwise restricted to dies of group f and j. None of the dies in Hallum have this feature but a coin of group g in the Cabinet de Medailles in Brussels also seems to have a second pellet. This reverse (g14) is similar in style to g13 but is not the same die. Otherwise the style of the reverse dies is very similar, as indeed is the style of the obverses.

There is one coin which it may be relevant to discuss here namely MZG505 (plate 33). This would appear to be a contemporary copy of group g coins. The animal is reversed to face right and the symbol beneath the jaw is similarly reversed. also the style is much less fluent and 'stiff' in execution than the regular dies. Given the overall control which seems to have been exercised

over the series X it seems highly unlikely that this could be an 'official' die. The die has not been numbered.

Reverse group h (Plate 27)

Only three examples of group h have been found outside the hoards. The first is from Domburg (HPK402), and appears to be identical to a coin from Hallum, LFM401 (Ca70/h3). The second coin occurs in the Norweb collection (SCBI16, 68) but the reverse die is corroded and has not been numbered. The third coin is in the British Museum (LBM149) and is a new die (Ca143/h9)

Reverse group i (Plate 28)

Only 6 possible group i coins have been recognised, including one from Middleburg (MZG525) and a badly corroded coin from Ribe (27). The third is from the Hunterian and Coates Collection (SCBI), the fourth is in the British Museum and the fifth is from Dorestat and is illustrated in Dirks (1870 pl E.d). The coin from Holmsland Klit is also possibly of this group (Bendixen 1984). The coins from the Hunterian and the British Museum do not seem to be linked with any other coins and both have type B obverses (B16/i12 and B18/i16). No die numbers were given to the Ribe coin but the reverse of MZG525 appears different from other group i dies and was numbered as /i13 although the obverse was too

corroded to number. The coin illustrated in Dirks also has a group B obverse which is reminiscent of a number of other dies.

Reverse group j.

Four coins of group j have been recognised The first from Datchet (Bk), in England is identical to LFM291 (Ca2/j2) from Hallum. The others are all new dies: HPK403a (Ca122/j18), probably from Domburg, Ribe 16 (Ca?/j20) and a coin in the Cabinet des Medailles, Bibliotheque National in Paris (Ca132/j20). The obverse of this coin has steeply angled lines forming the beard similar to Ca03/j11 or Ca01/j17 from Hallum.

Reverse group k (Plate 30)

Only one coin of this group was located amongst the coins excavated at Ribe. It differs from the coin from Hallum in that there are two pellets at the end of the lappet and the only one arm of the reversed V is attached to the animal's back. Indeed the die generally bears some resemblance to dies of group 1 especially in the angle of the animal's head. The obverse of the coin is illegible.

Reverse group l (Plate 30)

Five coins of group l occur in other collections and all, with one exception, are very similar. The

exception is MZG647 (Ca114/105) which is much cruder in style than the others of the group and, like Ca25/12 in Hallum, it may be a copy. The remaining coins are from four different sources: the Hague (HPK53); SCBI 16 (Norweb Collection); SCBI 30 (American Collections); the fourth is known from an engraving published by de Roever (1891) (Op den Velde: pers. comm.).

Of these, HPK53 is a die duplicate of LFM296 (Ca23/11) from Hallum. The coin in the Norweb collection has the same reverse die and the obverse, although apparently not identical, is extremely similar to, Ca23. The coin in SCBI 30 appears to have different obverse and reverse dies but again they are strikingly similar to the other dies of this type. Even on the engraving from de Roever it is clear that the coin illustrated had dies almost identical to those on the other coins. The impression from these coins is that group 1 was possibly the product of a single die cutter and was a small limited output.

Reverse group m (Plate 30)

One coin of this group was recognised in the Terwispel hoard.

Reverse group n (Plate 31)

Certainly one and possibly two other coins of this group are known (Appendices 6 and 7). The first is in the

Hague (HPK427) and was illustrated in Baldwin Brown (1903). The reverse is in relatively good style with two small pellets at the end of the lappet and the three pellets under the jaw are well defined. The obverse is particularly interesting because it belongs to a new type, which has been designated group E (fig 7). This group is distinguished by the fact that instead, of crosses at the side of the face there are symbols comprised of what appear to be back-to-back crescents. Otherwise the style of the die is very similar to the group C obverses. There is a second coin recently discovered during excavations in Dunbar in Scotland (P. Holdsworth pers. comm.). The coin is rather corroded but the reverse appears to have three pellets although the lappet only seems to have one. In addition the obverse is of group Ca and seems rather distinctive in that the crosses are apparently comprised of pellets only, with no bars. The only other coin with three pellets in a line below the jaw is that from Terwispel, illustrated in Dirks (1863), which also has an obverse of group Ca although as described above there seem to be some extraneous lines associated with the crosses. It is just possible that the Dunbar coin in fact belongs to group h, which has two pellets joined by a bar below the animal's chin, although it does not resemble any of the known group h dies to any particular extent. It has been numbered as belonging to group n (Ca?/n2).

Reverse group o (Plate 31)

Two, or possibly three, coins of this group have come to light in addition to the example from Terwispel (F01/o01). The first coin was discovered at Danekirke (49) (F02/o01) and the reverse is identical to the coin from Terwispel. The obverses are also very similar and may also be from the same die but have been numbered differently. The second coin is in the collection in the Hague (HPK423) and is probably from Domburg (F03/o02). Both reverse and obverse dies are generally similar to F01 and o01 but are clearly different dies.

The third coin is something of a hybrid. It is from Ribe (3) and the obverse has a symbol to the left of the face similar to that on coins of group E although the crescents appear joined by a bar or pellet (fig 7; plate 31), while to the right there is a symbol which appears to resemble the V of type F, or to be an attempt at a cross with one arm is missing. Otherwise in style it is not dissimilar to F02. To highlight these features it has been designated as E/F/01. The reverse is described in Bendixen's catalogue (1981:91) as having two pellets below the jaw but from the published photograph there is some suggestion that there might in fact be three. It has been assumed that this is the case and the die has been numbered accordingly as o03.

Reverse group p (Plate 19)

There are two coins of this group associated with obverses of group A and have already been discussed above.

Reverse group q (Plate 32)

There are 4 coins of this group associated with obverses of group G. They are discussed above.

Reverse group r (Plate 31)

There are two coins of this group which have been struck from identical dies. The reverse appears to have two small pellets below the head and also has two or three lines on the top of the animal's head, similar to the crest on group c. The obverse is of group B (B15). One coin is from Ribe (8) and the second is in the British Museum, the latter recorded as being a find from the Isle of Thanet, 1756. The style of the coins is not of the best and it is likely that they are contemporary imitations although the Thanet coin is of good weight at 1.14g; however the Ribe coin is much lighter at 0.71g.

Non-hoard coins, irregular types (Plate 33)

There is one coin from the Hague (HPK417), probably from Domburg, which clearly seems to be a copy. The animal is large and clumsy and although it has a single pellet

below the jaw it is unlike any of the other group c coins. Equally the obverse is crudely fashioned and unlike any other obverse.

5.5 METROLOGY

5.5.1. Hallum.

The weights of the coins in the Hallum hoard have been plotted as a histogram (fig 15). This shows a very interesting distribution, with the vast majority of the coins falling between 0.95-1.25g with only a very few, in fact 7, coins falling below this. This seems to suggest that the coins were not subject to wear and presumably had not been in circulation for any time before they were deposited in the hoard. The average weight of the coins is 1.05g and the very tight distribution around this average again seems to argue for a coinage where the output was well controlled. The weight is also indicative of a relatively early sceatta series perhaps late Primary or early Secondary in date. As already noted the metallurgical analyses that have been done show a relatively high silver content which also suggests an early date for the series. A comprehensive analysis of the alloy of the coins would be of great interest.

The larger of the individual reverse groups were also plotted (fig 16) but no real variation could be detected between the groups. Again this could be another small indication of the level of control maintained in the production of these coins.

5.5.2 Terwispel.

The histogram of the weights of the coins from the Terwispel hoard is very different in character from that of the weights of the coins from Hallum (fig 17). As always with any discussion of Terwispel caution must be exercised because of the excessive cleaning to which the coins were subjected, wearing away most of the detail and presumably some of the weight. However the average weight of the Terwispel coins is still 1.02g, only slightly lower than that of the Hallum coins, and the histogram peaks at a slightly higher weight than does Hallum, between 1.10-1.15g as opposed to 1.05-1.10 in Hallum. This suggests that the weights of some of the Terwispel coins at least may not have been radically altered. The uncertainties of the hoard make it impossible to draw any firm conclusions however.

5.5.3 Non-Hoard Finds.

The weights of the site finds seem much more affected by corrosion. The coins from Ribe, for example, range from

a low of 0.23g to a high of 1.01g. The weights of the coins in the collection at Middleburg were not available but those in the Hague were equally variable, ranging in weight from 0.43g to 1.29g, although only six out of a total of 31 coins with recorded weights weighed more than a gram (Appendix 6). The effects of corrosion can be judged by comparing a number of die linked coins. For example Danekirke 50 has the same reverse die as LIHA 17 (e20) from Terwispel. The Danekirke coin weighs 0.65g whereas the coin from Terwispel weighs some 0.98g. Similarly a second coin from Danekirke (51) weighing 0.61, is die linked to another coin from LIHA, noted as being from Domburg, this coin weighs 1.13g. Finally a third coin from Danekirke (48) is identical to a coin from Hallum (LFM213, Cc03/c07); the Hallum coin weighs 1.05g and the Danekirke coin 0.81, The available weights for the coins are listed in the relevant Appendices and the variation within these indicates the discrepancies which can be caused by corrosion. Care clearly needs to be exercised in using weights of individual coins in isolation.

At this point it may be worth attempting to put the series X in context by looking at the known weights of other sceatta series. Generally there is a decline in the weights of coins from the Primary series to the late Secondary (Grierson and Blackburn 1986:164-73). The early Primary series seem to have been aiming for a standard of 1.30g or 20 grains, similar to the late gold

coinage, for example the early series A average 1.27g (Grierson and Blackburn 1986:168; Rigold 1960). After the deposition of the Hougham hoard the weight standard drops somewhat and the late Primary and Intermediate coins generally fall between 1.10-1.25g (Grierson and Blackburn 1986:168).

By the early Secondary phase the weight appears to have dropped slightly again, with the majority of coins falling in the range 1.00-1.20 (1986:169). Two later secondary series, H and Y, are known in sufficient numbers to get an indication of their intended weights. The Northumbrian series appear to have aimed at a standard of around 1.00g (Booth 1984) and the Series H, although many are rather corroded, also seem to fall into the range 0.95-1.00g (Metcalf 1988:31).

Turning to the Continental series, the Continental Runic series quickly fall from a respectable 1.25g to a low of 0.70g by the time of the Aston Rowant hoard (Grierson and Blackburn 1986:168). Series E occurs in a number of hoards, particularly Franeker and Kloster Barthe. Some 26 die identical coins from the latter hoard averaged 1.30g (20 gr) exactly, suggesting the apparently early weight standard for which the coins were aiming (Grierson 1961). The series E from Franeker averaged 1.14 (183 coins for which the weights were available). The Franeker and Hallum hoards both contain coins of the Star of David type and these average 1.07g very similar to the series X. Assuming that the series

X were aiming for a weight standard of c.1.10g, they would seem to fit most comfortably into the early Secondary phase.

5.6 Size of the Coinage.

In the past various attempts have been made to estimate the size of coinages using a variety of statistical methods. Various techniques have been used to estimate the numbers of dies used in a coinage and then to use a multiplier to obtain the numbers of coins struck. This has proved controversial in the case of ancient and early medieval coins, as there is little evidence as to how many coins were struck, or indeed whether dies were fully used (Grierson 1959, 1967; Metcalf 1965, 1967).

However, it was felt apropriate to utilise the results of the analysis to attempt such an excersise for the series X sceattas and the method utilised is that which involves the concept of the 'coverage of a sample'. This was introduced into the numismatic literature by Lyon (1971) and was based on work by Good (1953). More recently the method has been expounded upon by Esty (1984, 1986:189-90), who has concluded, after computer simulations of various methods, that this is the preferable method to use. What 'coverage' represents is the percentage of equivalent dies, used to produce the total output of a coinage, present in a particular sample.

Figures 25 and 26 set out the results of the analysis. Appendix 8 utilises these results and the formula proposed by Esty to calculate the 'coverage' of the individual reverse and obverse groups, as well as then calculating the confidence intervals at 95%, 90% and 68%, as also set out by Esty (1984:180-81). It was clear that the small numbers of coins involved would greatly affect the accuracy of the estimates and this is graphically demonstrated by the resulting figures. For example in reverse group d the coverage was calculated at .278, ie; the sample represents c.28% of the equivalent dies used to produce this group in the coinage. At 95% confidence interval the probability is that the figure is somewhere between 5% and 50%. In the case of group f the coverage is c.47%, but the range is 7%-87%.

The same estimates were calculated for reverse groups c-j as a whole and the figures would seem to be more meaningful. When the groups are combined, the coverage is c.38% with a range of 29%-47%, suggesting that certainly between a half and quarter of the reverse dies are known. The figures for obverse group Ca are also reasonable, with a coverage of 25% and a range of 15%-34%; the other obverse groups have ranges as wide as the individual reverse groups. Appendix 8 sets out the coverage and confidence intervals for the various reverse and obverse groups.

Metcalf has used this method, although without calculating confidence limits, to calculate numbers of equivalent dies for various coinages, particularly the Northumbrian sceattas (1984) and the series H from Hamwic (1988:31). In the case of the Northumbrian sceattas this exercise appeared to demonstrate that the animal die was actually the lower or obverse die. This method was applied to the reverse and obverse dies in the series X coins, but including Esty's formula for calculating the 95% confidence limit for the 'coverage'. It was felt that this would at least give some indication of the limits of error. This was also applied to the series H and Y for comparison. Figures of 301-461 reverse/monster dies and 437-875 obverse/Wodan dies were obtained. This strongly suggests that the Wodan die, which has traditionally been regarded as the obverse or anvil die, is in fact the reverse or upper die. It also implies that the ratio of upper to lower dies was of the order of 1.5:1, although given the wide confidence limits this figure is not at all precise. For example die i2 is associated with five different Wodan dies and c2 with three.

Figure 27 sets out the formula used and the calculations for the reverse and obverse groups as a whole in Hallum and in the whole series. Figure 28 also lists the equivalent dies for the reverse groups, though without the confidence limits included, first from Hallum, and then for the series as a whole. Figure 27 also lists the range of equivalent dies for the series H and Y and, as

a comparison, the dies used in the Lincoln mint in the reign of Aethelred II have also been calculated (Lyon 1971). The figures obtained indicate that the series X was a larger coinage, in terms of the numbers of dies, than either series H (type 49) or Y. It also seems to larger than the Last Small Cross issue from the Lincoln mint , although this was issued for only six years, as opposed to perhaps twenty for the series X. Also in the reign of Aethelred II, Lincoln was but one mint amongst many.

5.7 Cross group similarities

In the discussion of the groups in the Hallum hoard reference has been made to similarities of style within reverse groups, and their associated obverses, which could indicate the work of individual die cutters. As also noted already no obverse dies have been recognised which are associated with different reverse groups. However there are a number of obverse dies which are very similar in style, which are associated with different reverse groups and some reverse dies belonging to different groups, which are also similar. If it can be established that there are dies which are so similar in style that they may have been cut by the same die cutter, which are associated with different reverse groups, or indeed belong to different reverse groups, this would be of obvious significance to any

understanding of the production of and control exercised over the production of the series X coinage.

A number of examples of coins which show distinct similarities of style are noted below these are not meant to be exhaustive and other examples could certainly be found.

The obverse dies Ca31/d10 and Ca97/f01 are very similar in general style particularly in the depiction of the crosses and the lines forming the beard. In addition Ca02/j02 is also similar and to these could also be added Ca90/j22. Other similar obverses are Ca91/g13 and Ca82/f10 both of which have a flat V above the head and similar crosses. Also alike are Ca59/g01 and Ca68/h01. Another group of coins where similarities in style might be suggested, both in obverse and reverse dies are Ca86/d19, Ca87/d20, Ca95/g12, Ca83/g19 and Ca120/g17.

This is not meant to be an exhaustive list and others could no doubt be found but it serves to illustrate that even if no actual die links have been found between groups there are dies in different groups which are so similar in style to suggest that they could be by the same hand.

It is perhaps worth considering briefly what the reverse groups represent. Clearly they seem to follow a chronological sequence but, in Hallum in particular, the

indications are that some groups were in production at the same time (Fig 23). It could be postulated that this might indicate different mints or moneyers, but there is little evidence from the distribution of the series that any mint other than Ribe was operating. Similarly, the stylistic similarities between the various groups suggest only one die production centre. This leaves the possibility that the reverse groups, with their distinguishing marks, represent the output of individual moneyers, who were supplied with dies from a single production centre. The later 'post Hallum' types also change the symbol next to the Wodan face. This may be some kind of chronological distinction and will be further discussed in the next chapter.

The analysis presented above began with a discussion of the Hallum hoard, as is inevitable in any study of the series X coins. This analysis identified a total of 13 separate reverse groups distinguished mainly by a symbol below the head of the animal as well as other differences in detail. Obverse groups A and B are very small in number and may represent early types, although some at least may be copies and the others English in origin. These groups will be further discussed in the next chapter. Three other reverse groups k,l,m are also represented by only a few coins. The addition of the coins from Terwispel and the site finds and those in collections, echoed this pattern very closely. A number of other groups were identified but these were few in

number and contained few examples. The overwhelming impression is that the Hallum hoard contains examples of all the major groups of series X coins and that all of these groups were therefore in circulation when the hoard was deposited c.720-25. The analysis of the dies suggests that the series X was a comparativly large coinage, but the numbers available for the analysis are small and the confidence limits are therefore wide.

Figure 20 gives the totals of obverse and reverse dies. Obverse group C is by far the most numerous type with 161 dies and of these 135 are of group Ca. Amongst the reverses groups c,d and e are the most common with j,g,i,f and h close behind. The other groups are very rare in comparison. The style of the coins, the consistency in design, their weights and die axes all give the impression of a coinage produced under extensive central control.

CHAPTER 6

DISCUSSION AND CONCLUSIONS

The preceding chapter has presented a detailed analysis of the series X sceattas, both those from the Hallum and Terwispel hoards, and those from site finds and collections. It is the purpose of this chapter to attempt to draw some conclusions from this analysis concerning the particular problems relating to the series X sceattas, as well as more general conclusions relating to the 8th century coinages. In considering the specific problems of series X, chronology, place of origin and minting organisation will be considered.

Chronology

The main arguments concerning the chronology of the Hallum hoard in particular, and the series X in general have been set out in chapters 2 and 4. The redating of the Cimiez hoard is clearly of particular importance, as are the recent archaeological discoveries at Hamwic and Ribe.

Blackburn (1984) has convincingly shown that the Cimiez hoard should be dated to not later than 720. He also suggests that minting of series X begins around 710 and that the hoard from Hallum should be dated slightly earlier than Cimiez at about 715-20. There are however two considerations which suggest that, both of these

dates may be slightly too early. The first is the dendrochronological dates from the Dommerhaven site in Ribe of 704-710, for the phase in which the site was parcelled out into plots and which appears to be associated with earliest appearance of the market/trading centre (Bencard and Jorgensen 1990). The coins of series X first occur in the phase immeadiatly following this. Strictly speaking the date for the appearance of the series X coins at Ribe should be put after 710. However, if it is assumed that the coins are a product of Ribe and are associated with the establishment of the market, then a date of c.710 may not be unreasonable for their appearance.

The second consideration relates to the presence in Hallum of a coin of series T, a type absent from Cimiez. This coin is now considered the prototype for the coins of series L, dated to the early 730's, and is thought to be a decade earlier (Grierson and Blackburn 1986:186). These various points suggest that minting of the series X may begin around 710 or perhaps slightly later, and that Hallum, on the basis of the presence of a coin of series T, should be dated slightly later, say 720-25.

The date of the end of the series X is also in doubt with some writers claiming that coins of the series continued in circulation well into the second half of the 8th century (Bendixen 1981; Callmer 1984; Frandsen and Jensen 1987). Various claims have been made for

debased, and therefore late, series X coins at Domburg and Ribe (Callmer 1984; Metcalf 1986). These claims have largely been based on the visual appearance of the coins and ignore the fact, that the coins from these sites are very corroded due to the adverse conditions in which they were buried. The Domburg coins in particular have suffered from the effects of long exposure to sand and seawater. The analysis presented above,has shown that the same groups of coins occur at Domburg, Ribe and elsewhere and that die links also exist between coins from these sites and the Hallum Hoard. Given the chemical changes, which may have taken place in the Domburg and Ribe coins, no real value can be placed on their appearance as a guide to their fineness and it is even doubtful whether metal analysis will give a true picture of their alloy. The only evidence which can be relied on is that from die analysis and this clearly indicates that the majority of the coins, from Domburg and other sites, are of the same types as those present in Hallum.

Two of the coins from Ahus recently published by Callmer (1984) appear to be of almost pure copper. Callmer suggests that this along with the 'debased' coins from Domburg indicate the possibility of a copper coinage in same style and presumably minted in parallel with the silver coins of series X. Clearly this is unlikely for the reasons just discussed, as well as the fact that, there is no evidence for other than a monometallic

coinage in Europe until the later Middle Ages. In the late 7th century the gold coinage was replaced by one of silver and for the next several hundred years gold coins were extremely rare and not in general circulation. Equally there is no evidence of a deliberate copper or bronze coinage.

Recent discussions on the Ribe excavations still hold to the view that, even if the series X ceased to be minted by c.740's or by 755, the date of the coin reform of Pepin, the coins still appear to have continued to circulate in Ribe for some decades after this (Bendixen 1981; Bencard 1988; Frandsen and Jensen 1988). As discussed above, recently published dendrochronological dates from Ribe (Bencard and Jorgensen 1990;380-1) indicate that the series X coins appear after c.710. There are additional dates now available for the later phases, also containing series X coins, but these are less secure. Two timbers belonging to fences apparently associated with the workshop levels, in which coins occur, gave dates of 'later than 730 and 'later than 759'. These fence posts had been driven into the layer in which they were found, but the levels from which they had been driven was unclear. Clearly the evidence from Ribe is important, particularly the, as yet unpublished, series X coins from Nicolajgade 8 (Frandsen and Jensen 1988), as well as the stratigraphic and dendrochronological evidence. Further discussion will need to await further publication of these crucial excavations.

Internal Chronology of Series X.

The analysis presented above in chapter 5 has provided information with which to, at least begin, to make suggestions on the internal arrangement of the series. It has already been suggested that Gp G/q, A/a, AB and B/b may be early in the series (chapter 4) although it should be remembered that Metcalf (1986a) has suggested that A/a and B/b in Hallum are in fact late copies. Turning more specifically to Hallum, Figure 23 shows a rough indication of the degree of die-linkage within the main reverse groups. This was calculated by dividing the numbers of die links in each obverse/reverse group by the numbers of coins with identifiable dies. What this clearly indicates is the fact that there are two clear groupings of reverse types. Group 1 consists of reverse types c,d,g and j, which have values of between 0.31 and 0.48. The second group includes reverse groups e,i,h and f with a range of values from 0.62 in the case of f, to between 0.80-0.89 for the others. On the basis that, the less the die linkage the longer the coins were in circulation prior to being deposited, it would seem that chronologically group 2 succeeded group 1. The clear similarity in style of all the groups would seem to suggest that there was only one mint, or at least only one centre producing the dies. Equally the great concentration of coins of series X from Ribe does seem to suggest that this was the place of minting (chapter

4). What these groupings of reverse types indicate is unclear. The coins in group 2 may represent a new ruler or new moneyers or some other administrative change. The great similarity in style suggests that a long gap is not likely and equally suggests, that if a change of ruler is indicated, then demonstrating this change on the coinage was obviously not considered very important as, in reality, the variations in the symbols differentiating the reverse groups are comparatively slight.

A similar exercise was carried out for the series as a whole (Fig 24) and the same general pattern is preserved, although the division into two groups is not so clear. Groups i and e are clearly the highest ranking, suggesting that these may be the latest of the main groups. The die survival ratio (Lyon 1981) was calculated for the reverse and obverse groups (Figs 25 and 26). There is little range in values but the general pattern for the reverse groups echoes that shown in Figs 23 and 24. Again the two groups, which were clear in the Hallum hoard, were not obvious, but the reverse types in group 1 had lower die survival ratios than the types in group 2, perhaps a further hint for a chronological development. It should be stressed that the numbers of coins available for the analysis is small and, further, the results may be distorted by the number of the coins from Hallum, which comprise some 65% of the total.

However there is enough evidence to say that the

earliest of the series X may be some of those coins of obverse groups G,A,AB and B, although it should be noted that some of the coins included within these groups are of poor quality and could be unofficial copies or insular imitations. Following these there are two distinct groupings of reverse types in Hallum, which seem to be chronologically distinct with group 2 being later than 1. The die survival ratio is less clear but does seem to suggest that e,i and f(?) are amongst the latest of the main reverse groups, and c,d and j the earliest.

There are also three other reverse groups which occur in Hallum but in such small numbers that they were not included in the analysis of die linkeage. Group k is stylistically very similar to the rest of the coins, as is Ca23/11. On the other hand, Ca25/12 could be a copy and both examples of group m may well be copies of group g. As already discussed above a date of c.720-25 could reasonably be argued for the deposit of the Hallum hoard. Clearly all of the types present in Hallum must have been in circulation by this date, although how long they continued in production is obviously uncertain.

Outside of Hallum there are in fact very few additional types. Reverses of groups n and o are present in Terwispel, although only single examples of each. Otherwise the types from Terwispel are the same as those from Hallum, suggesting that the two hoards were

deposited within a short time of each other. Of the non Hallum groups, reverse groups p and q are associated with possibly early obverses; r is found on two die duplicate coins, which stylistically are rather crude and may be imitations. It has already been noted that group m may be imitating g, which effectively leaves only groups n and o. Of these n is known from only three coins and o from four. Almost 200 series X coins are known, other than from the two hoards, amongst these are some 93 where a number was assigned to the reverse die (not counting those confidently assigned to a reverse group although not numbered). As there are only 7 coins belonging to groups n and o it is clear that these 'post Hallum' groups form only a tiny percentage, in fact only 7.5%, at best, of the non-hoard coins.

There is evidence of a chronological development in the Wodan dies. Type Ca is associated with virtually all of the reverse types. However, Cb and Cc are associated with reverse groups d and c repectively, two of the 'early' reverse types. Types B and D, on the other hand are associated with types e and i, both 'late' amongst the Hallum types. As already noted types E, E/F and F, are linked with non-Hallum reverses and are presumably the latest in the sequence.

The numismatic evidence presented above seems to argue for an earlier rather than a later date for the end of the series X minting. It is clear that the vast majority of the identified groups within the series were in production by the time of Hallum. Clearly some of

these must have continued in production after Hallum but only 7.5% of the identifiable non-hoard coins are of types not present in Hallum and, therefore, presumably later than the hoard. Even though some of the Hallum types would have continued in production, this is a very small amount of material and it is difficult to see how it can be stretched to c740 let alone later. The coins could have continued in circulation, as has been argued in the case of Ribe, but if this is so then evidence of wear on the coins might be expected. It does also raise the question as to why, if the workshop, and presumably trading, aspects of Ribe continued, did the minting of coins cease at all? Numismatically it would seem difficult to extend the minting of series X beyond c.740, and this might be generous. Clearly the evidence from Ribe is going to be of fundamental importance is resolving the date of the end of the series X coins.

Place of Origin.

Metcalf has recently argued strongly that the series X were minted in Denmark, probably at Ribe, rather than in the Rhine mouths area or Frisia, which were the traditional attributions for the series (Chapter 4). There is little direct evidence from the analysis which can certainly confirm such an attribution. However, the analysis of the coins from Denmark has shown that amongst the 30 published coins from Ribe and Danekirke all the main reverse groups, with the exception of h, were present as well as the rare, and late, obverse

groups D, E, E/F and F. The fact that such a wide range of groups was present, in such a comparatively small group of coins, may support a Danish, and specifically Ribe, mint for the series X.

At this point it may be useful to consider a possible origin or predecessor for the Wodan Monster type. In Chapter 4 a recent find of a type 31 coin from Royston in Essex was discussed and the group of English types which may have developed from it (Blackburn and Bonser 1986).

In the Hallum hoard are two coins A1/a1 and B1/b1 which have in the past been considered early because of their more naturalistic style (Hill 1952). A feature of these two coins is the use of pellets, in one case attached to the end of the lines forming the hair, in the other circling the head with the hairs radiating from them (Fig 7; Plates 2 and 32). In Terwispel there is a coin designated as AB1 which like G1 has pellets at each end of the lines forming the hair and these and the moustache and beard are neatly defined, although they are not identical to G1. Unfortunately the detail of the face and most of the detail of the reverse have been removed so comparison with G1 is not possible although the animal on the reverse of AB faces left rather than right. AB1 is very reminiscent in style to A1 the main difference being the lack of pellets at the end of the hairs nearest the head in A1. Obverse B1 is similar in

general style although presumably by a different hand. The interesting feature on this coin is that it has pellets around the head from which the hairs spring, a feature which continues on coins of obverse type B in regular style. It is perhaps worth considering whether AB, A1 and B1 are directly derived from G and are possibly English rather than Continental. The other dies of group A clearly seem to be copies, a feature of English sceatta series as Metcalf points out (1988:29). Similarly the use of pellets to outline the animal continues on English sceattas such as type 41b but also on the head of eg. type 44a. One other small indication of a more westerly origin is the fact that none of these types have, so far at least, been found in Denmark. However the major point against this argument is the fact that the reverses associated with A1 and B1 do have 'secret marks' on the reverse which appear to copy the marks associated with reverse groups c, d, and i/j of the regular series (Metcalf 1986). If this is so then it precludes these dies from being the precursor of the coins in regular style but they may still be English in origin, the Royston coin being a copy or imitation in 'English style', of the series X. Information on the alloy of these various coins may provide some insight into these problems.

Stylistic Similarity

The overwhelming impression given by the series X is the great similarity in style amongst the dies, both obverse and reverse as if they were the work of either few hands or at least in a very controlled workshop. Metcalf has suggested that the obverse dies were the product of a single die cutting establishment (1986:110) and the fact that there is such stylistic similarity between them must argue for this. Although, to date, no obverse die has been found which is combined with dies of more than one reverse group, there are certainly great similarities in style between obverses associated with different reverse groups. For example Ca31/d10, Ca97/f1 and Ca2/j2 are all similar in appearance as are both obverse and reverse dies of Ca86/d19 and Ca95/g12.

If similarity of style amongst the obverse dies is evidence of a single production centre then is the same not true for the reverse dies? The differences which can be observed between the dies are very systematic and regular. The symbols differentiating individual groups are usually clear and other characteristic details are equally consistent. For example series f and j have two pellets at the end of the lappet, c has a crest on the animal's head. Group i is associated almost exclusively with obverses of group B and reverse group c with with subgroup Cc. However the dies are, like the obverses, very close stylistically and dies from different groups resemble each other very closely. For example c3, f5 and g13 are similar in the way that the mouth and tail are depicted. Similarly h3 and g1 are also similar in

style.

There are also some deviations from the norm revealed in the analysis which may suggest, along with the stylistic similarities, that the reverse dies were either cut in a single centre or by a limited numbers of craftsmen. For example, groups i and j have the same symbol (Fig 8) and i, with one exception, is associated with obverses of group B. The exception is die Ca12, which is not unlike at least one of the dies linked with group j, Ca2. Similarly a group B obverse appears to be associated with a reverse of group d (Belfort 5776). The animal on reverse group g normally has a single pellet on the lappet (Fig 8), however, there are two coins which have two pellets as in groups f and j. The overall picture within the series X is that the reverses and associated obverses are carefully controlled but the variations in detail just listed and the similarity in style between the reverses may suggest that they, as with the obverses, were struck in a single centre by few die cutters. The most likely explanation for the reverse groups is that they were cut for different moneyers, although there is a clear indication of chronological differences. They could have been meant for different mints but the limited distribution of the coins in Denmark, assuming a Danish origin, argues against this.

Metrology and Die Axes.

Further indications of the centralised organisation responsible for the series X is indicated by the regularity of the die axes and the tightly grouped weights. The die axes of the series X coins were recorded and shown diagramatically by D.H. Hill (1977) (fig 19b). This exercise clearly indicated that the die axes were almost always at intervals of 90^{o} to one another, indicating the use of dies with some kind of square collar to secure them. This is also indicated by the fact that the series X are generally well and centrally struck on the die unlike many of the series E coins for example. However, other sceatta types do appear to display the same tendency to have die axes at right angles. Fig 19c shows the die axes of 20 coins of series A (SCBI Fitzwilliam, Hunterian and Coates and Berlin) and 24 die duplicates from the Kloster Barthe hoard, both of which clearly show die axes at right angles. This suggests that this feature may be more common in the sceatta coinages than previously thought.

The metrology of the coins was discussed briefly in the analysis in Chapter 5 and the histogram of the weights from Hallum indicates a tight distribution of weights, which is also generally accepted as an indication of a carefully controlled and organised coinage. The weight standard of c.1.10g is also indicative of a relatively early series. In an unpublished paper, D.H.Hill (1984) made some interesting comparisons between the weights of

the coins in the three main sceatta hoards (Franeker, Hallum, Kloster Barthe) and some later Anglo Saxon and Carolingian types.

The value of using histograms to study the weights of Early Medieval coins was first emphasised by the students of the later Anglo Saxon and Carolingian coinage in the 1960's (Butler 1961; Morrison 1963 and Petersson 1969). Butler, in discussing later Anglo Saxon coinage, pointed to the change in the metrology at the end of the 'Quatrefoil' type:

' With the end of the Quatrefoil a quite new pattern comes into the metrology of the late Anglo Saxon penny, one that speaks of great conformity and stability. The range covered by the weights for one type is narrow, and a very large majority is centred on the peak, showing that the king was able to enforce his appointed standard everywhere..' (1961:210).

Morrison (1963) used histograms extensively in his study of Carolingian numismatics. He produced a histogram of the coinage of Charles the Simple and was able to argue from the twin peaks of the graph that this coinage may have been struck at two different standards (1963:420) (fig 21). These two authors and Petersson also maintained that the coinage had an overvalue, meaning that the coins were actually accepted as being worth

more than the actual metal content. If this were not the case and only the value of the metal was important, then confusion would ensue, and there would in fact be little point in minting coins (Butler 210-3). This explains why the range of weights was acceptable and also why a rapid fall off occurs in the numbers of coins beyond a certain weight. Heavy coins would be taken out of circulation since the metal content would eventually be worth more than the face value of the coin (Butler 210-13; Petersson 1969:161-3). The important point in this brief summary is that histograms showing a narrow base and pronounced peak are indicative of a highly controlled coinage.

Fig 15 shows the histograms of the coins in the Hallum hoard and fig 22 the two Frisian hoards of Porcupine sceattas from Franeker and Kloster Barthe. The weights of the coins in the Hallum hoard, as already noted above, are very tightly distributed although the histogram does not have the very pronounced peak of some of the later coinages (fig 15). The weights of the Franeker coins are again tightly distributed but show a pronounced bimodal distribution, similar to the coins of Charles the Simple, suggesting there may be two groups of coins struck on different standards. The histogram of the Kloster Barthe hoard is very similar to those for the later Anglo Saxon coinages, with a very pronounced peak and rapid fall off.

In addition to histograms, Petersson utilised what he

termed the 'coefficient of variation' as a further indication of the control exercised over the late Anglo Saxon coinages. This consisted of the standard deviation expressed as a percentage of the average weight. He calculated this coefficient of variation for the coinages from the Reform of Edgar to the Conquest and set the results out in a table (1969:96-7). The range varied from a low of 6.6% for the Pax type to 21.4% for the Expanding Cross. The coefficient of variation for the sceattas from the three hoards, as calculated by Hill, were: Hallum 9.2% , Kloster Barthe, 9.2% and Franeker 9.5% (Hill 1984); in other words they were again shown, in terms of their weights, to be a highly controlled series of coinages.

If direct comparisons are valid, then the three groups of sceattas discussed here would seem to have been minted under considerable control and they may have had an overvalue similar to the late Anglo Saxon coinages. This is indicated by the distribution of the weights as illustrated in the histograms and by the coefficient of variation. Quite what the importance of this is in terms of the function of the coinage is unclear. Presumably the mere convenience of having regular, stamped objects whether they were used in market exchange or tolls or for social payments like wergelds would give them some overvalue. Also the later coinages were being produced at a number of mints all over the country where control of the production must have been

difficult. In terms of the sceattas it is unlikely that the main series were produced at more than one mint, thus making control over their output that much easier. The analysis has indicated that the minting of the series X sceattas was closely controlled and highly organised. The close similarity in style amongst both obverse and reverse dies suggests that there were few hands involved in the production of the dies and that this was done centrally with dies possibly being distributed to individual moneyers. The weights and die axes indicate the care taken in the production of the coins.

In Chapter 3 some alternative views on the nature and development of the coinage were considered. Metcalf saw the 8th century coinage functioning in essentially the same way as the later Anglo Saxon coinages based on their comparable distributions and apparent numbers. Grierson had pointed to the importance of understanding the nature of the society in which coinage was circulating and the importance of mechanisms other than commerce for distributing goods, as well as alternative functions for coinage other than use in monetary exchange. Hodges utilised numismatic evidence in his wide ranging consideration of the role of trade and exchange in the development of society and the rebirth of urban life between 600 and 1000AD. As described in Chapter 3 Hodges utilised a number of theoretical models and a series of specific expectations to predict the

development and changes, through which the coinage would pass, as it transformed from what he calls Primitive currency to Early Cash.

The first 2 expectations proposed by Hodges concern the size of the currency and as he has indicated himself (1988:117) it is not possible to offer precise information on the size of the outputs of Early Medieval coinages. Metcalf (1984d; 1986; 1988) has used a statistical formula to estimate the numbers of dies that were used to produce the coins of a particular series. However the whole question of the numbers of coins that could be struck from a die is highly contentious and estimates of the numbers of sceattas in circulation are controversial. However by estimating the number of 'Equivalent dies' in a coinage some broad comparison is possible (chapter 5, figs 27 and 28). Figure 28 lists the equivalent 'Monster' dies, estimated from Hallum and the series as a whole. Also noted is the output of the Lincoln mint in the time of Aethelred II have also been calculated (Lyon 1971). Appendix 8 showed that the series X appears to have been a larger coinage that either series H or Y, and was comparable to the Last Small Cross issue from Lincoln, although this was probably produced over a shorter period than the series X. Offa's coinage at approximately 1340 obverse dies (Metcalf 1965:482), though issued at three or four mints, certainly seems to show an increase in minting. By the 10th century the expansion in minting is clear, with some 774 obverse dies being used at Lincoln, in

roughly the same length of time as the series X. This being the output of one mint among many.

Hodges's fourth expectation predicts changes in the organisation of coin production with increasing political complexity. The Primary sceatta series he sees as being the result of royal control over coinage as part of a process in which the kings controlled long distance trade. The Primary sceattas then are, in Collis' terms (Collis 1971), a centrally controlled coinage. The analysis of the series X certainly suggests the same applies for this series. Hodges expectation goes on to suggest that in the secondary series the system degenerates into a 'moderately decentralised' system (Hodges 1988:117), presumably because the rulers can no longer adequately control coin production or exchange. If the attribution of the series X is correct and the dating of the Hallum hoard is acceptable, then this process does not seem to happen in Denmark. As already described above all the major groups were present in Hallum and, in addition, the evidence for a late, debased group of series X is highly uncertain. Either the series X go on essentially unchanged or they cease production and are not replaced. This also has considerable implications for Ribe as few other coins have been found in the excavations and any independent dates, from dendrochronology for example, will be of considerable interest.

The fifth expectation proposed by Hodges is that coin issues will become more standardised with increasing political complexity. The clearest indication of this "... is likely to be a reduction in the standard deviations of the weight and the metallic purity of the coins within an issue " (Hodges 1988:111). The sceattas are rightly seen as being struck from a wide variety of designs but the analysis of the series X shows clearly the highly standardised designs and clear organisation within the minting. The type 49 sceattas from Hamwic and the Northumbrian animal series of the second half of the 8th century, show similar evidence of standard designs which are maintained. Similarly the comparison of the weights described above and the coefficient of variation, developed by Petersson and calculated for the coins in the major hoards by Hill, shows that, at least in terms of weight, the production of the sceatta series was better controlled than many of the later Anglo Saxon coin series. Clearly further detailed analyses of other series would be of interest to see if this control is paralleled in the die production and striking as it is in the series X coins. It is also clear that at least some of the sceatta series show characteristics which Hodges's model would expect of 'Early Cash' rather than the 'Primitive Coinages' which the model regards them to be.

The last of Hodges' expectations concerns the use of coins as a vehicle for propaganda and the suggestion that this will increase with growing political

complexity. He suggests that in stateless societies, such as those in which the sceattas were circulating, the designs of coins will not necessarily have any political meaning, designs will simply be borrowed from external states. The gold coinages and the Primary sceattas certainly draw on Roman and Byzantine prototypes but these may have been harking back to and attempting to use a known previous authority. Also in complex states the mark of the issuing authority is the guarantee of the worth of the coin. There is no reason why some of the designs on the sceattas cannot be understood as the mark of the issuing authority. The Wodan Monster design may have been highly symbolic of which ever authority it was who controlled Ribe for example. Similarly the design of the type 49 or the animal on the Northumbrian coins which was linked with the name of the issuing king, may have had great symbolic significance.

Hodges utilised a number of other models which were briefly described in Chapter 3. Carol Smith's models, as well as the initial discussion of Hodges' thesis (1982) tended to follow Wallerstein's 'Core Periphery' model (1974) which saw change stemming from a core state to peripheral areas. Both Smith (1984) and Hodges (1986) modified these views and placed more emphasis on the interaction between Core and Periphery as being the generator of change. In the period dealt with in this thesis the Frankish kingdoms are seen as the core area

with England and Denmark as the periphery. However as already seen it is in the peripheral areas that there is evidence for a much stricter control over the coinages. In Hamwic some 50% of the recovered sceattas are of series H which were minted in the emporium and, as already noted, they are one of the coinages with 'secret marks', in this case probably indicating successive issues (Metcalf 1988). In Northumbria after c.740 with the introduction of Eadberht's coinage the situation is similar and in Denmark the minting of the series X excluded virtually all other types. It was in the 'core areas' of the Rhine mouths and even possibly Kent, that a lack of control over the coinage seems evident. A great variety of sceatta types is evident from Domburg, although they were not all contemporary, and a similar situation pertained in Kent with numerous varieties being recorded, so much so that it is difficult in the Secondary phase to determine just which coins were being minted there (Grierson and Blackburn 1986:151). It may be that in these core areas trade was being conducted by a variety of ways and a variety of agencies and was not the controlled trade as envisaged by Hodges. On the other hand it was in the more peripheral areas that it was possible to control the trade more effectively, and also the coinage.

The value of developing explicit models such as those developed by Hodges is that it allows the data to be tested against a set of explicit expectations of how the data should be acting. Testing the results of analyses

against such models should bring the particular characteristics of a sceatta series into sharper focus and highlight how it resembles or differs from other sceatta series. Such testing will also indicate where the model does not work and will allow alternative explanations to be developed.

Long distance trade has long been assumed to be the primary function of the sceatta coinages and in some cases this is quite clearly the case. The series E coins are widely distributed across western Europe for example. The series X sceattas are found in considerable numbers in Ribe where they were presumably circulating and in use. Quite what they were being used for is not so clear. The sceattas presumably represented a considerable value, they were not small change and were probably not used for minor market transactions but in the exchange of the goods and raw materials, which were being traded. The fact that they are found in considerable numbers in hoards in Frisia and in Domburg, indicates their use in trade between the Rhine mouths area and the north. The extent of die links in the hoards and the lack of single finds in Frisia suggests that these coins were not circulating in the area, however, and were rather stores of bullion to be used as a means of exchange in long distance trade.

The distribution of the regular style series X coins in England is very different from the Porcupines. They are

rare in East Anglia, non-existent in Kent and rare again in the Thames valley area (Fig 5). They do occur at Hamwic, along with coins which are clearly imitating the regular style. Metcalf (1988) suggests that there is some commodity that Hamwic is exporting which is unavailable elsewhere, but this would not exclude the series X being used elswhere to acquire other goods. The main point is, however, that the series X were certainly moving along the coasts of north-west Europe in the process of long distance trade. The sceattas from Hamwic on the other hand are rarely found elsewhere, either in England or on the Continent... The Northumbrian sceattas are found widly spread within the Kingdom, but rarely outside it and a similar pattern is evidenced by the East Anglian Runic sceattas. Rather than assuming a role in long distance trade for all the sceatta series the way forward in studying the coinage of the 8th century in north-west Europe should be to highlight these differences and seek to explain them in the contexts of the societies in which they are functioning. The first step however is further detailed analyses of the sceatta series themselves.

Hopefully this thesis has demonstrated that such analyses, even of the largest of the series, is possible with photographic records of the type assembled by Dr Hill. The study presented here has also hopefully demonstrated, that such detailed analysis can add significant new information, both to the specific problems relating to the the individual sceatta series

and to the more general problems of coinage in this period. Such analysis, daunting as it may seem, is badly needed for the Porcupine sceattas, particularly the hoards from Franeker and Kloster Barthe. Enough material is also known for analyses of the both the Continental and the East Anglian Runic series. The study of the coinages of the 8th century has made great advances in the last decade or so with large numbers of new coins coming to light. However the largest collections of data, vital for the study these coins, have been known for over a century and until numismatists face up to the challenge of finally analysing these collections progress towards an understanding of the coinage of the 8th century will inevitably be constrained.