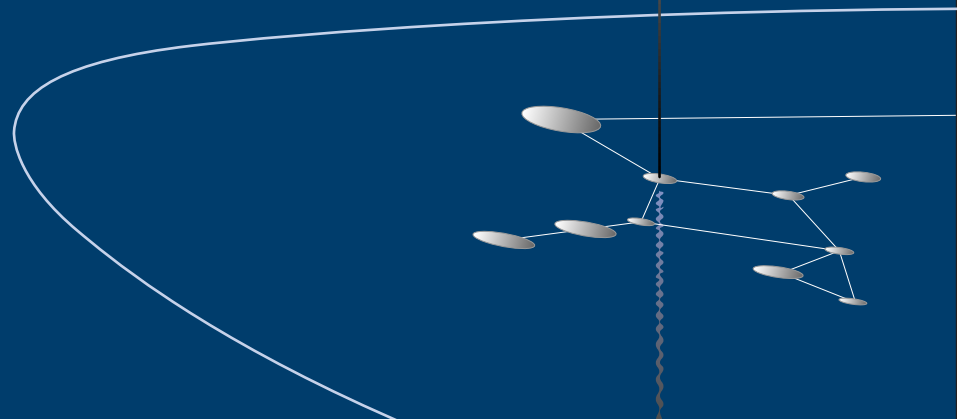


Landscaping the Powers of Darkness & Light

600 BC - 350 AD settlement concerns of Noord-Holland in wider perspective

L.L. Therkorn



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ACADEMISCH PROEFSCHRIFT

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‘The past is a foreign country: they do things differently there.’

L.P. Hartley, *The Go-Between*

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 - In early July, Hercules/Thor and Horse/Pegasus are visible, and Cow/Taurus is coming up in the east.
 - At the end of September, Horse/Pegasus is going down in the west, followed by Cow/Taurus. Greater Dog has come up in the southeast. Hercules/Thor is at his lowest position, but does not entirely disappear.
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Chapter 1 From depositional patterning to cultural practices

This volume developed from a thesis proposal granted in 1989, for a period of three years.¹ The title was: 'From depositional patterning to cultural practices: the development of theory and methods for the interpretation of (Roman) Iron Age communities.' Summarized, the aim was:

'Linkages between material patterning and interpretation at the cultural level will be studied through use of recent developments in theory and methodology. Results of extensive research within Noord-Holland will be used hereby to achieve an interpretation of the nature of communities for the period c. 400 BC - 400 AD, also in respect to the neighbouring regions of *Germania libera* and the Roman Empire.'

The data here discussed were generated with students and volunteers through successive rescue excavations within the coastal province of Noord-Holland.² Dating of the traces examined for this work spans the period from about 600 BC to 350 AD, but there are some traces dating to the medieval period, to around 1200. Initially planned was a comparison of settlement forms and possible meanings for this one region to possible differences and similarities with other areas of north-western Europe. The comparison has taken another form, as will be mentioned below in the chapter summaries. Generally, the aim has been achieved, but certainly in a form different from expectations.

Lines of analyses were to be taken further than explored in previous work (Therkorn 1983, 1984) in analysing, for example, housing remains as place and zoological remains as representing more than the sum of bones strictly representing remains of food resources and secondary products. However, during the final stages of analyses within the grant period, the inkling of a possible reason for patterning of feature placement, accompanied by particular deposits of materials, led to concentrating on an interpretation of seasonal concerns of inhabitants within ritual. Certainly unsuspected was subsequent definition of large-scale patterns, where individual features can be interpreted as representing stars forming still recognized constellations. Broadly, there was the possibility afforded of formulating an interpretative setting, with multiple facets of meaning, of inhabitant concerns while they were creating features within their settlement. The nature of the intertwining of everyday aspects and cosmology as landscape, including both the earth and the sky, could be explored at the scale of single farmsteads. 'Ritual' could be examined as to actual content.

The unanticipated time spent on the definition of large-scale iconography as placement of features led to little emphasis placed on theory, or methods. At a basic level, is the question of how to interpret features, in the present.

However, something of theory may be illustrated in regards to integrated aspects of marked place, cosmology, economy and gender within settlement layout. Facets of theory and method were derived initially from Bourdieu (1977), and later from Hodder's development of contex-

tual archaeology (e.g., 1986, 1987a & b, 1989, 1992), also in regards to the long term within archaeological analyses. The long term interconnects with an interest being developed during the research project within which the excavations occurred. Some careful renewal of interest in ethnohistory within Dutch archaeological circles was evident by the 1980's (e.g., Waterbolk 1980, Van der Waals 1982). Working within the Assendelver Polder research project of Noord-Holland (Brandt et. al 1987), Garthoff-Zwaan (1987) was broadening the framework for the interpretation of material culture within archaeology through historical texts in the vernacular. How archaeologically gained materials could be a part of historical anthropology (e.g., Gurevich 1992), or even religious anthropology within historical study (e.g., Dupront 1985) remains to be seen. Research of late prehistory could interconnect much more with these interests through the echoes of pre-Christian practices within the historical period, and a role for archaeology could be effected, as part of the history of Europe, such as suggested by Sherratt (1992).

The study presented here might be seen as interconnecting with advances of applied theory within Dutch archaeological studies of common materials, facets of meaning, and structured action (Abbink 1986, 1999) and similar approaches in regarding the 'elite' and their materials, within ritual and religion (Derks 1998, Diepeveen 2001). Materials, landscape and ritual are also becoming more forcefully addressed (cf Fontijn 2003).

An increasing number of fields of study seemed applicable during the process of forming interpretational frameworks within successive and parallel stages of analyses. Mallory (1989, 132-33) has remarked, for example, that there is 'ample room for archaeological "testing" of the tripartite model'; and, 'Although the tripartite conceptual system proposed for the ancient Indo-Europeans offers some opportunity for archaeological confirmation, it is a bit surprising to see how little use of archaeology has been made by those interested in comparative mythology'. Northern mythology pertains to the sites which are of the later prehistory situated within a Germanic area, and there is a special indebtedness to Davidson (e.g., 1964, 1981, 1988, 1993, 1996, 1998) for bringing archaeological materials and texts together in a critical manner. Rather than relating the excavation data as illustrating texts, however, here proposed is a reversal of the situation, where small-scale community remains can shed some light on what is known, mainly through later texts, of Germanic cosmology.

While there is attention given to the Noord-Holland sites as part of European tradition, it is necessary to delve mainly into anthropology for the component of cultural astronomy (cf Ruggles 1999). The field of study extends far beyond the alignment debate of mainly British researchers with which some archaeologists in the Netherlands may be familiar. For archaeologically gained data, there do not seem to be studies for a European region of the type, or scale of detail, for small-scale, farming communities such as presented here for Noord-Holland within expressions of interlocking ritual and economy, of seasons and agrarian cycles, and marking settlement place as the landscape of the sky. The sites concentrated upon in this volume are near the transformatory period of religion brought about by the introduction of Christianity. Through the interpretation presented, the metaphor of the 'powers of darkness and light' is translated by means of the dialectics of literal meaning, the aspects of night and day, daily practices and sky phenomena, which seem to have framed and led to creation of various settlement features as part of cosmology.

I. I RESEARCH BACKGROUND OF THE OER-IJ ESTUARY PROJECT

The content of this study grew through excavations of sites first carried out within the Assendelver Polder Project (Brandt et al. 1987). The region of research was subsequently enlarged and the project was renamed the Oer-IJ Estuary Project, in 1983, and sites of the Schagen area, Uitgeesterbroek Polder, the Velserbroek, again within the Assendelver Polders, and lastly the Broekpolder were excavated. Figure 1 shows the position of the polder areas of the sites mentioned in the text which were excavated within this project.³ Figure 1 also shows, imposed on the modern landscape, the trajectory of the main Oer-IJ channel, a shifting (here shown for the last stage of development c. 100 BC), natural landscape feature having much to do with forming the estuarine area. It seems also to have formed a border within the region.⁴ After the 1st c. BC, the main estuary channel remained as a watery depression, rather than part of an active estuarine system.

The focus of excavations within the project was on prehistory – traces at the sites excavated spanning the period 2000 BC – 350 AD. Features of the medieval and modern period became increasingly important as the long term became emphasised within the interpretational framework.

In an anthropologically inclined approach, and for archaeological materials, it was thought necessary to start small, and with ever increasing scales of inclusion, to enclose larger parts of the region, through time. Individual characteristics of the material record in this region can be defined at the level of the family. Characteristic throughout prehistory is a shifting of the dwelling location after about one generation of use. It is what has evidently become known as the ‘household’ approach, but without many of the difficulties encountered by others in recognition of discrete events (cf e.g., Smith 1992). One is not confronted with the basic dilemma of which features were formed by which family as is the case at sites with multiple, contemporary dwellings, and/or through the confusion that characterises sites where dwellings were rebuilt over each other through successive generations. The approach has been for the last twenty years to select and concentrate on excavating sites where there is good vertical stratigraphy and/or clearly only one dwelling present with associated features. Similarities are being defined, as well as differences, due to the increasing number of sites excavated to either side of the Oer-IJ estuary channel. It is now considered a border dividing groups of people with different traditions, on the one hand, but where other traditions are shared across the border of the Oer-IJ having to do with cosmology (Therkorn et al. forthcoming).

At the settlement level, the smallest unit of study was the house, within the body of data for the Assendelver Polders, to the northeast of the former Oer-IJ. The short-term of each dwelling structure within the Assendelver Polders was the subject of pattern analyses following on Bourdieu’s definition of the house within habitus, trying to illustrate as archaeologically gained data, Bourdieu’s theory of the house as *opus operatum*:

‘...it is in the dialectical relationship between the body and a space structured according to the mythico-ritual oppositions that one finds form par excellence of the structural apprenticeship which leads to the em-bodying of the structures of the world, that is, the appropriating by the world of a body thus enabled to appropriate the world. In



Figure 1 Areas of the sites of Noord-Holland discussed in the text, and the trajectory of the Oer-IJ channel of the estuary, which had closed by the 1st c. BC.

a social formation in which the absence of symbolic-product-conserving techniques associated with literacy retards the objectification of symbolic and particularly cultural capital, inhabited space – and above all the house – is the principle locus for the objectification of the generative schemes; and, through the intermediary of the divisions and hierarchies it sets up between things, persons, and practices, this tangible classifying system continuously inculcates and reinforces the taxonomic principles underlying all the arbitrary provisions of this culture’ (Bourdieu 1977, 89).

Objectified relationships found as ‘the house’, as the site of structures within the sense of economic division, gender relations and traditions in (re)creating spatial proportions were suggested for this small area within the region (Therkorn 1983, 1987a). Spatial proportions were different to other groups from other regions, and considered to be unconsciously reproduced. There were also standards of measurements noted, but little attention was given to the delineated measuring aspect.

The Assendelver Polder sites were dated mainly to the late 1st c. BC and 1st c. AD. Later was the site of Schagen Muggenburg-I, of around 300 AD, about 40 km to the north of the Assendelver Polder sites, which was used to suggest some signs of transformations connected to gender spheres. This was thought marked through difference, as compared to the Assendelver sites, seen as separation, and greater emphasis in marking activity areas presumed to be mainly of the female sphere (the house) and another area as focus of activity, mainly metal working, attributed to the male sphere (Therkorn 1987b). It was also the beginning of including other settlement features within the net of those analysed in sameness and difference of material traces.

The Schagen Muggenburg-I features had not been analysed fully at that time. The pits especially, with excellent preservation of materials and great variation as to quality and quantity of deposits, had not been interpreted other than in the vague sense of some possibly as 'ritual' and others as possibly 'rubbish'.

The designations were traditionally derivative, using categories of archaeological field-jargon naively assuming there was an argued reason for the tradition of use.⁵ The plan was to take the house, the well-preserved surfaces, other activity areas, and the finds in features and their spatial layout as the next level of analyses towards an integrated interpretation of traces left by one family. This was to be compared to earlier sites of the region.

Pits and materials, and the same materials in other archaeological contexts of the house, within one settlement, were analysed with the idea of illustrating the following general concept, of both method and theory:

'... where the surviving material culture data are sufficiently networked, it is possible to grasp variations in meaning in different contexts because the network is itself the attempt by people in the past to construct order through the repetition of similarities and differences along various culturally chosen dimensions of variation' (Hodder 1987b, 7).

The idea of longer-term similarities and differences is worked out here for a broader scale of archaeological features, starting with the background of the dwelling, to extend the net of feature and material associations within the one settlement, and as compared to others, back through time. Included in this volume are five sites situated to either side of the Oer-IJ. To the north of the channel, two sites of the Schagen area are described most fully. For the aspect of large pattern comparison, there is the site of the Uitgeesterbroek Polder, and to the other side of the Oer-IJ, two sites within the Velserbroek (fig. 1). From Schagen to the Velserbroek is about 45 km, with the earliest and latest site being distant, in time, by about nine centuries. The settlements, with each their specific patterns, inter-related, are considered for the longer term of suggested large-scale patterning of features. The types of traces could lead to a broad illustration of the text:

'Since action in the world partly depends on concepts, and since concepts are learnt through experience in the world, in which one is brought up and lives, it is feasible that long-term continuities in cultural traditions exist, continually being renegotiated and transformed, but nevertheless generated from within. Part of the aim of archaeology may be to identify whether such long-term continuities exist, and how they are transformed and changed' (Hodder 1986, 9-10).

Long-term continuities of unexpected patterns do seem to exist, but there is also the facet of research bound to the historical present, and expectations of types of interpretations acceptable about the past.

Hopefully, presentation of the data below is structured sufficiently into types of categories for clarity of how the interpretation arose: archaeologically gained, in the field, and those of historical, written, textual materials, dating to various times. However, because of the data indications, which are deemed sufficiently networked, historical texts⁶ gain an altered interpretation. That is, later texts become differently approached as they are regarded through earlier traditions distinguished through other types of materiality gained from the archaeology of one region. Single household traces are taken up within broader themes of European scope, which have been largely ignored by archaeologists, but which have exactly to do with materials and indications of past mentality. A start may be made in that which Sherratt (1992, 140) considers possible – that archaeology has come of age when historians learn from archaeologists. For the Dutch situation, however, critical reflection could be a more prominent feature within archaeological circles, and certainly on points of what questions can be asked, and how the answers derive from expectations, situated within historical processes (Hodder 1992, 192). The historical text passages in some chapters might induce archaeologists of the later prehistoric and medieval period to broaden analyses of their materials. Specialisation, especially at the watershed of pagan to early Christian period may be blocking understanding of either.

1.2 CHAPTER ORDERING AND CHAPTER SUMMARIES

The structure of this work can be summarized:

- Chapters 1, 3, 5 & 7 are chapters considering texts of various dates, dealing with the past in a cultural historical manner, through past research as historical text, or materials including historical texts as ‘finds’ brought to the fore through aspects of archaeologically gained data presented in the preceding chapter(s).
- Chapters 2, 4 & 6 are on aspects of the recovered data, and basic interpretation of facets of five sites within the region. The framework of the seasonal as explaining pit digging and filling in Chapter 2 is actually ‘testable’ as are the patterns presented of constellation figures in Chapter 4. Chapter 6 is where combination occurs, towards sketching more of cosmology, as landscape and time becomes addressed.

The scale of data inclusion is widened in various ways:

- through starting with the details of two settlements, near contemporary (300–350 AD) at Schagen Muggenburg, and within one-half kilometre of one another, for basic modelling of feature and settlement structure interpretation (Chapter 2),
- to a widening of the time scale back to the earlier Iron Age, c. 600 BC, and distance of about 45 kilometres away, as an additional three settlements are regarded for the interpretation of large-scale iconography, as the imbedded, cosmological facet of settlement landscape of dug feature placement (Chapter 4). The additional sites are two in the Velserbroek dating to the 1st/2nd c. AD, and 600 BC, and one in the Uitgeesterbroek Polder of 1st c. BC–1st c. AD (fig. 1).
- returning (Chapter 6) to the settlements of Schagen Muggenburg I & III, more encompassing socio-economic aspects and the landscape of cosmology are suggested as part of long-term tradition, for just these two families.

Chapters 2, 4 & 6 are succeeded each by a chapter regarding materials and interpretation within a wider scale of various themes. And, within the text chapters 3, 5 & 7, data as interpreted from Chapters 2, 4 & 6, is considered to provide more and different insights into the past or ongoing

discussion. Thus, Chapters 3, 5 & 7 have suggestions as to a somewhat different, additional, or re-designed interpretation of known types of texts, ancient to more modern.

Chapters 3, 5 & 7 are certainly incomplete and tread on various specialist subjects. A number of aspects of research become linked, however, which through specialized archaeological practice, particularly of the later 20th c., are no longer integrated research fields, certainly not within the Netherlands. The seeming disparity of subjects such as foot-symbolics, divination, stars, tropes and linguistics, or a much-studied text such as the Voluspa of the Poetic Edda, become linked. These themes and subjects can be additionally interpreted in the light of features and daily-life materials from farming communities within a region, within later prehistory.

Along with specialized, institutionalised practices, along lines of materials, archaeologists also have the habit of separating off prehistory from history, as period specializations. Time is continuous, and use has been made here in addressing texts for information contained on pagan practice, for developing interpretations of the pre-Christian period. There is also an emphasis placed on developing interpretation on features of small farming communities for charting transformation, as part of religious precepts, as something more than ‘ritual’, of the pagan to the Christian. Everyone is in agreement that facets of pagan practices lived on, as transforming tradition through to the modern period, although the form has been largely ignored in analyses of actual traces.

There are of course distinct differences with the introduction of a new religion, and the framework of interpretation put forward in this volume includes aspects of difference: The past is different; people did not have your common sense; logic is time and culturally specific. But, through the progress of time, any interpretation, certainly for the later prehistoric period, should probably be recognizable at some level in the Middle Ages. The anthropological, and historical, theme of ‘inversion’ is taken up here, and is considered to be invaluable in considering pagan to later practice.

Chapters 2-7 can be summarised as follows:

Chapter 2: The chapter begins where the earlier study left off through interpretation integrating the dwelling with the immediate settlement area. Two sites (300-350 AD) are discussed: Schagen Muggenburg-I & III. Both are characterized by excellent preservation of both surfaces and materials deposited in features, including bone and wood. Pits are the key for supplying the code for suggestions within the networking analyses of finds, also in relation to the pit-deposits of livestock and humans. There was an economic base of livestock with a great emphasis on cattle, and a small degree of cultivation, in line with the outcome of settlement research for the broad area over the last thirty years. Woltering (2000; and see references therein) has provided the most recent, and most extensive discussion and analyses to date.

Within the present study, attention is given to the way beasts and their parts were deposited, and to the importance within the settlement of bone, as object of deposits. The patterned deposits led to an interpretation that all pits were dug and filled within seasonal ritual. Attempting to retrieve cycles of primarily animal husbandry with an interpreted cycle of ritual was influenced by Bourdieu’s discussion of the Kabalye’s mythical and agrarian year (Bourdieu 1977, 96-158) (fig. 2).

Chapter 2 is concerned with basic delineation for archaeological materials of a level of structure as networked deposits and features whereby the interpretation moves towards meaning in the

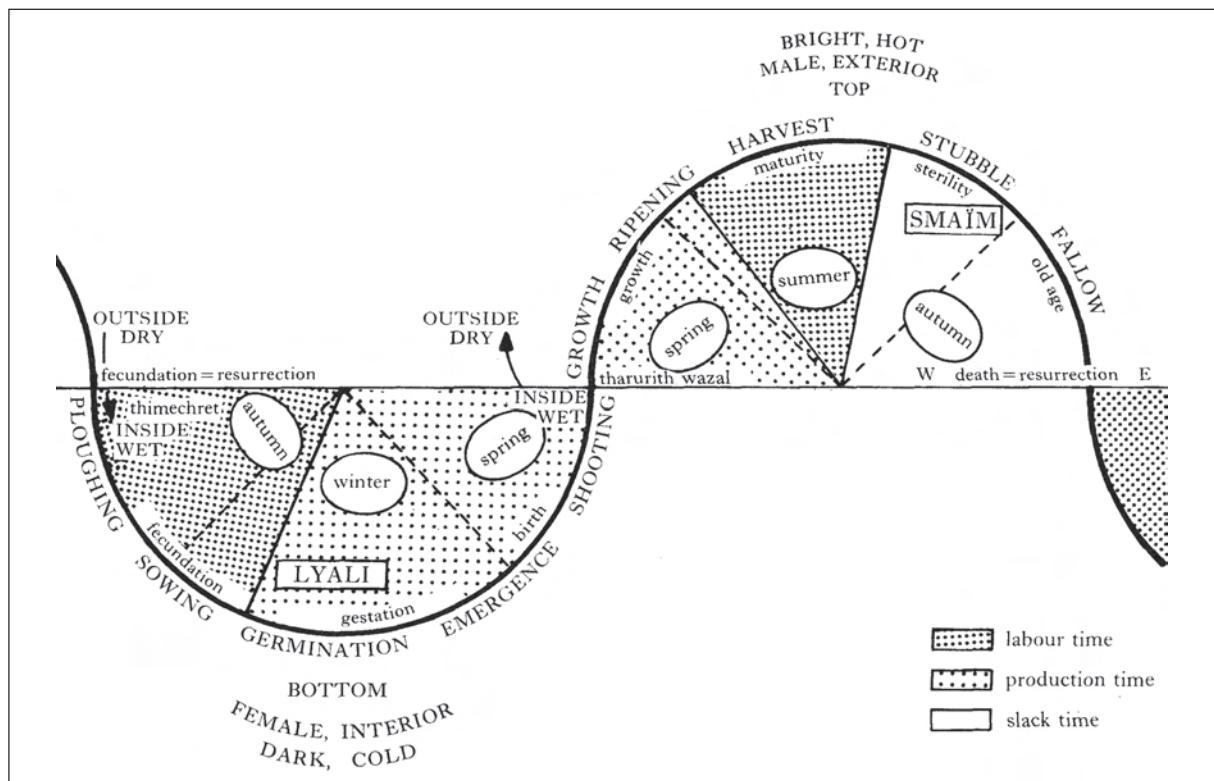


Figure 2 Bourdieu's (1977, 134) scheme of the farming year and the mythical year.

subsequent chapters: The grouped pits are modelled as marking seasonal ritual, and an attempt is made at integrating economic activities bound to time, that is, the seasonally imbued, small-scale farming, subsistence economy. This is also where Hodder's suggestion of networks (see above), as the term is here understood, can be taken at a most literal level: the pits as marked space, as nodes, containing materials bound through similarity to other pits across settlement space.

'Time' is inherent in this literal analysis, as through the duration of habitation, pit digging is assumed to have been part of the settlement process, marking and in ways re-iterating past time, through the similarity of deposits made. Pits were also dug mainly as groups of three.

Classical and medieval texts suggested the points within yearly time of ritual focus, in combination with available ageing indications of slaughtered animals, remains of which were deposited in pits and other features. A seasonal model for the pit groups is put forward, but the point is not belaboured that these pits have to do with seasons, on the basis of the contents of pits. This comes out in a different form in Chapter 4 and 6, within the facet of spatial placement of features.

The Schagen Muggenburg-I site was sufficiently excavated to suggest a structured settlement area, which is further interpreted through structuring principles of lived space. The burials of animals and humans seem to mark a horizontal axis within a life-death strategy of demarcation across settlement space, a process of demarcation that is cyclical, but additive, as it was achieved during settlement time. The result is a static archaeological plan. The site of Schagen Muggenburg-III was less extensively excavated, but the seasonal model is suggested to apply through similarity in the code of specific pit deposits. The pits here are also mainly grouped in threes.

Chapter 3: The centuries long discussion on foot-symbols is taken up for the broader context in relation to the Schagen foot bone elements, which interweave (that is, network) many features, as deposit. Pre-specialized archaeology is considered through early 20th c. to 1960's texts on the foot-symbol discussion, but it is revamped.

Presently used metaphors are seen to encompass, or impose, present meaning on types of seemingly most insignificant Schagen bone materials in pits, not ignoring double hermeneutics. A method is implemented which might border on deconstruction through regarding modern metaphors of life's path, finds-literality of the foot bones of livestock, the broad economic concerns within the seasonal-cyclical, and depositional context. By regarding the past discussion, but also by looking at the bones themselves, a form-analogy seems better to enfold facets of meanings than those put forward by previous authors, and the symbol is determined to be non-arbitrary.

Some foot bones were also probably used within divination. The active use of foot bones as lots/life's-lot is placed more widely in use-categorization within a mentality of divination/prognostication. Classical and European missionary texts are used for briefly examining an apparently general tradition of prognostication practices by pagans and Christians. The belief-system, as well as the use of everyday materials within action, is illustrated. Prognostication remained (remains for some) important, although other materials than bone and wood seem to have been substituted for divining a higher will of a different god within the Christian period. Missionaries did not maintain the other gods did not exist; they did associate the efficacy of materials and worship of the devil and his demons, the pantheon of pagan gods, with actively used, small, everyday materials such as those recovered from pits.

Bones are also brought into connection with trees. Similarity of form, and linguistics of tropes, as an excursion into widely used taxonomic form, provides an interpretation for an inverted, pagan, structuring relation of animal and human bodies and body parts of trees. Hereby, a facet of cosmology including a 'World Tree' is taken up. A few textual examples are given, and for the data, included are the deposits of non-worked wood, within spheres of meaning for the late prehistoric Schagen sites. Finally, divination is drawn back to contracts with the gods, via Marcel Mauss (1990 [1950]), toward materials as agents, as an interpretation for depositing some particular materials planted in features of the Schagen sites.

Chapter 4: If 'stars' seem a bizarre subject for archaeologists, one should read Chapter 5 first, before this chapter. This chapter was placed before Chapter 5 because the level of interpretation is commensurate with that of Chapter 2, as patterns have been delineated within analyses, and networking is again the method used. The patterns are shown in the drawings, and the drawings do need more attention than is general for publications of archaeologically recovered sites. One can decide for oneself whether or not the large patterns seem to be reproduced. The itemized deposits of each position, as stated in the text, are important for demonstrating what seems to be non-coincidental occurrence of deposits at certain positions.

Pit groups and the placement around settlement place are interpreted as forming large-scale figures based on star – constellation – patterns. This construction is on a larger scale than the pit groupings described in Chapter 2, as it has to do with exact placement of the features across settlement space. Four constellation patterns are suggested for the Schagen Muggenburg-I features, whereby nearly all of the pit and linear features are interpreted as to spatial positioning. This is a dimension in addition to the seasonal criteria discussed in Chapter 2 of pit interpretation.

A repetitive action of ritual, such as the seasonal explanation of dug features set out in recognizable patterns – landscaping a settlement in line with parts of a perceived sky landscape – is only interesting as an interpretation if it is present elsewhere. The tradition, somewhat differently executed, was thought sufficiently indicated for three other sites regarded for this aspect to present the interpretation. (The recent excavations of the Broekpolder have been regarded for these patterns, although results are as yet inconclusive (Therkorn et al. forthcoming)). Here, for the sites discussed, something of an institutionalised practice is concluded.

Many features at the three earlier sites are taken up within a similar spatial planning using the drawn models from Schagen Muggenburg-I. The earlier sites discussed are two within the Velsbroek and one in the Uitgeesterbroek Polder (fig. 1). At least two constellation patterns are recognizable back through time to the earlier Iron Age. Re-marking in the medieval period of parts of a pattern at one site in the Velsbroek shows a continued concern with the place, and the deposits are such as to suggest direct referencing and meaning similar to the earlier period. Horse bones had become iron horseshoes, within the intervening centuries marking constellation Horse/Pegasus. The tradition of setting out the figures as recognizable features thus gains a time depth of at least 1600 years within the region.

Chapter 5: As Chapter 3 provided some background and extension of the discussion based on data presented in Chapter 2, Chapter 5 provides background of sky phenomena studies in somewhat contextualizing the regional interpretation of Chapter 4. Anthropological and historical examples are given of how inhabitants of the world are doing interesting, culturally specific things with the stars. Also touched upon is the alignment debate among researchers of prehistoric societies. The literature on the subject of cultural astronomy has become enormous (cf Ruggles 1999). Less attention has been given to historical texts of European areas, and these are brought to the fore for showing similarities: for some Greeks, Romans, Germani, church and popular culture (folk) matters.

Reading missionary texts, it is difficult not to take them literally as referring to pagans revering sky phenomena, and even gods as planets, for example. The subject has been hotly debated within text analyses, but the direction of debate is also part of shorter-term mentality. Through a very brief examination of the last 150 years of scholarly research as mentality on the subject, the blockage to acceptance of cultural astronomy in the present can be somewhat understood. The mid-19th c. paradigm of the evolution of religion, still (implicitly) informing mentality of what is acceptable for ‘astronomy’ within small-scale societies gained the upper hand at the end of the 19th c.: Prerequisite for doing anything with the sky, in any type of organized fashion was a stage not reached by small-scale society within Europe, until the advent of the Middle Ages, influenced by knowledge of Babylonian and Greek precepts, as civilizing influence. The anthropological examples at the beginning of the chapter belie the point.

Whether or not solar and astral interpretations are something undergoing cyclical fashion or if acceptance has to do with modern mentalities on the ancestors will remain to be seen. The subject has been gaining more than specialist attention in the last thirty years:

‘What is of primary human interest may admittedly be the cycle of plant and animal growth, reproduction and fertility, and finally death, but the *correlation* of these things with the cycles of the Sun, Moon and stars is almost universal. Those who try to dismiss all modern astronomical analyses of prehistoric monuments as a misdirection of energy from some modern scientific Zeitgeist must come to terms with this fact

of history. Not that it is a very surprising fact, for whether we like it or not we are all subject to these cycles' (North 1996, 532).

Chapter 6 : The present work is different from the discussion referred to by North, as the interpretation on cultural traces referring to cultural astronomy is not about monuments, but through everyday places and sequences within single-family settlements. Suggestions are made as to integration of features, daily life, cycles and materials of economy, and meanings of materials through various spheres of concerns.

Within seasonal cycles, ritual is interpreted as punctuating the year, and for the region, times also including digging and filling features marking settlement place. While Chapter 4 described the static forms marking star patterns, in an archaeological retrieved static series of plans, discussed in this chapter are the movements of those constellations, marked in the sites, over the sites. The directions of the laid out features, to stars and sun, as telling time, is briefly discussed.

Movements in the sky and the inbuilt indication of interest with the sun, as part of the constellation figures, are used to specify further the seasonal model of ritual deposits that was outlined in Chapter 2. Other dimensions of marking are also discussed as to structuring concerns and principles of inversion in size and direction – vertical, horizontal, mirrored, and scaled methods of imaging – all based on combinations of archaeologically gained data.

As well, by taking the directional in combination with materials, within particular settings, suggestions are made on gender of star patterns and positioning. The settlement areas covered by the patterns also gain sense as to gender and cosmology when taking into consideration the differences between the earlier settlements and the later site of Schagen Muggenburg-I. This sets up the inversion of lived space with the night sky, and night into day: who/what is out and about, when. Regeneration of materials, and gifty things stuffed into star-pits, become connected with conceptions of the afterlife, and expectations of the otherworldly.

There are numerous topics that could have bearing on the traces interpreted, and a few subjects are briefly advanced, in addition to realigning ideas on simple farming life and what is known (historically) on Germanic cosmology. This chapter is also a start towards illustrating more anthropological/sociological precepts:

'Owing to the extremely important social function which it fulfils in orchestrating the group's activity, the calendar is one of the most codified aspects of social existence.... Practical taxonomies, instruments of cognition and communication which are the precondition for the establishment of meaning and the consensus on meaning, exert their *structuring* efficacy only to the extent that they are themselves *structured*. This does not mean that they can be adequately treated by "structural", "componential", or any other form of strictly *internal* analysis which, in artificially wrenching them from their conditions of production and use, inevitably fails to understand their social functions' (Bourdieu 1977, 97).

Orchestrating the marking of the death of the settlement by covering them with mounds is regarded through a larger regional scale. This aspect returns to one of the features already noted for the region, but provides an interpretation of why it may have been done. The superstructure of the dwellings was first dismantled, leaving the floor level undisturbed, and avoiding disturbance of hearths. This is a distinctive pattern for many of the single farmstead sites to the north-northeast of the course of the Oer-IJ, for at least the period of the 7th c. BC to the 4th c. AD,

the Early Iron Age to the Late Roman Iron Age.⁷ The tradition also undoubtedly contributed to the excellent preservation of the structures under these mounds. For the Assendelver Polders in any case, the ‘wet feet’ theory as part of archaeologist mentality was shown to be unacceptable in interpreting why these mounds may have been raised, and considered more likely was a reinforcing of the house location (Abbink 1986; Therkorn & Abbink 1987, 141–142). Brandt and Van der Leeuw (1987, 345) also suggested factors to do with ‘visibility’. Both suggestions would seem to apply.

For the area, more sites have been excavated, and it now appears that those covering abandoned dwellings with low mounds lived ‘above’ the natural border of the Oer-IJ (fig. 1). The tradition may also define a cultural entity, such as a tribe. Along with the habit of shifting building location, thus preserving the integrity of the house site, a definite style of living can be determined through a consistency of marking place.

With the mounds of Schagen covering literally deconstructed dwellings and the large star-images of pit formations, the dead settlement is suggested to have been reified into another type of landscape, co-existent with lived settlements, forming monuments, and also ‘functioning’ within cultivation activities. Preserved within the landscape, the mounds are visible and are created landscape features of the settled coastal zone.

As a landscape of past settlements, the settled landscape, and sea to the west, with a broad beach in between, gain an interpretation of positioning within a cosmological landscape, as an image of the heavens, on a larger scale than the single farmstead. Tri-partition of a living settlement at the small scale is found similarly structured at a regional scale when covered with a mound. With the physical and conceptual boundary of the sea to the west, the directional of up-down as horizontal plane is seen as the major spatial landscape, correlated with that of the heavens. It is also the means by which some additional interpretations can be put forward for tri-partition and cosmological perception of space in regarding well-known materials in the next, and last, chapter.

Chapter 7: Six examples, only, from outside the region of excavation, and within other specialists’ area of research, are briefly regarded in how ‘stars’ and something like the concerns sketched for the Schagen inhabitants may be illustrated elsewhere. These topics are all only briefly discussed and serve mainly to frame future aspects of study. The examples derive from the Later Bronze Age to the 13th century AD, in different scales and different materials.

The White Horse of Uffington could be landscaping the horse constellation, and be seen in conjunction with Dragon Hill, as constellation Dragon. Celtic coin iconography is interpreted as categorising Day:Night for the proverbial two sides of the ‘coin’. Germanic bracteates, better understood as to pictured mythological figures, are considered to be similarly Night:Day imagery. As the images of myths can be so understood, so can the place and movement of the textual myths. Yi-Fu Taun has stated:

‘Astronomic time is experienced as the sun’s daily round and the parade of the seasons; its nature is repetition. Mythic space is often organized around a coordinate system of cardinal points and around a central vertical axis. ... Has the human mind perceived and organized space in accordance with the biological experience of rhythmic time? Rhythm or period has two models: the pendulum that swings back and forth along a line, and the clock whose hands move in circles’ (Yi-Fu Tuan 1978, 714; cited in Lyle 1990, 92).

For the northern Germanic mythological setting, the suggested perspective of ‘astronomic time’ is distinguished as a dual focus on night features and the sun. With the settlement interpretation, the above can be reconsidered within a Germanic base of the dialectics of night and day, and related to ‘mythic space’ within cycles, but moving towards the end of the settlement. An interpretation is put forward of a basic stratification of textual landscaping in those works most often cited for understanding Germanic mythology, the *Poetic Edda* and the *Prose Edda*. The opening poem of the *Poetic Edda*, the *Voluspa*, is considered. With the constellation figures of the Schagen settlement, the action within the *Voluspa* becomes pinpointed as three of the constellations are recognizable and other figures then gain a relative space/time, as stanza progression. At the most literal level, the *Voluspa* can be read as a primer on constellation movements, literally ‘telling time’ of one year, and at the same time, of the coming year, if charted during one long winter’s night.

Following the settlement indications of a constellation, Snorri Sturluson’s creation myth on Audhumla, the giant cow of the *Prose Edda*, could be a 13th century telling of the constellation figure susceptible to risings and fallings. A few other famous cows are considered, as transformed pagan understandings still relevant within folklore, but also with a remembered sky context.

The last text, the Revelation of John, is very briefly mentioned whereby a reading of literal pagan space is evident. Suggested is that John of Patmos was eradicating a pagan system of perceiving the sky as three parts, while substituting a new vision of the sky as the unified kingdom of heaven, within Christian belief and myth.

Questions of origins of perceiving the night sky – as a form of tri-partition – have been avoided throughout this present work. The subjects of this last chapter are very briefly discussed whereby the main reason for mentioning them at all is to give an idea of how the interpretation gained from mainly settlement features and materials can be applied for other categories of finds. Also implied is where future research could go forward in other areas of research and regions, with testable patterns of the placement and spatial arrangement of features. Pits, across Europe, are not well understood and the various interpretations put forward in this work could go to framing an integrated approach to specific ritual, as part of religion, and interwoven concerns.

Chapter 2 Schagen Muggenburg-I & III: two sites, three seasons, and a farmstead each.

Two single farmstead sites will be discussed here that provided frameworks of interpretation for the coming chapters. Schagen Muggenburg-I (SM-I), excavated in 1983-84, is dated to around 300 AD and had features covering at least 60 m x 100 m. The second site, Schagen Muggenburg-III (SM-III), was situated 450 m to the southwest and dates to the early to mid-4th c., and was excavated in 1990.⁸

Neither of the sites was excavated completely, but the features that were recovered show such similarities in content and layout, and material categories and preservation, that they are of particular value for interpreting the character of life of the inhabitants and practices of long tradition within the region. Interpretation of the two sites will include designating them as settlement and ritual sites. In this and subsequent chapters, the integrated, macro-conceptual importance of settlement areas will be explored through various facets of the data, some of which is directly a result of excellent preservation conditions, as set out in the section on stratigraphy.

Further in this chapter are basic descriptions of the dwelling features, the linear features and the pits, which are divided into shallow and deep pits. The shallow pits contain bone deposits, including burials of animals and people. The deep pits, containing most of the materials, are used to form a seasonal model of ritual through analysing the spatial groupings and pattern of deposits within each pit grouping. The interpretation stems, not by looking at the large deposits, but by considering the small, compact types of bone elements common as deposits to both shallow graves and the deeper pits, as a form of networking analyses. Ritual intent is assumed for the grave pits; a seasonal framework of ritual is postulated for the deeper pits.

The interpretation of seasonal ritual connects with facets of the yearly, subsistence cycle, and informs the reason of pit-features being dug at all, and deposits being made, throughout duration of habitation at the two sites. The materials, as selected for deposit at particular parts of the settlement are then regarded for the activities they represent.

The excavated extent of Schagen Muggenburg-I was greater than Muggenburg-III, and lends itself to a more detailed interpretation of settlement structure in extending the interpretation of settlement space as cosmological place. Facets of meaning become increasingly specified within seasons, time as activities and cosmology as settlement layout in subsequent chapters starting from the baseline of data and interpretative framework presented here for these two sites.

2.1 GEOLOGY, STRATIGRAPHY AND PRESERVATION

The estimated original natural and cultural layering is shown in Figure 3 as it compares with that actually recovered. Both of the settlements discussed in this chapter were originally located on an oxidizing peat accumulation estimated to have been 70 - 130 cm thick during the time

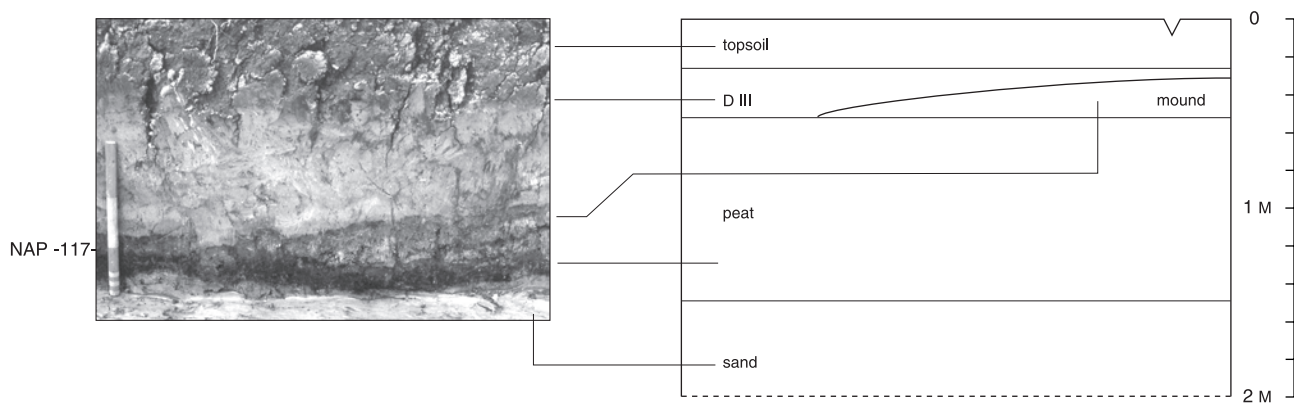


Figure 3 General stratigraphy of the two Schagen sites, showing the recovered situation (l) and the reconstructed (r).

of habitation. Over the course of the intervening centuries, the peat was further reduced to the recovered layer of humus rich clay, three to five centimetres thick.⁹ The reed peat accumulation rested on marine deposits of clayey sand interleaved with thicker layers of clay. Remains of the settlements were recovered 30–40 cm under the modern field level.

Features had been cut originally through the layer of peat. Those constructed on the peat surface – domed hearths and clay flooring – had subsided over the centuries but were recovered well preserved and intact. Linear and pit features had been back-filled with cut reed-peat turfs. Pits dug to the top of the sandy-clay sediments, thus originally only through the overlying peat, were found as concentrations of materials, including bone. Features when found cut only slightly into the sub-soil sometimes contained wood as well. Bone was well preserved even when recovered lying on the clayey deposits, and wood was in an excellent state of preservation whenever found. Both sites were covered at the end of habitation with low mounds made up of cut turfs, clay and immense quantities of bone and other materials. Parts of the mounds covering the dwellings were set afire at both sites. Ploughing was done on the mounds of SM-I in the early 4th c.

During the excavation of SM-I, detailed excavation of mound material overlying the original, but subsided, surface layers was carried out, and stratigraphic distinction could be made between materials on the original surface, and those of the mound material. Appendix 1 includes finds-drawings from surface and mound layers for SM-I. For SM-III, separation of mound materials from original underlying surface could not be achieved within the time allowed for excavation.

The early medieval period was represented by a few narrow gullies filled with heavy clay, a result of inundation in the 13th century. This heavy clay formed a deposit 25–30 cm thick over much of the area. During the later medieval period, wide field ditches were dug at both sites, destroying earlier traces.

Although the peat surface at the SM-I site had oxidized almost completely by the 13th c., the Roman Iron Age pits that had been dug through the original peat surface, and further more than 20 cm into the underlying sandy-clay sediments, were recovered containing non-oxidized peat. The re-deposited peat consisted of natural reed and other organic remains. Deposited materials recovered from this peat matrix were also excellently preserved and included such fragile materials as mice skulls, leaves, twigs, and pieces of rope. Organic finds were in a similar state of preservation at the somewhat later site of SM-III. However, the re-deposited peat showed a greater degree of oxidation, whereby natural reed inclusions were no longer recognizable.

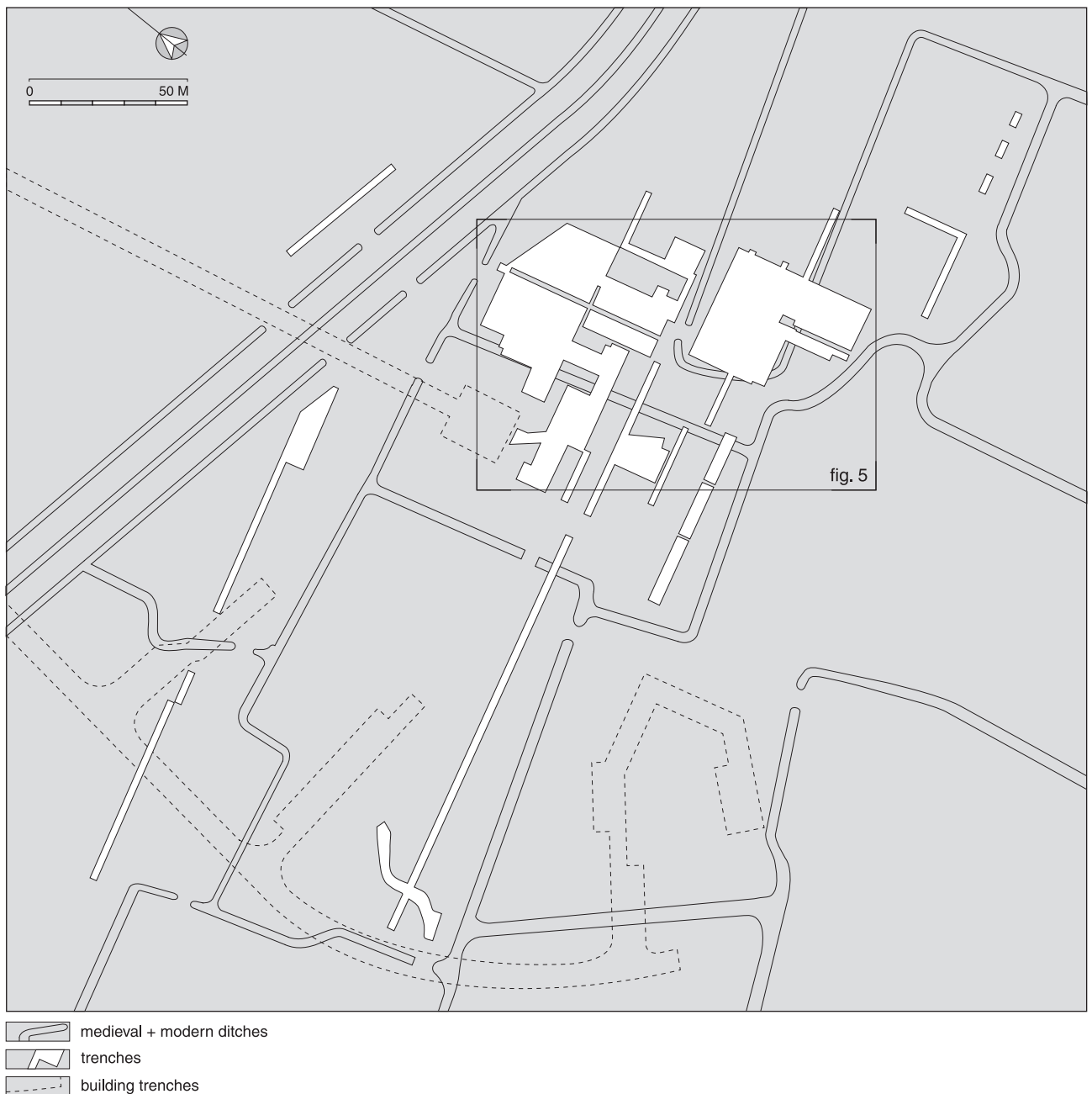


Figure 4 Overall plan of Schagen Muggenburg-I (SM-I), with situation of the trial trenches, roadway trenches and main area of excavation.

2.2 SCHAGEN MUGGENBURG-I (SM-I): C. 300 AD

Figure 4 shows the overall plan of SM-I, including main excavation area, trial trenches and those areas where road trenches were dug to the top of sandy-clay subsoil.¹⁰ The ditch system shown, disturbing prehistoric traces, dates to the 13th c. The area with features is given in Figure 5. Excavation revealed two main areas of activities separated by a central area, which had few features. To the north, an area with open-air hearths, surrounded by subsided surface spreads of charcoal and iron slag indicating metalworking as a main activity here. Four human burials and

a pit with cremation remains are also associated with the northern area. Sixty-two meters to the south, the plan of a small farmstead was recovered. Pits and linear features were dug within the northern, central and southern areas. The features shown on plan are considered to be contemporary with the habitation by a single family within an intensively used settlement area of about one-half hectare. The dating of about 300 AD is based on the Roman coin of Postumus (259–268 AD) and ¹⁴C dating.¹¹

Below, features are described of the dwelling, outside hearths and linear features. The remainder of the features, the pits, are subdivided into shallow and deeper pits, the first mainly with burials, and the deeper pits with numerous types of remains. Features and materials are given in Tables 1–8. For the Latin designations of the common names used below, see Table 1a & 1b, for bone, and see Table 7c for wood. A selection of feature sections, detailed drawings and recovered materials are shown in Appendix 1. George Maat has described the human remains in Appendix 2.

2.2.1 DWELLING (FIG. 6)

The remains of a small structure (5.4 m x 10–12.5 m) were found in the southern part of the excavated area. Of what could be defined, the most salient features were the floor areas of clay and a multi-phased hearth, a deposit in the floor and the materials of a house-ditch along one side.

structure: Little evidence for principle posts was recovered. There was one post-hole near the hearth that had been sunk into subsoil. Other indications for the positions of posts, as shown on plan, were shallow depressions, sometimes defined by sherds on edge. Enough post depressions were recovered to show the structure was typical for the region (and NW Europe in general) in being three-aisled, longitudinally. The central aisle was c. 3 m wide. Posts had evidently not been driven further than the thickness of the peat deposits. As the peat surface on which the house had been built had oxidized, the post-holes had disappeared as well. Features resting on the peat had remained intact during subsidence.

floor: A clay floor had been laid down originally over the entire length; the floor was 3–5 cm thick. Part of the perimeter of the floor at the north-eastern end had stake impressions indicating the floor had been laid down subsequent to enclosing the area with wattle walling. The clay had been pushed up against and somewhat around the stakes, which were spaced 30 cm apart. A pit (f352) had been dug near to the western short wall, through the flooring, at some point during dwelling use, as had another pit, f212. After deposits had been made in f212 and the pit back-filled, the entire width of the dwelling was re-laid with another layer of clay; there was also subsequent re-patching of the floor directly above the pit probably necessitated by subsidence of the re-deposited peat fill of the pit.

floor deposit: A large clay object in the form of a giant spindle whorl, and too large to be considered a loom-weight, was found imbedded in the area of renewed flooring (fig. 6).

Figure 5 SM-I: Plan of area with features.

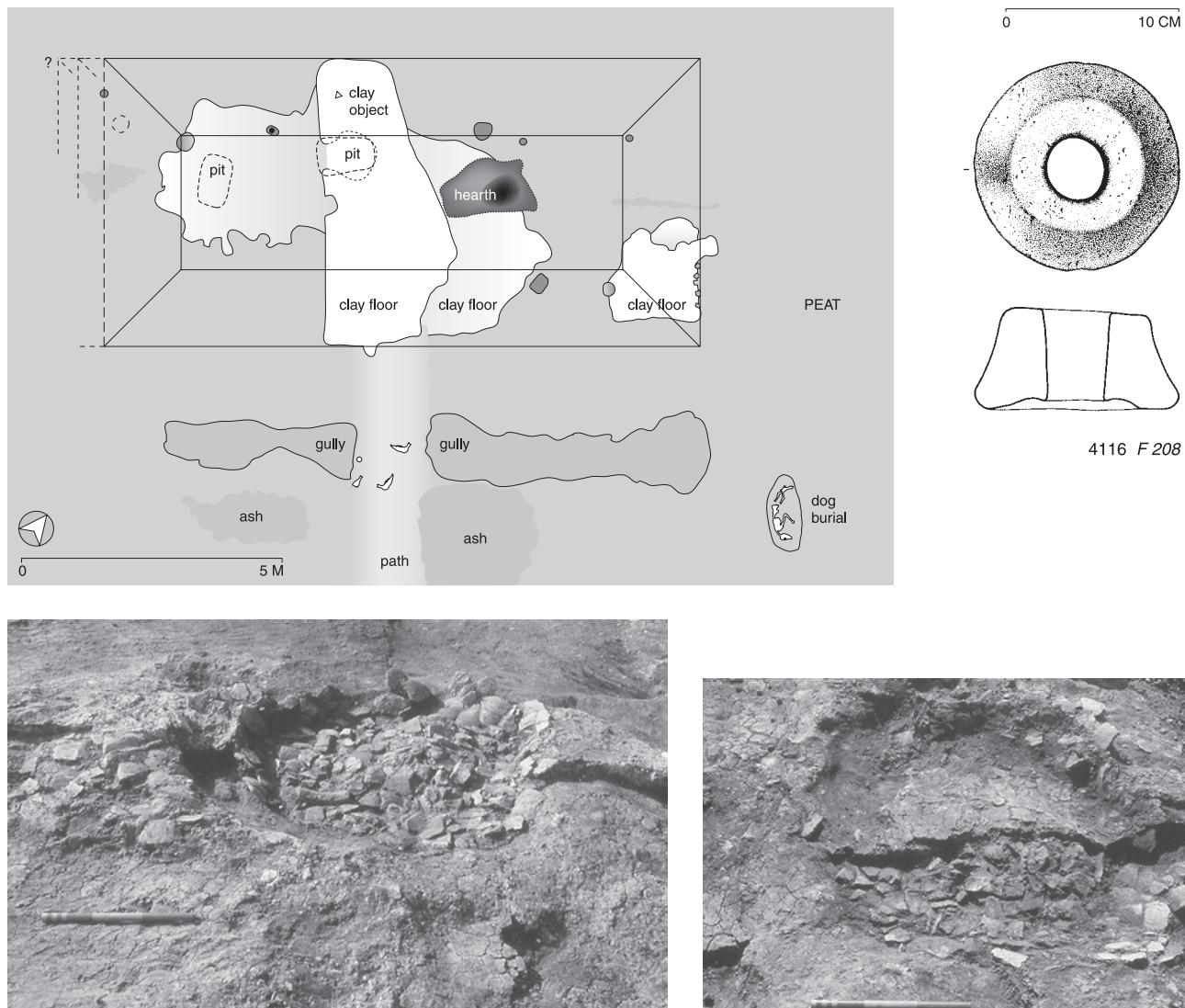


Figure 6 SM-I: House plan (cf fig. 5 for positioning). The clay object shown on the right was found imbedded in the floor. Two views of the hearth are shown below – on the right, with clay capping partially removed, and on the left, totally removed, revealing the sherd paving.

hearth: A hearth base of oval clay was found under the later clay floor. The hearth contemporary with the re-laid floor was carefully constructed and had been renewed once by adding an additional layer of sherds and clay. Both phases consisted of stacked and horizontally arranged sherds from various cooking pots. The hearth had a roughly trapezoidal use surface of clay enclosing a domed construction of stacked sherds covered by clay. The oval dome was the surface on which the fire had been built (fig. 6).

Refitting of the sherds making up the hearth did not produce whole pots or even complete profiles. Sherds from at least four individual pots had been used (Abbink 1999, 89). The fuel used on the hearth was reed peat, readily available from the natural landscape. Experiments with burning peat recovered from excavated pits, carried out at the site in 1984, produced a similar yellow ash as that recovered from the cracks in the hearth, and to the end of the hearth over part of the floor.

house ditch and entrance deposit: A concentration of a 1.20 m by 10.40 m stretch of finds, mainly sherds, was found extending along the southern length of the dwelling (tab. 5:III, f240). It seems likely there was at least along this side of the house a house-ditch cut into the original peat surface, but not as deep as the underlying sandy-clay sediments. Again, as with post-holes, the feature itself had disappeared as the peat oxidized. The deposited materials had remained horizontally *in situ*. The concentration stopped at the ends of the long wall along the southern side. There were no concentrations of materials noted around the other sides of the house making it unclear if a ditch extended along these sides.

Three near-complete ox mandibles and a block of pink granite, probably originally deposited in a shallow pit, were found at a break in the sherd concentration. Two ash dumps to either side on the outside surface also indicate a break. This is also the area marked within the dwelling with renewed clay floor, and the indications taken together make it likely at least one doorway is marked here through the southern long wall. Other openings could not be defined. As opposing doorways through long-walls is the rule within the region, the floor deposit mentioned above of the large, spindle-whorl shaped object is probably an indication for the position of an opposing doorway through the northern long wall.

2.2.2 OUTSIDE HEARTHES AND SURFACES

southern area: Three hearths, one flat-rectangular (incompletely excavated) and two domed ovals, consisting almost entirely of a burnt orange clay, were found to the east of the dwelling (fig. 5, see legend). They were not associated with surface finds to indicate function, except the spatially associated pits, and will be seen within ritual in Chapter 4.

northern area: The remains of five outdoor hearths with weathered surfaces were found in the northern area. They consisted of sherds mixed with clay (figs. 5 & 7). The clay had been baked to a yellow orange. Concentrations of iron slag and charcoal on the surrounding surfaces of the group of three hearths indicate metalworking and use of the hearths for at least this activity. The remains of misfired, vitrified, pottery in the immediate area might indicate pottery was fired here as well. The area to the east of these three main hearths had surfaces dotted with hearth dumps, and the remains of earlier hearth bases, *in situ*.

The fourth, large, oval hearth more to the west, by pit group 5 (fig. 5), had no associated surface finds.

In addition to the activities of metalworking, and possibly pottery firing, for the first three mentioned hearths, all four hearths will be interpreted in the light of rites carried out in the area and the line of pits also in the area.

2.2.3 LINEAR FEATURES (TABS. I & 5)

Some linear features were cut deep enough to leave traces in the sandy-clay. An eighth feature (f279) is linear but consisted of five, successively dug, pits. All of these features are important within the interpretation of large-scale iconography (Chapter 4).

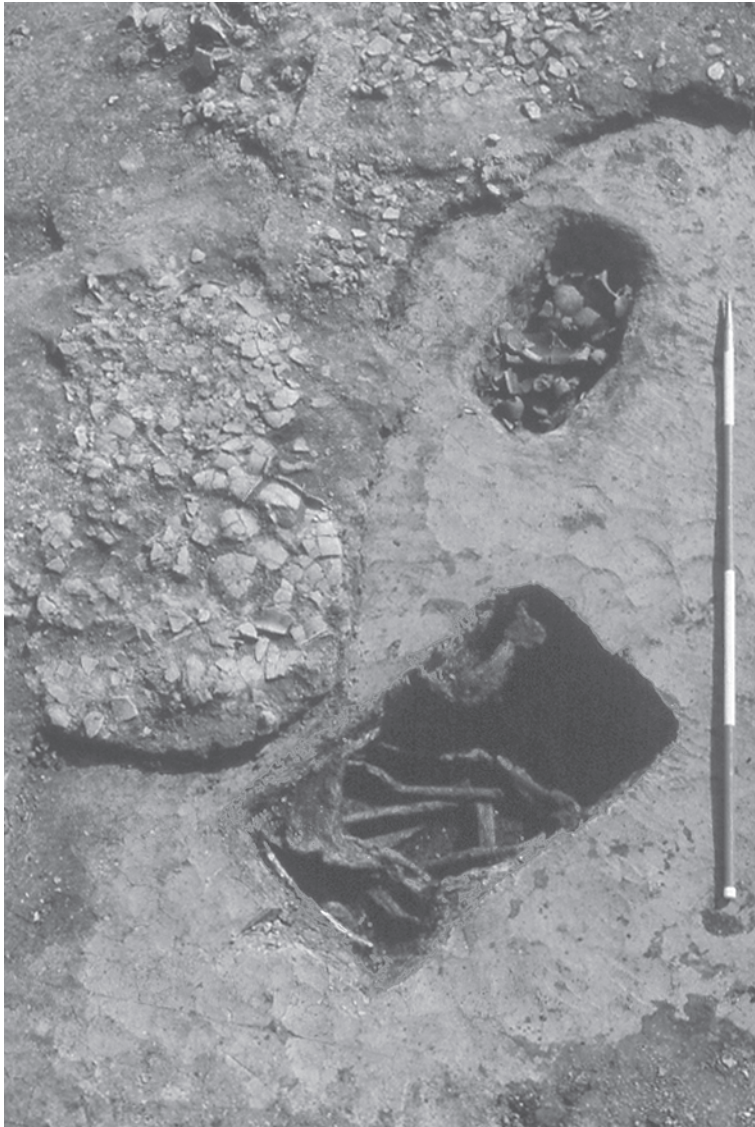


Figure 7 SM-I: Outside hearths by pits (f156 with mainly non-worked wood and f155, with pottery, both of group 6) (cf fig. 5 for positioning).

west: A two-phased ditch (f107), at least 46 m long and recovered 25 cm deep, was marking the west of the northern and central settlement areas. It did not have re-deposited turf fill, and the ditch during both phases was probably open, silting naturally during settlement duration.

The ditch was found packed with bone, 91% of which came from cattle. This is in contrast to the greater diversity of animal species represented in the pits (tab.2). The Roman coin (Postumus) and a triangular clay object were recovered near the northern extent. The ditch length (f162), 30 cm deep, at right angles to the southern extent of f107, contained no finds. Trial trenches (fig. 4) over the area to the west of f107 contained no features or finds. Feature 107 is therefore considered to have had a bordering function between settlement place and the west of the site.

central area: Three lengths of features, back-filled with turf, were found in the central area. The depth into subsoil varied: 16 cm for f17; and, about 45 cm for f102, f110 and f353. Of these, f102 contained the most deposits, including horse bone, Roman import pottery and metal.

southern area: Two stretches of linear features were recovered to the south of the house. They seem to border settlement space on this southern side. The slightly curving length (f273) was 45 cm deep at the eastern end and here contained deposits of wood and bone; the ditch was only 10-15 cm deep further to the west.

Feature 274 was cut 25-30 cm deep into subsoil and contained a complete dog's jaw at the very end and a large samian sherd cupping ash somewhat further along to the west.

pit row: A linear feature consisted of four pits (f270, f279, f257, f263) dug in sequence and cut overlapping south to north. A fifth pit (f258) somewhat out of line on the west, contained a small complete pot, standing upright, mouth opening covered by a sherd. The pot contained ground water only.

2.2.4 THE SHALLOW PITS (FIG. 8 & 59; TABS. I & 5)

Pits comprise the remainder of the recovered settlement features. These can be categorized in the first instance through depth. Eleven pits were cut through the peat layer only, whereby deposits were placed at rest on **top** of white sub-soil. Ten of these shallow pits contained (near) complete skeletons, bone bundles from ox and horse, human inhumations and cremated human remains covered by inverted pots. (Only one human bone element, a partial pelvis from a man, was in a deeper pit f27, discussed below.) One pit, but without burial remains, is included in this category of shallow pits. These features, cut only through the original habitation surface of peat, would have been at least 70 cm deep, originally.

Shallow pits with human remains (appendix 2)

The human remains were analysed by George Maat, described in his report of 1986 (Appendix 2), and summarized here.

f345: A grave-shaped pit dug to the top of subsoil contained seven pots, inverted, each found covering a small amount of cremated bone. The pots had collapsed with the subsidence of the peat, and were recovered as sherds over and infilling the rims (fig. 8). A fragment of melted bronze was found adhering to one of the pots rims. The vessels used to cover the cremated remains were large (Abbink 1999: groups 3 and 4), including one that was the largest of the site. All but one vessel showed signs of secondary oxidation and some burning. Details of construction and fabric point to manufacture by the same person (Abbink 1999, 244).

It was not established if the cremated remains represented seven individuals. Definite, however, is that six of the pots were covering bones of adult remains, whereby one pot covered bone which was identifiable as being from an adult woman. All of the cremated bone had been gathered during excavation and considering the small amount under each vessel, it might seem likely that the remains from one person had been distributed under the seven pots.

Other materials accompanying the pots and cremated remains in the pit were a foot bone and the pre-maxilla of a horse. The part of the upper jaw is particularly important for the large, iconographic-figure interpretation and 'Horse's mouth' position, in combination with inverted pots over cremation remains (Chapter 4 & 6). This was the only upper jaw of a horse found in features of the site.

f77: A new-born infant had been deposited on its side, head to the southeast, next to an outside hearth base, within the area of pit group 7. The skeleton was poorly preserved, but all of the body-parts seemed to be present.

f150: A 17-24 year old woman was laid to rest on her back, head to the southeast, face tilted towards the east. She had been disturbed through later ploughing and it is unclear if she had been buried with all body parts.

f322: A young man, 23-25 years old, had been placed in a flexed position on his left side, looking north, head in the west. He was less damaged than the woman of f150, but the left femur had been displaced, possibly as a result of ploughing, and there were traces of disturbance over his right femur. He was certainly buried without his feet, which were altogether absent.

f321: A man, 50-56 years old was found placed on his back, head to the west, all body parts intact. He had been much better preserved than either f150 or f322, buried at the same level and just meters away. Perhaps he had been covered with material, such as planking, although no traces remained. This older man had a wing bone from a mallard placed over his left chest.

Animal burials and bone bundles

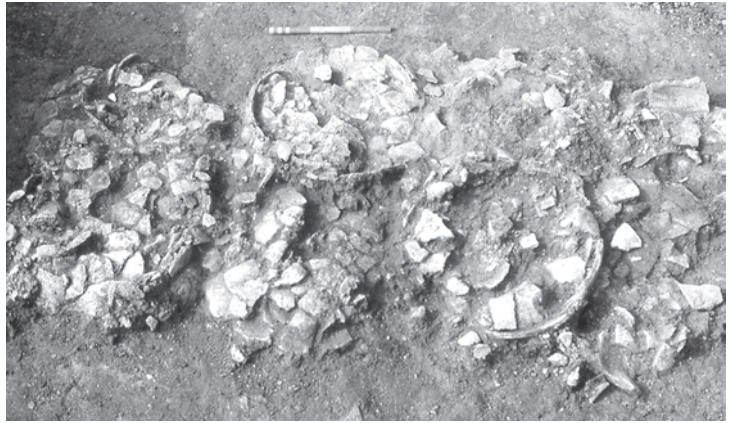
f62: A stallion, 4.5 – 5 years old, was buried on his left side, head to the west.¹² His hind legs were unnaturally folded up under his rib cage and positioned to interlock with the forelegs. The muscles/tendons at the femur-pelvis joints must have been cut to achieve such a stretched position of the hind legs.¹³ Three legs had missing foot-bones. The right hind leg was complete. The burial was accompanied by a polished bone object with a pointed faceted end, a small sherd of undecorated red samian ware, and two partial metapodia from sheep/goat.

f238: A large dog, about 66 cm tall at the shoulder, was buried near the south-eastern corner of the dwelling; it was 1.5 – 2 years old at death (index Harcourt 1974). Lying on its right side, its head was to the southeast. Not well preserved, it could not be established if it was male or female. Accompanying the burial were an astragalus from an ox, an incisor from a horse, and sheep/goat bones of an astragalus, two metapodia and a single molar. A worked bone disc was also in the dog's grave.

f250: A very large (75 cm at shoulder), 9-10 year old male dog had been buried to the north-east-east of the dwelling. It was lying in a twisted position, head to the northeast-east and not accompanied by grave-goods. At least seven toes had been cut off before burial, however.

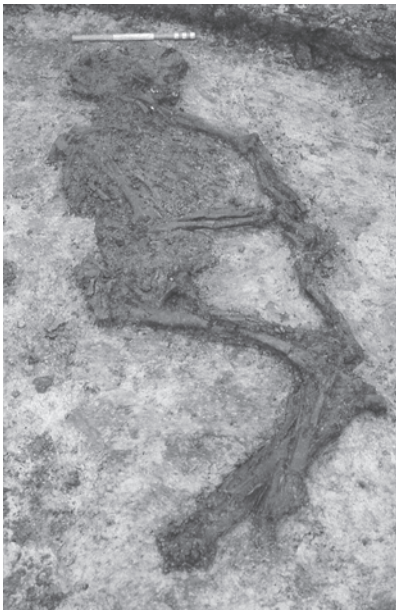
f254: A bundle of three lower legs from a horse was found to the east of the dwelling.

Figure 8 SM-I: Shallow pits dug through the original peat, with deposits placed resting on subsoil: f345 shows the collapsed pots, inverted and covering each a small amount of cremated remains; skeletons of f150, young woman; f322, young man; f321, older man; f62, stallion; f238 younger dog; f250, older male dog (cf fig. 5 for positions within the settlement).



345

345



322



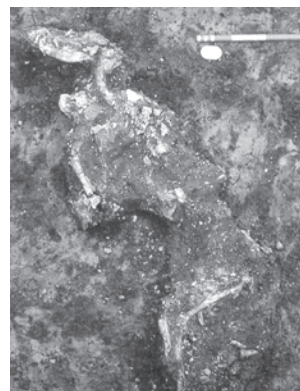
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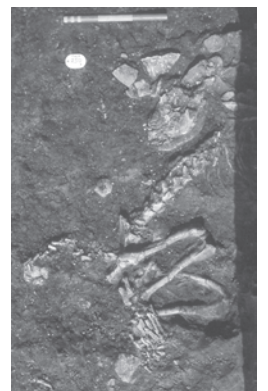
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62



238



250

f262: A compact bundle of ten bones from very large cattle included vertebrae, fore and hind legs. The exceptional size of the bones indicate they came from a non-native bred individual with a height at withers of about 1.50 m (index Matolcsi 1973). The bundle was found to the east of the dwelling.¹⁴ Complete lower leg bones of the smaller cattle accompanied the deposit as well as bones from sheep/goat.

f297: One other feature is included here through similarity with the above features. A feature dug only 4 cm into subsoil contained an arrangement of materials suggesting a small bed, as we referred to it in the field, or an empty grave. This association is based on the arrangement of laid willow branches in the feature, and the one, square cut, turf at the southern end. The single find of an ox metacarpal had been placed above and aligned with the square-cut turf. The visual analogy of wattle cradle is taken up below within the horizontal placement of the burials and the axis of settlement space discussed in section 2.2.6, below. The feature is part of three-pit group 14.

2.2.5 THE DEEP PITS (FIGS. 9 & 10; TABS. 1-8, APPENDIX 1)

Fifty-eight deep pits form the remainder of the features at this site. They had been dug through the peat accumulation and down into sandy subsoil. Pits varied in recovered depth from 35 cm to 2 m. They were originally at least 1.05 m to 2.70 m deep. All had been backfilled, and all contained a clearly recognizable fill of re-deposited peat, with the exception of f154, which was filled mainly with cattle dung. Of the peat-filled features, the natural layering had obviously been inverted when the pits were back-filled, as no pits were found with sand fills. The layer of natural peat accumulation was deposited in the lower extent of the pits, in-filling with dark earth that part of the cavity dug into white sandy deposits. And, the re-deposited peat fill always in-filled the pits to the top of white subsoil.

There was at times a clear layering within the pit fills, and these distinctions are evident in Table 5, where the deposits per pit, and layers are summarized. Why layers were different to each other was often a matter of relative inclusions of the peat matrix itself, and sections are shown in Appendix 1. Materials are also illustrated in Appendix 1, except for the native pottery, which has been illustrated by Abbink (1999). Pottery is taken up in Table 5 for sherd weight and number, and the number of vessels that were certainly deposited as complete. Bone materials are generalized in Tables 1 & 2. These and other deposits are somewhat specified in Tables 5 & 6. Category and species are shown for the deposits of wood in Table 7. Table 8 is on the remains of one feature, f248. Figures 7 & 9 give an impression of the pits. Numbers as shown on the settlement plan, Figure 5, designate pit-groups as well as the feature number.

Exceptional is the variation of deposits within the pits. It must be assumed that the materials in pits were found as deposited, except for soft-tissue or liquids, due to preservation conditions of the site. The enormous variability in pit contents, but the regular arrangement into groups of three was the starting point for the remainder of the analyses discussed in this section, and that used to model subsequent interpretations. The method of analysing these pits took various paths. Only those leading to further interpretation are specified here, and have to do with spatial and temporal scales. The sections below discuss how the framework arose for interpretation flowing from point positions marked as the duration of the settlement time:

- deep pits with clear ritual intent are linked with the shallow (burial) pits through inconspicuous, but reoccurring bone elements, which thereby link all of the pits within possible ritual intent
- the framework of ritual became developed through seasonal-time and economic cycles, suggested through groups of pits combined with indications of time of the year gained through texts, augmented by ageing indications from bone elements
- specific marking materials could be defined for difference within groups, linking the majority of the pit groups within similarity
- the two large pits, and materials, could be seen as related to grouped pits and the seasonal framework
- selection of materials for deposit were considered in association with main activity areas
- materials not selected for deposit could also be somewhat distinguished, relative to types recovered from surfaces and mound material.

foot bones connecting shallow and deep pits

In the initial stages of analysis (1985–1987), it was assumed that some pits were for rubbish disposal, but it was an assumption based on tradition of archaeological nomenclature. Other pits had contents clearly pointing to ritual intent, such as the pits with complete pots or complete cattle skulls, and little to nothing else. The key to the following interpretations however came through implementing networking analyses whereby all materials were regarded within the differing archaeological context for binding meaning within the marking of settlement place.

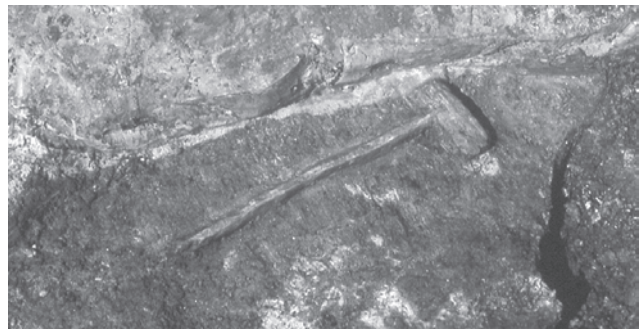
Accompanying the burials in the shallow pits described in section 2.2.4 were small deposits, of single complete bones, whereby the foot bones were most readily noticeable, also in regards to what some of the burials lacked: foot bones. In four cases at least, foot-bones were removed before burial – from the young man, horse, and older dog. The partial skeleton of a bovine (f22) did not have foreleg hooves, and they could have remained attached to the hide when the animal was skinned.

In Table 3, the materials deposited with the burials in the shallow pits are shown in comparison with three deep pits that might be generally agreed to have deposits made within ritual intent. The most noticeable deposits are designated, such as complete pots and the quarter of an ox. In addition to the fact that both shallow and deep features are pits, they also show a commonality in the complete bone finds of lower leg, teeth and other skull parts. In this respect, the features have a network of inclusion. Patterning was indicated through presence and absence of particularly feet elements, **not** through concentrating on the deposits such as human burials, finds of metal or complete pots. The backdrop to the more obvious deposits are these more ordinary, seemingly insignificant, categories of materials which link many of the features within sameness. The noticeable selection of the small compact bones for deposition in pits, for example, is evident in f223 that contains, among other things, ten complete pots. Pits are thus harmonized with very differing types of material categories.

The foot and teeth elements are known as butchery waste when the food value is taken into account.¹⁵ But this narrow subsistence function became inadequate for explaining distribution throughout many of the features. Other facets of meaning, lengthening the use-life, within symbolic intent and selection, of a bone were suspected due to the regular occurrence in pits. The lower leg elements especially are in contrast to possible eating waste representing those elements containing the greatest nutritional value¹⁶ – also found in pits, but in a fragmented state (tabs. 2, 5 & 6).



27



28



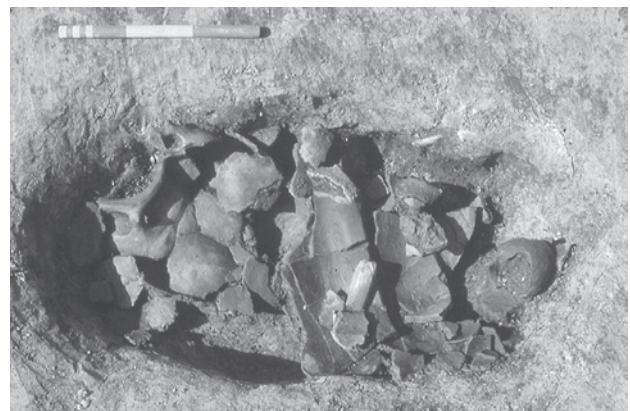
142



143



148



155

Figure 9 SM-I: Examples of the deeper pits, dug through peat and into subsoil, with feature numbers and when two layers are shown, the layer numbers (cf fig. 5 for position within the settlement).

While foot bones and single teeth deposits seem to interrelate features with burials and various other pits, meaning for deposit is not explained. However, foot bone/lower leg elements are ‘knucklebones’, a semantically confused designation as to exactly which bones are meant. There is a wide distribution of these elements in pits, including graves, across Europe from the prehistoric and medieval periods. Use within adult games of chance and/or divination across the continent is known from early on. Chapter 3 delves into these subjects and explores the interconnection of the particular bone deposits with wood finds. While these types of pits, in other



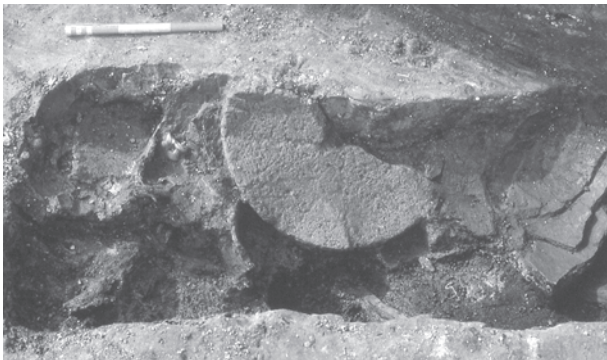
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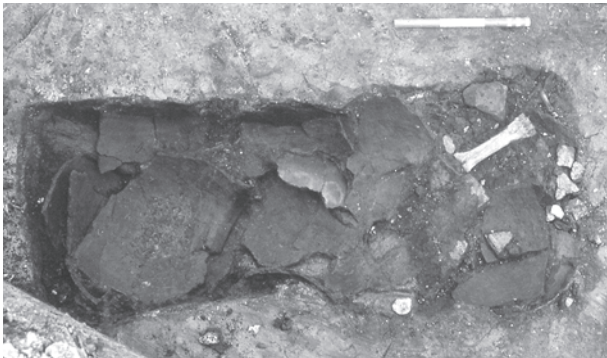
221.1



221.2



223.1



223.2



248

countries, are sometimes also regarded as the result of ritual, definition is however fuzzy as to the content of religion within tradition other than in general terms of propitiation and *pars pro toto*.¹⁷ By regarding the spatial settings, as groups of pits, rather than concentrating on materials in them, the Schagen sites led to a specified, seasonal-ritual interpretation.

spatial order as temporal process: pit groupings and seasonal ritual

Networking analyses continued in combination with another characteristic of the pits: the immediate spatial arrangement. It appeared that deeper pits could have been dug as groups of threes to form a grouping (fig. 5 & 10), as will be set out below. There is variation as to form and layout. Most were square to rectangular, usually with rounded corners; group 5 was exceptional in having three round pits.

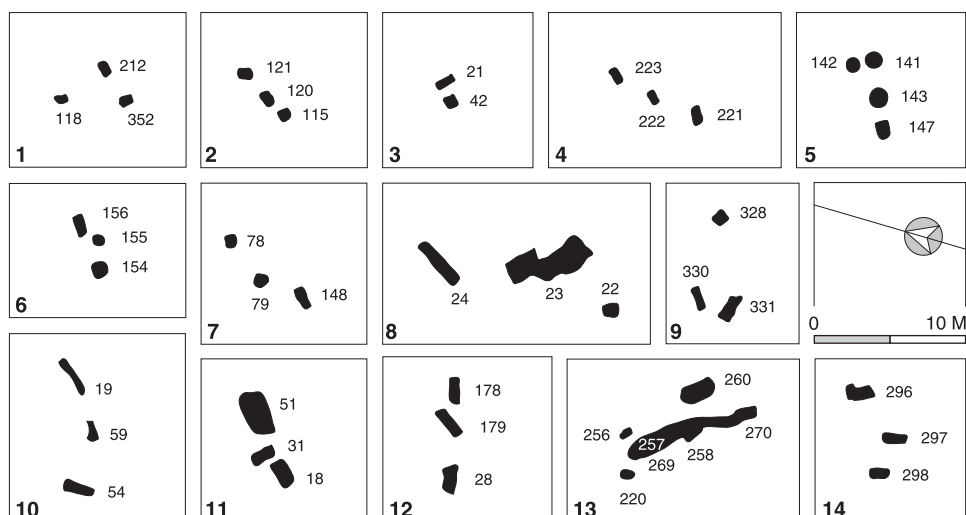


Figure 10 SM-I: Pit-groups, numbered, and feature numbers.

Defining the same network of finds of foot and skull bones weaving groups together in similarity subsequently led to defining differences between pits within the groups. This line of analysis extended from an indication from *The Germania*, Tacitus' late 1st c. AD work:

'...the year itself is not divided by [the Germani] into as many seasons as it is with us [Romans]: winter, spring, and summer are the seasons they understand and have names for; the name of autumn is as completely unknown to them as are the blessings that it can bring' (*Ger.* 26, Mattingly, ed/trans.1970).

The division of the year into three seems general to Indo-European time/cosmology and is part of tripartite structuring.¹⁸ The spatiality of tri-partition is particularly evident in dwellings, in being three-aisled longitudinally and often divided into three main activity areas in the NW European area. At a settlement spatial scale, this Schagen Muggenburg-I settlement is also interpreted as having three main areas. At the intra-site level, marking with pits filled settlement place during settlement time, as groups of three, as part of reoccurring inhabitant tradition. Time as marked by points within space became the analytical level for archaeologically gained data, for understanding the specifics of anthropologically known frameworks such as that provided by Bourdieu's scheme of cyclical ritual and economy, as mentioned in Chapter 1 (and cf fig. 2).

The shortest time span of action within settlement duration is demonstrated by the nature of deeper pits. The pits were back-filled very soon after being dug as shown by the consistently clean interface between turf back-fill and white, sandy subsoil at the bottom, without silts, even at the bottom of all but the deepest features. The water table at the time was such that if features had been open even for a day, or possibly even hours, ground water would have risen in them such as to disturb a sharp and clear-cut layering as that which was recovered. That is, peat was not re-deposited into water filled pits.

Taking into account the original peat accumulation, deep pits were dug, deposits were made, and the pits backfilled within a (very) short time-span. Texts and bones were used for trying to define at what times these pits may have been dug.

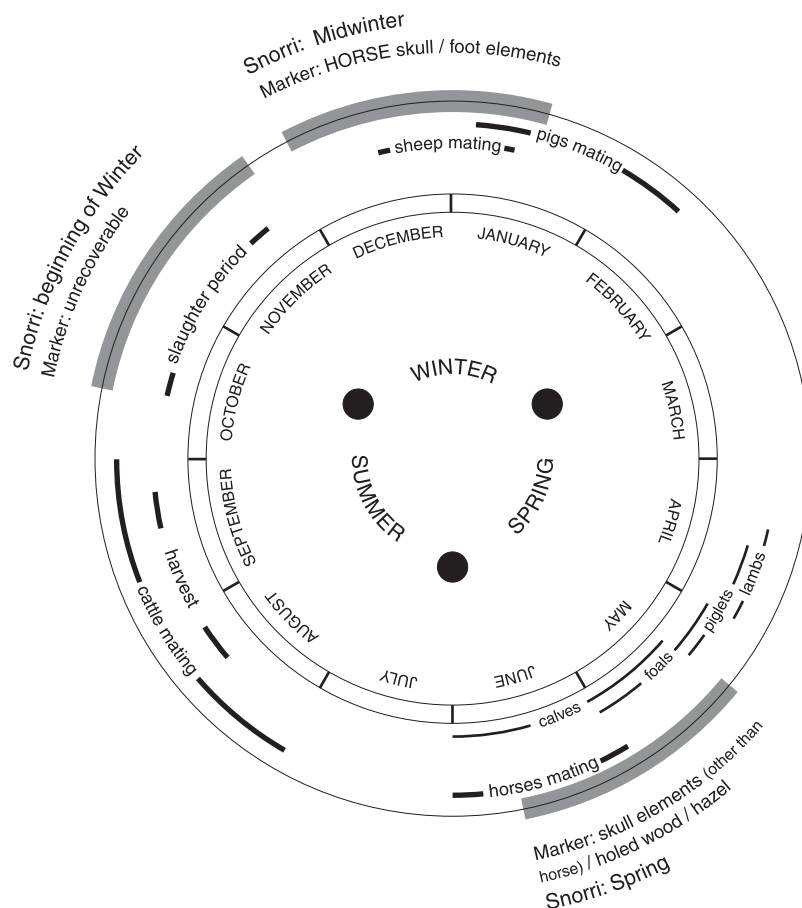


Figure 11 SM-I: Model of the cycle of seasons with high points of the economic year, and the seasonal criteria of the pit contents. The model is further specified in Chapter 6.

The texts considered were on later practice of Icelandic ritual. The 13th c. Snorri Sturluson in *Ynglinga Saga* [8] mentioned that the Scandinavian god Odin organized three feasts per year: ‘Near Winter’s day, they should sacrifice for a good season, in the middle of winter for a good crop, and near summer’s day it was the sacrifice for victory’. In the *History of Hacon the Good* [17, 18], Snorri remarks on blood sacrifices in the autumn towards Winter’s Day, and the feast at Mid-Winter. The Yule feast in January is taken to be mid-winter (Monsen ed/trans.1990, 86), although interpretations on the specific date differ. Bede, in the early 8th c. stated pagans began the new year around the time of the winter solstice.¹⁹

Dividing the year into three (Tacitus), and taking indications from Snorri, the year is divided up into three as shown in Figure 11. For the convenience of modern referencing, taking two months to either side of January 1st will adhere to ‘our’ months. The beginning of winter is then around the beginning of November; spring starts with March and the third broad segment of the year is July through October. Mid-winter is around the winter solstice. ‘Summer’s day’, if used in the same way as ‘Winter’s day’, would be the end of Spring/start of Summer, and very possibly connected to the period of the summer solstice.

High points of the livestock year are conjoined to this three-season year in Figure 11, whereby birth and death would be of considerable importance in continuation of the herd and inhabitant subsistence. Historical practice provides indication of the periods of the slaughter

month as November, which was also important in saving on gathering winter fodder.²⁰ Snorri's 'blood sacrifice' (that is: offering animals) comment is apt, certainly for small-scale societies in ritualising the slaughter of livestock.

This led to a search for correspondences to these general estimates that would make it possible to describe times of the year for a seasonal pattern of deposit independent of texts. The category of 'eating waste' was regarded for each pit. Younger animals can indicate age at death, as their bones are not fused or are in the process of fusing. Although ageing estimates are inexact, depending on the author and species of livestock studied, a range in number of weeks can be estimated for the age at which certain elements fuse.²¹ In estimating a month of death through the fusion data of bones, knowing the month of birth is a prerequisite. Again, there is no certainty on how herds were managed and the exact time of mating and thus the time of parturition for calves, lambs/goats and piglets, those livestock animals certainly eaten at this settlement. Estimates were taken from Van Wijngaarden-Bakker (1988) for Figure 11.

Five pits gave estimates for age at death, whereby the months of May–July were recognizable.²² Conjoining well with the cycle as given by texts and economic high point are two pits (f212 and f221) for the end of Spring/beginning of Summer. June economically corresponds to the close of herd regeneration in the arrival of newborn calves, most important for the subsistence of the inhabitants. A September–November estimate derived from pit f142 could indicate the slaughter period of November. The dead of Winter is only indicated possibly by f22 with the broad estimate of the one-third ox burial. Although the ageing indications were few, the pits with estimates were from four different pit groups. Other materials will be taken up below, with other indications for seasonal deposit, and all of the periods will become better specified in Chapter 4 & 6, through another type of patterning.

specific rite markers

Parallel to the above, and within an interpretation for regarding all of the pits as ritual, marking was expected to occur through materials in a specific manner for specific points in the year, as institutionalised practice. Or, for example, within modern, western tradition, practitioners of (seasonal) rites do not sometimes decide to ritualise eggs at Christmas, but give extra emphasis to ordinary things, such as eggs, at Easter. Specific rite markers could be delineated for many of the pits, and the ageing estimates were then applied, for pinning these to an estimated period within the year.

The initial layers of deposits – that is, those put into the pit first – was considered and the key was found to suggest difference within most pit groups, and sameness between pit groups. It was again the bone material that was found as patterned. The elements already mentioned – foot and skull bones that linked the shallow, burial deposits with these deeper pits – were those proving most important. Some of the wood finds are also taken up in the scheme. In line with the textual indications and economic high-points of the year (fig. 11) and the few indications given from ageing criteria, pits gained a characterization within a seasonal cycle. Twenty-nine pits, in nine groups, and a partial tenth group, exhibit the following, as shown in Table 6 (I):

- *Winter (December-January)*: a foot bone or tooth from a horse, in the bottom layer with bones, which is often accompanied by a tooth of an ox.

- *Spring (May-June)* : no horse bone in lowest layer, but rather the skull bones and/or loose teeth of other animals, mainly cattle, as part of the initial deposit. The end of spring is further indicated by the finds categories of hazel, and deposits of worked wood with (empty) holes. There are two exceptions to this rule (f352 with holed wood and f118 with twigs of hazel). The finds of wood are not always on the bottom of the pits. The wooden objects with holes are always finely worked, complete objects. Only one find can at this moment be placed within a settlement activity/function: a part of a vertical loom (from f212--within the house) that did show use wear. Construction joints might be a possibility for the other finds, although certainly not all. Some certainly appear to have been made especially for deposit, such as the finely worked oak plank from f154, with one triangular and three round holes.
- *Fall (October-November)*: Except for the un-worked bunch of hazel twigs (and a hazelnut shell) amongst more than 38 finds of wood in f118, there is an absence of the above categories in the third pit of a group. In general, there are fewer finds in these pits. The pits designated as Fall have no recognizable markers; some of these pits were noticeably empty, although there are exceptions such as f155 in the north, a small pit packed with pottery, or the complete pot in f21 in the south. The slaughter theme is for example expressed in the two complete cattle skulls, including lower jaws, in f179. They were in the upper fill; in the lower fill, below the deposited skulls, there was no sign of deposits: that is, nothing could be distinguished as primary deposit in the lowest fill of the pit. If there was a general marking material for these pits, non-recoverable substances from slaughtered animals could be considered such as organs/meat, hides or blood.

To reiterate: these pits with these criteria are found grouped together within settlement space. Table 5 shows the features arranged per postulated season, per group. Table 6(I) is clearer in showing sameness between pits of the groups as they are separated into seasonal designation. Within a group, the two pits of winter and spring often have more materials than the third: next to pits packed with many interesting things, there are pits with very little. The criteria are delineated sub-patterns within that which has already been marked in the horizontal and then found marked within vertical aspect, as first deposit (or absence) in pits, which were then back-filled.

Within a seasonal framework, it was assumed that proximity of a grouped three-some reflects an aspect of a proximal time sequence: one year. Less likely, but of course uncertain, is that inhabitants were digging, for example, a winter pit in the northern area, subsequently a spring pit in the southern area, and then a fall pit in the east, jumping back and forth through settlement space within one year.

In Table 6 (II), the four other complete groups are shown arranged. The presence of the Spring criteria is somewhat recognizable for three pits. Winter is not well defined (except for one horse jaw), but it was assumed Fall pits following Table 6 (I) would have even fewer deposits. In Table 6 (III), single pits up against non-excavated areas are then, insofar as possible, arranged by seasonal criteria assuming that they were part of groups. Of the remaining nine pits, Table 6 (IV), seven were only partially excavated, the exceptions being f105 and f106, which might explain the lack of fit. The certain exceptions, as they are complete groups (9, 10, 13 & 14) will be taken up in Chapters 4 & 6. All but group 9 will gain an interpretation within larger patterns.

On the one hand, there is variation within groups, as shown by those fitting the seasonal criteria. On the other hand, the wider spatial marking shows variation by groups within settlement. Marking of main activity areas, along SW-NE axes, with pits having the most materials also corresponds to the orientation of the dwelling in the south, and to the direction of the outside hearths in the north.

There is one exception near to the dwelling, thus within a main area, which can be explained: group 3 has only two pits (f21, f42). Absent in group 3 is a pit containing the horse bone/Winter criteria. If a pit-group marks a cycle of one year, the time of starting the settlement could be reflected in this group: after Winter and before the end of Spring. This would seem a good time to start your new settlement, building a dwelling before livestock is born, but with resources available for wattle walling through coppicing or pollarding. The Spring pit (f42) had lengths of willow, perhaps from clearing activities and/or as lengths of willow conceptually connected as deposit to the wattle of the nearby dwelling.

Less likely would be that the inhabitants moved away in the Fall and that this is the last group of the settlement. Analyses were done as to small inclusions in pit fill, and this group had no inclusions, or 'noise', such as burnt clay lumps or minute sherds within re-deposited peat matrix as habitation-surface debris.²³

If the double-pit group 3 marks the start of settlement, implied as well is that Winter pits were also marking when a new pit group was started. Subsequently, the perception within time-keeping of the beginning of a yearly cycle would be in the Winter, and would concur with Bede's remark (and present western practice) on the beginning of the New Year.

Below, various aspects of individual pits and materials will be mentioned, after description of the last features of the site, the two large pits.

large pits

There are two relatively large pits, one in the north and another in the central area. Both pits are irregular in shape and relatively shallow, and both have in common some rare bone elements as well as having laid willow branches, without leaves, in the fill. Chapters 4 & 6 go into the facet of the placement of these large pits and the larger iconographic scheme within the settlement interpretation.

f27: The large pit feature, cut 30 cm into subsoil, in the northern area had the entire range of finds categories represented in pit groups (Tables 1, 5 & 6). There were quantities of bone, accounting for more than a third of identifiable bones from dug features. However, it cannot be assumed that a third of the animals of the settlement are represented. Counting bones masks a number of facets. For example, the sixteen complete metatarsals deposited in this feature came from fourteen different cattle, an easily made visual determination.

This feature has the only dog skull from the site. It was a skull from a small dog, teeth extracted. The articulated horse leg did not show de-fleshing marks, and was thus likely an offering. A partial pelvis from a man was also deposited (Appendix 2), and it is the only singly deposited, human bone of the features.

Seldom as well are the cattle elements of horn-core and patella (kneecap). They may also be regarded as important, as they were included in only three pits of the site: this feature, the next described, f185, with relatively few bones, and f212, within the dwelling and part of group 1.

In f27, the bones were deposited as a layer above the worked and non-worked materials of wood, including willow branches. Figure 9 shows the central part of the pit at this layer with

wood concentration. To the left of the photo is the top of the bone layer, and to the right is the beginning of the northern extent of the feature, which had few deposits. The distribution longitudinally south to north of finds in this large pit-feature might be analogous to the groups having three pits. The northern third of the pit suggests a correspondence to the 'Fall' pits. Although not established in the field, the pit may have formed three separate occurrences of extending the length to the north, analogous to the 'linear' feature (f270, etc. above) formed by successively dug pits. A post setting appeared to have been originally present at the southern end (Appendix 1, f27), but was evidently pulled, before this area of the site was covered with a low mound at the end of settlement.

f185: The second large pit, 30 cm deep, had far fewer finds than f27 and an absence of hazel, wooden object with hole, spindle whorl, and metal. The pit was similar however to f27 in having lengths of willow branches; also similar are the deposit of the seldom-occurring elements of ox horn-core and patella. A small, near complete pot, placed nearly upright, contained seeds from orach and chickweed (Van Haaster 1985). There was also a section of an imported shale bracelet.

remarks on categories selected for pit deposits

A few points will be made here in addressing some facets of the deposits within the proposed framework of seasonal ritual in selection, distribution and state of the materials that were deemed fit for deposit within pits.

bone: The pit-finds relative to the linear feature on the western side of the settlement (f107) show a clear difference in species represented. Bones found as articulated limbs do not occur in the linear feature, but are present in the pits, most notably as the two articulated horse legs, the lower legs, and partial bovine skeleton. Complete skulls are also found only in pits: from cattle, a dog, mice, chicken and mallard.

Tables 1b-4 show the small animals, wild species and 'exotics' such as cat. There are more in Winter pits (7 pits with 35 bones) than the Spring (6 features with 6 bones), and very few in pits designated as Fall (2 pits with 4 bones). There are also more of these bones in the northern area (28 bones in the north to 16 in the south). Although only a few of the geese and duck bones could be identified as wild, domesticated duck is not known for the period.²⁴ If some were from migratory wild fowl, there may be a migratory aspect implied, and thus the seasonal aspect could also apply. The mallard wing on the chest of the burial of the older man could also be linked to this facet.

There is also an apparent selection in the bones chosen for deposit in being mainly wing/leg/foot bones of the (wild) birds. A foot bone, an astragalus, of a fox is also in the northern area (f22). Cats are represented only in the north, by a large deposit in f143, and by the two complete upper fore-leg bones from the same cat, but deposited in two different features: in pit f79 and the linear f107 on the west. House mouse skulls are represented in both south and north. The frog and toad bones are also listed, although they could have been part of the natural peat layer. However, as frogs and toads are certainly noted as part of recorded medieval practice, as are mice, the elements could have been consciously deposited here.²⁵ These species represented by bone elements are not season specific. The only bone from large wild is the partial jaw from a red deer in pit f260 in the south, recovered with a partial horse jaw and the complete hind leg of a horse.

There is a clear difference between the number of bones representing eating waste (Table 5 includes identifiable and Table 6, identifiable and unidentifiable fragments). The totals here are

inflated as ribs and vertebrae fragments recovered are counted as one, even though very fragmented. Some of the smaller fragments may not even have been conscious deposits, but part of the re-deposited peat matrix, including surface layers. Other facets also disallow direct comparison between features with the column of eating waste masked within bones totals. Feature 148 with 52 bones, for example, includes fifteen bones from four species of birds. These, if parts of meals, do not account for much meat. Another qualitative exception is f142 with 54 bones. Forty-two of these bones represent the remains of one lamb. Most of these were recovered collected into the base of a broken pot, which had been deposited on the bottom of the pit (fig. 9). It is an interesting deposit demonstrating active collection of eating waste for deposit, as well as secondary use of a broken pot for the purpose. Other eating waste elements from pits come from different species, and at times the same elements, or what would be articulating elements, come from demonstrably different individuals of the same species.

Extending eating waste into interpretation of 'ritual meals', with implied feasting and subsequent deposition associated directly with rites of the day(s), would have to take this variation into account. This is a single-farmstead site – that is, one family – and the consumption pattern of parts of various animals must be addressed through various lumps of meat, rather than as representations of complete animals. Within the more encompassing interpretation put forward in Chapter 6, aspects are mentioned for bone materials as possibly reflecting participation by inhabitants from other settlements, and selection for deposit as part of a regenerative belief system, including livestock/wild species.

wood: Of the 908 deposits of wood recovered from features, 899 are from pit features. In Table 7, the 114 worked wood deposits from pits are shown categorized and the non-worked wood is shown as to species. Of the worked wood, those classed as 'objects with holes' have empty holes. Beams had at times tenons in places, but they had been sheared off. Tenons are used to designate large pegs, which were unused and are considered especially made for deposit. The category 'other' includes a variety of objects, including planks, beams, a comb, a small Roman box or lid, an imported, Roman, lathe-turned sofa leg.²⁶ A complete rake (of which only the head is illustrated, Appendix 1) and sections and 'loose teeth' of rakes are also recognizable, but an original function cannot be assigned to many of the worked wood deposits. Branches, twigs and roots were also recovered, and they are classified as 'non-worked' as they had chop marks, only.

The finds of wood show a spatial patterning along main activity area distinction most evident between the southern dwelling area and the northern outside work area. Particularly pits f212 and f221 in the south had finely made objects. In the north, non-worked wood was in the majority when present, such as in pit f156 that was packed with non-worked lengths, which made the included sofa 'leg' standing upright near one of the corners all the more noteworthy. Pit 142 contained cut tree roots. The willow branches laid horizontally both in the large pits 185 and 27 (also with a finely worked comb) bind the large pits as being similar.

Wood will be taken up as being particularly important in Chapter 3, as structuring within tropes and Tree of Life tradition, and within a delineated larger patterning in Chapter 4, 6 & 7.

harvest/seeds: Looking for concentrations of seeds as conscious deposits, without the extra context of a container, in a peat matrix is a task involving the proverbial haystack, as naturally occurring seeds are preserved and many species are hypothetically useful. Nuts are more visible as having been utilized, but only three hazelnut shells were recovered from three features

(f118, f212, f223); there were no acorns. As the context is one of a settlement, without clear concentrations it is impossible for some materials (the flax remains and the few grains of crops) to be defined as deposits, given the backfilling including settlement surfaces. Only a few remains of crop plants were recovered from the few samples done.²⁷ Only two pits gave indications for conscious deposits of plants:

f248: The pit was mainly filled at the lower level with a large deposit of what must have originally been complete sheaves as indicated by the stems and un-threshed, charred emmer wheat, pieces of twining, and other plant remains, including barley, and insect remains (tab. 8). Apparently, sheaves of grain had been set afire. Where the material was burned cannot be defined with certainty – for example, it could have occurred at ground level and the remains subsequently shoved into the pit; or, sheaves were held over the pit while burning. Arrangement of the remains as recovered in the pit would not seem to indicate burning *in situ*. Non-burned complete, wooden objects were deposited above the plant remains.

An estimated 10 kgs of emmer wheat is represented that could be from a harvested area of greatly divergent size varying from 27 m² to 250 m² (cf discussion in Woltering 2000, 320–323). Additionally, through the criteria of cattle skull part and wood with hole, the pit is delineated as ‘Spring’, and the sheaves would not refer to the time of deposit, but to a coming harvest. They could have been sheaves of the previous year’s harvest, deposited at the start of generative process/Spring ritual, looking forward to a new harvest. This conclusion is substantiated through the recovered charred remains of dark meal beetles (*Tenebrio obscurus*) amongst the grain remains. It takes months for this insect to develop, which would be an indication for a spring deposit, if, as is usual, eggs were laid in the spring in stored sheaves by an adult beetle.²⁸

f185: The pot in f185 contained an over-representation of orach and chickweed seeds (Van Haaster 1985). These two plants are edible. Chickweed was also found in a pot at a 1st c. site of the region, in the Assendelver Polders (Pals 1987).

pots selected for pits and clay winning as pits: The pottery of the site has been extensively studied by Abbink (1999) and is illustrated in her work. Just some general aspects will be mentioned here. Table 5 & 6 show the pits where vessels were deposited, with certainty, as complete, unbroken pots. Through subsidence of the peat matrix, it was not always possible to define when pots had been placed as complete in the pits, or when sherds forming complete, but broken containers had been deposited as sherds. There were also certainly partial pots and single sherds deposited. The total sherd weight and counts can be found in Table 5. Whether or not all sherds were consciously deposited is unknown, but certainly smaller sherds could have been part of re-deposited surfaces.²⁹ Complete pots varied as to functional grouping and varied as to quality in being finely finished, or not, and in colour. Patterning is evident between the south and north.

Feature 223 was the only pit in the south with a multiple pot deposit.³⁰ The ten pots included were very large storage vessels, cooking pots and an exceptionally large jar. Abbink (1999, 309) considers that the same person made the pots, and that most were made especially for deposit as they show no use traces. Although a jar was included with the inventory, jars as complete vessels were deposited otherwise in the north only.

Single pots, recovered as complete, had been placed in four pits of the southern area. Two were medium sized, one finely burnished and black (f212) and the other with an atypical form

of finger decoration over the entire surface (f115), of grey colour. The mice skull placed in the bottom of the black burnished pot from f212 was the only recoverable content, within the earth also in the pot, but it is regarded as a conscious deposit. While these two vessels are of the cooking pot shape and size, they had unusual surface treatments. Feature 21 had a smaller, complete vessel at one end of the pit. The other complete pot, in f258, of the southern area was small and light coloured; it was standing on the bottom of the pit within the line of pits forming a linear feature. This pot had a sherd covering the mouth opening, and it contained groundwater, only.

In the northern area, only jars were found as actually complete, including the complete Roman jar mentioned below. The native jars were fired to a light colour in contrast to the mainly reduced vessels of the southern area. The Roman import jar was however grey-black. The jars contained nothing discernible. One was recovered in f143, on its side, and there were other complete vessels represented by partial profiles and sherds within this pit. They were badly made and most were for containing liquids (Abbink 1999, 308). Other vessels were certainly incomplete, and sherds belonging to the same pot were recovered from pits f143, f148 and f156, and a surface layer (f30). Pit f154 had three complete jars, very poorly made, and placed close together, standing on the very bottom, up against the north-eastern side. Other complete vessels had been placed in f79 and f155. It was mentioned above on the section on shallow pits, that the seven (large cooking or storage) pots of the north were placed inverted over the cremated remains (f345) of at least one adult woman. In the central area, a near complete, smaller pot in f185 was in a near upright position and contained soil with, as mentioned, chickweed and orach seeds.

Working within the distinction made between dwelling area and the northern area with hearths, Abbink could conclude variation between the pots deposited (1999, 309–311). There are mostly deposits of cooking vessels in the south, taken probably from the existing household inventory, while the very few cooking pots deposited in the north were probably all specially manufactured for deposit. There is a conscious selection of specific sizes and shapes for pit deposit, reflecting general function of the pottery, but different from the occurrence in the other settlement features, including layers and hearths. Smaller sized pots (Abbink's pot groups 1 and 2) and those for keeping fluids (pot groups 2 and 5) are better represented in pits. Within the seasonal designations of the pits per group, Abbink concluded the following general trend:

[Those vessels for fluids] 'are essential elements for the midwinter and late spring rituals and are associated mainly with one other pottery group in each season. Storage – or cooking and storage – vessels were deposited in the winter and cooking vessels in the spring. In the fall rituals, the special pottery of group 1 is predominant. Thus the size of the selected vessels is decreasing from winter to fall depositions, as is the total number of vessels. There is also a change in the place of deposition. The winter depositions seem equally important in both areas, but those of the spring and autumn are concentrated in the northern area' (Abbink 1999, 310).

Thus, within the facets of settlement spaces and temporal framework, there are indications for selection of particular pots, the largest group of materials recovered from pits. Women, as the potters, and gender concerns, as find-distribution, are taken up further in Chapter 6. The subsoil layering of the site consisted of lenses and layers of clayey-sand sediments, under the original accumulation of reed-peat. There were also two layers (12–15cm thick) of much purer

clay within the subsoil layering. It was to the lower extent of these layers that many of the deeper pits had been dug. The clay layers were not part of the re-deposited pit fill. It is suitable as potting clay and analyses of both clay and pots from the settlement show a suitable match between raw material and fired vessels (Abbink 1999, 112). In addition to the suggested seasonal-ritual aspect of the pits, there is also this clay-winning dimension, binding pit digging to aspects of above-ground activities of pottery production, cooking and storing and production processes through the year, as well as to seasonal rites of the year. Restructuring of natural layering will be gone into more fully in Chapter 6, within aspects of inversion and cosmology.

small objects in showing selection: Various types of materials are included here as they show, on the one hand, what was deposited, and on the other, what was not deposited. Through this brief comparison of materials recovered from surfaces, and the spread rubbish as mound material covering the site, it is evident that some material categories were not deemed suitable for deposit in pits (cf Appendix 1 for drawings of the materials).

Spindle whorls were regular pit-finds, occurring in both the north and the south as seven complete objects from clay, within six pit groups (tab. 6). If the bone object with hole (f143) was a spindle whorl, rather than a bridle fitting,³¹ all pit-groups along the south and north had spindle whorls, excepting group 3, the suggested first year's group with two pits. Spindle whorls were not exclusively in pits of a specific season, but did occur mainly in Winter pits. They were also well represented, with at least 20 examples, on surfaces and in the mound material. Loom weights were found near to the dwelling, but did not occur as pit finds.

'Gaming pieces' were also deemed fit for deposit in both south and north. The pits produced only black discs, shaped from native potsherds, but there were other possible gaming pieces such as the four-sided bone marker, and possibly included in the category is a bronze piece. Red, samian sherds had also been reshaped into playing discs, but they were found only on the surface near the dwelling. The four-sided die, from pit f143, was most probably made at the site. Initial stages in marking and working, and the off-cuts of worked cattle metatarsals demonstrate the various stages of dice manufacture, but were not recovered from pits. 'Dice' will be seen in combination with the unmodified knucklebone and single teeth deposits (Chapter 3), as part of divination.

Only a very few bone implements are included as pit deposits, while antler is absent, but recovered from mound material. The pits included one implement (a bone gouge) within the southern area, while other implements were recovered from the central and northern area. One was a pestle-type implement, and there were two ribs, one finely worked, which have been associated with pottery production. The possible bridle fitting/spindle whorl has been mentioned.

Two complete, utilized crucibles came from pit f79 in the northern area. Others, but fragmented, came from the surface. Small clay objects, aside from the crucibles, spindle whorls, gaming discs, and a complete lid, seem absent, which can only be established through the materials from surfaces and 'rubbish' of the mound material covering the settlement.

Within these surface layers there were broken small spoons or scoops, very small pots, and an object that can be likened to a 'rattle'. Without much room to rattle, two baked clay balls were enclosed within a thick mantle of baked clay. The very small clay objects with holes may have been beads. They, as well as the recovered beads of glass and amber, were never found deposited within a pit context. As mentioned, loom weights were also not deposited. Taken together, baked-clay objects show a wider variation of material inventory when surface layers are taken into account than the impression gained through materials in pits.

Roman import pot: There is a possible patterning evident in the few single sherds of blood-red samian ware recovered from pits: all were odd-shaped undecorated sherds. Decorated samian sherds did occur on the surface. Re-fitting has never (at any of the sites) produced anything but larger sherds, whereby the decorated sherds from the surface fit at times to the deposited, undecorated sherds. For the third and fourth century Schagen sites, the samian ware of the first and second century is older than habitation of the sites. A project of refitting samian ware for finds of the province has been carried out and native sites have sherds fitting sherds of vessels found at the Roman harbour at Velsen, which was abandoned before the mid-first century (Vons & Bosman 1988). The 'pick-up' hypothesis of sherds rather than pots as that which interested later visitors to Roman sites could also apply to imported roman sherds recovered at the later Schagen sites. Much later use of Roman import has been established in Wijnaldum (Volkers 1999) and the Broekpolder (Therkorn et al. forthcoming) for Early Medieval contexts. While the sherds (and other materials) may have been picked up, there is work needed for interpreting the selection more broadly as to meaning.

Roman samian ware, as complete pots, was evidently **not** a feature of inhabitants' value system at any of the sites of the province. At the Schagen sites, inhabitants evidently did not select for decorated sherds in their pits. The colour red as a facet of meaning could be important, in regards to permanency and blood symbolism to interpret intrinsic value of blood-red samian ware. If selection through colour applies to 'red', it might also apply to the other loose sherds of smooth white and coarse grey ware, also found at the sites. Again, they may have been brought into the site as sherds, through categorizing of hardness, colour and possibly as 'foreign'.

There was one near-complete pot of Roman manufacture, however; a grey coloured jar had been deposited in pit f147. A hole in the side had been patched with native clay, and apparently re-fired at least briefly. The jar itself dates to the second century, and again points to the long circulation of Roman materials.

metalwork: The metalwork is distributed in pits with all three seasonal designations. Some of the metalwork finds were clearly of the scrap-metal designation, cut to size for reworking; identifiable were parts of two Roman sieves, both from f148, and a cut fragment from an unidentifiable object in f248. Along with the two crucibles in f79 and the iron slag found around the hearths of the northern area, reworking bronze and iron-working certainly occurred at this site. The one-half bracelet, of bronze, found in f31 is not Roman, but Germanic.³² It is unclear if this bracelet had been manufactured at the site. It is perhaps noteworthy that the two bracelet sections, one bronze and the other from shale, were found in the central area, in two adjacent pits: the shale section in f185, the Germanic bronze four meters distant in f31.

stone: All stone had been gathered or traded into the settlement. Of the 136 stone finds of the site, only sixteen were in pits. Stone was classified into five categories, the following came from pits: whetstones (2); blocks, having no use traces (4); rounded/smoothed irregularly shaped with use traces (2); small shiny/polished pebbles (2); and, fragments from tephrite rotary querns (6). The largest section of quern stone was recovered from pit f223, with fully one-half of a lower stone found placed in the top of the fill, above the layer with the ten complete pots. Quern stone fragments were in five pits of the southern/central area, and one in the north, in the large pit f27. Another was in linear feature f107, along the west of the settlement.

dwelling area pits			northern area pits*		
winter	spring	fall	winter	spring	fall
iron	bronze	iron	bronze, iron	bronze, iron	(bronze)
pot inventory	single pot	single pot	jar	jar	
beam, post	beam, post	post	post/stake	post/stake	
tenons	tenons		tenons	tenons	
spindle whorls		spindle whorl gaming disc	spindle whorl	1/4 spindle whorl	
			gaming discs, bone die		bronze gaming piece
whetstone		1/2 whetstone		whetstone	
quern	quern	quern			
rake tooth	complete rake	partial rake			
	bone awl/gouge				
	loom parts				
	wheat sheaves				
	flax remains				
			bone bridle piece oven-wall fragments		
				crucibles	
		bronze bracelet, bone pot-smoother	wooden hammer bone pounder		
		central area pits*			

* not included are the two large pits f27 & f185. Feature 27, in the north, contained a comb; and, in the central area, f185 had a section of a shale bracelet and small pot with seeds of orache and chickweed.

Figure 12 SM-I: Activities represented by materials in pits and where they occur within the three settle-ment areas. The seasonal designation is based on deposit criteria.

2.2.6 SETTLEMENT ACTIVITIES AND SETTLEMENT SPACE

In the above sections, all of the settlement features have been described, as well as an attempt to give an impression of the associated materials. More on the finds-categories will be taken up in subsequent chapters for defining the dimensioning of ritual indicated by the pit deposits for this and other sites. The features, as dug and defining settlement time are here taken together, for facets of dimensioning place.

The interpretational framework of seasonal ritual involving digging and filling pits can be combined with the spatial placement of features and as the reflection of settlement duration. Within the seasonal framework, features are assumed to have been dug through the sum of the total years of settlement duration. If a pit group represents a year, the total of settlement time can be estimated at 22-25 years, by counting the number of groups and those partial groups assumed represented, adjacent to un-excavated areas. This is a total consisting of specific events, at specific places within settlement place.

Pit digging and placing materials within them can be interpreted within facets of time, spa-tially binding the years through binding the main activities of the settlement areas. The finds of the pits lend information for everyday practices of the inhabitants, within a selection of mate-

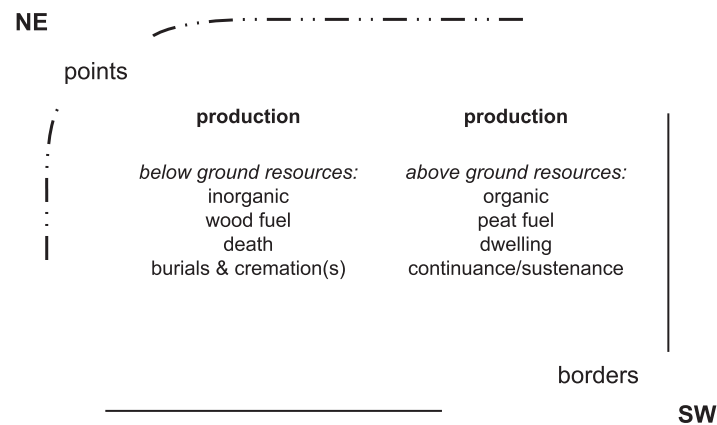


Figure 13 SM-I: difference summarized for the two areas of the settlement where activities could be defined.

rials for pit deposit. Normal settlement activities are represented and some of the finds in the pits are activity-area specific having been recovered from either the dwelling area in the south or the open-air activity area to the north. An activity for the central area could not be defined through surface finds. Activity reflections are shown in Figure 12 with the seasonal designation of the pits in which they were found. Some of the pit deposits at least refer in a direct way to these activities.

Materials on the surfaces were used in the first instance to define activities carried out, and then the pit deposits for the areas were considered for reflections of marking within settlement place. Some points can be made at this stage of basic interpretation that informs and frames subsequent interpretation. These facets have to do with the overall spatial arrangements of the features (figs. 13 & 14):

The southern area is spatially delineated by features referring to continuance/sustenance within everyday activities: the dwelling, with pits of the area containing deposits mark continuing life mainly through organic substances. These more generative aspects are found in the pits in the form of flax remains, and large grain deposit, grindstone for turning grain into a product; rakes for gathering the harvest together, pots mainly for containing food, cooked and stored. The two burials of very large dogs are here.

The dwelling of this site was not large enough to shelter animals in addition to people. Livestock may have been contained within the central area, to the northwest of the dwelling, although no traces of an enclosure were found. If there had been fencing, posts, stakes/stake-holes disappeared with the oxidizing peat. (Livestock at the site is indicated by the dung included in the fill of particularly f154, and a small amount of cow dung and one horse dropping in f221, in addition to slaughter waste, such as found within f107.) As far as recovered, the central area seems contained as to distribution of features, but they are less finds-rich relative to pit or linear

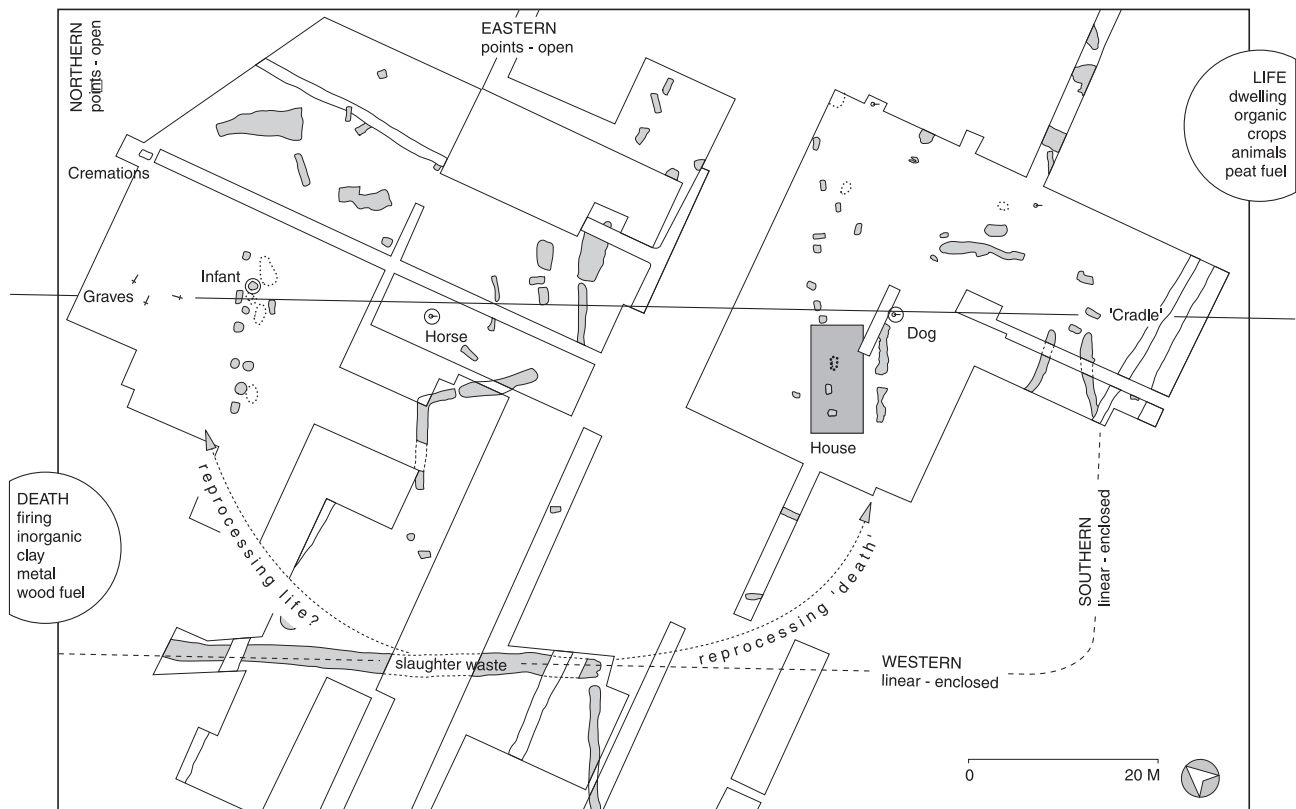


Figure 14 SM-I: the plan of the settlement as structured around an axis of life—death across settlement place, and main activity areas, and patterned through borders on the west and south and point positions along the east and north.

feature contents further away. The burial of a complete horse however again indicates conceptual importance and the arc suggested by the closest pits, group 10, will be further explained within the dimension of circles and centrally placed horse burial as the spindle of the large iconographic figure Horse (Chapter 4).

To the south of the dwelling, 'pointed to' by a linear feature (f274), is the only interesting pit, f297 – that shallow feature likened to an empty bed/cradle or empty grave. Associated with bounding the dwelling area, this feature could be considered as representing a bed of the livings' short term, nightly sleep, and/or the start of infant life, as an empty cradle. Carrying through the opposition – but linked as it is a continuous settlement place – are the dead in the north, as the infant burial next to one of the hearths and on to the positioning of the adult remains, the three burials. All of these features have in common the vertical aspect of having been dug only to the top of the white, sandy-clay subsoil. Within south-eastern to north-western axiality – empty bed/cradle to grave-beds – lie as well the burials of one of the dogs and the horse, also in pits dug only to the top of white subsoil. These features form a line through horizontal, lived space.

The hearths of the working area in the north are incorporated into the general NE-SW linear arrangement of pits. If something such as external relations can be induced through imported products, the northern and central area is better represented than the dwelling area

in the number of metal finds, the only complete Roman jar, the Roman, lathe-turned sofa leg, the bracelet fragment of shale. In the northern area, bronze (re)working of imported materials is reflected through deposits of crucibles in pits as well as the presence of scrap metal, cut to size for melting down. The area also has pits with the most wild and exotic animals (tab. 4). External contacts, reflections of different place, could be linked here. The concept of different places, external and foreign in wild animals and foreign goods may here be structures associated with a different human state, that of death. Horizontal place, as time, could have been a facet of arrangement at the small scale of settlement layout and activities, and as outward-looking.

Parallel to the skeletal line of suggested 'cradle to graves' is the linear feature on the west, bordering the central and northern area. The border feature contained waste from slaughtered animals and primarily the main subsistence resource of cattle. Processing dead animals would relate more to life of the dwelling. And, as the west is marked with a linear feature, a border, the side of the settlement to the south of the house is marked by a linear border. In contrast are the point positions of the north, in points with dead humans and deeper pits, similar to the east (as far as can be determined from the excavated area) of point positions.

In the north, use of the hearths was for turning inorganic substances gained underground into metal and clay products, in contrast to that hearth of the dwelling in the work of preparing organic products. Reversed is the aspect of fuel used within these respective areas: the resource of the earth, peat turf, was used to warm and cook in the southern area, while wood, the above earthly resource, was used for firing the hearths in the northern area.

These relationships are summarized in Figure 13. The three settlement areas of this site are shown as to this spatial ordering in Figure 14 with the elements of directions, axuality of marked place within the aspect of life to death, as a continuum. Short-term time is the interpretation of seasonal cycle enfolded as settlement duration, achieved as making and marking place through dug features, increasing in number through the life of the settlement. The exceptions to marking with particular finds, as mentioned, will be interpreted through the larger patterning in later chapters. Borders of S/W and point positions of N/E will also be addressed, as well as more of the gender associations, also in regards to the larger patterning in Chapter 6. Low mounds capped off settlement time.

2.2.7 END OF THE SETTLEMENT

With the end of habitation, two areas were marked. Two low, oval, mounds were raised; one covered the northern with central area; the other was formed over the southern, dwelling area (fig. 5). The mounds were made up of clay, turf and large quantities of sherds, small objects and bone. Part of the mound over the dwelling was set afire, shown by the powdery orange ash of turf and baked clay of the mound matrix.

The superstructure of the dwelling had evidently been dismantled prior to constructing the mound. There was no disturbance of the floor or hearth or spreads of charcoal present to indicate ground level firing. The house area as covered up, ended as a very large-scale hearth, fired by the same fuel of peat turf as had been used within the dwelling. The natural layer of the landscape occurring above the clay layers in subsoil used to make the hearths and mound was

restructured at a larger scale reproducing the relationships which were produced during settlement duration.

The natural stratigraphy became inverted, again, as a hierarchy of materials reformed through settlement duration into a cultural hierarchy of time marked similarly but at different scales. Both mounds remained visible in the landscape. Both had plough marks, indicating at least a seasonal use. The somewhat later site, conceivably inhabited by descendants of the SM-I inhabitants and even possibly doing the ploughing and harvesting shows similarities to patterns defined above, along with individual family differences.

2.3 THE SITE OF SCHAGEN MUGGENBURG-III (SM-III): C. 320-350 AD

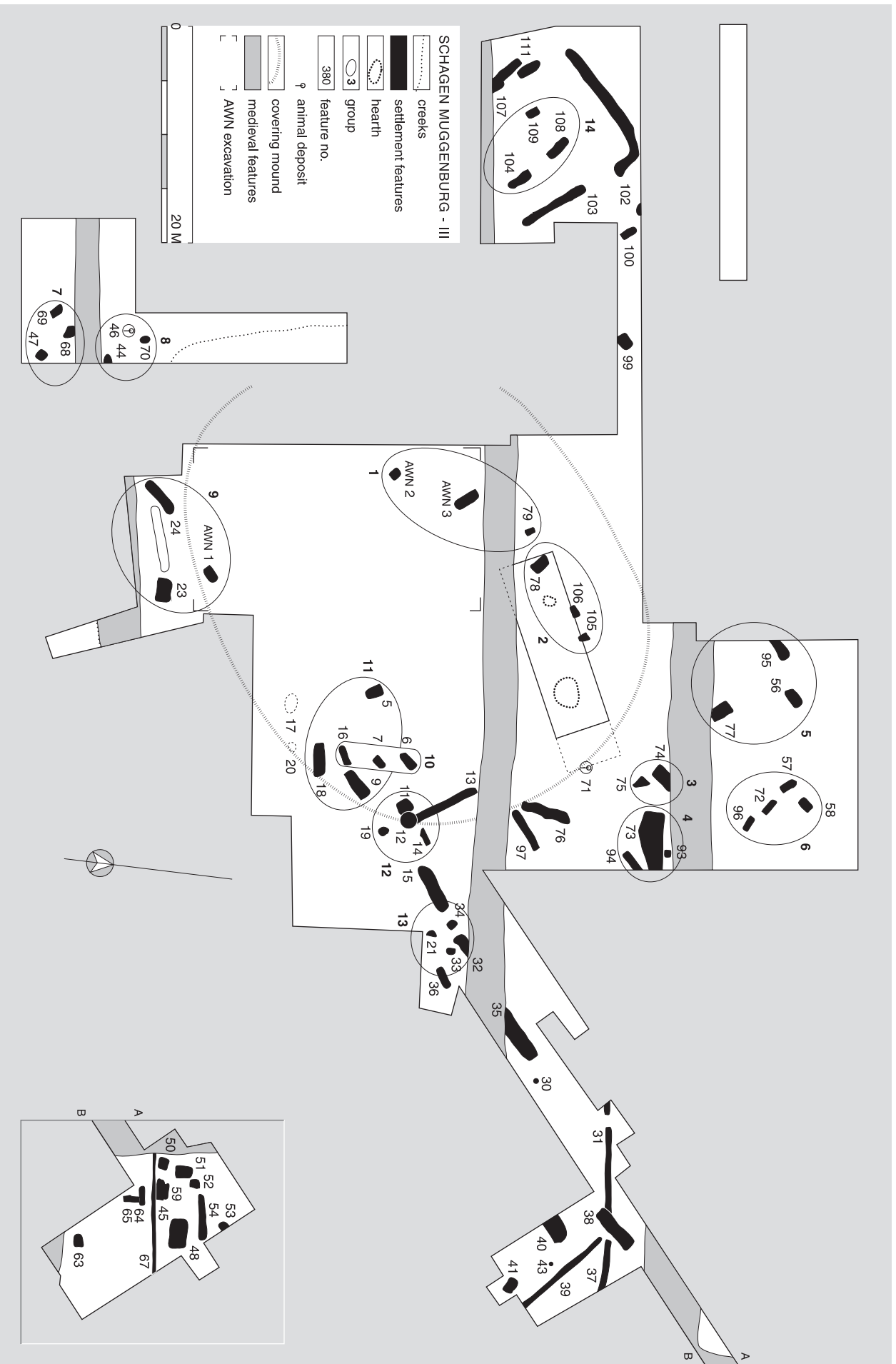
The second Schagen site discussed here is that of Schagen Muggenburg-III – only partially excavated (fig. 15). This site is somewhat later than SM-I, placed around 320-350 AD.³³ Located 450 m to the southwest of SM-I, SM-III was situated on the same peat deposits as SM-I. Similar to SM-I, SM-III is characterized by a dwelling plan, linear features, and pits, as well as a low mound of soil and materials, fired, found covering the dwelling. SM-I supplied the material ingredients for delimiting seasonality in combination with pit grouping, indicated primarily through the selection of animal parts. Horizontally, the SM-III site may have been similarly set out as SM-I; the local group of amateurs had excavated a limited area to the north-west, which had pits and work hearths. Due to the limited time allowed for the excavation of SM-III, even less could be defined of the total site, which limits analyses relative to the SM-I patterns. However, the importance lies in the similarity of pit digging and nature of deposits of this settlement somewhat later than SM-I. Similarities and differences can be summarized.

Differences to SM-I:

1. The features were less deeply cut into the sandy clay deposits underlying oxidized peat; clay winning was not a possible (additional) function, here, of digging pits.
2. There were fewer materials deposited in pits. There are very few finds of wood and the bone category of eating waste is minimal. (Fewer organic deposits cannot be ascribed to poorer preservation conditions; what was present was in an excellent state.)
3. More deposits had been made in the floor and under the hearths within the dwelling.

Similarities to SM-I:

1. Same general type three-aisled dwelling was constructed.
2. The complete and partial animal burials were dug only to top of (white) sandy-clay deposits; that is, through the peat deposits only.
3. Pits were immediately backfilled after deposits were made.
4. Pits were also grouped.
5. The quality of deposits shows indicators for defining similar seasonal ritual.
6. The dwelling was dismantled, the area covered by an oval mound and set afire at the end of habitation.



2.3.1 THE DWELLING AT SM-III (FIG. 16)

The dwelling was c. 5.25 wide, and the length was between 17-21 m. A late medieval ditch disturbed the southwest corner. The possibility of linking directions and entrances to gender are afforded by the nature of the floor and entrance deposits and the characteristics of the two hearths. These aspects will be combined with various schemes of spatial definition, directions and comparison with SM-I in Chapter 6.

super-structure: The few indentations from posts in the subsoil indicate the dwelling was three aisled. Indications for posts further were completely absent due to post-occupation oxidation of the peat habitation surface. However, the laid clay floor and hearths had subsided, and these features were recovered intact. There are two main internal divisions marked by deposits and feature differences, and clear opposing doorways through the long walls.

flooring and floor deposits: The clay for the floor at SM-III was not won from features within the excavated area; the natural substrata does have clay layers, but none of the pits of the areas excavated were dug deep enough to reach these. Clay had been spread as flooring, 4-6 cm thick.

The positions of deposits purposefully imbedded in the floor are given in Figure 16.

1. a small, complete pot
2. the pot foot from a bowl
3. an astragalus from an ox deposited adjacent to a small, complete, pot
4. a near complete imported pot (fig. 17), inverted, at the threshold of the doorway through the north long wall. The pot was not inverted over a definable material. Staining of the ground indicated the pot had been deposited in a shallow pit dug through the original peat accumulation, but not into sandy-clay.
5. a complete hind leg of a horse at the opposing doorway through the southern long wall, probably also originally deposited in a shallow pit only through peat, but not into subsoil.
6. lower leg bones from horse and cattle marking the southern long wall-line towards the northeast

While the division of the house is clear, it does not seem livestock were stalled in the north-east end, at least at the time habitation ended. The flooring was undisturbed and had surface finds mainly in the NE end which were little fragmented, having more the character of dumps, without clear indications of trampling. The immediate area around the hearth at this end had charcoal and flakes of bronze. The south-western floor area, with a smaller hearth, was clean. At other sites of the region, this is the main characteristic for distinguishing a dwelling area (clean) and the stalling area, with seasonal use for some work activity, sometimes with a hearth (Therkorn 1987a).

Three pits had been dug within the house. All had lumps of clay flooring in the fill and two had a patched flooring layer over them, and post-holes associated with them. They were evidently dug during the use of the dwelling (see below pit group 2: f78, f105, f106). That pit on

Figure 15 Plan of the excavated area of Schagen Muggenburg-III (SM-III).

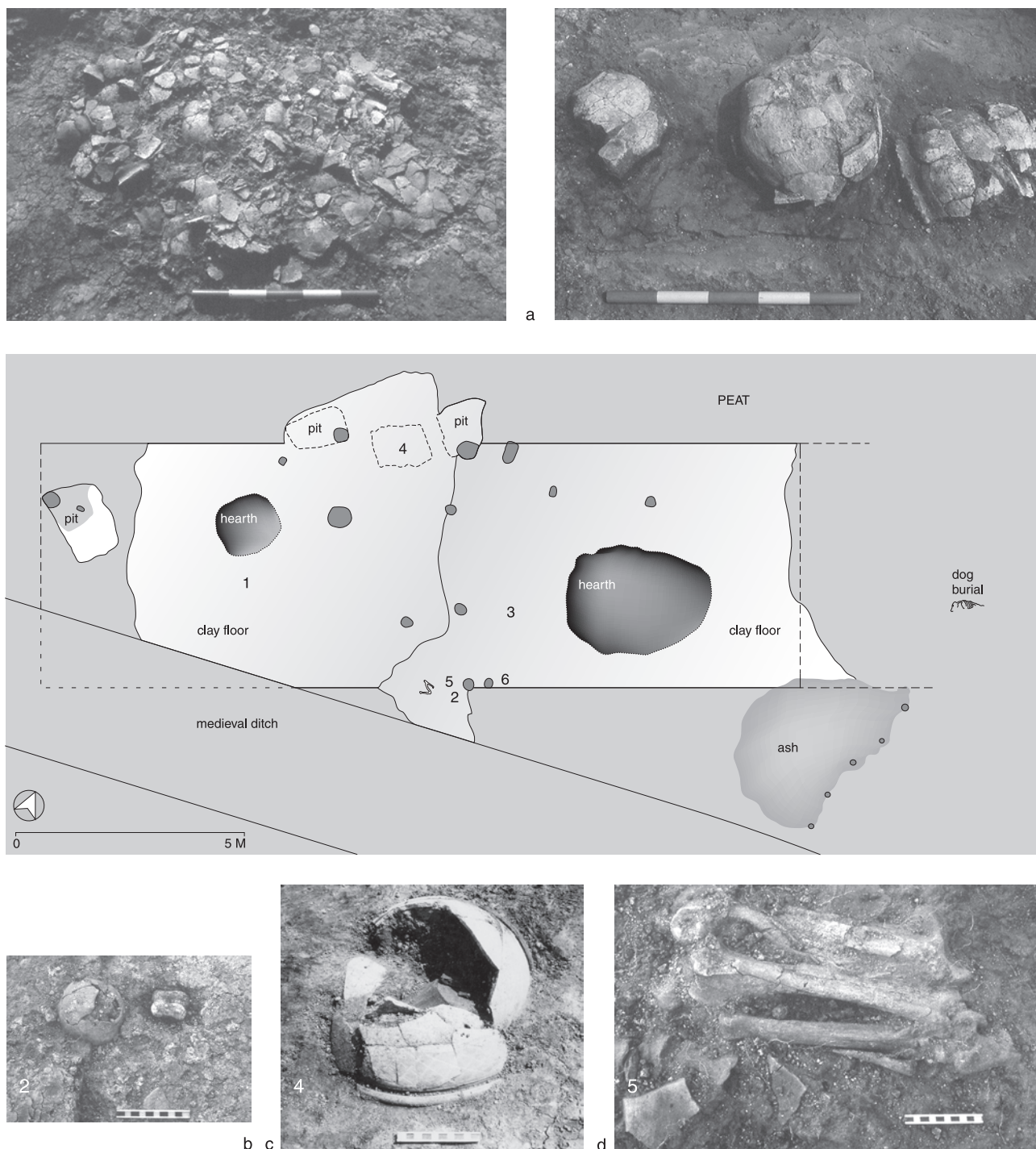


Figure 16 SM-III: House plan, with a: the dwelling end hearth, with clay capping removed from over the sherds (l), which were found covering three partial pots (r).

Below, b-d are three of the floor deposits: b. small, complete pot beside an ox astragalus, at position 3; c. large, import pot, found inverted at threshold, northern long-wall, position 4; d. complete horse leg marking threshold of southern long-wall, position 5.

the south-western end, even though it had clay in the fill, was not in an area with flooring. This could be consistent with a function of this end as sleeping area, also a characteristic of dwellings within the region (*ibid*).

Outside, adjacent to the northeast end were five post-holes bordering an ash dump. Fencing in any case is indicated, if not a small shelter or enclosure for protection under the eaves of the farmhouse for livestock.

hearths: Two hearths were found one in each of the main areas of the house. Both are important particularly because of the deposits underneath, which re-emphasize the spatial definition. Unlike the previously encountered hearths described for the region, all of earlier date, there were deposits underneath the SM-III hearths.

The dwelling area hearth had three partial cooking pots arranged in a row, as an initial deposit under the surface of sherd paving covered with clay (fig. 16).

The hearth of the eastern end consisted of clay, baked orange, with only the occasional sherd. This type of hearth with unordered sherds is in contrast to those of the dwelling end, where dwellings have two hearths, and has been described for other sites of the region (Therkorn 1987a,b). They are characterized by spreads of material around them and occur within the stalling area of the farmstead, put forward as in use during the months when cattle were out to pasture (c. April-October). Two bones from the lower legs were found under the hearth: a bovine astragalus together with a phalanx II from a horse. Placed close together and not embedded in the floor, it is certain the bones were intentionally placed when the hearth was constructed. As mentioned above however, while this hearth is typical of a stalling area, there is no indication livestock was ever sheltered here. The bronze and charcoal around the hearth indicate at least bronze working in this part of the dwelling.

house divisions

Longitudinally, there seem to be two clear categories of material associated with the two main divisions of the house: pots at the living-end, and bones in the work area. They reflect the activity spheres of enclosed space, as they could well reflect main female and male divisions of concerns: of basic maintenance activities associated with food processing and cooking; and metal working, of unknown importance, but within that part of a farmhouse which traditionally would have contained livestock.³⁴ The axis through the opposing door-openings is marked similarly to the long axis of the house with deposits of a complete pot on the north and a complete horse leg on the south. Both spheres are represented, in materials placed together, towards the eastern hearth in the deposit of small, complete pot and ox astragalus. While the doorway axis is shorter, the deposits seem larger: a large Roman import pot, as opposed to those small native pots inside the house; and, a complete horse leg under the threshold rather than a foot bone element. As to scale, both deposits emphasize the importance of thresholds and inside-outside. Entrances, directions and gender will be taken up more fully in Chapter 6.

The importance of the chosen lower leg bones must be emphasized: astragali, metapodia and phalange elements of ox and horse. Paralleling the pit deposits of the SM-I site, the same bone elements were used here to demarcate enclosed space. The pot-foot deposit possibly signs to associations with pots, but also as body part, corresponding to animal parts, and the already delineated importance of 'feet'. The pot-parts as common body parts, in the present vernacular (mouth, neck, shoulder, etc.; handles are 'ears' in Dutch), seems to be indicated here. Position-

ing of pot bodies – lying, standing, inverted and their ‘mouth’ orientations – will be taken up further in Chapter 6, as well as this farmhouse with its similarities to the layout of the SM-I settlement area.

2.3.2 LINEAR FEATURES

The distinction between linear features and pits is vague at this site compared to the somewhat earlier SM-I settlement. Along the southern extent of the area excavated – to the south of the dwelling – long, single pits were dug along the same line as groups of smaller pits. As far as can be determined from the area excavated, the manner of spatial definition changes below the south-eastern corner of the dwelling. These features, although relatively large, contained the back part of an ox skull, horn core cut off, placed in the north-eastern end. These were the only deposits. The only human bone, a left thighbone, of the site was recovered from a linear feature (f97).

To the west of the dwelling, linear features were formed by successively dug, and backfilled, pits (f102, f103) enclosing an area on at least three sides (fig. 15). The time-span involved in forming the enclosure may have had something to do with yearly events, or seasons, but marking was not such as to make many conclusions. The northern side (f102) was dug from the southwest to the northeast. One of the pits contained a complete, black burnished, pedestal bowl with incised decoration of pits and hanging triangles (fig.17). The eastern line was dug southeast to northwest (f103). Both lines had deposits at the entrance terminals, impressed into the side of the latest dug pits. On the northeast end were cattle skull parts. A complete Germanic fibula of the early to mid-4th c. was impressed into the side of the northwest end (fig. 17). The western side had no finds, nor did the pits within the marked area.

Pits, found to be near empty, therefore had been dug to mark at least a conceptual enclosure. Perhaps this semi-enclosure was the place of (ritualised) slaughter, although the slaughter waste was not deposited in the dug features recovered. The position to the west of the dwelling is somewhat similar to the bordering feature (f107) with slaughter waste at SM-I, a point to be further explored in Chapter 4 and 6.

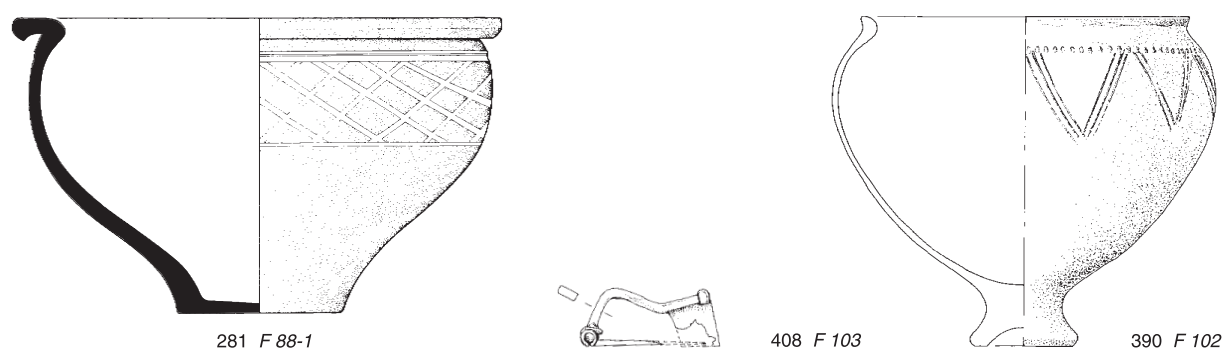


Figure 17 SM-III: (l) Complete import pot from the northern dwelling entrance, position 4, fig. 16; and (r) complete, decorated pot and Germanic fibula from the enclosure pit-ditches (cf fig. 15 for position). Pottery scale 1:4, fibula scale 1:2.



71



46

Figure 18 SM-III: Shallow pit feature of poorly preserved dog (f71) and bundle of three lower ox legs and skull (f46) (cf fig. 15 for position).

2.3.3 SHALLOW AND DEEP PITS: MATERIALS, SPATIAL DIMENSIONING AS GROUPS, AND ACTIVITIES (FIGS. 18 & 19; TABS.9 & 10; APPENDIX 1)

shallow pits: As at the SM-I site, large animal deposits were put into pits dug to the top of subsoil only. Only two shallow pits were recovered at SM-III and both had deposits:

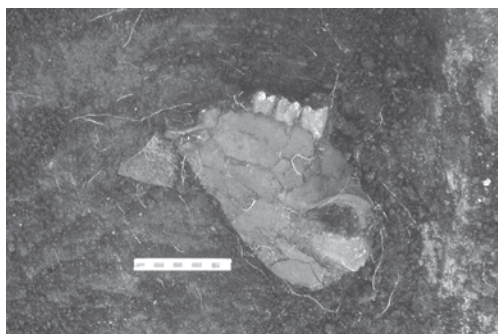
f71: A poorly preserved burial of a large dog was found at the north-eastern end of the house. Its head was to the northeast, looking to the southwest.

f46: Next to, or part of, group 8 was a bundle of bones consisting of skull and mandible and three lower legs of a very large bovine, of the size also found at the SM-I site.³⁵

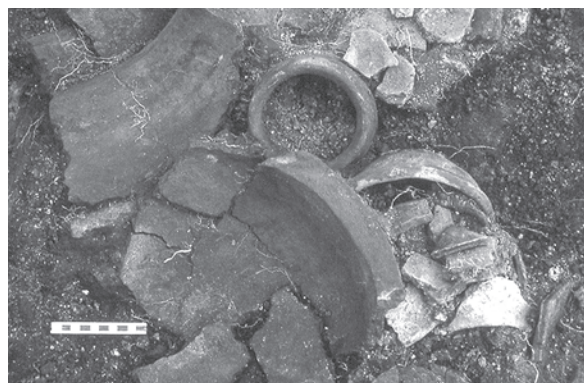
deep pits: The pits were generally less deeply dug into the white, sandy-clay sediments in comparison to SM-I, and only a few pits showed a clear stratigraphy, although it was obvious materials had been placed sequentially and with care. Preservation conditions for the organic finds were excellent and fewer recovered deposits is absolutely not a result of poor preservation conditions, relative to the SM-I site.

The most important aspect of the SM-III pits is that they generally have few finds, but pits groups have the deposits of those bone elements used in networking analyses to define ritual at SM-I: complete lower leg bones, single teeth and other skull parts. Bones representing body-parts with a great meat value, and thus labelled 'eating-waste' were fewer, relative to SM-I, and no estimation could be made of the slaughter time of animals for making general estimates of season at death, and time of making pit deposits.

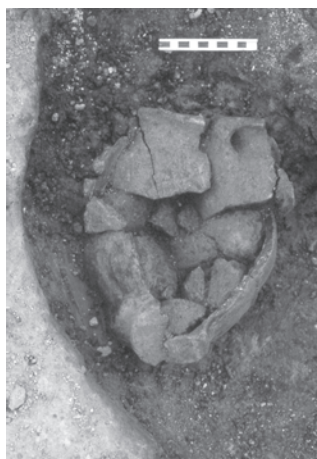
The qualitative criteria defined for SM-I in bone elements does seem to apply for groups of pits of this site. Horse element and cattle skull elements differentiate pits within a group of three as well as there being a consistency as absence of a recognizable deposit in the third pit of a group. The Spring indicator, in addition to skull parts (but not horse), defined for SM-I of



15



58.1



24



58.2



58.3



106.1

106.2

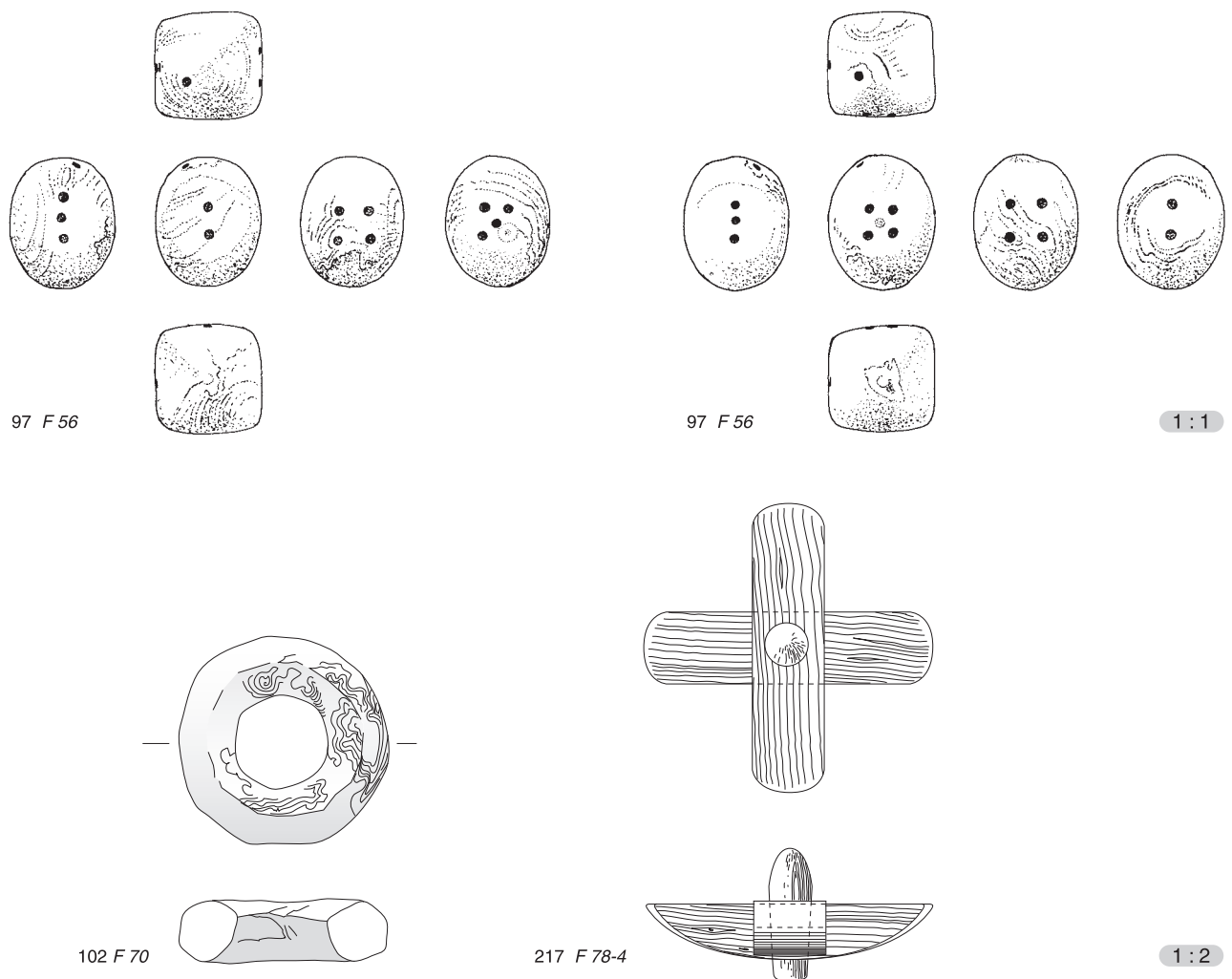


Figure 20 SM-III: Wooden objects from pits of a pair of dice from root-wood, a wooden ring and an object, possibly a spin-top.

wood with holes is represented by only one find, and there is but one find of hazel. The complete pots, spindle whorls, and samian ware fragments, again only undecorated sherds, are not season-specific. Table 9 shows the pits arranged according to spatial grouping, and Table 10 as arranged according to the types of marking finds following SM-I as to a designation for season. While seven groups did follow the SM-I criteria, six are unclear. For the SM-I sites, peripheral groups were those where the model did not fit, and this is mainly the case at SM-III.

Lacking lots of finds, placement of what there is seems carefully done. As compared to the confusion of SM-I, SM-III is elegant in comparison, or 'simpler'. But, through the model provided by the somewhat earlier site, there seems to be clearer intent. The bone elements seen as networking the pits into a definite framework, despite the overload of other types of materials at SM-I, are those recovered consistently from this later site. These foot and skull elements do

Figure 19 SM-III: Examples of deep pits with feature numbers (cf fig. 15 for position).

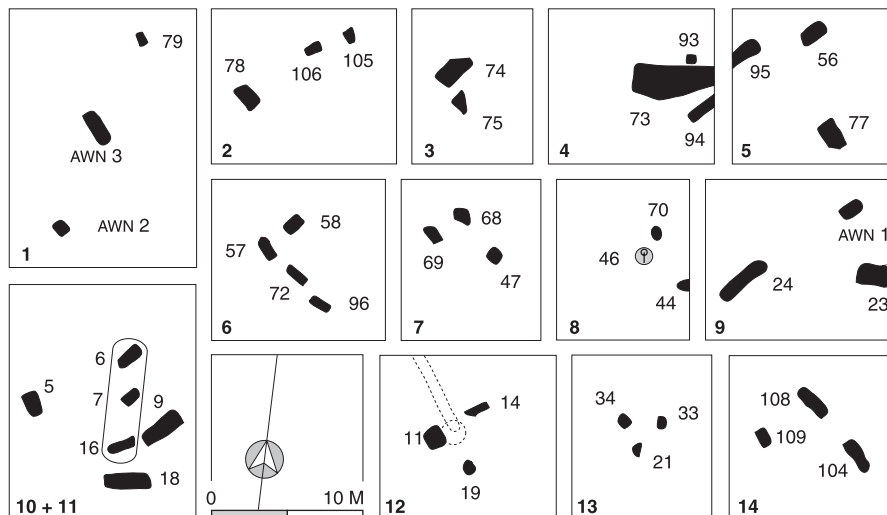


Figure 21 SM-III: Groups of pits with feature and group number (cf fig. 15 for positions).

seem to be an important category, and considering the absence of other types of finds, those considered most meaningful for deposit.

Eating waste is possibly more symbolically represented at SM-III. In contrast to SM-I, many of the broken pots here might make sense through the placement. Loose sherds were relatively few. However, large vessels were represented through very large single wall-sherds, all placed horizontally, inside upwards. This also applies to bases, one of which was secondarily worked to shape it into a plate-like disc. Conceivably, and given the one pot base with collected lamb remains from SM-I (f142) the meal component is represented in SM-III through these large platter-like or plate-like sherds. In line with pot-foot/animal foot deposits, however, these large sherds could represent disarticulation of pot-body parts as well, as animals and trees were disarticulated (Chapter 3).

With little of even ritual rubbish, the contents are characterized by things: complete pots, dice, wooden top, wooden circle, boar's tusk, polished stone, spindle whorls. Gaming discs in pits are again black only, including one of black stone. A tail bone with incised X's on the ends could fit with a gaming/lot interpretation. Wooden objects and lengths of un-worked wood are few. The only wooden objects are a spin-top, wooden ring and a pair of dice, from root wood (fig. 20); and, within the dwelling, part of a possible furnishing (f105).

Aside from the inverted pot within the northern dwelling entrance, the complete pots found in pits spaced encircling the dwelling at this site were found standing upright, as they were at SM-I. The only jars found were two examples found lying, again with mouth opening to the northeast-east, in the bottom of two pits in the line of features to the south of the dwelling (f24, group 9; f7, group 10). These pits were also, importantly, incorporated into the pit alignment stretching off to the northeast-east. This is again a similar pattern and of type of vessel and direction as found for the northern area of SM-I, of pits aligned with single jars placed on their side, 'lying down'. The same type of alignment, bordering the southern area was indicated in the trial trench in the southeast at SM-I and linear features to the south of the dwelling. The spatial layout of the features along the south of the settlements seems to have been similar.

The pits of SM-III show intra-site variability to the same extent as SM-I. Empty pits or pits with one telling find are adjacent, for example, to others containing up to five complete pots. Again, it appears as though the inhabitants did their best in figuring out variations in horizontal layout for their pit groups (fig. 21). The groupings seem ordered in a more regimented style relative to SM-I (fig. 10). The tighter control makes the use of circles likely as the means used to set out the pit group patterns. The staggered linear and triangular settings are clear, and will be further interpreted in Chapters 4 & 6.

settlement layout and activities: To the northwest-west, one trench was excavated by the local group of amateurs. Hearths and ash were found as well as vitrified pottery (F. Diederik pers. comm.). The settlement layout could have been similar to that of SM-I with an open air production area to the northwest-west. There are few activities shown by pit finds around the SM-III dwelling in contrast to the pits of SM-I. Aside from the multiple pot depositions (f58, f106), there were the gaming pieces and a quern fragment (f95). Wild is represented by only one bone: a complete wing bone of an eagle owl (*Bubo bubo*; f106), a rarely recovered species for the region.

2.3.4 END OF HABITATION AT SM-III

A low mound was raised over the dwelling and the immediate area when habitation ended (fig. 15). The mound was similar to SM-I as it had been fired, as seen by burnt orange material of clay and peat ash over the dwelling (fig. 13). After dismantling the superstructure of the house, but again avoiding disturbance of hearths, the mound was raised and then set afire. Plough marks could not be discerned in the material of the mound as they had at the other Schagen site.

CONCLUSION

The qualitative sameness, but also quantitative differences, of depositional patterning in pits between these two sites at Schagen will be taken up in later chapters. The thread running through both sites is the deposition of single bone elements from livestock in pits and importantly within the dwelling of the somewhat later site, SM-III. While the content of the pits has been suggested as patterned and connected to the seasons, the meaning behind deposition of the reoccurring finds of lower leg and skulls elements of the livestock can be more closely regarded. Fortunately, past researchers have provided breadth and depth to possible meaning definition within the 'foot symbolics' and divination discussion. Both aspects will be taken up in the next chapter through analogy, thereby including the more than 900 deposits of wood from pits at SM-I into a more encompassing, depositional scheme of symbols as Trees.

Chapter 3 Life's path, feet and divination: towards Trees

The bone elements of lower leg and skull parts, including single teeth, were distinguished in the previous chapter as forming the deposit continuum binding features together in sameness. Not explained is why these bones might have been important and selected for deposit. Below, particularly the small, compact objects of lower leg bones, in natural state, are further regarded as to why they have been deposited to weave points together, of burials and deeper pits, and as deposits within the dwelling. Some associations will also be sketched for the skull parts.

First, the foot bones will be brought into connection with the European, and wider, referencing as part of studies on the foot as symbol. Then, the European-wide mentality of divination will be taken up, as the same bones were also actively used within a mentality of the power of things, pre-Christian to folk practice. Within past studies cited below on body part meaning (including foot symbolics), texts and practices were followed backwards, and concentrated upon seems to be an underlying symbolic meaning of male generative force. However, here it is suggested that the underlying referent may be 'World Tree', for the late northern tradition. This combines the widely known aspect of texts on earthy sacred trees, and human and animal parts can be considered as tropes of trees, within cosmology. Provided as well is a point around which meaning could invert, from the pagan to the Christian period, where in the latter men give rise to 'family trees'.

As a result of these networking combinations of texts and language, many finds are suggested to have a common structural base suggested by the archaeological context of being literally rooted in pits, within regenerative aspect of being buried in the earth. Returning to the theme of divination, with the more encompassing structure, the framework of the seasonal, the context of deposit in pits is bound to seasonal regeneration and to various finds in a suggested active use in making contracts with the gods/nature, prior to burial which closes the contract.

3.1 FEET ARE IMPORTANT: FOOT SYMBOLICS

The complete lower leg bones consistently deposited in pits of the Schagen sites can be taken up within the 'foot symbolic' discussion. The theme has been part of formalized discussion for more than 300 years, starting apparently with Benedictus Balduinis' *De Calceo Antiquo*, published in Amsterdam in 1667 (cf Verhoeven 1956). Since that time, there have been various approaches in studying feet. The amount of data is enormous, as apparently most of the inhabitants of the world are concerned with feet, in addition to and through, the obvious functioning of feet. Although Onians' 1951 grand work has remained in print, the body part discussion, in general, is not usually part of archaeological analyses nor are the obtained materials interpreted within the broader symbolic framework.

'Foot symbolics' is just one of numerous types of studies done within ontological acceptability of symbolics as intrinsic to human life. The social/academic mentality within which

people and divinities	<p>Isis and Nebthath associated with leg and foot of dead (respectively) as embodiment of strength of life, life itself</p> <p>Sarapis as healer, feet as symbol of healing and renewed power (Hellenic Egypt)</p> <p>Mars Gradivus blessing of cultivation under footsteps</p> <p>Pyrrhus with right foot healed spleen afflictions; big toe remained undamaged when body cremated</p> <p>Vischnu footprints honoured as shortest way to heavenly bliss (<i>Rigveda</i>)</p> <p>Buddha 5 x 2 foot large footprint where he took off to heaven (Ceylon)</p> <p>Auvandhl's toe while on Thor's back, in a basket, Auvandhl's frozen toe became a star (Snorri)</p> <p>Ymir's heels placed together produced a son (Snorri)</p> <p>groom placing foot on bride's as sign of dominance (13th c. Germany)</p> <p>chapel at Grossbeck footsteps in stone left by goddess, stepped in by women to become pregnant</p> <p>well at Aargau footsteps attributed to Saint Verena</p> <p>thief's footprints put in pot with coffin nails (Westfalen); put in pot with glass sherds, lid airtight, cook until pot explodes (Bohemia); put coffin nails through footprint (Mecklenburg)</p>
horses	<p>Pegasus stamps up well at Hippocrene</p> <p>Baldr's horse stamps up well (Saxo)</p> <p>Charlemagne's horse wells at Odenberg and Aachen</p> <p>St. Bonface's Abbos stamps up well near Dokkum</p> <p>St. Walpurgis' (donkey) pawed up well at Heidenheim</p> <p>Frau Holle women near-term give oats to dapple greys as the horse of the goddess of midwives</p> <p>to hex put nail through hoof print (southern Germany)</p> <p>to protect take first horse print by village boundary, throw backwards over border (Brandenburg)</p>
other animals	<p>Dionysus honoured with bull's foot</p> <p>Berchtha Carolingian 'Stammutter' has goosefeet</p> <p>Freya with swan feet</p> <p>dwarfs with cattle or horses hoofs: fertility of underground</p> <p>corpse head from man, foot and thigh from women, kept in smoke room as sympathetic means for fertility and health of livestock (Posen)</p>
shoe/stocking	<p>Ruth 4,7 giving sandal as sign of contract closed</p> <p>Perseus' sandal at Chemmis said to appear, three feet long, as a sign of coming prosperity for Egypt</p> <p>Tanaquil Etrusken-Roman originally with sandal; sandals+spindle+(weaving)skirt as attributes of Roman Matrone (temple of Dius Fidius)</p> <p>old shoes built into walls, under threshold or floors during construction (Belgium, France, Germany, Spain, Switzerland, Scandinavia, Finland, Netherlands, Britain); fastened to suitcase of bride</p> <p>into shoes, weddings for luck, health, fertility, bride puts: money in shoe (or stocking) before entering church (Saxony, Bohemia, Vogtland, Baden), or flax (Thüringen) or other crop plants (Brandenburg), salt and bread, or mugwort (Waldenburg)</p> <p>axe in stocking placed in a woman's red stocking and set on threshold of byre door so that cattle step over it when returning to fields in Spring</p> <p>adoption ceremony made by the elder of the sib, a 'shoe' was cut from a three-year-old, bovine's, lower foreleg and a vat of beer set beside it; the elder first placed his foot on the 'shoe', then the initiate, followed by the rest who thereby showed they agreed with adoption (Scandinavian)</p> <p>shoe of dead next of kin binds shoe on corpse before barrow grave closed (Old Norse)</p>
divination with shoes	<p>throwing/spinning eve/day of St. Andreas, St. Thomas, St. Sylvester, Christmas: e.g. girl throws shoe over tree and listens to direction of dogs barking as sign of direction beau will come (Oberpfalz); shoe thrown three times at pear or apple tree, and if on third throw stays in tree, beau will become spouse (Pfalz); standing with back to the door, girl throws left slipper back over her head; if the toe is pointed towards the interior, a bridegroom will present himself that year (East Prussia, Mecklenburg, Vogtland, Tirol, Bavaria); girl spins a shoe and if points to door, girl will leave house in the coming year, to inside will stay (East Prussia, Sudeten, Vogtland, Saxony); if points to cemetery, person will die in coming year (Vogtland), or indicates someone will come from a certain direction (East Prussia); on bridal night, groom throws (spins) shoe, if points to wall or door, he will die first; if towards the bed, his wife will die first (Krain)</p> <p>polishing shoes will die if done during twelve nights of Christmas or will be the next to die if boots polished before walking in burial procession (Mecklenburg)</p> <p>broom stuck into earth or snow (St. Sylvester or St. Thomas Eve) with shoes around: death predicted if the direction in morning is towards cemetery (Austria)</p> <p>witches if there is a whirlwind or hail, throw left shoe to make the dancing witch appear (Switzerland)</p> <p>future bridegroom put 'well-weed' into shoe: girl will meet bridegroom (Waldenburg)</p> <p>wear of shoe crookedly from inside, will become rich; from the outside, poor (Bavaria)</p>
remedies	<p>sick animals let sick chickens (Böhmen) or sick calves (Oldenburg) drink salt and water from shoes</p> <p>unwanted attentions put on a pair of new shoes over bare feet, walk a mile take off the right shoe and drink some beer or wine from it</p> <p>illness put the name of the fever on a piece of paper in the shoe and when the paper falls apart, so will the fever (Oldenburg); put right sock on first (Oldenburg)</p>

Figure 22 Examples of various forms of 'feet' cited in the study by Aigremont (1909).

such studies have occurred will not be examined here. Certainly, the beginning of the 20th c. was noted for cross-pollination in the various sources of data examined within historical disciplines. Exclusive specialist research was more or less inoperable given the goals of understanding the rise of western civilization. In the two studies providing most of the examples for this section, people are analysed as understandable within an (ill-defined) Indo-European context, and beyond. Past studies included archaeological materials to illustrate developments, providing examples of much earlier practice, continuous with ethnohistorical traditions in Europe. The earlier studies can be taken up in various ways in providing elements useful for extending insight into deposits of the foot bones recovered from Schagen pits, and absence of foot bones of burials from humans and animals.

3.1.1 MOTHER EARTH TO FATHER FEET: DR. AIGREMONT ³⁶

Aigremont (1909) uses archaeological materials, iconography, early and later texts, customs and oral history to make and support the argument. Symbolics of feet is the theme, not particular materials. Included for example are rock engravings, classical texts and 19th c. customs. The sources are cross-referenced through feet, and while Aigremont concentrates on those of humans, examples of other animals are also taken up. That materials were meaningful within symbolics was taken as a given within synthesizing and theorizing works influenced by psychology. The study has explicit elements of dialectical evolutionism and aspects of phenomenology. Figure 22 lists a selection of some of the practices and beliefs cited, whereby noted here are relatively more of the animal rather than the vast majority of human feet examples. A few classical and biblical sources are given, written down earlier than the ethnohistorically known examples gained mainly through Aigremont's interest in rural European society.

According to Aigremont, the meanings attached to feet originated within matriarchal, gyneocratic society whereby fertility of the earth was bound to, and equated with the foot, in a metaphysical and literal sense. Through the later development of male dominated society, the original symbolics were partially retained and adapted, to an extent masked, and/or compounded. The theory of general societal change leans heavily on Bachofen's (1861) interpretation of matriarchal society developing into patriarchal. The material is arranged chronologically, as far as was understood in the early 20th c., to illustrate the theory.

Power is interpreted by Aigremont as becoming the dominant symbolic theme, the male principle 'foot' dominating the female principle 'earth'. 'Foot' is symbolic of power as prime mover and generative force in female fertility through earth contact. The same applies to the accoutrements of feet: shoes, sandals, socks and stockings are extensions of the feminine principle. For later European history, the foot as phallic and footwear as symbolic of female genitals is most obvious in various forms of salacious lyrics and art themes. The principle of gender is also found adhering to animal feet: bulls' and horses' are 'priapic' (phallic); those of cows are 'tellurian' (earthly).

The imaging of feet whether in texts or as iconography is stacked chronologically and followed linearly from the Near East to Egypt, to Greece and further within Europe. The interpretation is the spread of foot symbolics marching along with the spread of civilization, not an unusual explanatory framework for the early 20th c. Societal transformations are witnessed through transformations in symbolic ascription, through gender transference, but within the

same broad scheme: generative power. Within early 20th c. social evolutionism, the study was well received and is still often cited for the data it includes.

3.1.2 FEET AS MIND SET: VERHOEVEN

The same type of data is used by Verhoeven (1956), but the range is extended to include many other parts of the world whereby the framework of explanation is one of transcendental, Jungian universals. Verhoeven poses the question: does the symbol 'foot' have of itself a religious meaning or has the symbol received meaning from religiosity (Verhoeven 1956, 204)?

Examples of the phenomena are found spread – rather than chronologically stacked – around the world. The answer to the question is determined through the distribution: if it appears people within many cultures are incorporating foot symbolism within their religion, 'feet' must have inherent meaning and the symbol is a mental structure inherent to being human. Examples of the structure are then variously illustrated through Native American Cheyenne using deer hoofs to divine where to find deer, practices described in the Old Testament or the Vedas, and prehistoric rock-engravings of feet. The underlying meaning is interpreted as being within the dialectics of fertility and power/order.

Whereas Aigremont's data was chronologically ordered, with societal changes as explanatory mode, Verhoeven's methodology is necessarily concerned with the nature of symbols. He finds that earlier studies lacked power as the natural religiosity of the symbol remained unrecognised. By equating foot to 'penis', a symbol was thereby degraded to a sign, and nothing was revealed of the actual symbolics: interpreting something as 'phallic' or 'magical' is for Verhoeven thus only solving a banal riddle (1956, 94). For example, the Dutch expression 'having a white foot' was thought to have arisen through a 16th c. Dutch custom whereby horses with four white lower legs could pass toll-free, as the colour white was regarded as 'magical'. Verhoeven considers that nothing is explained (1956, 44). He does not suggest a more specified reason, as inherent symbolism is its own explanation.³⁷

As exemplary of the combined importance of power/order and fertility, Verhoeven cites a number of practices associated with northern European weddings:

- the bridegroom gives shoes to the bride for the ceremony
- the bridal shoes are saved whereby a happy married life is insured
- the groom drinks from a bride's shoe
- guests throw shoes after the departing bride and groom leaving church
- shoes are attached to the vehicle in which the married couple leaves the scene ³⁸

Verhoeven (1956, 98) suggests that seeing these actions as simply part of a fertility rite misses the power/order symbolics.

3.1.3 SCHAGEN BONES AND CHRISTMAS STOCKINGS

We might not know of these practices, but possibly some of the transformations thereof, which when combined with the older, could lead to analyses of transformations. As materials and practices noted for centuries, different forms of analysis through structuring practices could be drawn through to more modern forms including substitution of shoes to dragging tin cans

behind the bride and groom's departing vehicle and throwing rice, rather than shoes. Certainly, the economics of empty food 'container' and seed-fertility/throwing-sowing actions of the more modern practices might be an obvious line in analysis. Exactly because of the changes, meaning might become more transparent within a ritual context using everyday materials, which are at the same time actively being discarded (that is, 'ritual rubbish').

Present-day practices are part of the foot symbol discussion. Why certain explanations may seem more satisfying – that is, more logical – than others is effected through actual practice of the present day, within aspects of double hermeneutics. Renewed interest in Heidegger's mundane world in bringing 'to attention things that have been forgotten or made to seem trivial' and the idea that 'hermeneutics begins at home' (cf Gosden 1994, 109) is combined with practices of the long term with present practices. Ethnohistory, of growing interest within the Oer-IJ Estuary Project since the eighties (Garthoff-Zwaan 1987) and more widely (eg., Knapp (ed) 1992) is in a direct line to popular culture, but needs to be addressed within the logicity of archaeological interpretations, as archaeologists also are part of popular culture.

In examining the hidden meanings of foot bones in pits, and forming the interpretative framework of seasonal ritual, a number of facets could simply be thought up that framed a logic – unaware this was a part of the long term, foot-symbol discussion. A reasonable structuring explanation could be found within one's own head, without the benefit of specialist study, through the common metaphors and mental mapping of 'life's path' and 'the road not taken'. This becomes worrying as the object of analysis becomes an effect of the long term in being part of one's own data-set, as a product of symbol-associations and logic transforming over centuries.

Within metaphorical logic, the path of pit-finds would be literally represented by the bones of feet within the sense of seasonal expectations that bind the years of settlement habitation within time, as progressing along that path. And, within that progression, given livestock as primary subsistence base, most important were the foot bones of those animals. Casting about for materialized 'feet' to accompany the metaphorical, but at the same time modern logic and materiality, examples are found as modern practices. These include, for example, marking a personalized life's path in making relics by bronzing baby shoes or the seasonal in hanging up a Christmas stocking from the mantelpiece to be filled within gift exchange, which is analogous to putting a shoe beside the hearth on St. Nicholas' Day in the Netherlands. Both stocking and shoe are supposed to be filled with gifts, and the latter sometimes in exchange for providing food for St. Nick's horse.

Both Aigremont and Verhoeven withdraw themselves into the objective analytical stance (c.q., academic or folk), although some poor referencing by the first author might indicate some of the examples were drawn from personal experience and the reader's of the early 20th c. Following Verhoeven's line, one is apparently taking part in symbolic action too deep to grasp, either because of the long ago coming of patriarchal dominance, or because symbols by their very nature can never become transparent, at least to the practitioner. In the Christmas example of stocking/shoe, logic of exchange used towards children is the aspect of good behaviour over the past year which is rewarded with gifts from the non-aging, male, popular-cult(ure) figures. Within present adult practice the exchange is possibly consciously symbolic for some, in the action of binding and marking relationships; one can possibly read meaning from the gift itself, but most actors are probably not reading anything into the containers of shoe or stocking.

However, the practice of placing a carrot in the shoe set by the hearth for St. Nicolas' horse, in exchange for gifts, is still evidently a viable visual metaphor, meaning still entwined with male/



Figure 23 A modern, seasonal, example of foot and generative principles from the cover of the Volkskrant weekend magazine (November 11, 2003).

female generative principles as can be read from Figure 23. It is doubtful the graphic designer of the figure knew of the century-long discussion of foot symbols, and more likely design was through form analogy and associations: an iconographic metaphor. Another facet of meaning is culturally specific. For the season, immediate referencing within Dutch tradition is also made to setting a shoe with a carrot for St. Nicolas' horse. Another facet of Figure 23 is that the picture (except for the season) has nothing to do with the content of the text contained inside: it is a bundling of two messages from two articles, one about shoe fashion and another about Christmas holiday meals for vegetarians. To get the meaning of the iconography of the cover, one must be acquainted with the Dutch tradition of St. Nicolas (celebrated December 5th).

The implication of the above: given the use of the same materials through time, and that tradition could be the meaning in itself, how does one define the operative meaning or set of meanings for specific times? This is not a new question for archaeology. The same bones have been given an additional meaning, as Maier's study shows: very old indeed, they occur as deposits far back into the mists of Palaeolithic time.

3.1.4 ANIMAL FEET TO HUMAN FEET: MAIER

Maier (1962) attacked the problem for older materials through charting the distribution of mainly modified foot bones and imitations thereof. Chronology is his framework for supplying the explanation. Once the chronological ordering has been established, explanation again becomes the distribution itself. Most of the sites are ritual in nature, the criteria being dead humans, and the sites primarily megaliths, grave-caves and graves.

Most importantly, as the study covers much of Europe, Maier's catalogue demonstrates the clear selection of particular bone elements for deposit for a great time span over wide areas. Many of the illustrated finds are modified bone elements: the 'idols' from metapodia, 'whistles' of phalanges and the 'amulets' from teeth, jaws (with and without teeth), are characterized by holes. Aside from actual phalanges, there are also *imitations* of horse and cattle phalanges in stone, clay and ivory occurring as grave goods. Based on these and many other types of foot/hand finds, including human shoe and feet amulets and engravings, Maier came to the conclusion of there being a general form of foot symbolics (hands and teeth are rather ignored) from the Palaeolithic onwards, across Europe.

Maier was mainly concerned with the Neolithic period, and he consciously sidesteps the long discussed astragalus elements then thought used as deposits only within the Bronze Age.

In a later work he associates the use of astragali with both games and oracles, maintaining the use derived from the Far East, having originated with sacrificial rituals of nomads (Maier 1987), reason unspecified. This may be a result of ethnographically known practices, rather than archaeological definition.³⁹ Up until the medieval period of Europe, these astragalus elements, usually from sheep, remain in ritual association with cremations, usually of males (Knol 1987, Krüger 1982, Kühl 1984). The largest deposit noted contained 72 astragali and accompanied a late prehistoric burial of a woman (Kühl 1984).

The material discussed by Maier is mainly from the feet of animals, wild and domesticated. He suggested a differentiated use of the lower leg bones for places and period: for northern Europe, a greater selection of phalanges, with a more southerly distribution of metapodia, but the use faded out in undefined terms towards astragali selection in at least central and western Europe from Halstatt times onwards. The ‘diffusion’ of astragali deposits is wider than the contemporarily occurring rise of human foot/shoe/sandal symbols that Maier associates with the ‘Fremdimpulse’ of metallurgy, colonization and ‘cults’ from the eastern Mediterranean and the Near East.⁴⁰ The bone elements taken up within ritual are introduced into areas through migrating people, and the ‘matter’ becomes diffused:

‘Im dem ungleichen Verhältnis der nordischen Astragale zu den Phalangen spiegelt sich das erdrückende Übergewicht des Fremden, gegen das die gewachsene Tradition kaum mehr aufkommt. Praktisch hat die Phalangen-Sitte dann ja auch mit der Bronzezeit ihren Abschluss gefunden’ (Maier 1962, 257).

‘...Doch scheint dabei kein wesentlicher Sinnwandel zu erfolgen -- die vielgestaltigen und verschieden gebrauchten Einzelformen sind überhaupt nur in einem grösseren wesentlich gleichbleibenden Sinnzusammenhang verständlich. Hier kann die angekündigte religionsgeschichtliche Auswertung nähere Einblicke bieten: an dieser Stelle genügt die Erkenntnis einer “anthropomorphen Überfremdung” der von “paläolithischem Tierdenken” struktuierten Autochthonen Europas und Kleinasien’ (ibid., 264).

From Palaeolithic animism overlaid by anthropomorphic impulses, these bone elements are again interpreted as the bearers of civilization, accompanied by metal. Whatever explanation is used for the deposits, there is in any case excellent evidence for people manipulating foot bones, expressing feet in various ways from very early times to the present in the West.

3.2 THE MATERIALS OF DIVINATION AND POWERFUL MATERIALS

In a number of the examples of late foot-symbols (fig. 22), shoes were noted as actively used in 19th c. divination where the orientation is important. Here earlier examples of bones, wood and iron will be seen as the materials often shown variously wrapped into classical, Church, Germanic-Frankish practice within a common aspect of mentality, a shared belief in divination. It was legitimised practice, although who was authorized to manipulate materials and interpret the will of the god(s) was contended up through the Middle Ages. What happens to the materials after use is not specified in early texts. While the element of games may certainly be present, well recorded for teeth, phalanges and astragali, certainly astragali are also suggested as a material

used in divination in Europe (e.g., Maier 1962, Krüger 1982, Kühl 1984, Lehmkuhl 1985, Knol 1987). Through archaeological associations and/or folklorists' knowledge that 'old practices live on in children's games. . .' (E. Evans cited in Walton 1969, 106), distinction of only the astragali might well be too narrow. And, there are many texts of later practice including numerous everyday materials as having been powerful. Here, the theme will be briefly regarded of divination as general belief in the effectiveness of materials, of the types recovered from the pit contexts in Noord-Holland, in divining a higher order. Attention is given to the associated materials, and the setting, rather than conceptual aspects, as the focus is to provide points of departure for distinguishing likely meanings, given the combinations of deposits in pits.

3.2.1 RURAL CLASSIC

Practices noted by missionaries to northern Europe, at contact, were not dissimilar to practices known to Greeks (cf overview Morrison 1981) and Romans. The research done on the subject is vast, over vast areas – that is, the world – and overlaps the foot-symbol discussion, in materials used. Although the divine to whom the questions were directed were culturally bound (leaving aside questions of possible basic Indo-European deities) the general practice was decidedly not. Everyday materials were used for practicing the art, although with which materials is at times unclear. Whether or not 'lots' in texts refer to wooden or bone objects, or other materials is not always clear. Whether or not the bone element is meant when classical writers make mention of word forms of 'tali' or 'astragali', in Latin or Greek, then translated to 'dice' is also unclear as the bone elements have the same designation.⁴¹ Archaeological finds from early and later Aegean contexts show the importance of the astragalus bone, through caches of many unmodified examples and funerary contexts with special vases to hold them. They are also recovered as imitations in bronze and glass, or with a gilt covering. That at least some of the meaning must be sought within divination is generally acknowledged (cf Gilmour 1997, and ref. therein). While ritual contexts gain much attention, astragali also occur in domestic situations. Overrepresentation in charred examples, interpreted as burnt on a house altar, makes it possible to delineate ritual use of astragali within households (Prummel 2003, 191, 212–219; and ref. therein).

Pausanias, in the 2nd c. AD, was explicit about a pile of 'astragaloi' in a cave, and how to go about divining:

'On descending from Bura towards the sea you come to a river called Buraicus, and to a small Heracles in a cave. He too is surnamed Buraicus, and here one can divine by means of a tablet and dice. He who inquires of the god offers up a prayer in front of the image, and after the prayer he takes four dice, a plentiful supply of which are placed by Heracles, and throws them upon the table. For *every figure made by the dice* there is an explanation expressly written on the tablet' (*Description of Greece* 7.25.10; ed/trans. Jones & Ormerod, 1918; my emphasis).

The phrase in italics was apparently troublesome, as the idea of marked cubes of 'dice' (as Frazer translated it) now form a 'figure', but the translator admitted uncertainty.⁴² The problem would seem to be solved if the actual shape of each of the four sides of the *astragaloi* (as they are named in the text), were that which was analysed.

That most informative source on Roman practices is Cicero's first century BC dialogue on the pros and cons of divination in its numerous forms. One passage is here cited as it well illustrates ever-present legitimising attitudes towards materials, gender, country bumpkins and trees, and carved lots, as rural belief, as opposed to elite practice. Praeneste was a place marked by a temple of Fortuna.

'And pray what is the need, do you think, to talk about the casting of lots? It is much like playing at morra, dice, or knuckle-bones, in which recklessness and luck prevail rather than reflection and judgement. The whole scheme of divination by lots was fraudulently contrived from mercenary motive, or as a means of encouraging superstition and error. But let us follow the method used in the discussion of soothsaying and consider the traditional origin of the most famous lots. According to the annals of Praeneste Numerius Suffustius, who was a distinguished man of noble birth, was admonished by dreams, often repeated, and finally even by threats, to split open a flint rock which was lying in a designated place. Frightened by the visions and disregarding the jeers of his fellow-townsmen he set about doing as he had been directed. And so when he had broken open the stone, the lots sprang forth carved on oak, in ancient characters. The site where the stone was found is religiously guarded to this day. It is hard by the statue of the infant Jupiter, who is represented as sitting with Juno in the lap of Fortune and reaching for her breast, and it is held in the highest reverence by mothers.

There is a tradition that, concurrently with the finding of the lots and in the spot where the temple of Fortune now stands, honey flowed from an olive-tree. Now the soothsayers, who had declared that those lots would enjoy an unrivalled reputation, gave orders that a chest should be made from the tree and the lots placed in the chest. At the present time the lots are taken from their receptacle if Fortune directs. What reliance, pray, can you put in these lots, what at Fortune's nod are shuffled and drawn by the hand of a child? And how did they ever get in that rock? Who cut down the oak-tree? and who fashioned and carved the lots?...This sort of divining, however, has now been discarded by general usage. The beauty and age of the temple still preserve the name of the lots of Praeneste – that is, among the common people, for no magistrate and no man of any reputation ever consults them; but in all other places lots have gone entirely out of use...Then let us dismiss this branch of divination' (Cicero, *De Divinatione* II.xli; ed/trans. Falconer 1979).

Aside from powers of various materials, this might be typical of female goddess/mother contextualizing in opposition to male magistrates' practice. Cicero was himself an augur who thought 'augury and auspices the best means of controlling the excesses of democracy' (Falconer 1979, 216). Commoners are already put down as 'superstitious', a method which would remain for centuries in denoting those not legitimised authorities in dealings with deities.

Early Christian teaching carried on the tradition. St. Augustine can be found contemplating the workings of the divining 'wonder lamp' at a temple of Venus (Harmening 1979, 292). Importantly, the text is illustrative of Christian ponderings for centuries to follow in deciding if particular wonders, signs and omens were worked through the true god or the devil and his demons, the pagan gods, not whether they occurred.

Augustine decided in the case of the wonder-lamp that the workings were through the devil and his demons. His decisions on such matters were important and would set precedents for deciding the source of miracles for centuries to come.⁴³ *Superstitio* and all of the practices associated with it was seen as a religion in itself by Church fathers, but obviously the wrong

one. Not real wonders, those worked through the devil were demonic arts, a product of magic and wizardry, techniques achieved through the extraordinary intelligence and know-how of demons (Harmening 1979, *passim*). In usurping the old gods, the Church introduced sanctified forms of divination, that method most widely spread being through God's ordeals, a subject studied extensively by Herbert Nottarp (1956). Casting lots particularly may have been associated with pagan practice as use of lots in god's ordeals was quite early and specifically forbidden by the Church as sacrilegious: by the synods of Orléans (511), Auxerre (578), and Corbridge (786).

3.2.2 GOD'S ORDEALS

God's ordeals were a sanctified form of divination up to the 13th c., but still in use to later periods. Ordinary materials were still recognised as having power. The Christian church was accompanied by belief accompanied by practices not unrecognisable to earlier Greeks, Romans, Celts, or Germani. Legitimation and authorization were involved: which form and if overseen by a priest became the questions involving the materials, not whether the materials were effective or not, nor whether god's judgment could be so divined.

God's ordeals are first mentioned associated with the Christian deity at the end of the 5th c. (*Lex Burgundionum*, cf Nottarp 1956, 15). Within simple 'duels' retribution was part of the process: simply, he lying would be he dying. The basic premise of a god's all-seeing eye was tied to the laws of nature, most importantly the disturbance thereof. By the other forms of ordeals, it would become evident who was disturbing order by a less disastrous sign. God was order and his judgment would be known through signs of disorder: disordered nature would, depending on the type of ordeal, manifest itself most commonly through feet or hands.

They were bandaged after the trial, sealed, and then revealed after three days. Here interpretations differ. For instance, Buma (1949) assumes the simple presence of a wound indicated guilt. Nottarp however states the matter was decided after three days by being judged as to how the wound was healing: infection would indicate guilt as evil outs itself through the body as a sign of disturbed nature. Some latitude in subjective judgment in determining 'infection' probably had its priestly, political aspect as well. Charlemagne declared in 809 that nobody of the entire empire doubted the efficacy of such ordeals (text cited in Nottarp 1956, 224).

Pits were also used for trials. For example, in the earth trials known from an English text dating to about 1025, the accused was buried in a pit and if after two days he was still fit was judged innocent. The idea was that the 'earth' did not have a right to him (Nottarp 1956, 31). Interesting in detail of specified material is the reformulated ordinance from Würzburg dating between 1442–1455. Bishop Schenk of Limpurg decreed a duel would take place to determine who was lying in cases where a woman accused a man of rape, who denied it. The man was to fight from a pit dug to the depth of his navel, his left hand was to be bound behind his back, and he would have a stick, as his weapon. The woman, fighting at ground level was to be armed with a stick specified as hazel with a stone attached by a thong. One or the other could be killed, or, when disarmed a third time, the lying party was revealed, and could be killed by the other. Alternatively, the loser would be handed over to the capital crimes court: for decapitation if the man had lied, or, if the woman had been found guilty of false accusation, to be buried alive (text cited in Nottarp 1956, 295–296).

Scandinavian regions made possibly less use of trials than other Germanic areas, due to 'north Germanic scepticism' (ibid. 69). However, the duel was in use until the 10th c. where the form was superseded by trial by iron introduced by Christian missionaries in the early 11th c. In Denmark, the trial by hand-held iron was first used, followed by that involving the test of walking over heated ploughshares.

In England, the trial by boiling water was recorded by Ine of Wessex in the later 7th c.; Aethelstan decreed in the 10th c. that the trials by iron should take place in church, and ordeals are mentioned in the Danelaw of the 11th c.; Queen Emma's ordeal in 1043 was to walk over nine heated ploughshares, supported by two bishops, in Winchester Cathedral; as mentioned, the synod of Corbridge had forbidden the use of lots in 786 (ibid. 65, 218, 243). In the Netherlands, the duel in Friesland was possibly only reserved for rape cases by the 11th c.; Emo, abbot of Bloemhof, blamed the flooding of Friesland in his chronicle of 1219 on the wickedness of the populace led by false priests in their continued implementation of trials by iron despite church decrees (ibid. 55, 180).

The Lateran Council of 1215 had distanced the church from taking part in the trials, and although divine judgment would still be included in secular law, the ordeals could no longer officially be overseen by priests or take place in or near a church. Not long afterwards, Pope Honorius III in the Livonian Decree of 1222 prohibited even the secular use of ordeals by iron, a stance reiterated by Gregory IX in 1232 (ibid. 340, 352).

The Church reiterating its stance is an excellent sign people were not taking notice, and whatever the official church position, even trials by combat were still carried out as shown by restrictions of 1231 placed on duels by Frederick II for Sicily and southern Italy (text cited in Herlihy 1970, 121-122). A stream of restrictions and reminders of church law show continued use further north. Still, in 1508, a trial by iron was demanded in a rape case in Land Wursten and in Groningen although trial by iron had been prohibited in 1424 (Notarp 1956, 204-205). In parts of Europe, ordeals were in use up to the 19th c. (ibid. 207).

Ordeals were forms of divination of the most earnest kind, after the worst crime: lying. The proof was in the pudding as it were, as the party was deemed guilty, or not, depending on signs shown through materiality of body part. The material nature mirrored the inner character; the hand or foot wound was the message written through healing purely or impurely. The institution of ordeals should not be confused with penalization; trials were not punishments except in trial by combat where the outcome, possible death, was at one and the same time the sign of guilt and immediate retribution.

The institution of gaining judgment should also not be confused with pagan or Christian practice; it was general. It is not remarkable that when pagans were evidently using lots to determine guilt, those christianised decreed against them and introduced different forms. Who decided which materials were to be used for Christian practice is unclear. These ordeals overlap with the logic of hand and foot symbolics, in rooting out the liars – rooting out evil – by signs on their feet or hands, tested by iron in the form of ploughshares, bars and rings. Inorganic objects (the iron) seem mainly to have superseded the use of organic materials of wood and bone. Casting lots was early on banished by the Church as mentioned above, a form the pagan Cicero had already deemed bucolic within Roman practice. The particular Germanic forms are demonstrated by texts from pagan, classical writers through to the later periods.

The Germanic use of wooden lots as well as ‘playing’ dice was noted by Tacitus:

‘For omens and the casting of lots they [Germani] have the highest regard. Their procedure in casting lots is always the same. They cut off a branch of a nut-bearing tree [or ‘fruit-bearing’ tree: *virgam frugiferae arbori*] and slice it into strips; these they mark with different signs and throw them completely at random onto a white cloth. Then the priest of the state, if the consultation is a public one, or the father of the family if it is private, offers a prayer to the gods, and looking up at the sky picks up three strips, one at a time, and reads their meaning from the signs previously scored on them’ (*Germania* X, Mattingly & Handford, 1970).

The same chapter goes on to mention birds and horses as revealing portents – signs – which will be cited below. Tacitus also mentions serious ‘gaming’ habits:

‘They play at dice – surprisingly enough – when they are sober [or ‘after fasting’: Grappin 1965], making a serious business of it; and they are so reckless in their anxiety to win, however often they lose, that when everything else is gone they will stake their personal liberty on a last decisive throw’ (*Germania* XXIV, *ibid.*).

This was a serious business of improving one’s lot in life. Caesar had also mentioned Germanic practice for life and death decisions:

‘...Caesar was told that the German matrons, who used to draw lots and employ other methods of divination to decide whether it was advisable to join battle...’ (B.G. I.50, Handford 1985)

‘Procillus recounted how, before his very eyes, the Germani had three times cast lots to decide whether he should be burnt to death at once or reserved for execution later, and how he owed his life to the way the lots had fallen’ (B.G. I.53; *ibid.*).

Later writers noted the continued Germanic practice such as the official rules of how the process was carried out for trying to unmask the perpetrator of a murder, recorded in *Lex Frisionum* (XIV). There is unusual detail for the early law codes and generally concluded is the indigenous character of the practice (Nottarp 1956, Siems 1980, Eckhardt & Eckhardt 1982; and references cited therein).⁴⁴

According to the *Vita Willibrordi*, the saint visited the island of Fositesland (possibly Helgoland), at the border between the Frisians and Danes. Named after the god Fosite, the island shrine was so revered that all animals and objects were deemed inviolable and silence was to be observed when fetching water from the spring. King Redbad punished with death all disturbing the peace of the sanctuary. Willibrod however baptized converts in the spring and slaughtered animals whereby Redbad ruled lots would be cast three days running to decide Willibrord and his followers’ fate. Only one died a martyr’s death (Ström 1942, 75–76).

In the *Vita Willehadi* it is reported that the saint had crossed the river Loveke (Lauwers) into territory adjacent to the Frisian, preaching against heathen beliefs. The missionary urged the pagans to give up their superstitions, it being folly to trust in deaf and dumb images of stone. Some became enraged and demanded Willehad’s death. Others did not agree and it was decided that the casting of lots would decide the matter. Lots decided in Willehad’s favour, and he set off

for the Saxon region of Thrianta, where some of his disciples demolished temples; attacked by the heathens, they made back to Dockum (ibid. 76–77).

Martin of Braga and Pirmin both objected to something called ‘watching the foot’, something which Flint (1991, 211) connects to Burchard’s (Decretum XIX) observation that women collected the trodden soil of a footprint to use in manipulating the fate of the person. The prophetic powers of women were referred to by Tacitus (Ger.8): ‘...[the Germani] believe that there resides in women an element of holiness and a gift of prophecy and so they do not scorn to ask their advice, or lightly disregard their replies. In the reign of the emperor Vespasian we saw Vēda long honoured by many Germans as a divinity.’ Drawing a textual line from this and other Roman comments on Germanic practice to extensive mention of seeresses in later Scandinavian texts, Davidson (1981) notes that the goddess Freyja was particularly connected with intuitive augury. In the saga of Erik the Red, the costume of a seeress is described:

‘... it consisted of a blue cloak decorated with stones and with straps or hangings, a hood, gloves of catskin lined with white fur, calfskin boots with hairy side outwards, glass beads, a skin pouch full of charms, and a staff bound in brass with a knob at the end’ (Davidson 1981, 131).

As usual, the sack full of ‘charms’ was not specified as to materials by the early text writers, but perhaps the contents included categories of objects recovered from much earlier pouches as those recovered from earlier Bronze Age graves,⁴⁵ or similar to the range of materials, as deposits, in Schagen pits. Livestock management was also an aspect of prophetic powers, and in discussion of landscape, natural features, ritual and the seasonal, Davidson cites the 11th c. *Landnámabók* (Book of Settlements) with information on the first Norse families settling Iceland.

‘Thorstein Rednose, for instance, said to possess great powers of foreknowledge, used to be consulted every year as to which sheep should be singled out for killing in the autumn. He could make a wise decision, because he knew which animals were doomed to die in any case, and so his flocks prospered. Thorstein is not said to have worshipped the gods, but he made offerings to a waterfall near his farm, throwing gifts of food into it’ (Davidson 1981, 126).

One’s livestock (at least horses), in addition to natural beasts in the flight of birds, were also communicative, and one can draw a textual line again from Tacitus to later texts:

‘Although the familiar method of seeking information from the cries and the flight of birds is known to the [Germani], they have also a special method of their own – to try to obtain omens and warnings from horses. These horses are kept at the public expense in the sacred woods and groves that I have mentioned; they are pure white and undefiled by any toil in the service of man. The priest and the king, or the chief of the state, yoke them to a sacred chariot and walk beside them, taking note of their neighs and snorts. No kind of omen inspires greater trust, not only among the common people, but even among the nobles and priests, who think that they themselves are but servants of the gods, whereas the horses are privy to the gods’ counsels’ (*Germania* X, Mattingly & Handford 1970).

Commoners and elite are here at least still aligned on belief in horses. Later texts report on the wider region. In his history of the Danes, Saxo Grammaticus in the 13th c. describes use of

horses as well, among the Slavs on the island of Rugen, bordering on the Danish realm. A white horse was kept, and only the priest could graze or ride him although the god Svantovitus was believed to ride him at night waging war against enemies of their religion, shown by the horse found mucky with sweat and mud in his stall on certain mornings. Saxo continues with remarks concerning horses and other forms of divination:

‘When it was decided to wage war on any district, ministrants would set up three arrangements of spears two joined crosswise each arrangement being fixed point downwards in the earth at equal distance. When it was time to set out on the expedition, they said a solemn prayer and the horse was led out from the porch in harness by the priest; if he crossed these spears with his right foot forward, it was taken as a favourable omen for war, and if only one of them, with the left hoof before the right, the proposal for attacking that district was dropped. Nor would they decide to set sail before they had seen three encouraging paces in succession. And before setting out on various other sorts of business, they would determine the success of what they intended by whatever animal they met first. If the omens were good, they would happily go on with their journey; if bad they would go back home. They also knew how to draw lots; three bits of wood, white on one side, black on the other, were used for this, and when thrown into the lap, the white meant good and the dark evil fortune. And their women were skilled in this sort of wisdom. They would sit by the hearth and draw random lines in the ashes without counting. If they came out an equal number, they foretold success; if odd, they augured ill’ (GD XIV, 39: Christiansen 1981, 496–498).

This passage is filled with concrete detail of categorizing by oppositions: right:left :: white:dark :: even:odd :: good:bad. Which animals within the specifics of portents were favourable or unfavourable were unfortunately left unspecified. Christiansen cites later belief (*ibid.* 838, citing J. Grimm) in animal portents of the Rani whereby hare and weasel portended bad; but good were wolf, fox and bear.

Thietmar of Merseburg describes another instance of horse as diviner when the Livs of Treiden were deciding whether or not to sacrifice their bishop, in a move against Christianity: a horse was led up to a line to see if it would put forward ‘the foot of life’ (*Chronicon* i,10, cited in Christiansen 1981, 838).

Accessing god(s) through divination was an aspect of mentality wrapped up in common materials used as imbued with power. Belief in effectiveness is clearly shown by attempts to ban manipulation of the materials. The European-wide practices are again coming into notice, whether from lists of practices for (germanised) Silesia (Mostert 1995b) including a few on divination, or works such as by Meany (1981), Flint (1991), or Dowden (2000), as mines of textual information on belief adhering to materials. Meany is concerned with why small materials would be so prevalent within British, Anglo-Saxon grave contexts. The materials are small common objects and they received particular attention by early ecclesiastics, recognized both by them and by the users as powerful.

Other common materials are also designated as ‘amulets’ and the distinction may have become fuzzy, or used in conjunction. Use of ‘amulets’ was described by Boniface in the mid-eighth century as a capital sin, and around 800 Alcuin wrote to Aethelheard of Canterbury:

‘that he had seen many customs among the people, which the archbishop’s zeal should prohibit: for amulets [*litaturas*] were worn as though they were holy. It would be better to imitate in the heart the example of the saints than to carry bones around in little bags; better to bear in mind the evangelical admonitory writings than to wear little inscribed slips of parchment hung about the neck’ (cited in Meany 1981, 14).

Which bones these were in these little bags is unknown. Of the much later texts, which are more specific as to materials, the bringing of ‘luck’ is the generalized meaning such as some still attach to rabbits’ feet and horseshoes. Although Martin Luther proclaimed in 1518 ‘that the use of the [divining] rod violated the First Commandment’, it was only after an academic thesis was written at Wittenberg in 1658 that the use was forcefully branded with satanic associations (Vogt & Hyman 1979, 15), which had little effect. Use of amulets, even for clergy, was not unacceptable. The English clergyman and author Robert Burton (*Anatomy of Melancholy*, 1624, cited in Meany 1981, 17) was willing to accept somewhat the efficacy of amulets such as ‘a ring made of the hoofe of an Asses right forefoot’ or amulets of ‘pretious stones’ as effective against most diseases.⁴⁶

Combinations of bones and stones are also part of Schagen pit contents, for example the upper layer of feature 106 at Schagen Muggenburg-III (fig. 19): as last materials were placed a rose quartz pebble, an astragalus from a bovine, a sheep/goat metatarsal and a single sheep molar, in proximity.

The texts are contiguous, whether Romans are regarding their own traditions or those of people they are attempting to colonize, or Christianizers trying to stamp out pagan practice. Within a general belief in divination, Thomas Gataker’s 1616 thesis turned science towards defining the uselessness of lots and dice for everyday guidance for everyday activities. Lots were still being drawn and dice rolled, but Gataker redefined the prime mover as statistics, according to mechanistic laws of chance, rather than a message sent by any omnipotent being; and the Church could just as well stop worrying about its members’ non-legitimised activity in this respect. The signs received were neither from God nor the Devil (cf discussion in Thomas 1971). Gataker’s work is in line with Cicero’s first century BC scepticism in regards to divination, who also called out for science, but now of natural laws devoid of deities, Christian or pagan. It would seem belief in divination was recognized widely, as well as the attributed power inherent in ‘things’. Despite church prohibitions, belief and practices obviously continued.

A 17th c. Scottish practice of augury and second sight is particularly interesting for colours, bones, right and left, feet and the detail of short term effectiveness of the material:

‘...they look to the Sole of their left foot, and if they get ane black hair its an ill omen; if white good; if mixt indifferent....

They foretell events by looking on the Shoulder-bone of a Sheep. They have a care not to touch it with the Teeth or a Knife. They by it foretell deaths, commotions, and tumultuary conventions within the bounds....

They can let others see very strange things in the Bone by setting their Foot on the persons Foot, to whom they make the discovery. The bone onely servs for that moon’ (Rev. Kirkwood cited in Campbell 1975, 35).

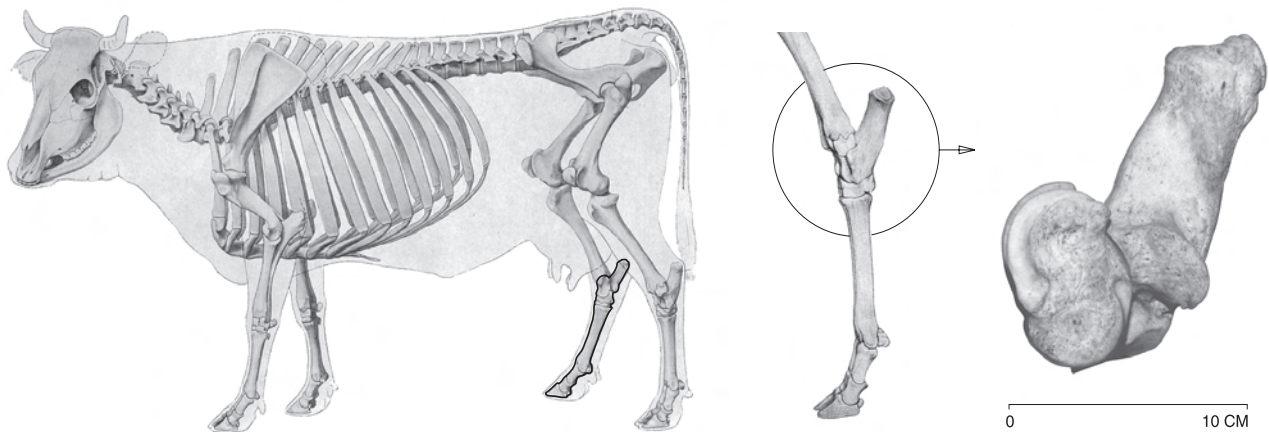


Figure 24 Position of lower legs and the suggested visual analogy of the articulating astragalus and calcaneus (r) as a visual metaphor of male body parts and acorn/glans related to trees and seeding in pits.

This is the only text yet encountered with a specified time limit on the effectiveness of, or power imbued in, any element used within divination. In this specific case, more than one shoulder bone could have been used for the same action within one year. Again, people recording these types of beliefs unfortunately do not seem to have been interested in noting what happened to the materials used. Whether or not the shoulder blade became meaningless, or regarded as a relic, would certainly make a difference in what the further treatment of the material object would entail.

The Scottish practice cited above is also a form of augury known more widely, as ‘scapulimancy’. Archbishop Hincmar of Rheims had mentioned witches using shoulder blades for divination by the 9th c. (Flint 1991, 56–57). Further afield, the practice is best understood for the period 1400 to 1100 BC of the Chinese Bronze Age, through actual inscriptions written on 40,000 examples of these bones (Loewe 1981).⁴⁷ Why shoulder blades were used is unknown and the connection between various areas using the same materials is even less understood.

For the Noord-Holland region, sites and features are actually stacked through the layering of continuous time, from the prehistoric to the 19th c. There are parallels throughout the time sequence, binding the prehistoric to later practices in use of materials, through undoubtedly transforming meaning. Above texts of Europe through time have been mentioned to show generality of practice and long tradition. Coming back to a text – *Indiculus superstitionem* – closest to the sites discussed and not far away in time is that list of chapter headings of pagan practices, originating most probably at the mission of Utrecht, during the mid-8th century (Mostert 1999, 26–27). There are general practices listed, many of which were contained in the texts mentioned above or such as those having to do with blasphemy (by graves)⁴⁸, pagan temples, forests as holy places, holy places of Mercurii and Jovis (considered to refer to Wodan and Donar), and their feast-days, sacrificing/making offerings, making offerings at watery places, places that are honoured as holy, the eclipse of the moon, and ‘sordid practices’ in February. Ditches or furrows around the settlement were also somehow indicative of paganism.

The same text makes mention connecting paganism with various materials, but how manipulated and to what use, is unclear. Clearly named are practices involving amulets, brains of animals,

stones, horns and cups/bowls, idols made from dough and material (textile, leather?), and an idol they carried over the fields. Divination is also clearly mentioned, and the practitioners thereof, and some of the means: ‘with birds or horses or cow dung or sneezing’ or ‘what the pagans see in the fire at the start of an enterprise’. As well, the use of wooden feet or hands in a pagan rite is denounced.

Everyday things, in the few examples given above had inherent power, and were integrated within divining and influencing everyday things. The attribution of meaning in an active sense through inanimate objects was apparently widely shared, and of the long term.

3.3 TOWARDS TREES: TROPES, BODY PARTS AND DIVINATION

The archaeological context is here focused upon, to combine various facets mentioned in the previous sections. Studies on foot symbolics, common materials of bones and wood, and the deposits of the tree parts within the same context of pits will become linked by using inversion for trying to understand an underlying depository meaning. An encompassing structuring interpretation would bring the use of wood, as lots, mentioned in texts, as well as bones into the scheme through extending the body part discussion towards that of the ‘World Tree/Tree of Life’ theme. As well, the use of inverted meaning could provide the transformation key in understanding pagan to Christian belief. Texts do not interpret pre-Christian traditions; they only summarize some of them. The progression here is from a visual metaphor suggested by the Schagen analyses, to body parts as tree parts, while the last section comes back to the divination theme and contracting the gods, as part of seeding deposits in pits, and the future.

3.3.1 SCHAGEN: ASTRAGALUS + CALCANEUS, A VISUAL METAPHOR

One of the facets that does not seem to have been given attention within the centuries-long discussion on foot symbols is a visual analogy, which can be termed a visual metaphor. Doing analyses as to what was deposited as selected objects necessarily leads to definition of what was not. One of the bones articulating with the astragalus is the calcaneus. Calcanei were absent at Schagen Muggenburg-I, except for five **un**-fused examples from cattle in three pits (three were in one pit).⁴⁹ Combining what there was – astragali – with what there was not – fused calcanei – the articulating elements look phallic, certainly in profile. Categorizing through presence, absence, and visual analogy produces a picture not regarded by the authors cited above (3.1) within the foot-symbolic discussion. Figure 24 shows the positioning of the articulating elements, and the articulating astragalus and calcaneus bone combination.

Within foot-symbolics, male power as visual statement could be summarily used for contextualizing divination with these bones. And the time-depth question could be resolved. As Maier demonstrated, the manipulation of foot-bones dates back to the Palaeolithic. Verhoeven’s supposed universal symbol could then be a matter of dissemination through the carrying of ideas to the New World. And, anyone in the world knowledgeable on forms of bones, as perceived visual statements within analogy, could conceivably at any time make an analogy between astragalus + calcaneus and male genitals, and do something with it within structuring action through generative principles.

The bones as combination could be signing, as an illustration, that which is the base of the foot symbol discussion.⁵⁰ As regular deposits in the earth, within pits (or various other earthly contexts such as the graves and caves mentioned by Maier) the broader message of integrated concerns is reiterated through symbolic action. As these are the actual bones, the imaging is always present, and conscious analogy could be assumed. That is, the actors would have been aware of the direct referencing. They were not using an arbitrarily chosen material as symbol. The forgotten link as an actual sign through time and transformation would ultimately lead to an absence of signing, such as in use of a Christmas stocking.

In Schagen, the astragali as objects were deposited in the earth, and carrying through the visual analogy, a conglomerate of meanings could include that of seed, as then planted in holes. The generative facet is then maintained from the aspect found by the researchers discussed above, of the phallic/male foot – in this case, the bones – and tellurian/female earth, as foot bone into earth.⁵¹

What happened to calcanei of older animals is unknown for the prehistory of the region. The importance of the phallic-looking calcanei finds is (as yet) only defined through absence at the 4th c. Schagen sites.⁵² The absence of foot bones, removed before burial, of both livestock and humans at SM-I (Chapter 2) draws attention again to the importance of the lower legs. The calcaneus could be, within the sub-set of those lower leg bones, of even more importance within visual analogy. It is also at the physical junction between, and the border of, lower leg bones and the meat carrying bones, above.

Of those calcanei which were deposited, a border is also marked within time. Again it is absence of the proximal end of calcanei which draws attention and makes them interesting. As cartilage, which does not remain preserved, of young animals to bone in older, the proximal end of the calcaneus fuses in horses at about three years, and for cattle between 3–3.5 years (Silver 1969). Horses and cattle can mate the summer of their third year (Van Wijngaarden-Bakker 1988). Thus, those animals of which calcanei were deposited were probably slaughtered before or around mating age. Another archaeological context – that as yet undiscovered – was evidently reserved for the calcanei elements of animals that had been slaughtered after they had mated. The absence of the bone from the settlement record could very well indicate past recognition of the visual metaphor, and the facet of regeneration therein implied.

Biological age, as a facet of time, and numbering in threes could consciously have been part of depositionary meaning, as has been noted for rites as suggested by groups of three pits, within tri-partition of the year, as seasonal and marked rites. Seasonal cycles – animal fertility – age at mating – presence/absence of bones – and shape analogy can be thus combined as indications for linked meaning. Here then is an interpretation which could combined to the foot symbol discussion, and even contextualize the bone elements within divining practices, within generative spheres of family welfare. However, this may be too narrow of scope, and does not address the remainder of the seed analogies.

3.3.2 BONES AND BODIES: PARTS OF TREES

The networking of various categories of finds and analogy of bone elements with body parts could launch the foot symbol discussion towards trees and tree symbolism when regarding body

parts as referring both to animal and tree parts. Extending the structuring analogy can then perhaps facilitate better understanding of the 'World Tree' of northern myth, and provide a transforming point and clear difference between pagan and introduced Christian understandings. Interpretation is through the visual trope, the analogy of astragalus + calcaneus, to male genitals, to linguistic tropes as other body parts, but more importantly to body parts of trees.

Crown, trunk, limbs and roots refer both to animal body part and elements of trees, as nomenclature. They are tropes. The head/skull, body, arms and legs are also rooted to the ground through the ankle-bones, and the joint bones of the forelegs in animals, which are designated as 'root-bones' (*wortelbeentjes*) in at least Dutch and German.⁵³ Structural categorizations can be suggested through the deposits within the same archaeological contexts as there are numerous parts of trees, as well, deposited with bones. In the case of the Schagen pits, archaeological patterning in presence/absence becomes the text of associations within a seasonal and economic framework, interpreted through other categories of deposited material.

A trope is a figure of speech that consists in the use of a word or phrase in a sense other than that which is proper to it (OED). 'Which is proper to it' requires knowing the historical connection of what was first named. Wondering about the same words used for not obviously connected things has been a practice of scholars since classical times, and later by Vico, Rousseau, Freud and Lévi-Strauss (Hersey 1988, 2-10). The etymology of words cannot define categorization as cognition, as language is also verbal art, within the artfulness of lifting materials in linking spheres and combining specific meanings into general concepts. Anthropologically, tropes are analysed within contemporary societies (cf discussion of analytical history: Fernandez 1991), but are approached as if without history, which is more than problematical (cf Fabian 1983). The vernacular, rather than etymology is important here:

'Folk taxonomies are cultural phenomena. Their structural variation within and between cultures must be explained by the cultural uses to which a taxonomy is put, and not by appeal to differences in the cognitive powers of individual minds' (Frake 1964, 199).

and

'... the meaning of a linguistic form is a function of the total situation, linguistic and non-linguistic, in which the form is used. Essentially it is a matter of determining with what a term contrasts in a particular situation' (Frake 1964, 198).

Within a larger, human oriented body-part discussion, Onians (1991 [1951]), while also discussing feet, demonstrates as well the interconnectedness of body parts as tradition through texts as practice and etymology. Texts as linguistics and materials from Greek and Roman, Germanic, and Celtic areas are included, and by following the mind-boggling array, the pit finds of bone could be explained within the generative aspects attributed by men to their body parts within Onians' framework. However, there are facets left unexplored, and important here is his discussion on the shared concepts of the head as the site of genius/soul and the interconnection of brains as seed as the life-giving force which could inter-connect with another broad understanding, of sacred trees, and even the World Tree/Tree of Life concept.



Figure 25 'Astragal moulding', an example of the bones within classical, architectural elements, form and nomenclature (from Hersey 1988, 37).

Onians demonstrates the widespread conception that the conduit of seed, generated in the skull, was regarded as being through the spine. At the site of the head, horns and antlers mark growth at the site of this seed, and are similar to jaws as the materialization – the concentrated stuff – of procreative force. Through the spine, seed flows, not only through to the male genitals, but is also clearly linked to other body parts, within conceptions of a physical flowing from skull, via the spine, also to thighbone, knee and feet. Thus, from skull to feet, there is a body part and 'seed' connection to procreative force. The breadth of the texts cited by Onians, and linguistics, such as the cognate within all Indo-European languages of 'knee' as having to do with generation (ibid. 175–6) for example, might make it likely even Schagen inhabitants were categorizing along these terms.⁵⁴ It would also seem to contextualize the single, human bone elements recovered from the sites of the region.⁵⁵

The structural referencing could be read directionally, from plant life, rather than as circularly to males. Particularly the spine on down to the feet, as conduit of procreative force, can be seen as analogous to tree trunks and the flow of sap. This would also go towards interpreting why thighbones, knees and feet were referenced as sites of this fluid, life force in animals and humans.

Astragalus, as mentioned, is a trope denoting both the foot bone and neck vertebrae.⁵⁶ The linked meaning of the two bone designations could then be sought through the linkages of past belief in the conduits of seed, as the generative force, through neck – spine – to root of the foot.

If these linkages apply, the physicality of animals (including humans) could also become more understandable through texts on uses of trees, within ritual. But rather than concentrating on practices of sacrifices, hung on trees, of which a few text examples will be mentioned below, more important is a relationship suggested through tropes as body parts of both trees and animals, the later in likeness to the fruit of trees.

There are associations and attribution of sacred trees with the gods from early Greek times (cf Dowden 2000, 67–69). As well, trunks of trees are the first wooden columns of temples. In stone, temples retain the nomenclature of body parts, within Greek architecture. These are tropes, as Hersey (1988) has set out in re-examining the historical context, starting with Vitruvius who was already pondering the linguistic connections in his 1st c. AD work on classical architecture. The terms were known but not understood as to why they were so used. Hersey has recovered an essence of trees as 'column' in relation to human and animal body part. Body parts, as named masonry elements, are seen interconnected through sacrifice of animals, and animal parts, as well as trophies, hung on early temples, which were made from columns of wood. These later become integrated with stone columns, and 'body part' offerings, such as thighbones (triglyphs) and teeth

(dentils), remain as nomenclature of the temple elements. 'Astragali' are also represented by name as a type of moulding looking somewhat like the foot bone element (fig. 25).

The connection of trees and gods was also shared by the Romans. Pliny the Elder, for example, specified clearly the divine and Tree connection:

'Once upon a time trees were the temples of the deities, and in conformity with primitive ritual simple country places even now dedicate a tree of exceptional height to a god; nor do we pay greater worship to images shining with gold and ivory than to the forests and to the very silences that they contain. The different kinds of trees are kept perpetually dedicated to their own divinities, for instance, the chestnut-oak to Jove, the bay to Apollo, the olive to Minerva, the myrtle to Venus, the poplar to Hercules; nay more, we also believe that the Silvani and Fauns and various kinds of goddesses are as it were assigned to the forests from heaven and as their own special divinities' (*Natural History* XII.2; ed/trans. Rackham 1968).

The 'poplar' as the tree of Hercules will come to the fore in another form in Chapters 4 & 6.

For northern areas, Tacitus mentioned Germanic sacred forests (*Germania* IX). Davidson (1988, 21-23) summarizes archaeological traces and texts on trees and pillars of wood from Germanic indications, including the well known 'Irmensul', reported on by Rudolph of Fulda, c. 865 (text in Dowden 2000, 118), and possibly similar to Jupiter pillars. The pre-Christian indigenous practices are well known through reports of hanging animals and humans in trees, carried out every nine years with nine days of feasting, as described in the 11th c. text by Adam of Bremen on Old Uppsala: 'The sacrifice is like this: from every animal that is masculine, nine head are offered and it is the custom for the gods to be placated with their blood. The bodies are hung up in the grove next to the temple. Indeed, this grove is so sacred to the pagans that individual trees in it are believed divine as a result of the death or gore of the sacrificed' (Dowden 2000, 75). Thietmar of Merseburg describes similar rites at Lejre, and specifies criminals as the male human victims, and that the time was in January, after Epiphany. These, and later texts are gaining increasing attention, and many can be found in Dowden (2000), including the examples where missionaries chopped down single trees revered by pagans. But, what cannot be found is the exact relevance for those integrating trees within practice, as the texts are particles of information on ritual, and show an abhorrence of sacrifices, written down in the main by those interested in superimposing a Christian ideology.

Generally agreed is an earthly referencing to a more encompassing understanding of a heavenly World Tree/Tree of Life (De Vries 1956/57, s582-589; Davidson, *ibid.*, and references therein), and noted in the Eddas (Larrington 1999, Faulkes 1987). The primary sources of the Eddas are not explicit at all as to content of a World Tree (Yggdrasill) belief. Certainly in the north, the point of change could have been induced even before the introduction of Christianity. Cosmologies including a World Tree have a wide distribution, but for Europe, have not been taken up to any extent within the archaeology of recovering trees or within interpretation of a belief system.⁵⁷ It should be obvious that recorded rites on earthly, sacred trees are symbolic of a 'World Tree'. In Chapters 6 and 7, the single tree in the landscape of belief will be tied directly into the heavenly, rather than the earthly, which may also serve to bracket later facets of folk practice within the long term, as an amalgam of belief, and transformations.

If the directionality of nomenclature (trunk, crown, limbs, roots) interwoven with animal and tree parts was from a World Tree understanding to animals, there would be a directionality of



a



b



c



d

Figure 26 The inverted relationship between trees and people between the pre-Christian and Christian period, as coming from (and returning to) trees: (a) a late Neolithic man (Velserbroek, Noord-Holland) surrounded by three oaken planks (Therkorn & Van Londen 1990), (b) Bronze Age hollowed out tree-trunk as a woman's resting place, Wardböhmen, Celle (Coles & Harding 1979) and (c) anthropomorphic figure as wood (Coles 1990). The suggested inverted relationship of the later period is shown (d), of male generative principles and a (family) tree, stemming from the glans [acorn] (Ashburn manuscript, Biblioteca Medicea Laurenziana, Florence. 14th c.).

people as metaphors of trees, rather than the reverse. Some indications for this are given by the well-known myth passages of the Eddas where two logs – Ask and Embla – washed up to shore and were given life by the gods, as told by Snorri in the 13th c., and by name referred to in the earlier Poetic Edda.⁵⁸ Even later, part of folk belief is that children come from trees, widespread in the Netherlands at least, as noted by Schuyf (1995, 89-90). The importance of 'Tree' symbolism, as a part of cosmology, is evident through sanctions early on in attempts to stamp out traditions. It was deemed evil to put branches on one's roof, to use trees within celebration of the first of May, and to plant a tree on one's house plot to bring health and happiness, a literal

‘family tree’ (cf Gelling & Davidson 1969, 159; Mostert 1995b, 250, 260). Many practices could not be eradicated, and erecting Maypoles and the use of branches/trees seasonally is still quite widely practiced. Another specifically seasonal practice, combined with livestock biology of late Spring/early Summer is the tradition, recorded into the 20th c., of hanging the afterbirth of foals high in a tree, noted at least for the Dutch areas of the Veluwe (Gewin 1925) and Drenthe (Kuipers 1976).⁵⁹

Rather than focusing on animals and humans as sacrificial victims, here the focus is on the trees, as they provide the binding element between various long-term uses. If the past connection of hanging animals and humans in trees (or even draped on columns of early Greek temples) was through a structural association with trees, in death, as sacrifices, the analogue could be to the fruits of trees. The seed of plant life – in the ‘seeds’ and site of seeds – found consistently by Onians as body parts, but circularly related to male humans, could be a result of later transformation, and could also apply to the male foot and domination scheme of the foot symbolic studies cited in the first section.⁶⁰ Perceiving male ‘seed’ as the generative force within a naturalness of traditional logic may be a historical result of transformations, occurring at different times within different cultures.

Of materials gained archeologically, most obvious perhaps are the anthropomorphic figures, one shown in Figure 26, which are being studied as to correlations of tree species, and northern texts (Coles 1990, 1998). In combination, or even more telling, is the use of trees into which some people were returned. Figure 26 shows prehistoric examples of people inserted in trees, at death, which could be part of a Tree of Life/World Tree understanding. Using hollowed out tree trunks within burial ritual is cultural, but the later-day usage of coffins in the West might be rarely contemplated, as though there is a naturalness that people should be buried surrounded by wood. Rather than just a handy container for burying some people in prehistory, the meaning would seem integral to an early belief system.

Also shown in Figure 26 is a male giving rise to a tree, at the site of the acorn/glans as male body part. As a concept, he demonstrates the suggested inverted relationship of the ‘family trees’, mentioned above. Within non-eradicated folk practice, the family tree was an actual tree, planted by the house and bringing luck and happiness to the family, and more in line with a World Tree concept, as known from myth, referenced on earth. The male in Figure 26 is bringing forth a tree (perhaps a ‘family tree’) rooted in himself. When this type of rooted-ness arose could be researched, of course for particular settings, although it probably cannot be determined when the tropes of body parts as tree parts (limbs, trunk, acorns, sap etc.) arose. However, directionality of the relationship could also, without compromising the association, have revolved as well with introduction of a new religion.

3.3.3 PLANTING IN PIT FEATURES

With the plant/tree association put foremost, many aspects can be collated of fertility and renewal. The interconnectedness of materials is for the interpretation primarily through the common archaeological context of pits. Common is that the materials were buried, and regenerative themes are not necessarily confined to humans (as burials) for pre-Christian sites. ‘Tree’ as that binding element, is bound to earth through holes and rooted-ness, in the earth.

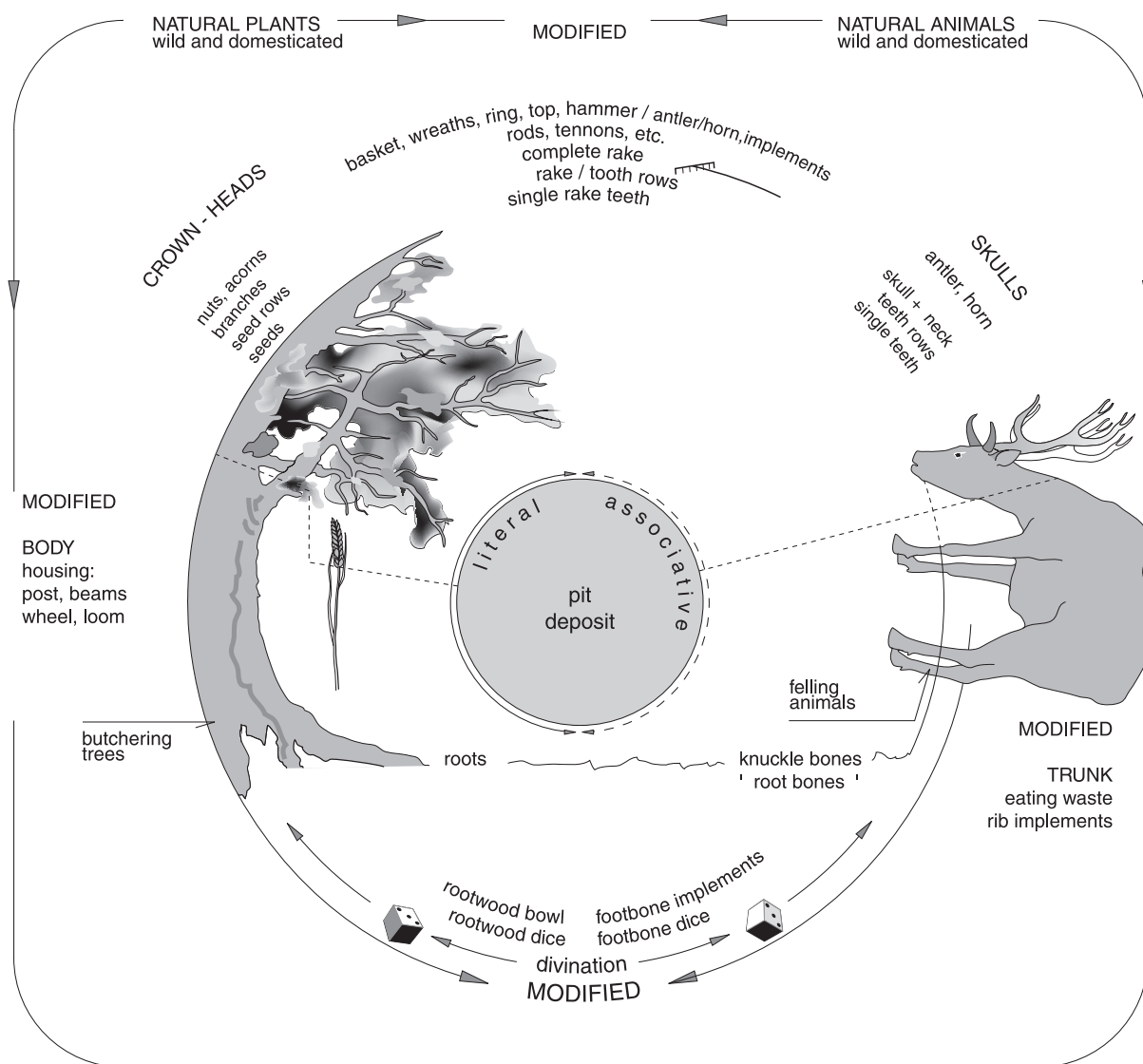


Figure 27 Scheme of pit materials as deposits and within tropes as literality of wood and bone. The directionality for the pre-Christian period is interpreted as being from trees, within World Tree belief, to animals.

The most substantiating pit finds on the point are the deposits of cut, but further natural, tree roots, trunks and tree branches. At the Schagen sites, although SM-I certainly has more of these deposits than SM-III, all of the non-worked wood was from deciduous trees. Evergreens in the form of worked wood were found at SM-I as a tenon of yew (f156) and a partial object, possibly a spade, of imported silver spar (f118). The specific distribution of evergreen finds for earlier sites, in the form of juniper, will be noted in Chapters 4 and 6. The Tree of Life theme of farming community inhabitants and what this implies for myth interpretation will be further worked out through Chapters 4, 6 and 7, as the 'Horse as the Tree' in association with later myth of Yggdrasill. There is the earthly referencing as patterns, but the interpretation is to a sky context.

Using the tree/root analogy, a much greater number of pit finds can be considered as carrying through the recycling, generative theme of seasons from plant-life to livestock/human life. The

selection hereby is specifically dimensioned through apparently trivial categories of nomenclature in common denominator referencing, across and through archaeological find-categories. The structuring scheme through analogy of body-parts of both trees and animals is summarized in Figure 27. Shown are the main tropes of trees, to animals, and there are also other connections with other deposits.

Teeth and skull elements became important as well in delineating criteria, as marking deposits, within the seasonal framework. The single teeth/molars, also complete, extracted with their roots from the natural context of jaws, were also deposited. They as objects are also then planted in pits. ‘Roots’ as part of teeth can be likened as categorized through the roots to teeth growing from jaws. These elements of animals are bound by their teeth to grazing, as vegetative-growth, welfare, and sustenance relationships.

With teeth, the relationships can again be turned to wood. Finds broaden the body-part analyses to the finds of loose ‘teeth’ of wooden rakes. The complete rake (f221) has thus a ‘tooth row’ comparable to complete mandibles – for gathering grass, as livestock jaws gather grass within reoccurring seasonal activities. Taken up as well are the partial tooth row of the partial rake (f118), and the ‘loose teeth’ finds of single rake teeth deposits (f118, f120). One stage of regeneration is well represented by finds of deciduous teeth and molars – that is the ‘milk-teeth’ of younger animals, evidently saved, gathered, for deposit. Antlers as branches, which seasonally shed, to regenerate, are represented occasionally at other sites (Chapter 4). The transitory, but multi-dimensioning through various types of materials is networked through association of common words, as they are associated within pit contexts. The **re**generative, within facets of the after-life, are taken up again in Chapter 6.

‘Tree’ could therefore also include: the various body parts of animals, and particularly the lower leg bones, loose teeth, the rake and rake teeth, the nuts, the pit with kilos of grain, and certainly the unworked finds of trees, with which some of the pits were filled, and the finds of cut and deposited tree roots, with which one round pit was packed. Preservation conditions of the Schagen pits do make a difference in suggesting the interconnectedness of organic materials and burial.

Some of the finds could well have been manipulated within divination, within a common mentality of historically known divination practices within Europe. Feasting with the god, through sacrificing, and looking forward to the future for prosperity, was primarily, according to Davidson (1993, 93), to renew the contract with the gods, ‘so that the luck and prosperity of the land might continue’.

3.3.4 DIVINATION AND/AS CONTRACTS: BACK TO SCHAGEN

Within the interpretation of pit deposits as features and seasons through the years (Chapter 2), that is, life’s short-term path, divination through everyday materials would encompass what was directly to come. The place in the scheme of associations is shown in Figure 27, and Figure 28 shows types of materials which could have been used within divination.

Mauss (1990 [1950]) took up facets of Germanic practice exemplifying his thesis of the pledge and the gift, and the power inherent to ‘things’ when a contract is made between men for the Germanic *wadiatio* known from customary law. The word is both wager and pledge. Use of sticks is known for northern regions ‘of the kind used between friends, in the Danish fashion,



Figure 28 Types of materials from pits suggested to have been used within divination including dice from root wood and one cut from a lower leg bone, as well as non-worked lower leg bones.

as the equivalent of a seal...’ and from inscribed pieces of wood (Saxo Grammaticus, Christiansen 1981, 571; 879). Or, for the more southerly context, the bargain struck between debtor and creditor is also materialized through ‘tally’, a notched piece of wood recording the contract, split between the two parties.

‘The thing itself, given and committed in the pledge, is a bond by virtue of its own power. First, the pledge is compulsory. In Germanic law any contract, whether for sale or purchase, for loan or deposit, includes the constitution of a pledge. An object, generally of little value, is given to the other contracting party; a glove, a coin (Treugeld), a knife – or (as in France today) pins that will be returned when payment for the thing handed over has been made’ (Mauss 1990, 62).

As mentioned above, early ecclesiastics knew the power of small, common objects – to be translated as amulets/charms, talisman, and so forth within minimization of someone else’s belief system – and power towards the Devil and demons (the other gods) via these common materials. The legitimising text was the first commandment: ‘You shall have no other gods before me’ (Exodus 20.3). That objects – mainly common materials – were so forcefully condemned is good reason to consider them as having been recognized as agents, within a broader conceptualisation of religion (cf Lawson & McCauley 1990).

In addition to the facet of meaning, for some of the same deposits as those already suggested within the seed/roots/tree referencing of the generative sphere, many bones become rooted in the earth, through planting in pit features. The vegetative as generative is given by the earthly container of pits. The broader base of symbolic action can then include many more of the finds, with a more inclusive base of generative categorization than the animistic and anthropomorphic, human-oriented, analyses of foot-symbolics of previous centuries. The other roots – those of the root-bones – even perhaps from the astragalus downward, were those distinguished as selected deposits at the Schagen sites. They occur together at one site, which is contrary to Maier's chronology for deposits of first phalanges and metapodia, succeeded by astragali deposition. At the Schagen sites, the bone elements of animals are packaged together. The literal border is given by the place of the calcaneus, which was not selected, except for a few bones from younger animals. The distinction leads to defining a border, and makes the selection in the remainder of the foot bones downwards to the hoof all the more apparent.

Foot bones are directly connected to a four-sided die, found in a pit, at the Schagen Muggenburg-I site. Various bones, showing the production stages of metapodia towards finished dice were recovered as surface finds (Appendix 1). There are numerous complete metapodia in pits, thus these may be included, and the combination of materials, such as in f223 or f156, with astragali and phalanges, as possibly manipulated within divination. The tail vertebra with incised crosses from Schagen Muggenburg-III could also be included as a material, which was used for predicting and contracting the future. Within interpretation of ritual and pit content association, the recorded traditions of divination suggest general mentality most certainly associated with manipulating the bones, and then those most certainly astragali, dice and other lower leg bones, such as the metatarsals from which dice were made. Wooden lots cannot be identified, and from Tacitus' description they would be just strips of wood. There is the finely made pair of dice, of root-wood, from SM-III. The deposits of at least these finds within the seasonal cycle could be signs of the contract itself for the coming period, season or year.

If the gods were being addressed and favourable signs received as a number (on the dice) or side of the bones, or within a type of lot throwing/drawing with the longer bone elements (metapodia), or even casting single teeth,⁶¹ the material receives the sign and could become itself the contract. Such use could even apply to finds spun/dropped in a method for receiving directional signs – orientations – the way from which that being contracted would appear, to be gone into in Chapter 6. The materiality of the sign would become imbedded in and imbued as the material itself: in literal deposit – going on deposit, in the pit – pit closed, contract closed. The embodiment of an agreement, the material, becomes embedded at the site of expected, contracted, outcome: within settlement place and site of activities.

It was argued that the 'Tree' of daily life is that more broadly referenced than in the historical discussion of foot-symbolics, in regeneration through, as materials seeded in pits, combining seasonal expectations and commensurately family welfare, within economics of livestock and crops. Tree of Life/World Tree would be the overarching (underlying) belief system within which details of daily sustenance, and particularly livestock welfare and regeneration would be effected. The burial as primary facet of practice – interconnecting humans, animals and materials – within an archaeological context cannot be ignored within the longer term, and the powers attributed to materials as tradition far into the historical period.

Schagen inhabitants seem to have been specific as to images bringing seasonal gifts, looking over their activities. This could be defined through the relative horizontal distancing of their pits, in combination again to specific finds in them, the subject of the next chapter. Wood, including branches in heads, and roots in hooves, as well as an understanding such as Yggdrasill, will also return, within suggestions of concerns.

Chapter 4 The measured iconography of features: constellation patterning.

The data from Chapter 2 of the Schagen sites is here revisited for an interpretation of a larger spatial patterning of pits and other types of features across settlement areas. Features are interpreted as measured-in points within a dimension of telling time, an additional facet of meaning, connected to the groupings of pits as reflecting ritual marking of seasons through each year. Taken as larger patterns, features seem to form constellation patterns of stars, mapping the cycles of seasonal time. The patterns in the sky have yearly movements, and this is the seasonal dimension of the short term wherein pit-groupings were dug. While the pit groupings could be delineated as reflecting ritual, the larger patterns made up of pits and linear features go towards defining religious concepts encompassing ritual. Movement through the year of the mapped patterns and the combined facets of in-built orientations as seasonal ritual will be examined in Chapter 6. This chapter is concerned with describing the patterns.

Here, after the patterns as static models are described for the Schagen sites, three earlier sites in the region are discussed as to this one aspect, interpreted as cosmological landscaping of settlement area. I will argue that there probably was a longer-term institutionalised practice whereby the Schagen inhabitants gain a place within late, regional tradition. Figure 1 shows the position of the three other sites of the region which were regarded for this aspect – two in the Velsbroek (VbB6 and VbHof) and one in the Uitgeesterbroekpolder (Ub18).

While the Schagen sites show groups consisting of three pits, most often interpreted as marking a single star, the earlier sites do not generally have groups of three. The Uitgeesterbroekpolder site is characterized by a more iconographical style incorporating circles. At this time, providing an interpretation of the differences in tradition will not be attempted. More recent excavations, with the problem in mind for single pits, provide indications that three occurrences of making deposits may be marked in the vertical aspect of one pit at earlier sites.⁶² Transformation in marking through time or different groups, having different traditions, are the two most obvious starting points for difference, and will be examined at a later date.

Large-scale planning through measuring-in patterns of stars is an interpretation that takes up the large majority or areas of features at each of the sites discussed in this chapter. The period spanned by the sites becomes c. 600 BC to 320 AD. There are also medieval (c. 11th/13th c.) features clearly **re**-marking important prehistoric positions at the site of Velsbroek-B6. An even greater time depth of at least sixteen hundred years is therefore suggested, and prehistoric time becomes bound to 'folkloric' time.

The patterns are interpreted as multi-faceted, formalized iconography in a region not yet shown to have had inhabitants using a measuring system or a tradition of large-scale iconography; or, for that matter, any type or style of imagery at all.⁶³ Why the patterns are recognizable has to do with very long tradition often assumed to have stemmed from Greek or Babylonian

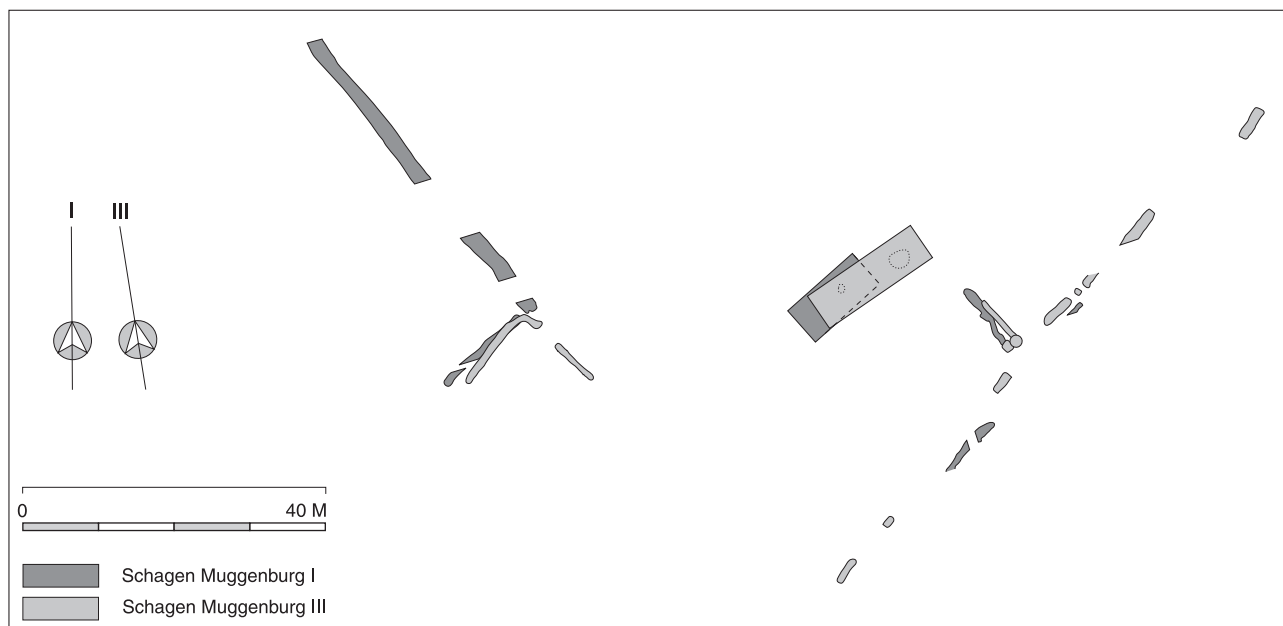


Figure 29 Superimposed plans of SM-I and SM-III showing the fit between placement of the dwelling and dug linear features suggesting layout was not an ad hoc affair.

perception of the images. ‘Origins’ however is not a topic discussed here; it will be briefly discussed as to various views in Chapter 5.

Non-excavated areas of the sites hinder the analysis presented in this chapter, but very nearly all features that were found gain an interpretation through spatial framework by extrapolating points. Importantly, the statement on setting out constellations can be ‘tested’. As inhabitants seem to have been using similar patterns, as scaled arrangements, through at least 900 years (earlier sites have not been regarded), it is possible to predict where features will occur, and this was done at two of the sites discussed below.⁶⁴ Patterns had been recognized for the Schagen sites before two of the sites described below had been excavated. The patterns at Velsbroek B6 (VbB6) and Velsbroek Hofgeest (VbHof) are more complete as areas were excavated exactly to ‘test’ the models. Obviously, as much of these sites were excavated as possible within the usual constraints of time and money faced by field archaeologists. Limitations were also in the form of modern roadways and housing. Excavating empty areas also gained in importance as they surround points of marked, measured-in landscape.

The line of analyses of the large-scale patterning started with laying the plan of Schagen Muggenburg-I over that of Schagen Muggenburg-III, dwelling hearth on hearth and with similar orientation. Figure 29 shows the two plans with dwellings and linear features superimposed which seemed to correspond in such a way as to suggest the inhabitants were consciously measuring in certain features. Previous research on farmstead structures of the region had delineated standard measurements, as mentioned in Chapter 1. This chapter thus also extends and widens the breadth of measuring as part of tradition to include other facets of dimensions within the settlement. The technicalities of a measuring system are something in itself hard to show. That a system was used will become clear in the following sections.

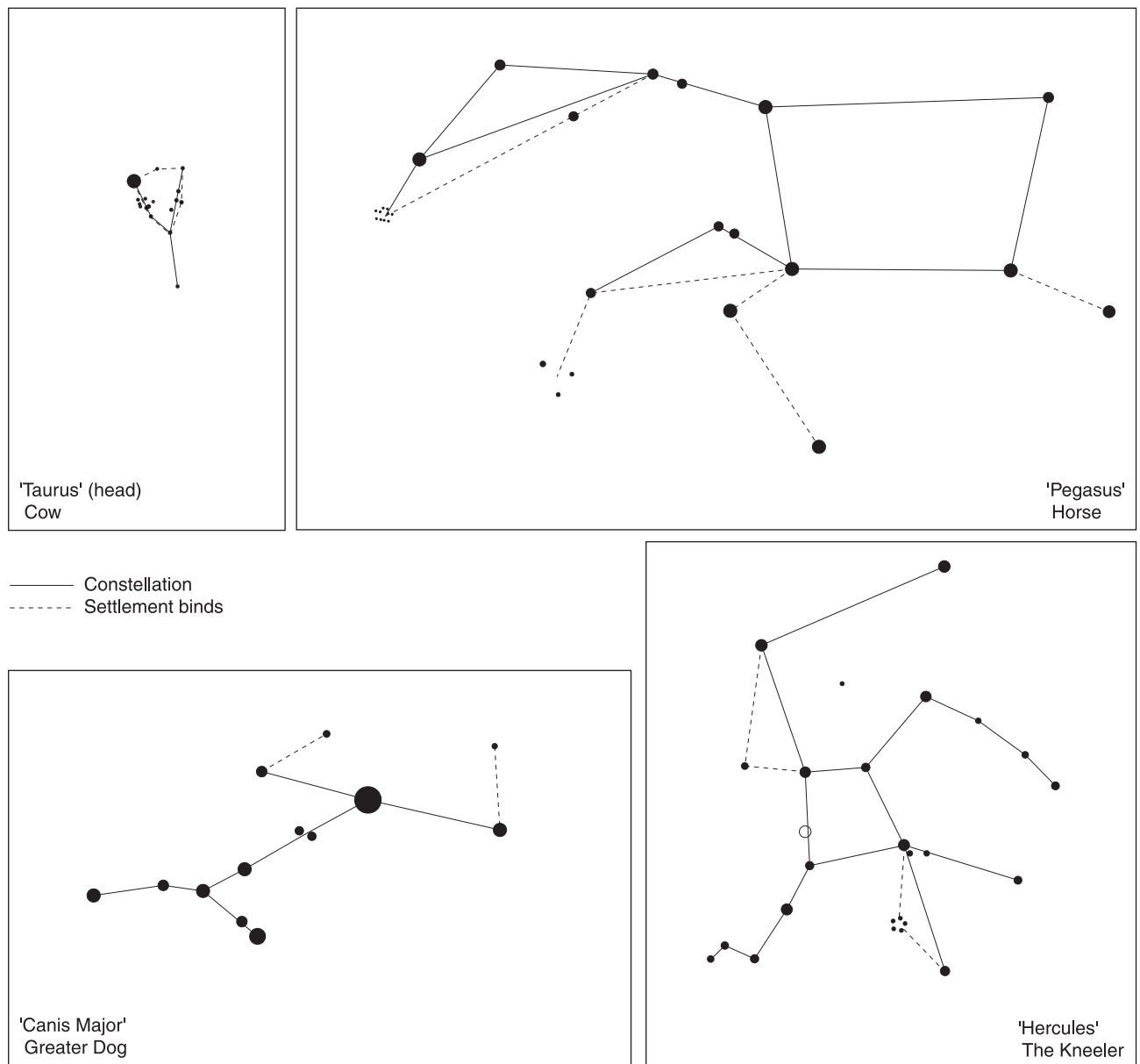


Figure 30 There are various versions of how constellation are drawn together and even which stars are used. These are from *Noordelijke Sterrenhemel 2000.0* .1985: O. Hlad, F. Hovorka, P. Polechova, J. Weiselová. Some of the settlement binds are different and they are indicated with a broken line. (Star magnitude has not been shown exactly in the dot diameters—cf Tables 13 & 14).

The figures in the settlement are not exactly replicating the proportions of the sky patterns. This is a result of the formulas used in setting them out, and importantly in aligning the pit-stars on the ground to function within a system of orientations on the constellations in the sky, as well as the sun, at points in the year as areas along the horizon (cf Chapter 6). With each pattern below, something of Babylonian, Greek or Roman context of these constellations is given. As mentioned, this chapter is about patterns, not derivations or origins.

There is no absolute way to bind stars together and there is variation on modern star charts. One traditionally known way of binding the stars is given in Figure 30. The lines are used to bind

the points together to show the figure and to name some of the body parts. The interpreted later prehistoric conception, in this region, of which stars were used, is demonstrated at times to have been different from any of the modern versions seen, and these differences are also shown.

The site of Schagen Muggenburg-I is where four (incomplete) patterns were delineated: Pegasus/Horse; Taurus/the Bull, here designated as Cow, for the Germanic context, in line with one Germanic creation myth discussed in Chapter 7; Hercules, also known as The Kneeler; and, Canis Major/Greater Dog. There is also a pattern 'Rider' suggested that seems to be present at two sites, astride the pattern 'Horse'. It is not a now recognized constellation, but will also be suggested as part of northern iconography and known from other materials, and will be interpreted as to sky landscaping in Chapter 7. The large sky feature of the Milky Way is also taken up as site features, and is important for defining tri-partition within cosmological landscape.

The SM-I patterns were first defined and subsequently checked with other sites. Horse and Cow could be clearly delineated, but it is not certain that the others were not laid out. Followed below is an ordering going back in time from the Schagen sites. For SM-I, materials deposited within the pits could be defined as near pattern specific. The spatial patterning became the model for the other sites, and features show a good fit, although the dimensions for one site (Velserbroek-B6) is somewhat altered. For each site, all of the recovered features are shown on the respective plans, and one can judge for oneself whether or not the fit of the patterns is convincing.

A letter and number designation (H1, H2, etc.) for each respective star position per constellation has been given so that inter-site comparisons can be made. The stars represented by the positions are given in Table 13, with star magnitudes. Table 14 summarizes the occurrence of the positions at each site.

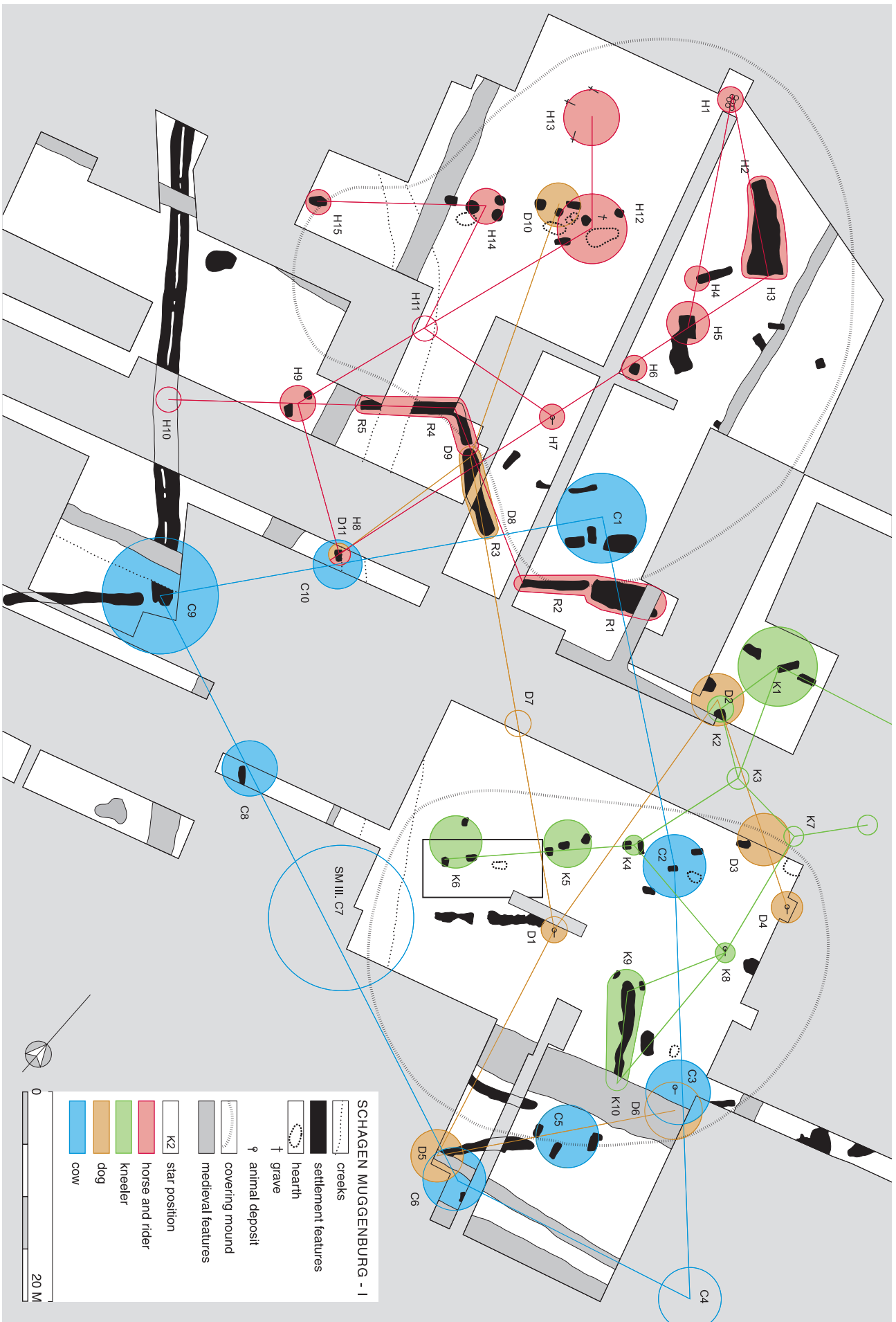
4.1 MEASURING SETTLEMENT SPACE TO MARK OUTER SPACE: SCHAGEN MUGGENBURG-I

Three constellation patterns were found by binding pit groupings having regularly, but infrequently, deposited elements of animal species and burials thereof. Incomplete groups are taken as indicating star positions.

The category of animal species mainly structures the patterns in direct correlation between earthly bones to the common constellation names. Three patterns are animals known as Horse/Pegasus with a 'Rider', Greater Dog/Canis Major, and the head of Taurus/the Bull, here designated as 'Cow'. The fourth suggested constellation pattern, but very incomplete, is Hercules, also known as The Kneeler, which can be identified with a Donar/Thor type of figure within Germanic context. Each of the four patterns has, in addition to positioning, possible find-associations, but they are not exclusive to each pattern. The exceptions are itemized in the section on 'Cross-referencing', below (4.1.7). The features with the following categories are shown in Figure 31a, and the patterns are pulled together in Figure 31b.

Figure 31a SM-I: Occurrence of finds categories which seem to best characterize the four constellation patterns. There are exceptions as can be seen in comparison with Figure 31b (they are also itemized in the text).





- Horse (H), Pegasus, is marked by horse burial and horse bone, and human remains in the northern and central area.
- Rider (R) is an unknown pattern, astride Horse, and not recorded on modern star charts. He also occurs at Velsbroek Hofgeest (see below) and is mirrored in one of the burials, on a smaller scale at SM-I (Chapter 6). Linear features draw the outline as Rider form, rather than specific finds markers in pit-points.
- The constellation of The Kneeler/Hercules (K) is marked through a wooden hammer and hammerstone, horse bone, poplar wood, and singly deposited, standing pots. He overlaps the southern dwelling area.
- The relatively few bone elements from the exceptionally large cattle was the main association of deposits in drawing features together into the head of constellation Cow (C), known from modern charts as Taurus/the Bull. She marks the central and southern dwelling area.
- Dog (D), Canis Major/Greater Dog is marked by the burials of the very large dogs and bone elements from dogs. Dog stretches across the three settlement areas.

The Milky Way, as sky and settlement landscape feature is also suggested as being represented at this site.

The constellation patterns overlap at SM-I, and all but two groups of pits are taken up (fig. 31b). The patterns will be described first looking from the western side of the settlement, at the pattern Horse/Rider/Milky Way overlapping the work area with hearths and the central area; and, at The Kneeler/Hercules over the southern dwelling area. Subsequently, Cow is regarded looking from the southeast over the dwelling area to the central area, where she abuts Horse. Dog spans all three settlement areas.

The patterns as set out in the ground are scaled differently to the relative size of the figures in the sky (fig. 30 as compared to figs. 32–35). The head of Taurus (Cow) and Greater Dog are reproduced much larger in the ground relative to the ground patterns of Hercules and Horse.

4.1.1 SM-I-HORSE CONSTELLATION (FIGS. 31A & B, 32)

Modern star-charts vary as to binding of stars to achieve Horse/Pegasus. Pegasus was also known as simply Hippos and Equus, by Greeks and Romans, respectively; Al Dalw, the water bucket, is the Arabic name that refers to the square of Pegasus (Room 1988, 126–7). Hartner (1965) examined the Near Eastern constellation iconography of horses and the square of Pegasus, which is sometimes given as chequered squares – a ‘game board’ – or a cultivated field, both sometimes associated with a tree. Water, trees and fields are also associated with the figure at the sites in Noord-Holland as finds and settlement situation.

What would appear to be hind legs is now formally the constellation Andromeda. Drawn together as the settlement pattern are unmodified horse bones, the horse burial and human remains from the northern and central features of the groups of pits. Thus, the seasonal criteria

Figure 31b SM-I: The overlapping constellations of dug features, suggested by form and to some extent by the deposits shown in Figure 31a.

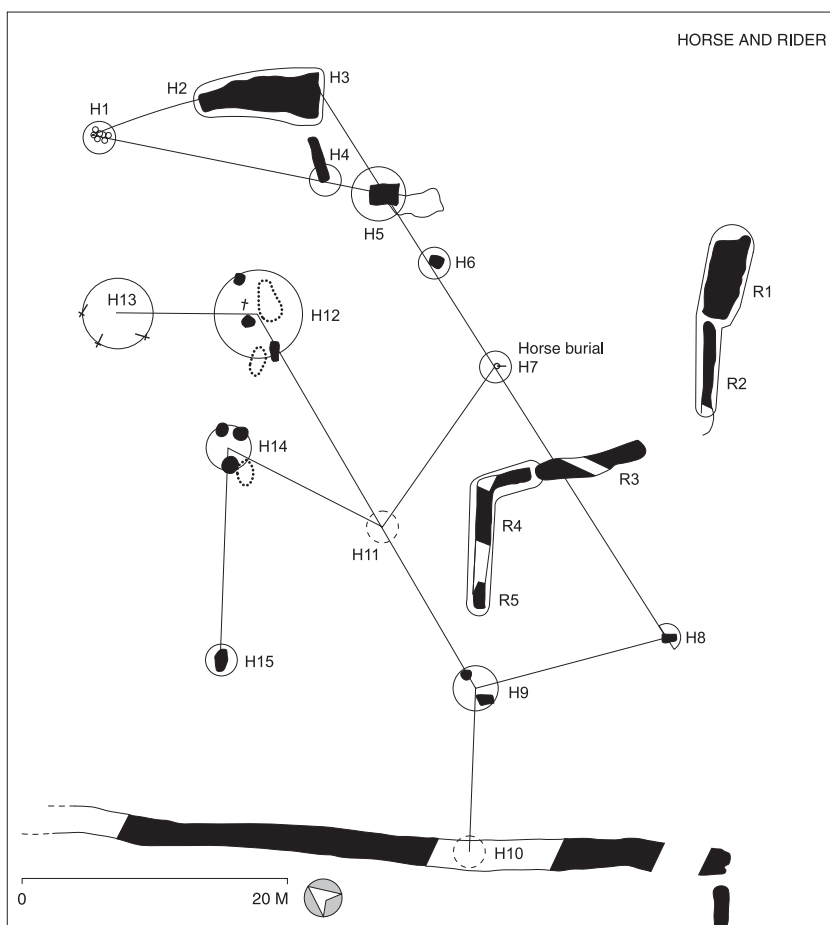
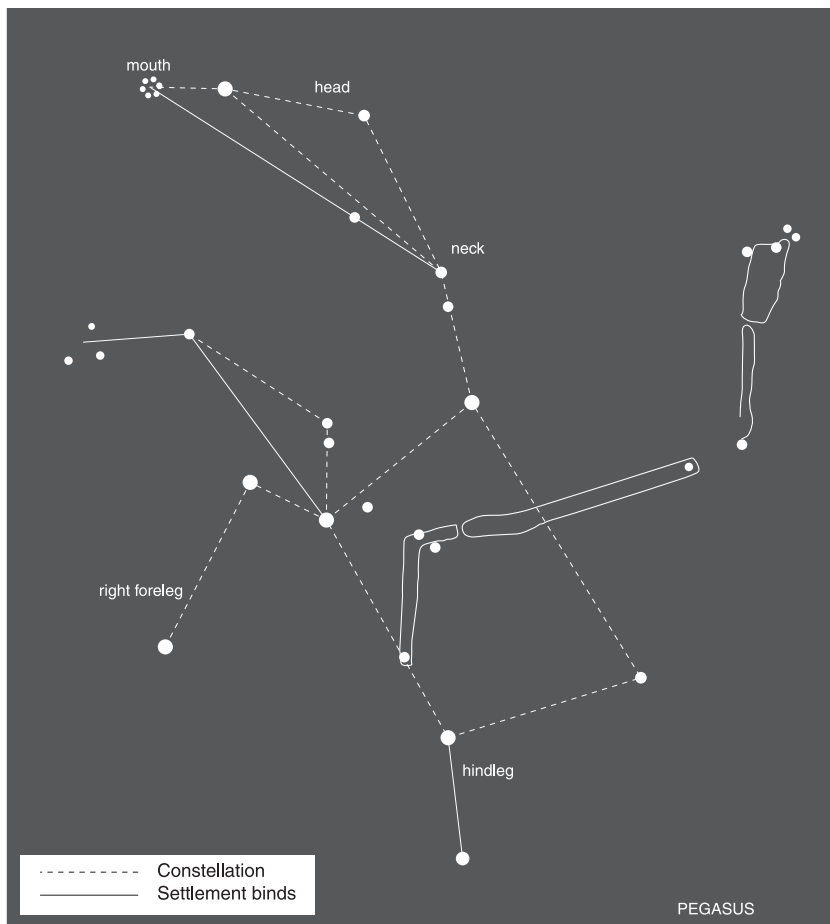


Figure 32 SM-I: Features forming Horse and Rider in the sky and on the ground. For the settlement positions, see fig. 31. Number designations are given for the positions: see Tables 13 & 14 for actual star names and magnitude.

for Winter pits (Chapter 2), within a three-pit group, could also be the marker for the large-scale Horse. The positions described below are shown on Figure 32 (see also Tables 13 & 14), and the feature and group numbers are given on Figure 5.

- H1--nose/mouth: this is the pit (f 345) with seven pots inverted, set upside down in two rows, over cremated human remains; the pit contained as well the 'mouth' of a horse, the frontal maxilla, in direct reference to the position. This was the only frontal part of an upper jaw of a horse found at the site.
- H2 & H3--feature 27 joins two star positions as part of the head; H3 appear to have been specifically marked by a post at the end of the feature. This pit contained numerous materials, including horizontally laid branches of willow.
- H4 to H6--three pits (group 8) mark three stars in the jaw and neck; pit f24 (has no horse bone), f23 is a deeper than any other pit at the site; f22 has the partial ox burial placed over wood and a horse bone.
- H7--the near complete horse burial f62, a stallion.
- H8--rump: incomplete pit group (f137), also representing a position taken up as Cow-10 and Dog-12, below.
- H9--corner of square and proximal hind leg (tibia): incomplete pit group (f105, f106).
- H10 & H11: area not excavated and disturbed
- H12--left foreleg joint at proximal metacarpal: pit group 7 (f78, f79, f148) and the burial of a newborn infant (f77). Hearths also mark the position.
- H13--hoof of (left) foreleg is not taken up as part of the constellation in the examples of modern star-charts seen; the position on the ground is marked by the three human burials (f150, f321, f322).
- H14--right foreleg joint: pit group 5 (f141-143; and f147) and a large hearth. This was the pit grouping consisting of the round pits, as exceptions to form, one containing the chopped segments of tree roots.
- H15--possible hoof of right foreleg: not taken up in any modern traditions noted of joining star dots. It could be a pit (f310) of an incomplete group, and seems to be marked at two other sites.

While this picture is incomplete, the head is excellent, and symbolism becomes apparent as positioning of burial and cremation remains, landscaping texts in a literal sense.

4.1.2 SMI-RIDER (FIGS. 5, 31, 32; TABS. 13, 14)

If the above is a Horse, it then looks as if it has a Rider. There is now no officially recognized constellation Rider of this Horse. However, there are faint stars within the square of Pegasus and stars above, around which the features on the ground may be drawing together. A very close fit of this same pattern of features occurs at the nine hundred year earlier site of Velsbroek-Hofgeest discussed below. As will be discussed in Chapter 6, he is mirrored in the burial of the young man, laid in a flexed position (fig. 59). The Rider as image is indicated on later finds of bracteate iconography, as Odin/Wodan, and as legends of 'Wodan's Wild Ride'. The following Rider pattern has no exclusivity of content, but horse bone regularly occurs. The drawing-in of the dug, linear features is in itself apparent content, as iconographical form.

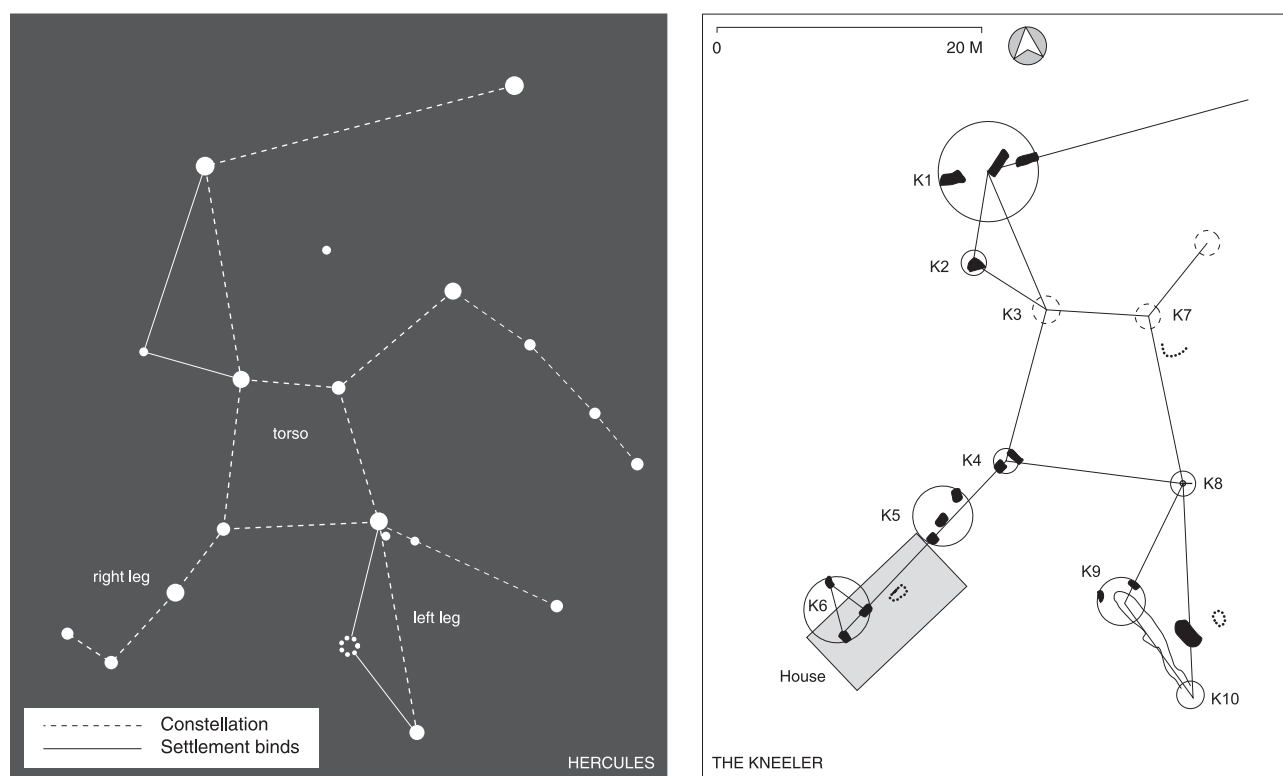


Figure 33 SM-I: Features forming the constellation of Hercules/The Kneeler and his partial image as a Donar/Thor type of figure as settlement features, including the dwelling (see fig. 31 and Tables 13 & 14).

R1--the head: large pit f185, which has all of the seasonal determinants, horn core and lengths of willow branches. These finds also characterize Horse's skull pit f27 (H2-H3).

R2--back/spine: linear feature

R3--thigh shaft: linear feature with bone material including horse rib, vertebrae, and two partial horse thighbones.

R4--knee, lower thigh and upper shin: a selection of four teeth of a calf, an ox and two horse teeth.

R5--ankle? no finds.

Pit group 10 (fig. 5) suggests an arc around the horse burial (H7); the circle was also drawn by inhabitants as a ditch at Uitgeesterbroek (UB18), discussed below and is suggested to form the ribcage of the large scale Horse (fig.45). An example of horse and rider (often identified with Odin/Wodan) with shield (with 'pit' motif) is shown in Figure 70 that could be another interpretation of the intention behind the arc of features.

4.1.3 SMI-MILKY WAY

Horse and Rider are travelling along the linear feature (f107 on fig. 5; figs. 31a & b, 32) bordering part of the settlement along the west. The combination reoccurs but differently marked at

three of the sites discussed below. Spatially, the combination has a likeness to the sky phenomenon of the Milky Way, along which runs the official constellation Horse. The angle between Horse and linear feature is not good, but can be explained when the action of Horse and Rider is taken into account (Chapter 6), in taking off from stilled settlement space, carrying the dead of the Schagen human burials and cremations.

The Milky Way is a band of mainly dim stars stretching across the sky – it is a path – which is variable as to cultural denotation, whereby the Scandinavian folk designation of ‘Odin’s Way’ is most interesting.⁶⁵ Here the linear feature was filled with butchery waste, 91% of cattle. The feature also forms a border between inside and outside settlement place and the general type of bordering is important for the interpretation of the night sky as divided into three parts, a key to pagan structuring of the heavens and lived landscape, in contrast to the christianised (cf Chapter 6 & 7).

4.1.4 SMI-THE KNEELER (FIG. 5, 3IA & B, 33; TABS. 13, 14)

The pit pattern is very incomplete but distinguishable as the pattern known on star-charts as Hercules; an early Greek designation is the Kneeler (Room 1988, 93), which shall be his designation here, as being less laden with cultural derivation. The Kneeler is an early Greek naming of the constellation not referring, according to Room (1988, 93), specifically to Heracles. As Hercules, the hero of the constellation is kneeling on the dragon, slain during his eleventh labour.

Where his head is supposed to be is not obvious. In any event, the classical hero Hercules holds a club in his right hand, while this settlement pattern has a hammer in the right-hand position, indicating a Thor/Donar figure, the Germanic counterpart to Herakles/Hercules. The Celtic counterpart is the Dagda, with an attribute of a club.⁶⁶ The suggested figure at Schagen Muggenburg-I is possibly the most interesting as figure and attributes with direct correlates to Thor/Donar-Herakles/Hercules-Dagda myths. However, he is very incomplete at both of the Schagen sites, and could not be established at the others, possibly as the areas to the east of the dwellings were not excavated. Associated in Germanic myth mainly with fertility and crops, the Thor/Donar type of figure is here associated with the dwelling, overlapping the figures of Cow and Dog at the Schagen sites. The figure is also associated with horse bones (see positions K8, K9-10) something shared with pattern Horse.

The incomplete figure is formed by pits with horse bones occurring in the southern part of the settlement and a wooden hammer and hammer stone finds which are in the pattern. The feature groups are also near specific in having the single, standing pots of the site. Poplar (*Populus* sp.) as wood find is also important for this figure. Pliny (Nat.His. XII. 2) was cited in the Chapter 3 for illustrating ascribed Roman deity-and-tree associations; the tree Pliny associated with Hercules is the poplar. Poplar occurs infrequently as wood find for the entire region.

K1--group 12 has the westerly pit f28 with the long-handled hammer, with willow shaft and ash head, as well as a club-like, near-complete horse tibia; the middle pit has two complete ox skulls and a pole found standing in the eastern end.

K2--overlaps with Dog 2, and is a partial group with f29, and f183 with a quern stone and un-worked birch

K3--right shoulder: unexcavated

K4--right hip: two pits, group 3, of which f21 had with a broken hour-glass formed

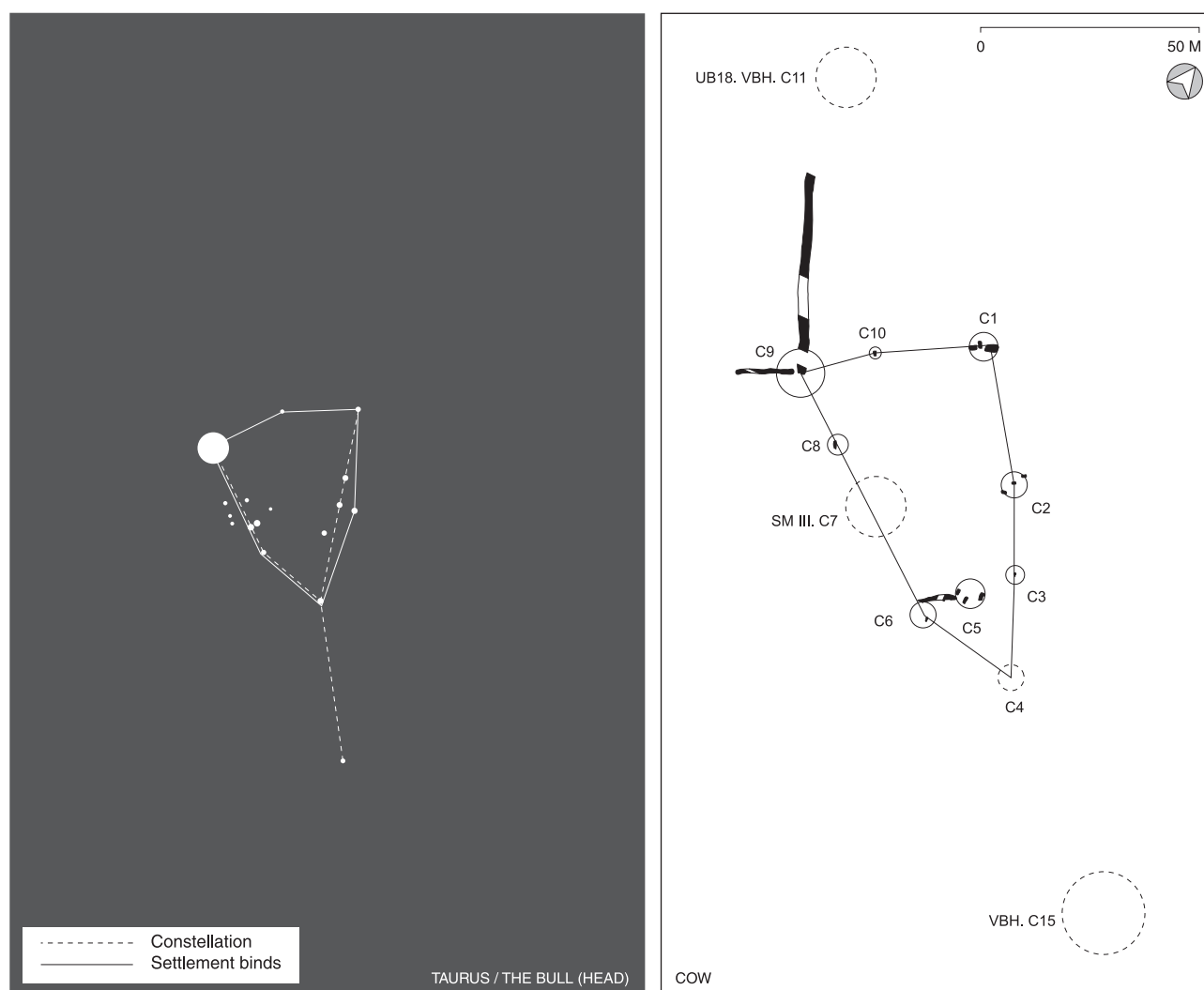


Figure 34 SM-I: Probably a Cow, within Germanic mythology, part of the constellation of Taurus, showing the face as a V, with stars including Hyades and Aldebaran and the partial ground picture (see fig. 31 and Tables 13 & 14). Positions shown added to the picture are derived from the other sites (figs. 36, 48, 53).

whetstone, the only whetstone of this type found in a pit. The finds category is relatively common as complete whetstone on surfaces; there was also a small complete pot. A clear exception to the 3-pit groupings, this two-pit group was suggested to be the first of the settlement and it was lacking a Winter pit (Chapter 2).

K5--right knee: pit group 2, the middle pit (f120) had an upright post of *Populus* sp. It is the only upright post at the site, and from a rarely occurring wood type. Feature 115 contained a complete standing pot.

K6--right foot: pit group 1, of which two pits were inside and another outside the dwelling; that near the back wall (f352) had an un-worked, slightly worn hammer-formed stone and a chip of *Populus* sp. An oak pole was leaning in the corner of the pit; pit f212 contained a large complete pot, black burnished with the mouse skull as deposit inside the pot.

K7--left shoulder: the assumed incomplete group is possibly represented by that one pit f248 with kilos of charred grain, stems, and rope representing burnt sheaves deposited with unburned wooden objects. This pit is also taken up as D3.

K8--left hip: the deposit of three horse lower legs.

K9-10--left knee and shin: the left knee as here given is a globular cluster (M92, magnitude 6.4) and visible only in exceptionally good circumstances. The position is indicated by the two pits (f220 and f256) and 'pointed to' by the linear feature. The linear feature is a series of pits cut successively to the northwest; f258 contained a small complete pot with a sherd covering the mouth-opening. The feature was disturbed on the south by a modern ditch.

Due to the similar feature at SM-III and positioning (see fig. 29) the linear feature is regarded as the first marking of the left leg, which was re-marked by the pit group f220, 256, 260: f260 contains horse bones: a left leg, from the pelvis to the astragalus; the posterior part of a lower jaw, and 17 vertebrae. The only large wild mammal element of the site, the partial jaw from a red deer, was recovered from this feature.

4.1.5 COW (HEAD OF TAURUS/THE BULL) (FIGS. 5, 31A & B, 34)

Traditionally agreed is that the face of the constellation is made up of the Hyades, five stars, although more are visible. Aldebaran, the brightest star of an orange-red hue is often considered the glowing right eye, but is usually not considered as one of the Hyades. The remainder of the bull's body is variously connected, but is not taken up here, except the line below the face (to C15; see Velsersbroek Hofgeest). The Pleiades are included sometimes as part of the picture (see fig. 68 for their position). The group is known as being seven sisters or 'nine', when the parents are counted. Within Greek mythology both Hyades and the seven Pleiades are daughters of Atlas, for unclear reasons, and the meanings of the names are also unclear. The derivation of the name 'Hyades' is alternatively given as connected to the Greek *hycin*, to rain, the set of Hyades in November being the start of the rainy season (OCCL), or via their popular Roman designation as 'Sculae', little pigs, from *sus*, sow, thus relating to Greek *hys* (Room 1988, 96): 'Pliny combined both senses by explaining that the rains with which the stars were associated made the roads so miry and muddy that they seemed to delight in dirt, like pigs'. One could also combine the two if Romans slaughtered their pigs in November.⁶⁷ The constellation the Bull/Taurus has the same name in Greek (Tauros) and Arabic (Al Thaur). The Arabic name of the Hyades is Al Debaran, the follower, as the cluster follows Al Najm, *the* (as in paramount) constellation: the Pleiades. As mentioned, interpretation here will be through a Cow rather than a bull, through associations more with the female sphere and materials within the excavations (cf Chapter 6). In a Germanic text, Snorri Sturluson is considered as explicit in his creation myth of Audhumla – as rich, hornless, cow (Chapter 7), and she will be found in the sky.

The matching association of deposits of the SM-I pattern is the presence of bone elements of the very large, non-indigenous cattle bones, with the exceptions of group 14 (C5) and the incomplete group indicated by pit f137 (C10; also position H8). The giant cattle bones could be in reference to the 'Giant Cow' figure. As mentioned in Chapter 2, these bones from very large cattle occur regularly but sporadically within settlements of north-western Europe. Because of the patterned way the bones occur as deposits at this Schagen site, they could have been traded in from more southerly European regions exactly for the purpose of marking gigantic Cow constellation figures.⁶⁸ Bones from very young animals occur regularly as well.

The following incomplete picture of the constellation Cow is found, which was added to by considering the other sites. Clockwise the figure is bound together:

- C1--left top of skull: a three pit group with radius from a very large bovine, in f51, and a complete implement which appears to be a pestle (from a horse metapodia); f31 included one-half of a bronze bracelet, a finely made, unused implement (made from a horse's rib) for pottery production, and two lower jaws from lambs.
- C2- pit group 4 of regular formation is packed with interesting finds. The southern pit contains two partial skeletons of piglets, 7-10 weeks old. The wood finds included a complete rake, and other complete objects with holes. The winter pit, f223, contained an inventory of ten complete native pots, one-half of a rotary quern, a selection of knucklebones and a boar's tusk. The spring (f221) and October/November pit (f222) both contained a vertebra of exceptionally large cattle bone as part of the initial deposit.
- C3--lower left face: the bundle of bone elements, f262, belonging to the very large cattle.
- C4--not excavated
- C5--group 14 contained bones referring mainly to cattle, with 17 bones, and two of sheep/goat. The small wattle empty grave/cradle, f297, was accompanied by a metacarpal of an ox; clear selection of four cattle metapodia from four different beasts is in f298; two lower cattle jaws accompanied a quern fragment in f296.
- C6--the linear feature 274 is also part of Greater Dog (D5-D6), and contained cattle bones, including those from a very large bovine. A group of pits may be indicated by the edge of a pit (f276), partially excavated.
- C7--not excavated
- C8--The single pit (f271) found in a trial trench contained two elements of extremely large cattle, the centrotarsale and a partial humerus, as well as two deciduous teeth of a calf, c. 3 weeks old.
- C9--top (right) of head: at the junction of the two linear features forming the border of settlement space, f162 with no deposits, and f107, with many. As well as containing three bones of the large bovine, f107 was filled with butchery waste, 91% cattle bone, a percentage greater than the average of the site features as total. Feature 107 was also suggested as the Milky Way, the path of Horse & Rider.
- C10--midway top skull is a dim star marked by f137, and is included as it is present at other sites, below; it contained four bones of cattle, only. The pit also represents a group as Horse-8 and Dog-12.

Further, the pattern includes positions C11-16 found at the more fully excavated areas of the sites Uitgeesterbroek Polder and Velsbroek Hofgeest discussed below.

4.1.6 SMI-DOG CANIS MAJOR/GREATER DOG (FIGS. 5, 31A & B, 35)

The Greater Dog constellation includes the brightest star of the sky, Sirius, which the Greeks called either Cyon, the dog, or Astrocyon, dog star; the Romans are assumed to have copied this from the Greeks; Arabian astronomers called the constellation the Greater Dog (Al Kalb al Akbar) (Room 1988, 68).

The stretched picture is made up of the burials of the two great earthly dogs at the site, two linear features and a pit group with the bone elements of dogs. Star-charts again show variation in which stars are used, and one example is given in Figure 30. The way of binding the stars can be taken as a dog standing on its back legs, with forelegs in a stretched position, and the head

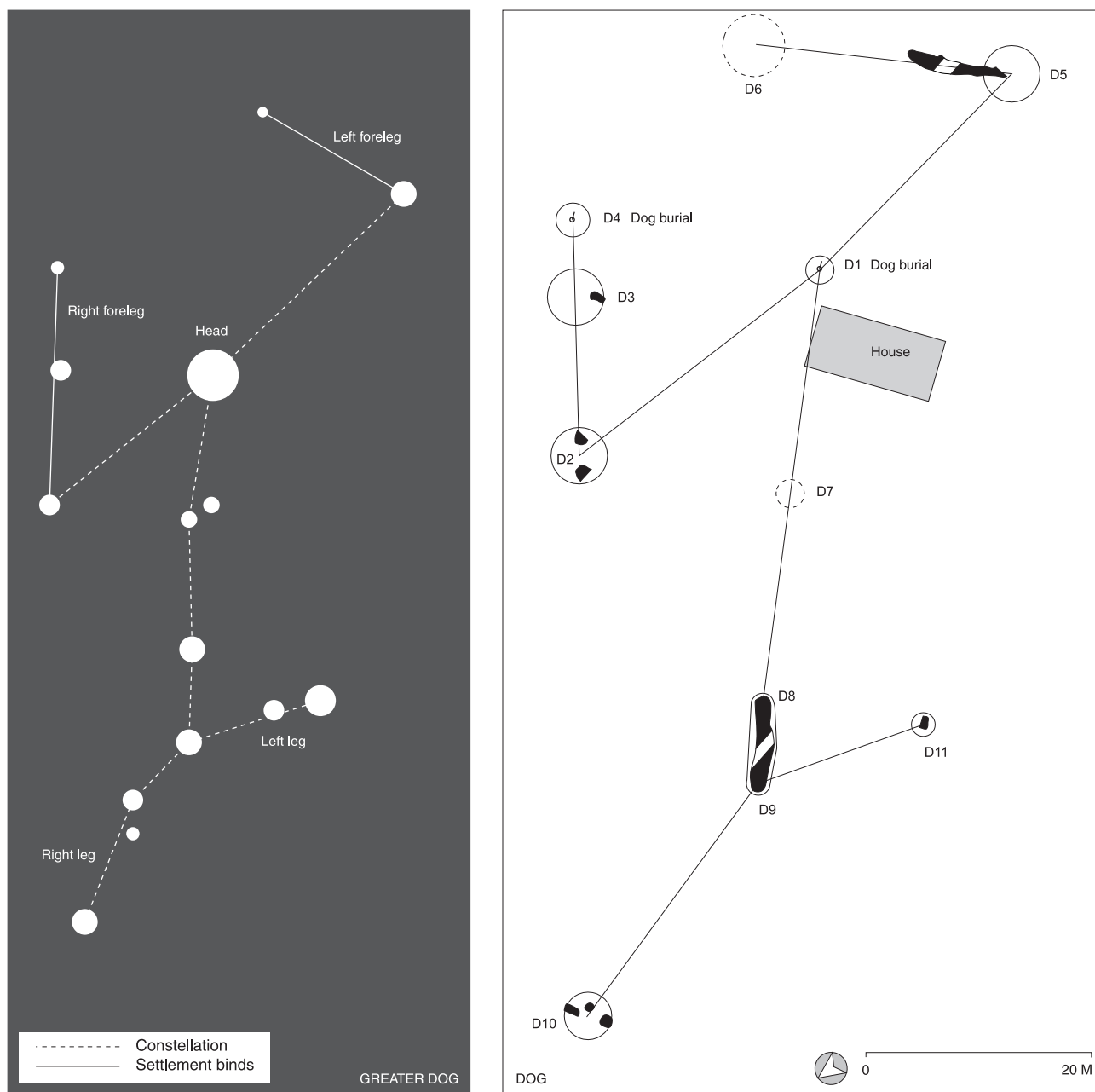


Figure 35 SM-I: Constellation Greater Dog and the settlement traces, including two great dog burials.

(Sirius) in-between. The position is unnatural, and although not exactly reflected, has a similarity to two buried examples of dogs, one here at SM-I, and another at SM-III. The model of the relative star/pit positions is a composite of SM-I and SM-III of those features with burials and bone elements from dogs in features.

D1--the head: very large, young dog (f238), buried adjacent to the dwelling. The star represented is Sirius, the brightest in the sky.

D2--the right elbow: position is extrapolated from an assumed partial group of pits, f29 and f183, the latter only with finds of birch and a quern stone fragment.

D3--represented in an incomplete group. The pit present is that with kilos of burnt

grain, an interesting combination with the Thor/Donar figure (Kneeler/Hercules) through the harvest connection of season of rise and the myths and legend connected to both figures.

D4--the right front paw: the burial of an old, and very large dog (f250), buried in a twisted position (fig. 59)

D5--left foreleg: the linear feature (f274) has a dog's mandible, which marks the position of a relatively bright star, but the further extension towards D6, to the northwest, is towards a dim star position.

D6--the position here is shown as it seems to be present in SM-III (cf fig. 36); it is here possibly disturbed by a medieval ditch.

D7--not excavated

D8-D9--lower back/base of spine: linear feature (f55), binding two star positions, with the foot bone of a dog; the feature doubles as Rider's thigh.

D10--right hind foot: marked by the pit group with f154, containing a lower jaw from a small dog, with teeth extracted. The pit also contains complete standing pots and worked wood. The area between D9 and D10 was not excavated, but could hold a star position such as shown by the constellation model (fig. 35).

D11--the left hind leg is represented by one pit in a trial trench. Also used for H8 and C10.

4.1.7 OTHER FACETS: CROSS-REFERENCING, DIRECT CORRESPONDENCE, INVERTEDNESS, RIGHT & LEFT SIDES

The suggested constellation patterns described in this chapter use the larger spatial patterning of pits than that suggested for the yearly, seasonal framework of pit-digging set out in Chapter 2. The conjunction of stars as seasons will be gone into in Chapter 6. There are a few points to be made here on the finds-distribution among and between the four patterns at SM-I.

cross-referencing: The finds of horses, humans, gigantic ox, hammer stone, horse bone, single pots, poplar wood, and dog bones as part of their respective, here partial, constellation pictures have been taken up except for the following. The materials could be referencing the flow of time, as the images in the sky follow one another, as discussed in Chapter 6. And, they could also be seen within a scheme of direct cross-referencing, from one picture to the other, in features demarcating feet and head position of the images.

In Horse's skull SMI-H2/H3 (f27):

--radius fragment of an extraordinarily large bovine to Cow

--small complete dog skull to Dog;

--block type hammer-stone to The Kneeler;

In H12 and H15: bones from a very large bovine (in f148, f310)

Rider's head, SMI-R1 (f185):

--in f185 a horse bone and a small near-complete pot were deposited suggesting reference to Horse and Kneeler.

In The Kneeler's right foot (SMI-K6):

--f352 has the only other dog bone recovered from pit-features; it is a toe bone (not from the dog which was buried without toes at D4).

In Cow's left eye (?) (SMI-C2)

The group C2 of three pits was best filled and absolutely packed with interesting finds. A horse bone is taken up here in the Winter pit, f223.

Greater Dog

Overlapping the entire settlement area, Dog crosses on the ground the other three constellation patterns, and shares star positions with Cow, Rider and Horse, and the other way around. A piece of *Populus* sp. was found in his right hind foot in D10 (f154). In the same position, there was also the horse bone of the Winter pit (f156).

Feature 'Milky Way' (f107)

In addition to the quantity of butchery waste deposited in this border with 91% cattle bone, finds were deposited particular to three constellations: a block type hammer-stone; three elements from exceptionally large cattle and six horse elements. There was no bone from dog.

direct correspondence of bone element as pictured part: The star position of 'Horse's mouth' (H1) has the only upper front jaw of a horse found in features of the site. The only horse rib, near complete, found at the site is in the Rider's thigh (R3). The horse's rib and vertebrae at this position is on rib cage/spinal column of pattern Horse.

inverted quality in method of marking stars: The method of proto-Dutch star binding as suggested might seem 'illogical' in the use of at times faint stars that are only visible in very good conditions and by people with excellent eyesight. However, there is a consistency suggested by the ground patterns when compared to the stars in an inverse relationship between how the stars are marked as feature when compared to the visibility of the star reference point. This will become more apparent through features of the other sites, as will the general framework of inversion of the Schagen sites, discussed in Chapter 6. Summarizing the 'dimness' factor of the above patterns as compared to the actual stars, the following points can be made:

- Human adult inhumations mark dim points of the sky as the suggested hoof position (H13). Horse's mouth (H1) is the pit with seven inverted pots and cremated bone, corresponding to the cluster of stars difficult to see in the sky.
- Rider is made up totally of linear features, and the stars used are dim and not at all now a recognized constellation. However, various 'holdovers' of this figure are a part in later iconography and practices, and the mirrored position of the flexed burial at this site (Chapters 6 & 7).
- The use of a ditch to mark the Milky Way is also analogous to dimness in heavily marking through linear features. In the sky, the feature is formed by primarily dim points of light.
- Greater Dog's 'lower back' is marked by relatively bright stars, but on the ground marked with a linear feature; the same feature doubles however as Rider's thigh of dim stars, which could explain the exception.

- The left knee of The Kneeler is a globular cluster, but marked by the end of a linear feature that extends to the foot. The feature is then the drawing in of the left shin(bone). At SM-III, below, a similar linear feature correlating to the 'thigh' had a deposit of a left, human thighbone, a specific reference to the pictured body part.

right and left sidedness: Tilley (1981, 144-145) gave some practical advice on what archaeologists could be looking for in their bone finds. Point three was in finding patterning within right and left bone elements, but it could not be demonstrated for the bone material as clustered pit deposits at the Schagen sites. The above quality of dimness of actual stars shown as well-marked, emphasized, positions through features, has a pattern when taking the sides of the constellation figures into account. The linear features of The Kneeler and Greater Dog draw in parts of the left sides; Rider's left side is shown completely by linear features. The seven pots inverted over a cremated woman are in the left side of Horse's mouth. The adult inhumations in one of the forelegs of Horse when following the 'dimness' criteria of the star can be interpreted as the left foreleg. The burial of the new-born child is in this same leg. Texts as to horse's 'leg of life', as the right leg within divination (Chapter 3) could indicate the SM-I hoof/inhumation position is the left leg of 'death'. The right leg has then round pits, as exceptional form, one with tree roots, taken up within Tree symbolism, on which more will be said in Chapter 6 & 7. More striking is the directional inversion of humans and animals as to how they are laid to rest. While the constellations are mapped in settlement space, the iconography of the sky is indicated at times as mirror-imaged in burial position of male animals and humans (cf Chapter 6).

4.1.8 FIRES AS STARS: THE HEARTHS

The figures of SM-I have been presented in the above sections as 'loose'. In settlement context, the figures have been pulled down from the sky to overlap whereby Rider and the body of Horse cover the central area that was undefined as to clear traces of settlement activities (fig. 31a & b). As gone into in Chapter 2, the northern area of the settlement was used in pottery firing, iron and bronze working as shown by surface finds around groups 7 and 8, of hearths and pits. That large hearth associated with the westerly group 5, with round pits, showed no similar finds on the surface. To the south, there were three hearths outside the dwelling without surface finds around them to indicate a function. The Kneeler constellation has a hearth under his (extrapolated) left shoulder. There are hearths at positions of Cow, at C-2 and C-3. The dwelling, with hearth, is planted between Cow's eyes, and is also Kneeler's right leg.

The hearths, some functioning within daily-life activities, are also light-giving sources which could have also referred to, and paralleled the aspect of stars, at night. Through the ritual aspect, they are connected to the large patterns, at particular 'special places' within the settlement. The hearths and pits also form alignments having to do with common activities of the day and reference the sun, pulled up by night figures, again a subject to be discussed in Chapter 6, as it has to do with 'action' of these statically presented (incomplete) 'finds' as spatial placements of features.

4.2 SCHAGEN MUGGENBURG-III CONSTELLATIONS (FIG. 36)

Lying to the southwest of Schagen Muggenburg-I, and about two generations later in date, the site of Schagen Muggenburg-III was excavated even less completely. However, the pits as discussed in Chapter 2 can be interpreted through similar categories of deposits related to the basic seasonal designations, following the associations in deposits of Schagen Muggenburg-I. The linear features at the two Schagen sites overlap (fig. 29), as well as some of the pit positions, and can be regarded as referring to settlement layout done within a plan of constellation-star positioning. Although the excavated area is even less than SM-I, there are enough indications to suggest that the Kneeler, Cow and Greater Dog were set out at this somewhat later site.

All of the pits of the excavated area also gain an interpretation through placement as star positions and alignments. Moreover, as a greater area was excavated to the south of the dwelling, insight is further given on important orientations towards the sun, an alignment also implied by the features in a trial trench at SM-I.

Within a somewhat different (family) tradition – including being very sparing with deposits – materials in features marking the stars are analogous but not the same as the SM-I site. The constellations were not laid out overlapping in the same manner as in SM-I. The greater length of the dwelling could explain the shift in the layout of constellation points.

4.2.1 SMIII-KNEELER (FIGS. 15, 36)

The dwelling takes up Kneeler's right leg almost completely. Two features in his pattern have multiple deposits of complete pots in contrast to the single pots characterizing the pattern in SM-I. Much of the picture is assumed to fall outside of the excavated area. Present seem to be the positions of:

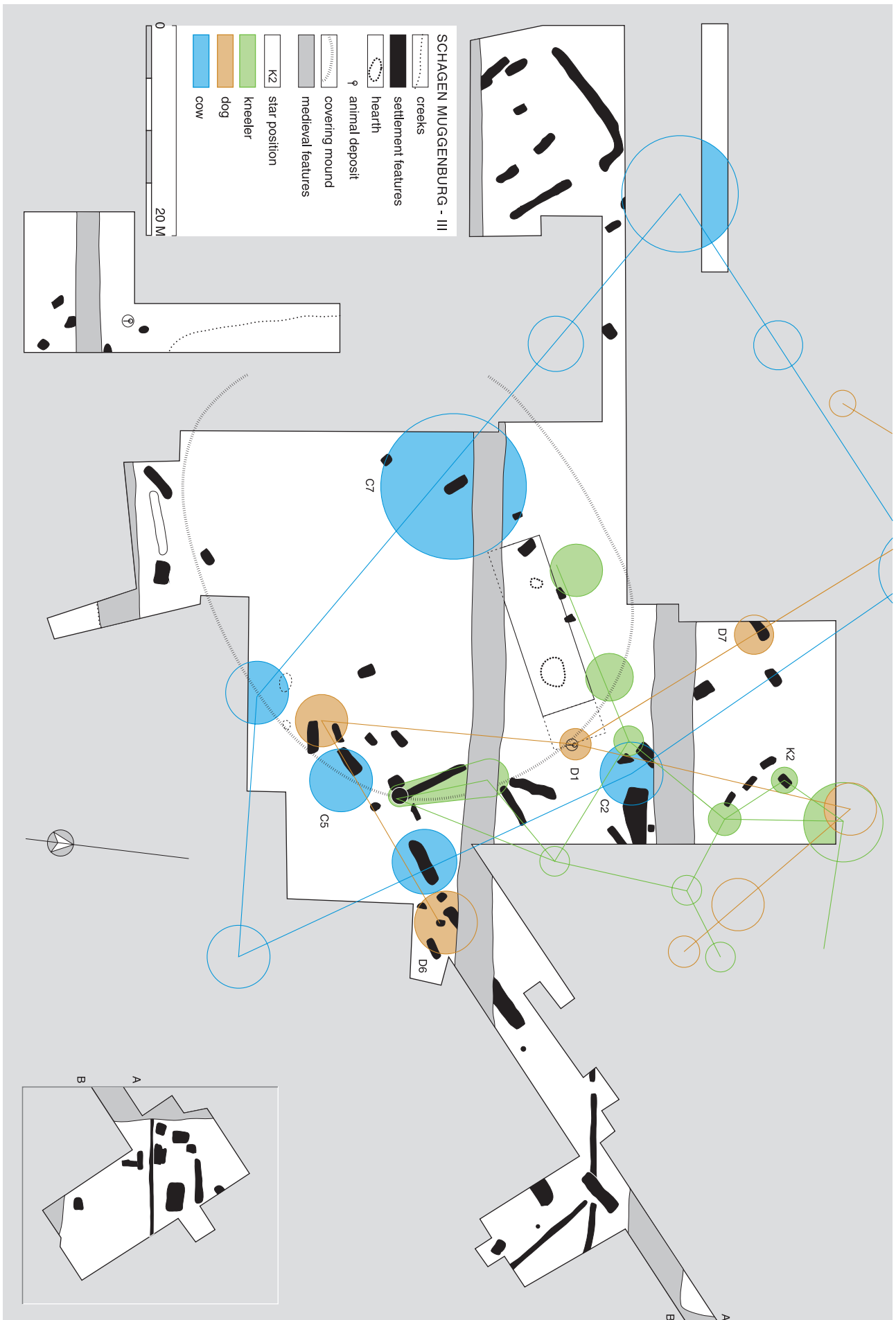
K2 to K3--right elbow to shoulder: only partially present at SM-I, this group here consists of four pits; the one (f96) proportionately best fitting the 'real' star position is that with a horse element. Feature 58, filled with pots, and the odd one of the group insofar as orientation and content, will be discussed in suggesting correspondence to small-scale, house-layout in Chapter 6.

K4--right hip, pelvis joint: SM-I had only two pits, as is possibly the case here although the medieval ditch may have obliterated a third. The two groups are similar in formation; f74 has a horse molar as initial deposit; f75, layer 2, the acetabulum of a horse's pelvis--the cup-shaped socket – chopped with care out of the pelvis. The initial deposit was a partial ox skull, thus the feature is designated as a Spring pit, and it also marks the position of Cow-2.

K5--right knee: taken up as the NE corner of the dwelling position.

K6--right foot: whereas the hammer-stone and the horse element were in the same pit at SM-I, here they were deposited in two pits. The pit f 78 near the back wall contains the horse foot bone as well as one complete standing pot. The only hammer stone of the site is in the spring pit by the door-opening, f106, with multiple pot deposit. The stone is the same type and form as that of SM-I. To the other side of the door was the pit (f105) with worked wood.

K7 & 8: not excavated.



K9--although K8 was not excavated, it is 'pointed to' by f97 drawing in the left thigh as a linear feature. The only human bone of the site was found here. It is the left thighbone shaft and is in direct relation to the left thigh of the suggested pattern. The modern ditch disturbed the exact position of K9.

The linear feature f76 also points to position K9, as part of the thigh. Identifiable bone in this feature was from ox – foot bones, two teeth, complete atlas – and eating waste (13 bones). A black stone gaming disc and a sherd of samian ware were also in the feature.

K10: the linear feature from knee position to foot is marked similarly as the shin of SM-I. Here the end was recovered as a circular feature containing a horse molar and eating waste.

4.2.2 SMIII-COW (FIGS. 15, 36)

The most often-occurring ox element of the pattern is the back cranium, horn cut off. These finds refer in a more direct manner than the finds of SM-I to what the constellation picture relates: the head. Even Snorri Sturluson's (*Gylfaginning* 5-7) 'Audhumla' – as rich, hornless, cow could be a later reference, discussed in Chapter 7. Only one deposit from exceptionally large cattle was found: a skull accompanied by three lower legs found in f46, at the south-western end of the linear alignment of pits. It is not a position taken up in the pattern itself, but could relate to directions as set out in Chapter 6, to the rise of the summer solstice sun. While SM-I consistently has this marking type of deposit, the pattern is found only through laying it over the dwelling, and relating it to pit groups not taken up by the Kneeler pattern. While single, standing vessels were associated the Kneeler at SM-I, they are here more associated with the Cow pattern (C7, C8).

C1--not excavated

C2--group of two pits with few finds doubles at this site as Kneeler's right pelvis (K3). The spring pit, f75, had a complete mandible from a very young calf. The same initial deposit includes two complete cattle vertebrae. The find is similar to the bones used in marking the same C2 position at SM-I with vertebrae, but there from a very large bovine animal. The pit also contains a fragment of a round disc, whereby it is then similar to the same position at the site Ub18-C2 (below).

C3--elongated f15 with the right partial crania of an ox, horn cut off. The position was possibly re-marked with that three pit group (f 34, 21, 33) having together six ox/calf bones and one tooth of a sheep/goat.

C4--not excavated

C5--groups 10 & 11 (fig. 15) may be taken up, but overlap with the Dog pattern. The layout of group 10 is the same as that of C-2 at SM-I. The middle pit (f7) here contained as initial deposit a complete jar lying on its side, mouth opening to the northeast. Lumps of clay to hold it in this position were found under the pot. The position however falls on f18, a long pit with a selection of cattle bone (as well as dog, see D-5, below), of twenty cattle skull elements including single teeth of older cattle as well as calves; there was also the back of a partial cattle skull.

Figure 36 SM-III: Plan of settlement with the constellation patterns of SM-I over the features.

- C6--the position falls over f17, a shallow concentration of bone, including a partial lower jaw from a calf and a partial ox cranium. Feature 17, and another concentration near to it, f20 (fig. 15) is not taken up because it is uncertain if they were part of activities on the original surface, or part of the mound material covering the area. Thus, it is unclear if this position is marked.
- C7--marked by three pits, comparable to the opposite formation at SMI-C2. AWN2 & AWN 3 were features excavated prior to the institute's excavation and were not well recorded as to differentiated mound and pit deposits. There was a complete pot standing in f79 and bones from calves and lambs.
- C8--not excavated, or part of a group, indicated somewhat above the area in the trial trench with f99. This feature contained a complete pedestal bowl and cattle bone, including skull parts.
- C9--the nearest feature is the enclosure of linear features formed by pits; the three sides excavated contained partial ox skulls and other bones from ox and very young calves and a lamb. A partial ox cranium was impressed into the terminal of the length along the northwest, the same feature with the complete, black burnished pot with hanging triangles and pit-decoration (fig. 17). This was the only decorated native pot found at the site. A bronze, Germanic fibula was found impressed into the side of the other terminal and this length contained very young calf bones and skull parts from older cattle.

4.2.3 SMIII-GREATER DOG (FIG. 15, 36)

Although there are but few points, all deposits of dog bone at the site and the great dog burial are overlapped by the model formed by SM-I traces, and those at this site.

- D1--the star Sirius is again a complete burial of a very large dog, lying near the northeast end wall of the dwelling. While the burial of the SM-I site was on its side, this dog was buried in a position similar to the dog at the position of D4 at SM-I.
- D2 to D4: not excavated
- D5--the linear feature of SMI-D5 overlaps two pits with dog elements of atlas and foot bone of group 10 (f16) and of group 11 (f18) with a dog's tooth and a jawbone. These groups overlap (fig. 15), and could be referring to both Dog and Cow.
- D6 - Feature 36 contained a foot bone from a dog.
- D7 - three pits, group 5. Pit (f56) shown circled in Figure 36 contained an ulna, from a very large dog, and also had the pair of dice made from root wood (fig. 20).

4.2.4 SHIFT AND SIMILARITIES RELATIVE TO SM-I

The fits to the SM-I patterns are tenuous. However, there are enough corresponding, and near corresponding positions to suggest intent was similar. If correct, there was evidently latitude within tradition of individual families for shifting positions. The shift could have to do with the length of the dwelling. Greater Dog pattern was laid out shifted to the northeast relative to that pattern of the Kneeler.

Use of a dog mandible, without teeth, to mark positions corresponds to marking of D-10 at SM-I. Sided-ness is shown here through the left side of the Kneeler's thigh, with left human

thighbone. The dimness of the stars was mentioned for SM-I as correlated to positions for human remains (H1, H13) and the left side. Here the very dim position of K9 (the globular cluster M 92) is associated with the only human bone from the excavated area, and is the left side of the pattern.

The theme of back crania deposits, characteristic for the Cow pattern, was carried along through the elongated features dug SW-NE along the southern extent of the excavated area. The suggestion of a similar series of pits in the same position is found in those pits unexplained in SM-I, found in the trial trench (fig. 5: features 347, 348, 350, 351). At SM-III, the line seems to border settlement space along the southern side and a similar line could have been present at SM-I.

4.2.5 REMAINING FINDS AND FEATURES

Not taken up are group 4, large pit f73, and the two smaller pits f93 and f94. The deposited materials could be taken as referring to pattern Cow, and f73 does fall partially with the position of C2. Accompanying ox elements of shoulder blade and foot bone, a fragment of a horn core was found in f73, corresponding to the large pits of SM-I (other horn core fragments at SM-III were in f28 and f58, general alignment and K3); f93 contained two ox mandibles, and f94 a pot foot (from a pedestal bowl). The direction of east-west (as that feature f73) will be shown to be important in conjunction with the birth and death cycle of constellation Cow, but also in the combination of the rise of the constellation Kneeler, around the slaughter period (Chapter 6).

The SM-III site will not be taken up further however, except for the general indications of a SW-NE alignment along the south of the settlement. In relation to each other, closely related in time and some habits of filling settlement place with pit features, the indications for patterning at SM-III for the larger scale were taken as good enough for reviewing other sites of the region for this aspect.

4.3 THE SITE OF VELSERBROEK-B6 (VBB6): A C. IST-3RD CENTURY HORSE, WITH MEDIEVAL REMARKING (FIGS. 37-41)

The entire 1.75 ha excavated of this site is interesting due to the clear traces of pit digging and deposits up through the 19th century.⁶⁹ Prehistory and folk history are demonstrably connected through the excellent stratigraphy of layered time and continued form. Areas of the site were excavated during 1991-1993. Therkorn & Oversteegen (1994) is a summary of the main phases with conclusions based on the sequence of activities over the 1.75 ha excavated area, through the at least 3500 year history of the site, and a two meter deep stratigraphy.⁷⁰ Part of the site is shown schematically in Figure 37, and includes the main traces from phases 3-6 of the site. All of the phases can be summarised as follows:

1. Concentrations of charcoal indicate an incidental use of the site during the Early Bronze Age on the slope of dune sand covering Calais IV deposits.

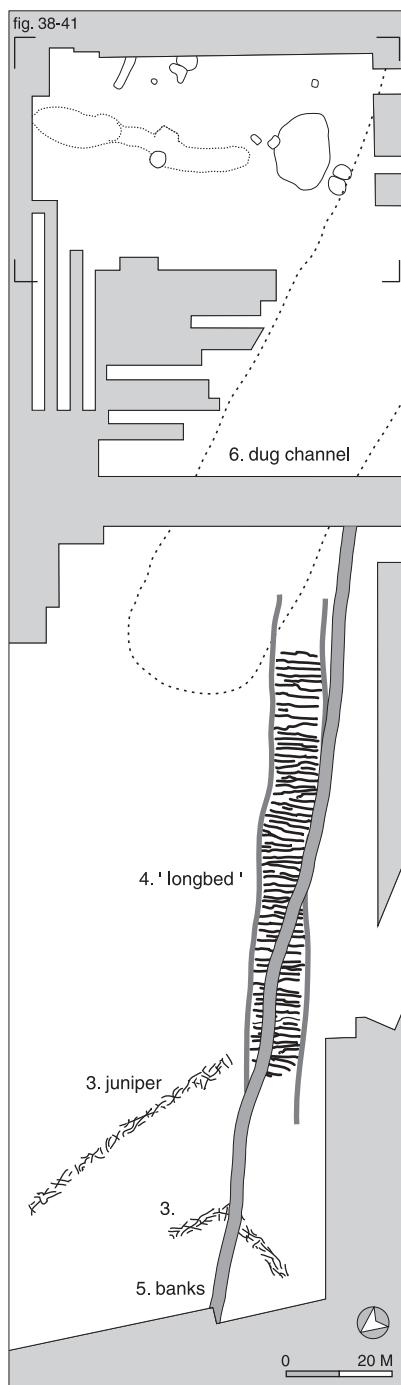


Figure 37 Velsbroek-B6 (VbB6): part of the excavated area showing traces associated with phases 3-6 (numbered) of the offering site, stacked through a 1.5 m deep stratigraphy. The area of Figures 38-41 with (later) Roman Iron Age pits and later medieval marking is shown.

2. During the middle Bronze Age, the depression was open water and partially filled with clay and subsequently with plant dust (gyttja-like) sediments. Reed peat was accumulating around the eastern and southern sides of the pool. More than twenty beams of secondarily worked construction wood were deposited in open water, forming two axes, during the middle or later Iron Age.
3. The swamp continued to fill with plant dust while deposits of peeled juniper trunks and branches were placed as bundles, in linear arrangements pinned down by stakes on the bottom of the pool. Silts had covered the beams of phase 2. The deposits of juniper were up to 45 meters in length.
4. Plant dust silts continued building up, covering the above. The raised swamp had dried and the surface was used to construct a 'longbed' aligned roughly NW-SE. Two parallel running ditches were dug 7-8 meters apart, about 1 meter deep. Material won from the ditches was re-deposited in between. The monument was 103 meters long. Hundreds of oak branches as a single layer were placed over the width of the heightened area, along the entire length. This was then covered with cut reed peat, which was recovered undisturbed, as were the branches. Total recovered height of the monument was 55 cm. The north-western end was marked with three vertically placed oak posts. Deposits of this phase included dog and horse skull elements, a human thighbone, a metal lance point, and a shaped antler, lance-like, point.
5. A period of sedimentation ensued, with two events of flooding. The phase four monument was covered. Deposits during the sedimentation phase include two human thighbones. On the newly formed surface, a series of linear banks were constructed, over the position of the phase 4 monument, but with a slightly different alignment. The last, non-eroded banks consisted of two banks of sand, about 75 cm apart, covered each by cut sods/turf, grass side up. The space between the banks was in-filled with re-deposited white sand. Of the original length, 120 m was recovered. The total length could not be established as the banks extended under the modern roadway on the west. On the east, the end was eroded and a modern ditch further disturbed the stratigraphic connection between the banks on sandy sediments and peat landscape to the east. Open water was still present at this eastern end. Deposits included bronze fastenings, fibulae and a human thighbone.

6. The connection between the above and the area marked by features dug in the reed peat landscape to the east is unclear due to the modern ditch dug on the border between sand filled pool and natural peat accumulation. Clear is the digging of a channel through the peat accumulation, first marked by narrow ditches. This became a water filled channel, 27 meters wide, and at least 100 meters long. (The housing estate on the southeast blocked establishing the total length.)
On the west, the channel was filled with sandier sediments. To the southeast, plant dust sediments gradually filled the channel during its use for making deposits. A variety of materials had been thrown into the NW-SE oriented channel from the eastern side. Deposits included metal, 'spears' of peeled juniper and other wooden objects. The directly adjacent area of peat, on the east, is that which was marked by pits, forming the constellation pattern Horse, described below (figs. 38-40), and re-marked in the medieval period (phase 8; fig. 41).
7. Prehistoric settlement activities were represented by features in sediments covering the earlier monuments of banks and longbed, and included a field/garden plot system, turf banks set into ditches, a cart-way and pit alignments (not shown on fig. 37). These traces could be contemporary with the Horse pattern and watery channel of phase 6.
8. The medieval period is represented on the peat area by a re-marking, which is described below, of the Horse pattern (fig. 41). To the north, on the sandy area, there were also a horse burial, an ox burial, and a several pits.
9. Of the later and post medieval period, up to the 19th century, features included a field system, three pits with finds of standing whale bones, a pit with horseshoes and a well with deposits of a foot bone and a pseudo-pocket watch, hands showing the 11th hour.

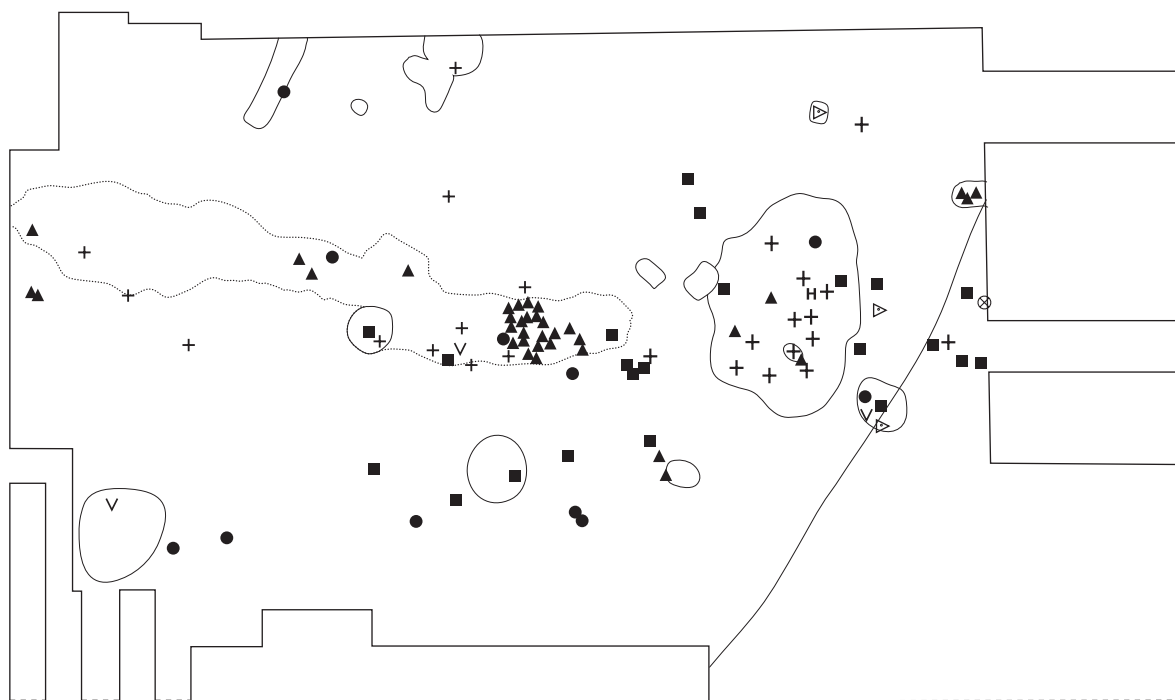
4.3.1 VBB6-HORSE (FIG. 38-41)

The Horse pattern discussed here relates probably to the period of use between 100 to 300 AD, phase 6 in the above summary. It was constructed on the peat landscape on the north-eastern side of a watery channel and partially remarked sometime between the 11-12th century, phase 8. The dug channel, containing deposits, had long been silted up by that time. It might be expected that the Horse pattern was laid out in the initial stages of using the channel for deposits. The pattern cannot be more closely dated than the 2nd – 3rd c. AD. How long use continued of the adjacent channel for deposits is unknown, and it must await further dating.⁷¹

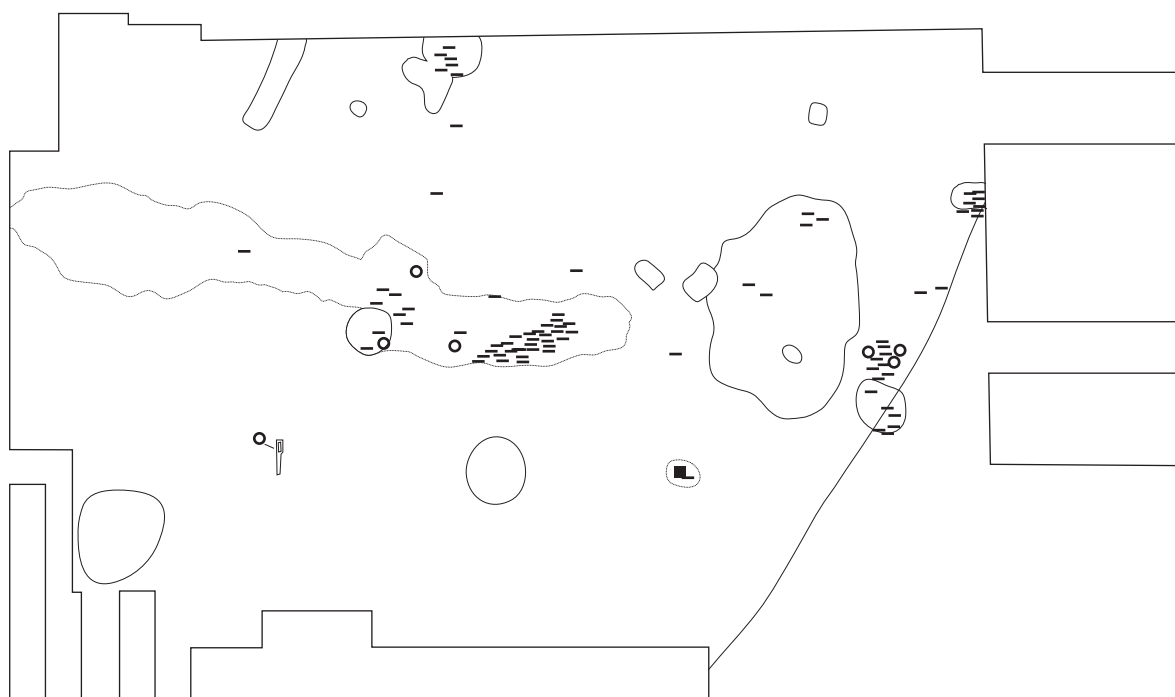
This prehistoric Horse constellation pattern was formed mainly through wood. It was a large wooden Horse, or 'Tree-Horse'. The pattern Horse is fascinating particularly as it appears inhabitants of the region could explicate by their features that subtlety referenced in later texts, as Yggdrasill, designated as the Tree of Life. Yggdrasill is at the same time a compound word, translating as 'Odin's Horse' (cf e.g., Davidson 1993, 68-69).

The late prehistoric features recovered at this part of the site are shown in Figure 39 a and b. The Schagen model of Horse positions is shown over the features in Figure 39a. The position of f107, the ditch with slaughter waste at the SM-I site, matches the positioning of the dug, water filled channel with deposits at this site.

A somewhat revised model to better conjoin with the features is shown in Figure 39b. The neck has been shortened to fit over two dug features, the forelegs are also revised, as are positions H9 and H11. There would seem to be enough points of similarity to suggest the same type of Horse



- ▲ horse
- ox
- ∇ sheep/ goat
- pig
- H human
- ⊗ dog
- ▽ fish
- + lrg. + med. mammal



- tenons
- wood with holes
- hammer



0 20 M

figure was laid out here at this Velserbroek site. The modifications of the feature positioning of the constellation Horse might relate to an altered way of achieving the alignments (Chapter 6). As relative proportions, this revised model is also more realistic to the actual star patterning (fig. 32).

The Horse pattern (fig. 39 a or b) is here similarly oriented to the linear feature of dug, water-filled channel, as the Horse pattern at SM-I in relation to the ditch filled with butchery waste (f107). Here, the suggested mapped 'Milky Way', as a water filled channel, could also lend some insights to 'offering sites' of watery contexts, and relation to a sky context. Actual use of the eastern side of the channel was shown by the trampled depression, a broad pathway, along the trajectory H2-H11.

Concentrations of worked wooden objects, branches and trunks were the deposits most noticeable, although of the marked positions, H5 & H6 were exceptions. Vertical stakes, all of oak, were found (in the revised figure 39b: H4, 7, 9, 11, 13 & 15) while position H10 had stake-holes. Some of these positions are taken up in the directional discussion in Chapter 6. Horse bone also accompanies this figure, representing one-half of the recovered, identifiable bone material excluding fish bones, representing two fish in two features. The wooden objects deposited in dug features most often were complete tenons, large unused wooden pegs, of various wood species; as at SM-I which also had tenons, it seems that selection leading to variation in wood species **is** the pattern, as part of the meaning within 'tree symbolics' (see 3.3).

Thirteen species of trees are represented as tenons. Oak tenons were deposited most frequently in features, followed by hazel and ash. No correlation could be found between tenon form and wood species. Wooden objects with holes also occur, as they do in the SM-I pits. The distribution of the tenons and bones of the area are shown in Figure 38, and the wood species of tenons are shown in Table 11. Examples of the deposits are shown in Figure 40.

In contrast to the Schagen sites, here deposits of the evergreen juniper were frequent. Juniper was used for demarcating areas through horizontally laid branch lengths, with no bark. When recovered from the channel, they were also always without bark, and were most frequently recovered as 'spears': as straight lengths, the point always formed through one clean chopping action. Forked branches of juniper were also occasionally deposited. The diameters of the vertically placed, posts/stakes are enlarged three times on plan (fig. 39).

The positions are described according to those shown in Figure 39b:

- H1&2 – marked by deposits of horse bone, including a partial lower horse jaw.
There is also a dug arc, near to the position. This is also the beginning of the worn and trampled pathway extending to H11.
- H3--unmarked
- H4--standing post.
- H5--elongated pit, extending to southeast; one deposit of a pig's jaw.
- H6--small round pit with one find of a charred acorn. There is a feature, a partial arc, near to the pit.
- H7--standing oak post on edge of a pit, which had a mandible fragment of a medium mammal and an acorn; a second pit re-marked the position, cutting slightly into the original. It had juniper branches, and six tenons.

Figure 38 VbB6: Distribution of bone and worked wood in features associated with pattern Horse (cf fig. 37 for positioning within the site).

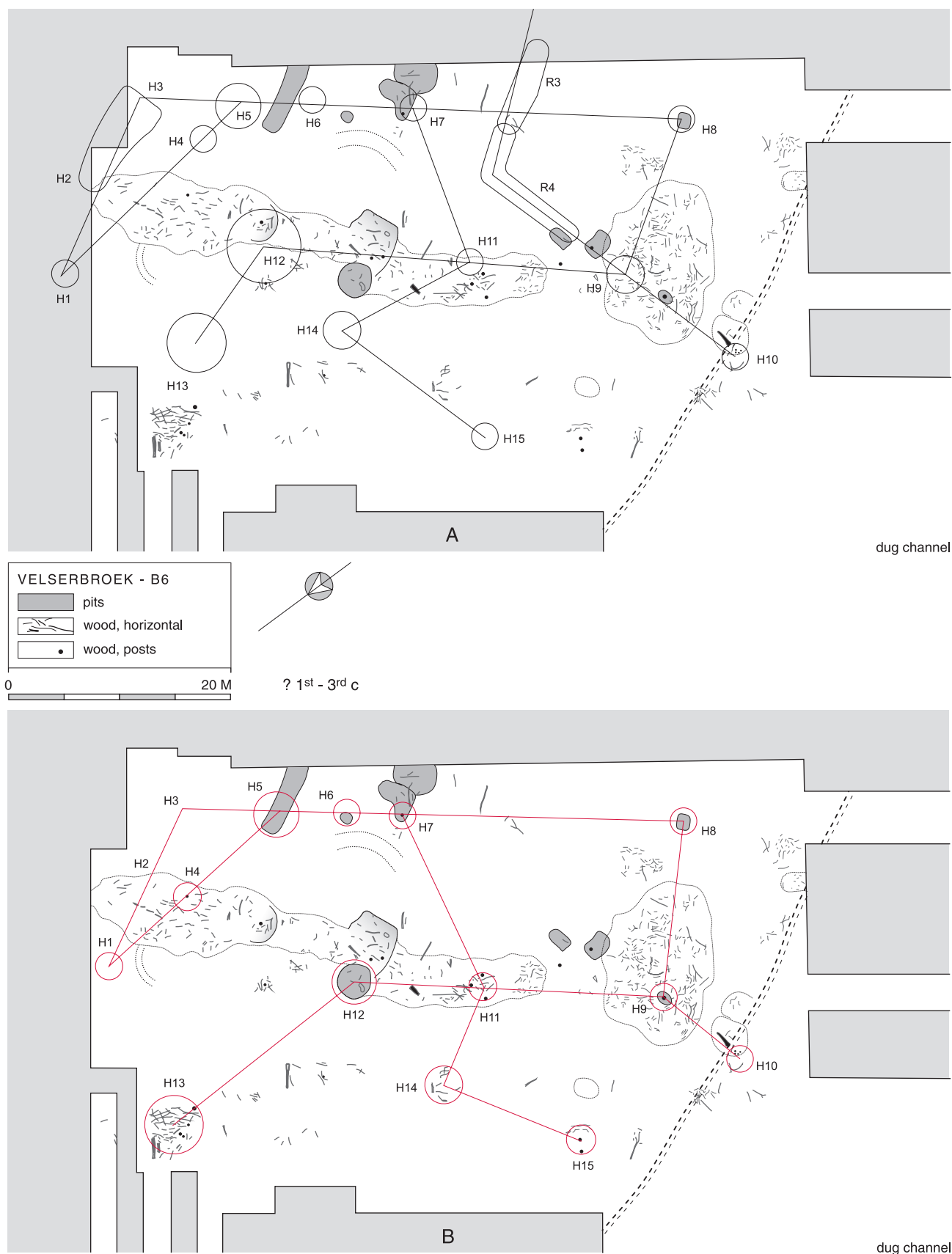


Figure 39 VbB6: The pattern of Schagen Muggenburg-I Horse (A) over the traces of dug pits and the pathway towards the water filled channel. To make a better fit, a somewhat altered pattern is given (B). (The oak stakes, *in situ*, are emphasized on plan by 200%.)

H8--a pit with a flatfish (*Heterosomata*).

H9--a large pit, with a concentration of un-worked wood and seven tenons; bone finds included horse elements of a sacrum, a vertebra, and a canine (that is, a stallion is represented). The only human bone in this area of the site was deposited here, a right thighbone shaft.

A small pit was cut into the concentration, and may be a re-marking. It contained another standing post of oak, and a complete pelvis of a young mare, as the only deposit.

A standing post was on the eastern edge of the feature, set into a pit.

H10--on the edge of the channel, a 1.70 m long juniper tree trunk with naturally pointed end and a shaped bulbous end was found without bark, branches cut off, horizontally placed towards H9 (fig.40); a cluster of four stake holes was at the western end of the juniper trunk.

The shaped trunk could be analogous to a very large-scale tenon and/or a large-scale tibia, which is the large scale bone positioning of this Horse's hind leg. Six normal sized tenons accompanied the trunk along with un-worked wood and four bones: three complete tibias from sheep/goat and one from a pig. These were the only tibiae recovered within or around this Horse pattern. That is, this seems to be a selection from other livestock, in association with the large figured part of Horse. A partial ox mandible and fish bone from the head of a pike were also included in the deposit.

Adjacent, on the south, to the juniper trunk was a concentration of materials: eight tenons and three wooden objects with holes. It could be later than the original marking. The feature is positioned similarly as the second pit feature by H7, and may be a re-marking of the general position.

H11--three standing posts, of oak, in triangular setting, were in an oval feature within the linear feature stretching to H2. There were twenty-four horse bones deposited on the eastern side of the posts. The skull was represented by a few fragments, but the deposit consisted primarily of neck to rump vertebrae and ribs, chopped into fragments; complete refitting was impossible, but all of the bones could have come from the same, older, horse. Eating waste might be represented, along with the sixteen unidentifiable fragments of 'large mammal' (thus, possibly also from a horse) of ribs and vertebrae. A single horse tooth was somewhat to the southwest of the deposit.

Deposited as well were thirty-three tenons, mainly of oak and ash, but also a selection of four other species, one each. Tenons were placed around the posts and to the northeast; there were also juniper 'spears' and forked branches.

H12--a round pit, with a holed object of oak, eight tenons and an astragalus of an ox, was adjacent to two standing oak posts. The linear depression of the pathway between H11 and H12 contained a double-holed wooden object, tenons, juniper finds of 'spear' and forked branches, and a horse sacrum. Of the four other bones, one was identifiable as being from a sheep/goat.

Towards H1/2, there were concentrations of branches, one tenon, two horse bones and a pig bone.

H13--the distance from H12 to H13 is greater here than the Schagen model. Marking was done with a concentration of wood placed as a triangle (fig. 40) The largest trunk was of alder. A still standing oak post was at the southern corner and a vertical pole was in the long side. Junipers 'spears' were included in the setting and the other deposits were a sheep/goat jaw, and a pebble.

H14--the round pit contained branches from six species of wood.

H15--this position was marked with two standing posts of oak in a pit with no discernible contents. (Five meters to the southeast was a pit containing a wooden mallet and a tenon. It would seem to be too far away to be considered a re-marking of the position.)

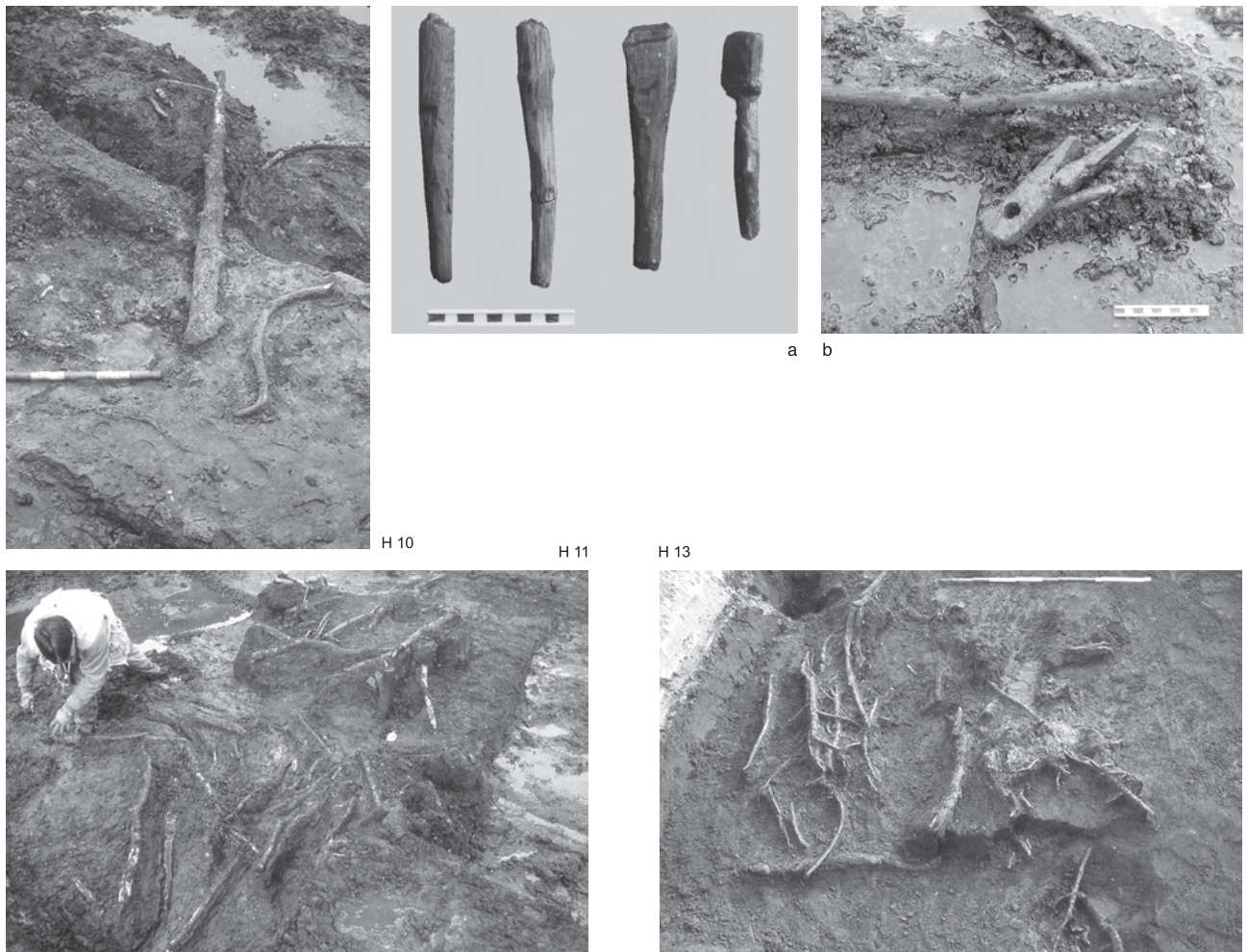


Figure 40 VbB6: Materials associated with the Velsbroek-B6 Horse pattern, with the positions indicated. Examples of the deposits of wooden pegs/tenons are also shown (a) and one of the holed-wood finds (b).

4.3.2 VBB6-RIDER?

If there is a Rider indicated, it is only through marking of his leg in placement of the SMI-R4 feature with a 2m deep, rectangular pit, containing no recoverable deposits or by marking with a forked trunk of juniper at the northern end of R3 (fig. 39a).

4.3.3 MILKY WAY — WATERY WAY: FINDS AND FEATURES

The open water channel corresponds closely in relative positioning to the Horse model from Schagen and to the bordering ditch feature 107 at that site (fig. 32). The broader channel here at VbB6 had been dug through the peat layers to the sandy sediments. The position had been marked out initially by two narrow ditch features. Two depressions with unclear edges were along the channel and had concentrations of un-worked wood, as well as eleven tenons and three horse bones: a complete femur and two joint bones (os tarsi and an astragalus). Deposits

within the channel (in contrast to the SM-I linear feature with butchery waste) were mainly of metal and wood. The quantity of metal finds for the region is high. The only weapons in metal found at this site were ‘spears’. ‘Rings’ in various forms, in silver and bronze, and coins were recovered as were various types of fastenings, particularly harness fittings and fibulae (see Bosman 1997). Analogous to the spears (the only weapons deposited during any of the site phases), are the ‘wooden spears’ that were made from branches of the evergreen juniper. These had all been peeled of bark and were pointed at one end. Later texts denote horse and spears as attributes of a Odin/Wodan type of deity. As Yggdrasill, the World Tree and Odin’s Horse, this constellation pattern, along with other figures of the Voluspa of the Poetic Edda, is found in the sky (Chapter 7). Chapter 6 goes into some ceremonial aspects in regards to the directions of throwing spears, and other materials, into the channel as part of the discussion on directions and time of year.

4.3.4 MEDIEVAL REMARKING OF THE LATE PREHISTORIC HORSE AT VBB6

The late prehistoric Horse evidently lived on in memory, but how long a marking remained visible through above ground visibility of the oak posts, for example, is unknown. Sometime after the 3rd c., the area began to be so swampy again as to be unreachable by foot, and peat accumulation began. By the 11/13th c., a partial re-marking had been carried out over the place of the late prehistoric Horse figure. Some of the features of the old Horse are shown in outline in Figure 41, with the positions of the later features of medieval mound, juniper branches and a pit dug during this phase of use.

mound over H11: A mound, 13–14 meters in diameter, of white sand covered a layer of cut turfs.

The original height of the mound is unknown, as the sand had been eroded to 17 cm by the onslaught of the period of flooding in the 13th c. The cut turf layer had been deposited over initial deposits of five horseshoes (fig. 41a), quite nearly as the points of a pentagon – that is, a star – with a deposit of a complete shoulder blade from a horse in a near central position. Other deposits were the upper foreleg (humerus) of a horse, a lower leg bone of a pig, and six unidentifiable bone fragments.

juniper branches: A concentration of thin juniper branches (fig. 41b), with bark, and thus in contrast to the peeled and thicker juniper of the prehistoric periods, was along the edge of the mound. A similar concentration was alongside a dug pit near the old position H8.

pit near H8: A rectangular pit over-cut partially the original position H8. One horseshoe was in the pit.

Prehistory is bound directly through stratigraphy to the medieval period. Written history, as textual finds points towards associations with Wodan’s Wild Ride – and similar traditions across Europe such as Wilde Jagd, Wilde Jakt, Wild Hunt, Chasse Hubert or Chasse d’Authur (cf e.g., De Vries 1956/57, Brown 1993). Now they could very well be contextualized as bound to the night sky as a star pattern, as the earlier patterns suggests the actual referent as constellation. The theme here of connected evergreen deposits of juniper wood is also of long tradition. Other iconographic forms and texts will be similarly interpreted in Chapter 7.

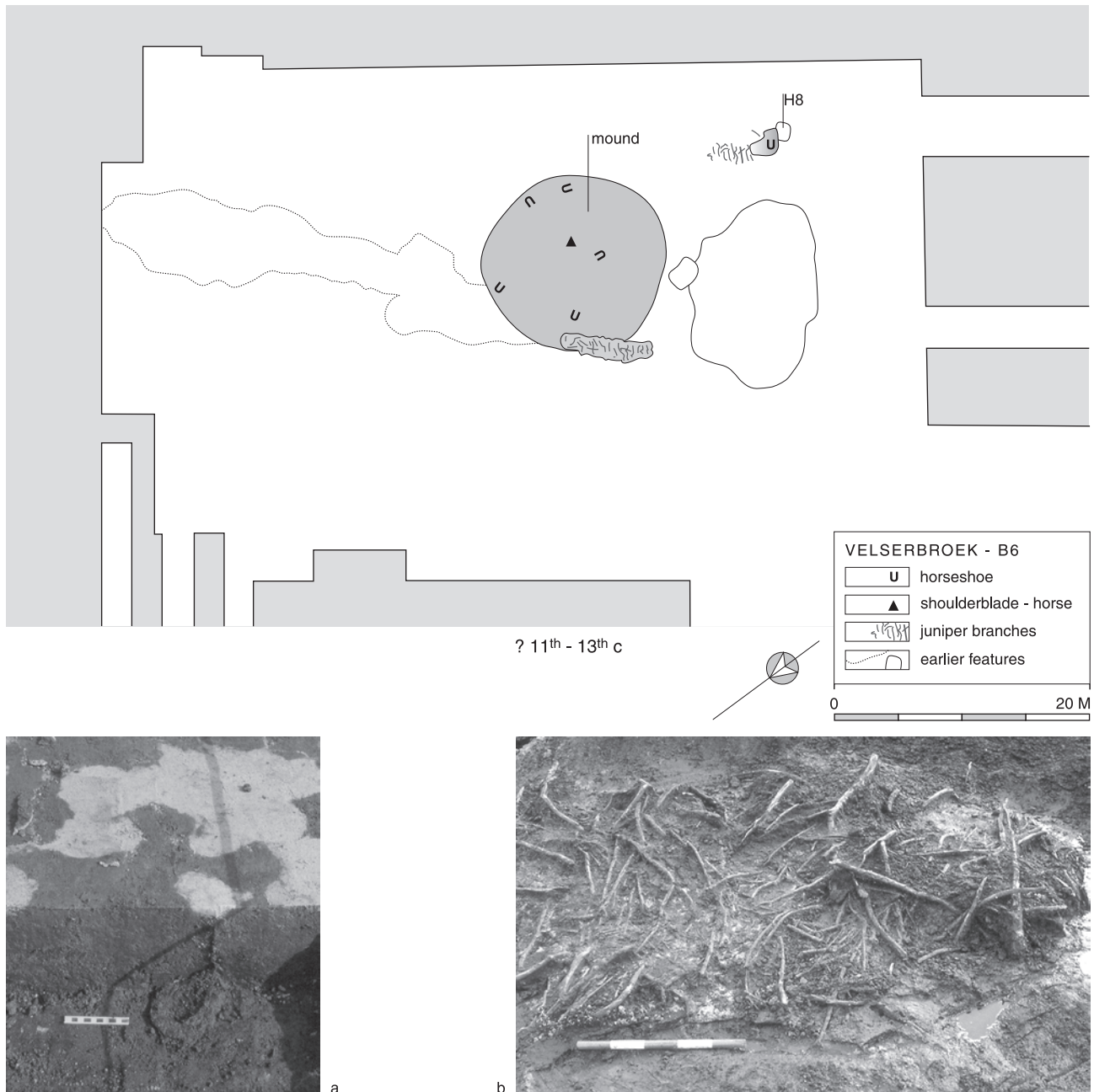


Figure 41 VbB6: Features re-marking the (late) Roman Iron Age Horse pattern, where some of the main features are shown (cf fig. 39). In the medieval period, a mound of turf and white sand was raised covering five horse shoes (a), and complete shoulder blade from a horse. A pit with horseshoe re-marked position H8. Features of thin juniper (*Juniperus com.*) branches were also deposited (b).

‘Horseshoes’ are also contextualized relative to prehistory. In connection to foot symbolics of Chapter 3, these fit as having had prehistoric predecessors as the foot bones of earthly horses and other livestock. The consistent use of tree elements is however more telling within a Tree theme, also discussed in Chapter 3. Perhaps most people of the Western World (still) recall a tradition of horseshoes bringing ‘luck’, that vague non-dangerous term often applying to traditions from the pre-Christian period. The subject of horseshoes will be taken up in the final report of the

complete site as they were also found deposited up to the 19th century in small pits within the late field system of this Velserbroek-B6 site.

The horseshoes and horse's complete shoulder blade are under dark turf, covered by a white mound, and not unlike the mapping of a star. The form of this mound is a near circle. Circles were also implied through the arcs of the early Velserbroek-B6 Horse, at positions H1 and H6. Circles, as features, are more clearly evident in the next discussed, and earlier prehistoric patterns of Horse and Cow.

4.4 UITGEESTERBROEK POLDER 18 (UB18): 2ND / 1ST C. BC - 1ST C. AD HORSE AND COW.

Prior to road building activities, two hectares of the site of Uitgeesterbroek Polder 18 (Ub18) were excavated during two field seasons, 1987 and 1988 (Therkorn1989).⁷² The site was in use from about 200 BC to 50 AD. A few deposits, of complete pots and bone in small natural creek channels characterized the earliest use. These were small tributaries of the main Oer-IJ channel that lay directly to the west of the excavated area. After the creeks became blocked, earlier enclosures probably mark where livestock was corralled, possibly only during seasonal use of the area for pasture. Cultivation followed, shown by dozens of dug, narrow drainage gullies. The Cow pattern is found here and an adjacent large enclosure on the south can be interpreted as a large iconographic Horse.

Single farmsteads of the late 1st c. BC to first half 1st c. AD, traces of which were found on the raised bank of the silted up Oer-IJ, may have been contemporary with these features. The site lies between the Wijde and the Nauwe Laan, both wide medieval ditches (fig. 42). Medieval activities and use as pasture from the 12th/13th c. might show some concern with the prehistoric figures. The site was pasture up until excavation and subsequent road building activities.

There was little stratigraphy and no prehistoric surfaces through intermittent water erosion. The prehistoric features occur at two levels, in sandy-clay deposits. Only the limited aspect of the two suggested constellation patterns, found among the mass of dug features, will be discussed here. The use of dug portions of circles, and an iconographic style for the figure Horse, is the main theme of the figures rather than deposits of materials.

4.4.1 UB18-HORSE (FIG. 43)

Several Horses were set out during the duration of use of this site, shifting to the southeast through time. The traces discussed here are the earliest pattern, which consists of re-cutting as various phases. The main features defining Horse are ditches demarcating three areas. These features date somewhere between 150 BC-25/50 AD.

The proposed Horse figure is lying on the southern edge of the field system defined by dug gullies. Figure 43 shows the SM-I pattern over the features as well as circles, reconstructed from arcs of the cut features at Ub18. Figure 44 shows some of the features of the positions described below. The main features are also shown in Figure 45, with a suggestion of how iconography could be imaging a lying down horse, positioned (mirror-image) as that of the burial of the stallion at SM-I (fig. 8, f62).

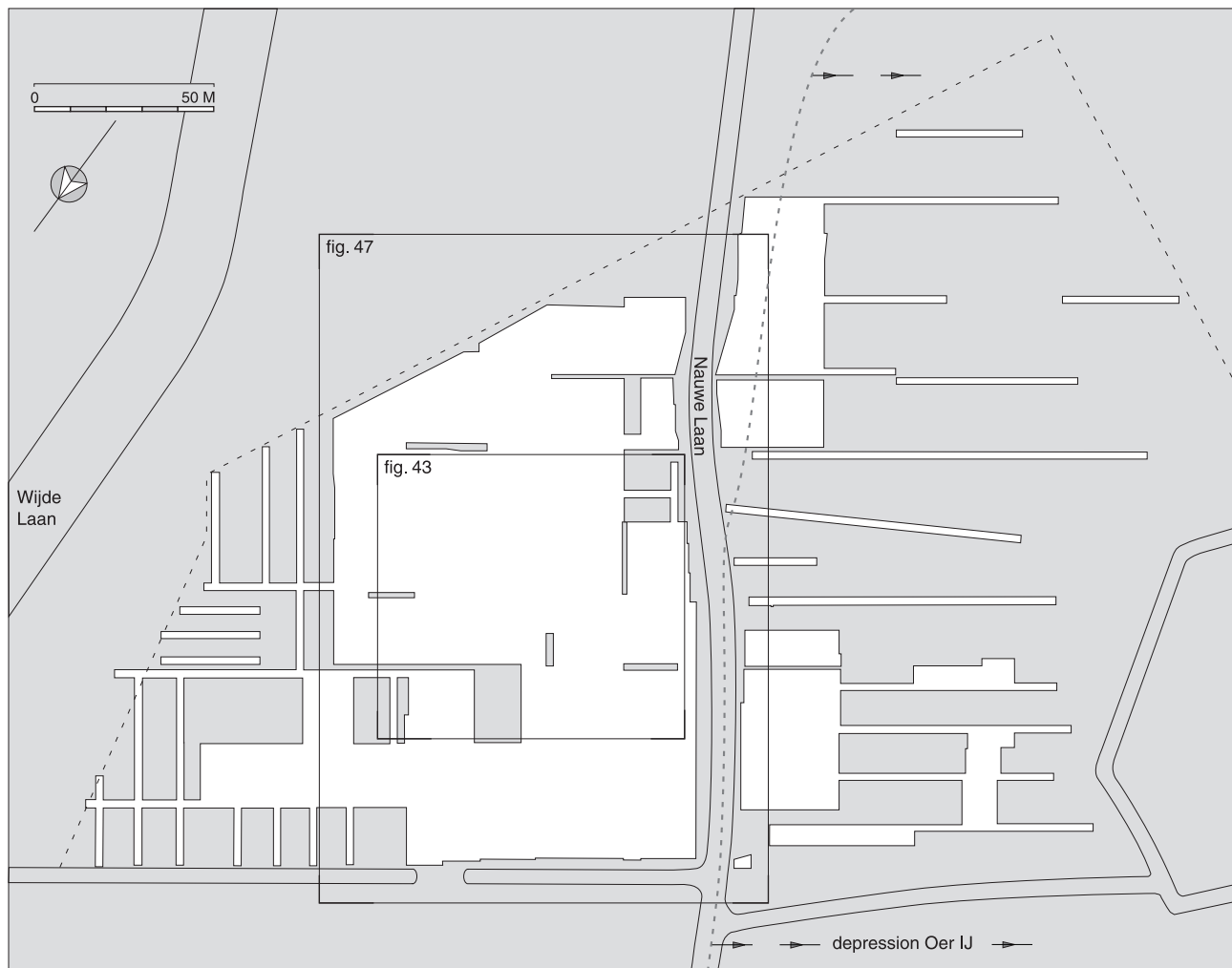


Figure 42 Overall plan of the excavated area of Uitgeesterbroek Polder 18 (UB18). The area to the west of the Nauwe Laan was the slope of the bank of the Oer-IJ channel. The areas of Figures 43 and 47 are indicated.

The landscape iconography of this Horse is clearer than the almost three-century later SM-I site. The method of setting out the Horse is also imbedded in the picture through arcs dug in the ground. Circle-centres as the places from which some features were set out can be analysed for distances, and measuring system, about which a few remarks will be made at the end of this chapter (4.6). By extension, the same method could have been used at the other sites to achieve the figure.

The Horse has various phases, as is clear from the plan (figs. 43 & 45). Marked and re-marked were especially the head, the left foreleg, and the area between positions H11 and H12. Deep pits/shafts mark some of the star point-positions and are all early and may be the initial marking. All were immediately back-filled although they had no recoverable deposits. The shafts were sometimes (H14 and H12) taken up within the paths of the later ditches. The latest ditch f1321, an enclosure, binds earlier features together, possibly destroying earlier markers. Ditch f1321 was the only feature of Horse containing finds deposited over the entire length.



Figure 43 UB18: Horse pattern from Schagen Muggenburg-I over the UB18 pattern. Dug arcs are reconstructed to circles, the centres shown with a '+'. See Figure 47 for the traces without pattern or circles.

Feature 1321 had four layers of natural silts. Included were pottery and bone waste, eating as well as many butchery elements. There were spindle whorls, all shaped native pot discs with holes, and gaming discs. The lower, western crescent of f1321 around H12 contained three partial human skulls. These are the only human bones of this Horse and of the similarly dated features of this site.

Ditch f1321 is in complete contrast to the somewhat earlier dug ditch, circling the position of H7, f1385. Feature 1385 was dug to form two-thirds of a circle but there was a near absence of finds. Some of the other features had clear deposits, to be taken up below.

The large ditches both silted up gradually under watery conditions, and both ditches may have been completely filled with water during some seasons. Pits and early shafts were back-

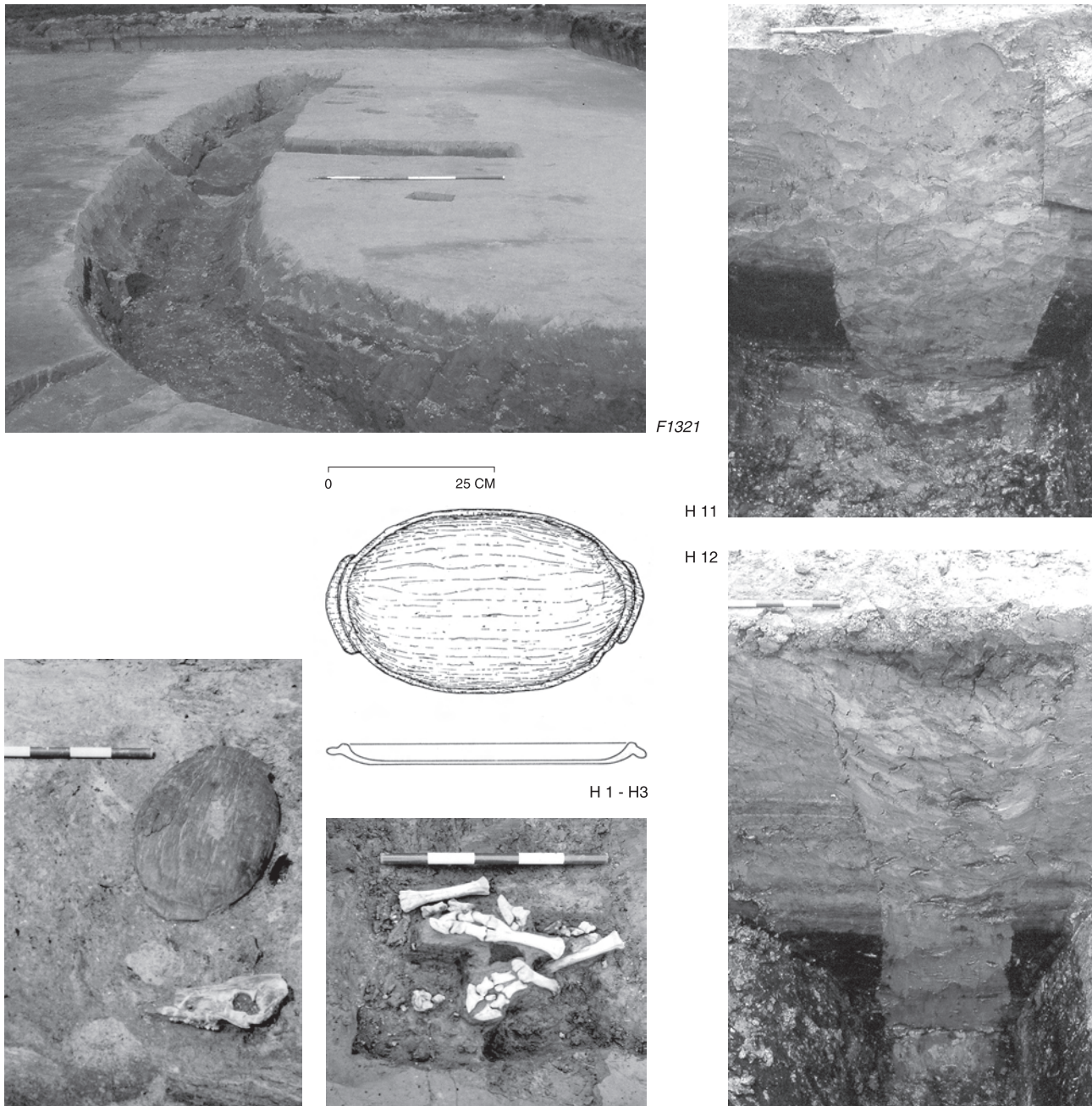


Figure 44 UB18: Features associated with pattern Horse including part of the latest ditch (f1321), and earlier marking of the positions H1-H3, with pits containing a pig skull next to a wooden platter and a pit with four lower legs of a bovine. Other positions shown were deeper pits (H11, H12). See fig. 43 for the positions.

filled, the deeper pits and shafts certainly almost immediately. They are straight sided with no signs of water working through erosion or silts at bottom. Wood was not preserved except in features over 1.5 m under the modern surface level. Marking with wood may have been an original feature, but sleeper beams such as found marking the Velserbroek Hofgeest-Horse (discussed below) would not have survived under the preservation circumstances at this site. Figure 43 shows the positions described, below.

- H1 to H3--the position of H1 is near the centre of a circle reconstructed from the arc of a ditch, and six short gully lengths dug near and up to this point. They had no finds. The area also overlaps with Cow-10 (below). Noteworthy are deposits placed at the ends of later features dug in the head of the larger curving pit and the end of ditch f1321. The deposits included a complete wooden platter next to a complete pig skull (fig. 44); a deeper, round pit packed with cockle and mussel shells, complete ox skull with mandibles and complete shoulder blade; a concentration of large sherds covering a deeper pit with three complete lower legs of an ox (fig. 44). Within the end of f1321, there was hearth material, a complete pot and a complete pig skull near the end and further to the south, a concentration of pottery over a round pit, dug prior to or into the bottom of ditch f1321, before silting; this pit contained a small complete pot and a short length of rope.
- H4--not present, or more to the north of the Schagen position, as a narrow gully.
- H5--this is the junction of the two main ditches f1385 and f1321. Feature 1321 was dug deeper, destroying any earlier marking of the position. Even later, the narrow gully was dug over the silted up f1321, turning at the same position.
- H6--position is at the end of a linear feature
- H7--in the positioning of the SM-I model as shown, the SM-I horse burial is near to the centre used for setting out circular ditch, f1385. Pit group 10 (fig.5) at SM-I was not taken up within the patterns at that site (fig. 31), but here could be an indication of a close connection with the burial, and pit group 10, as the group falls more or less on this arc.
- H8--the position was cut away by later medieval ditches, but other ditches appear to have been dug towards the position and the situation is paralleled at the Vels-erbroek-Hofgeest site, described below.
- H9--two pits mark this position, one with charcoal.
- H10--extrapolated at SM-I, present at VbB6 as a juniper trunk with stake-holes, this position falls within a medieval ditch. Leading up to the position however are short lengths of gullies and three stake-holes aligned towards H9. All of the features here were shallow and had no finds.
- H11--the point position is marked by a round pit, without recoverable finds (fig. 44). Re-marking was done by the arc and by two shallow pits with no finds; three stake-holes were on the western side.
- H12--there is a partial circle marking, and enclosing the H12 position, and two round pits, one (f1497) 60 cm deep, the other (f1453) 2.73 m deep, neither with deposits (fig. 44). H12 is also at the bend of the later f1321.
- H13--the position of (left) fore hoof of inhumation at SM-I, and triangle of VbB6, is here given as curvilinear lengths of gullies. The earliest of the series is that most resembling an iconographic 'hoof'. Five stake-holes were present in the fill of the latest. The forms were not marked further through materials.
- H14--the shaft feature (f1200, 2.33 m deep) corresponds very nearly to the position of the round pit, f141 of SM-I, packed with cut tree roots. Here there were no recovered deposits.
- H15--absent as a feature, the position falls only on the reconstructed circle.

4.4.2 HORSE ICONOGRAPHY RELATIVE TO HORSE BURIAL POSITIONING

This iconographic Horse is positioned 'above', in the horizontal sense, the cultivated area, lying in this sense over the fields. Two images seem to have been drawn: a horse with folded legs, bound, and a running horse. Both types of representation are seen in burials. The bound horse

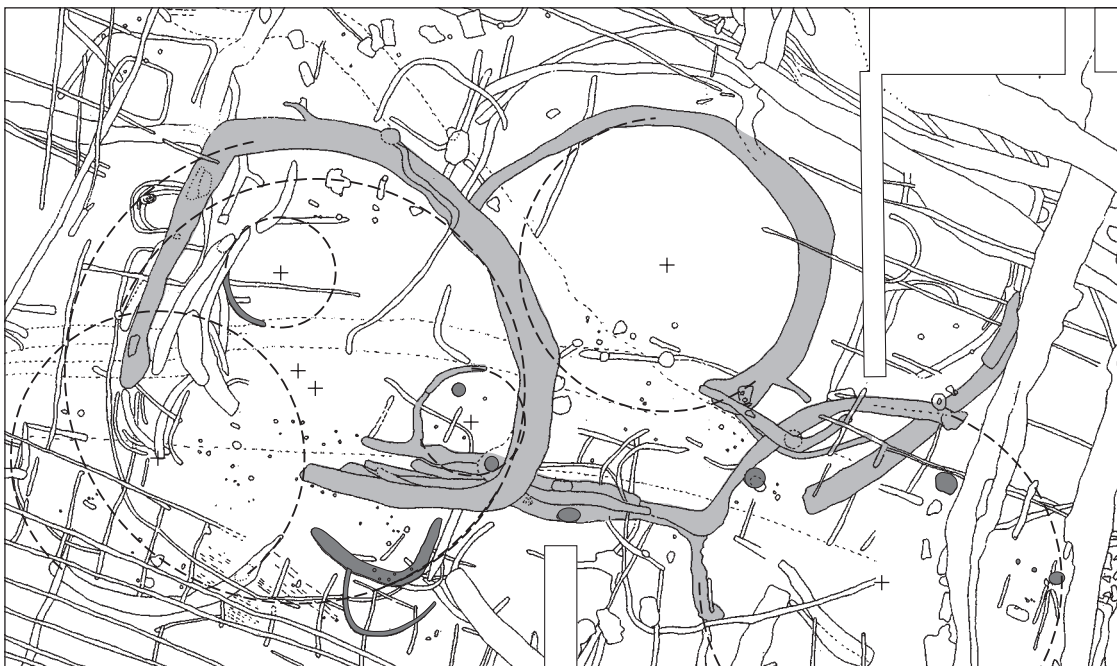
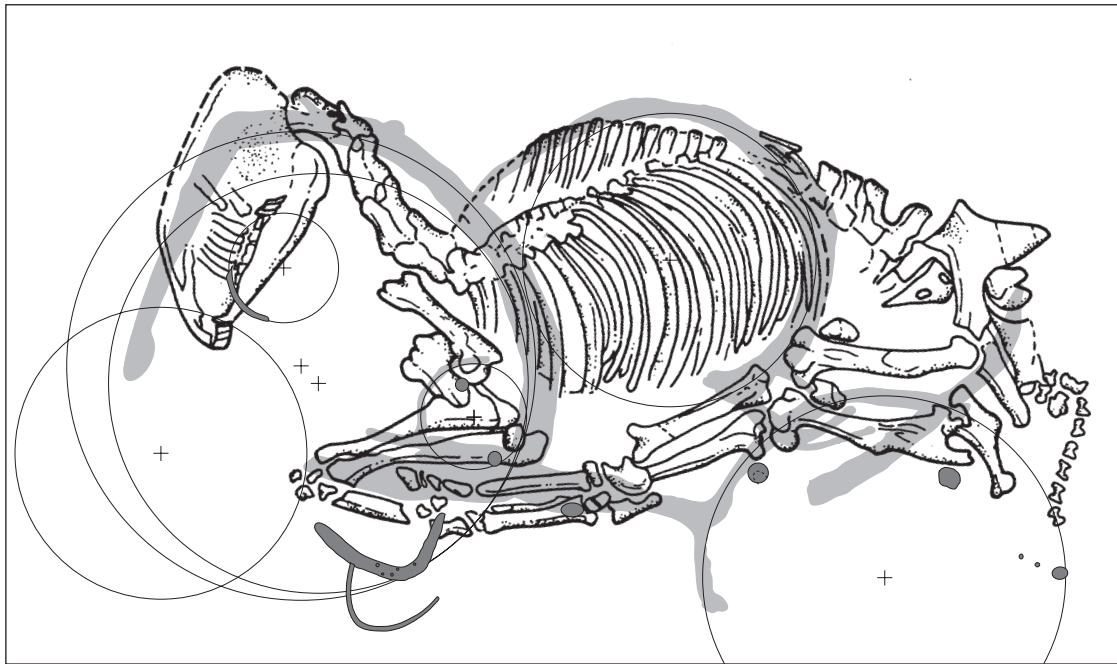


Figure 45 UB18: The main features of the Horse pattern, with circles shown (below) and the main features lifted out of context (above) with the burial of the Schagen horse (cf fig. 8) marking position H7, projected in enlarged, *mirror* image over the UB18 features to suggest iconographic similarity.

figure is known from the SM-I burial of the stallion (figs. 8 & 59, f62). In mirror image, the burial is shown projected on the dug traces of Ub18 in Figure 45.

The Schagen burial may indicate that earthly burial position of horses was a tradition, which had been represented, in schematic iconographic form at this site. The arc of head, neck and



Figure 46 UB18: A horse burial, not associated with the here described constellation pattern, but another partial pattern (not discussed here) showing concern with leg placement, and absence of legs.

forelegs of the burial is similar to the shape of f1321. The position of the Schagen burial itself, at H7, is then midway within the rib cage, the last ribs marking the arc of f1385. The area between H11-H12, with curvilinear features, is approximately the position of the calcanei of the Schagen burial. The bone was also linked to tree symbolism in Chapter 3 through the trope of acorn as glans in various languages. These are the missing bones, as single fused elements, at the sites. Here, the position is re-emphasized by re-digging the same position a number of times within iconography as features.

As an image of a running horse, the traces at Ub18 also have the position of H13, of the outstretched left fore leg, with the hoof-formed dug features. The position was marked at SM-I with three burials of humans situated as a triangle, and the same suggested position at VbB6 was marked as a triangle of wood.

One burial of a horse, also a stallion, was found at the Ub18 site (fig. 46) built into a later incomplete horse pattern not discussed here. One-half of the pelvis and the entire left hind leg were not buried. Only the femur is present from the right hind leg. A hoof bone is present as loose deposit. The femur is not visible as part of the leg in flesh and blood horses, so absence of the left leg (with femur and part of the pelvis) was a partial dismemberment of the stallion cutting into the hip. On the one hand, there is illustrated concern with absence of limbs. On the other hand, the forelegs of the burial could indicate conscious positioning and concern with an indication of a horse 'running' in death, although the positioning of the forelegs is unnatural. The placement of the forelegs of the burial conjoins with the theme of triangles, which is part of the type of marking of the large scale, sky figure.

The burial of the Ub18 stallion is also mentioned because the left foreleg was positioned raised higher than the right. The dimness criteria of stars and sides were mentioned for the Schagen Horse pattern as the indication for left sides, and therefore an indication as raised, left foreleg as that containing the four burials. Texts on divination were cited in Chapter 3 on the 'foot of life' as the right fore hoof placed by horses and taken as the sign for clemency. Placing a leg forward, first, would imply it was raised relative to the other foreleg. Here, the indications are that death is marked by a raised left leg.

The orientation of the Ub18 burial of running horse (that is, it is not a mirror image) corresponds well with the large-scale constellation Schagen Horse, the wooded Velserbroek B6 Horse, and etched version at this site mapping the sky. The sidedness and presence/absence of horse legs was apparently important within sacrifice and dismemberment of earthly horses. As mentioned, the SM-I horse burial shown in Figure 45 is the mirror image of the actual situation. He will be discussed more fully in Chapter 6, along with the other burials in their resting, but active positions connected to seasonal pursuits of people in conjunction with the cyclical rounds of the sky figures.

4.4.3 RIDER?

Figure 43 gave the Horse and Rider pattern from SM-I over the traces at Ub18. Given the consistent, and more forceful remarking of the resting/bound position of the Horse's legs as ditches, relative to the shallow gully markers of the running position at the hoof-formed H13, it might not be inconsistent, or rather logical, that Horse was here not given a Rider. The Rider pattern of SM-I shown superimposed with the Horse pattern in Figure 43 has overlap only in the large circle drawn as the ditch f1385 enclosing H7. And the arc dug to the south, on which H11 lies, is through the break between shin and ankle positions of the SM-I Rider pattern. Therefore, the arcs, as reconstructed circles show indirectly how the positioning of a Rider pattern could be related to the total, measured-in set-up of the Horse pattern. He is not drawn in here, but is present at the earliest site, Velserbroek-Hofgeest, discussed below. It is not a factor of chronology, apparently, that he was not drawn in at Ub18.

4.4.4 UB18-COW (FIG. 47)

This Cow seems to have two phases. As Horse at the site was set out through large circles, smaller 'circles' are for Cow even more important as they seem to represent individual stars. Cow is set out southeast-northwest, an orientation different to the Schagen sites but corresponding to that fourth, and earliest pattern of the figure discussed below of Velserbroek-Hofgeest. Although the orientation is turned relative to the Horse pattern, the star positions of Cow are the same and the SM-I & SM-III composite pattern is shown as the model circles, rather than the features.

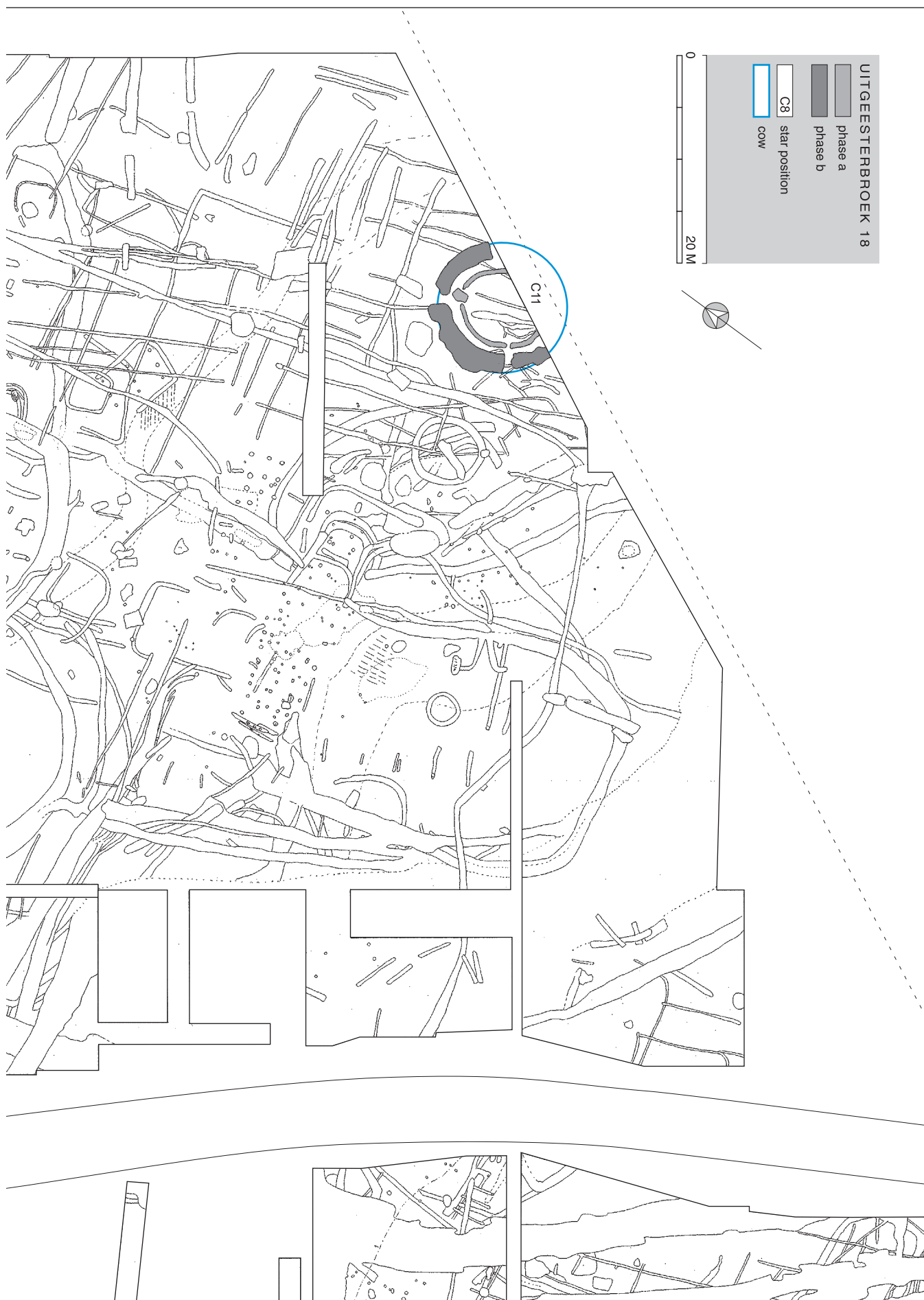
Some positions were twice marked in a somewhat shifted position. Earlier features are the actually dug smaller circles over this part of the site. The fills of the features were similar and they relate to the period of cultivation and could date between 150-50 BC. By the middle of the 1st century AD, the area had become grassland as was shown by the humus-rich fill of later features including shallow pits with near complete and partial, articulating cattle skeletons. These are the later features that seem to re-mark some of Cow's positions. As not all positions were re-marked during this later phase, the earlier pattern may have remained visible in some way. One can see that by conceptually tugging the circular features to the west, the later pattern is reproduced, of positions C3, C4 and C6. Positions C9 and C11 have both phases as circles, but are re-marked at nearly the same points. This partial Cow pattern is coded Ub18-Ca for the earlier features and Cb for the partial, and later, picture. The combination of SM-I and SM-III modelled cows are given in outline, under the later phase of this Cow.

- C1: two phases may be represented, the first with a round pit (shown with the broken line), under the late ditch of pattern Horse. Five small pits, one with a few sherds, also fall within the position.
- C2-a: the position falls over one pit, which had a deposit of an unbaked fragment of a clay ring.
- C3-a: a dug circle with no deposits
 b: a partial burial (fig. 48) of a very large cow (cf note 7, Chapter 2). Lying on the right side, the rib-cage and left hind leg were complete and articulating. The skull with mandibles was placed under the chest, upside down: that is, face downwards. Of the right and left foreleg, only the bones of the lower leg, metacarpals to hoofs, were present. They had been placed under the hind leg. The right hind leg was represented only by a kneecap and the foot bones (metatarsus to hoof). One complete horn from another animal had been deposited by the skull of the cow.
- C4-a: an early phase feature of a rounded square had no finds.
 b: a pit with post-hole to the side, both with no finds.
- C5--if it is marked, it is through stake holes.
- C6-a: a dug circle, no finds.
 b: a partial ox skeleton deposited on its right side consisting of ribcage and leg elements: present of the right foreleg was the humerus and complete radius/ulna; present of the left foreleg was the humerus to the proximal ulna. The left hind leg consisted of the femur to proximal tibia. The right hind leg was missing entirely. As loose deposits were placed three carpalia, a sesamoid and one phalanx II, all complete.
- C7-b: the position was not completely excavated. Two of three large pits, with natural silts and a relatively high humus content, fall within the model. There were no finds. These pits may have been water pits when the area was pasture.
- C8a or b--the position is marked by a burial of a cow, carrying a calf, near term, which is a good indication for a seasonal marking in June/early July. The left hind leg of the cow was present but had been cut off. The right hind leg was not deposited.
- C9-a: dug circle, no finds.
 b: an odd shaped gully feature, with no finds, over-cutting the dug circle.
- C10--an overlap with Horse, position H-1; curvilinear features mark the position.
- C11-a: a narrow gully dug as a circle with openings (fig. 48).
 b: a low mound was raised over the earlier features by material gathered from a circular scarp ditch, recovered as only 15 cm deep but encircling the earlier feature. The mound feature was visible in the landscape at the time of excavation. This position is also exactly marked with a mound at the site of Velserbroek Hofgeest, discussed below.

This Cow has broad implications for the meaning of circles/rings as ground features. Here they are interpreted as star positions. The rings drawn in the ground contained no finds. The iconography is the suggested message, whereby the relative positioning, the circles as patterned, tend towards revealing the meaning in reference to stars. Later at this site, the tradition is marked in

Page 126-127: figure 47 UB18: The Schagen Muggenburg I & III Cow pattern over an area of UB18, with additionally C4 and C11 added here. There are two phases, the earlier characterized by dug circles, the later over which the Schagen model has been arranged, with partial cattle burials and other pits.







C 11



C 3b



C 8

Figure 48 UB18: The phases of circles associated with C11, after the mound had been removed. Two positions with (partial) cattle burials are shown, one with rib cage and pelvis (C3b) and another of a cow with foetus (C8).

a direct way, in referencing to Cow with the form of deposits in grave-shaped features, of identifiable cows and cattle parts. Again, as with the burials of animals and humans at Schagen, the lower leg bones are absent or displaced within the burials of the later phase of this Cow pattern. The right hind leg was not deposited.

Circles, grave form and stars are here connected. Larger circles were used to draw in Horse. The unending circles of immortality are taken up as textual context, of star-home of mortals in classical texts and other type of immortal materials, such as gold, as the coin of day and night in Chapters 5 & 7.

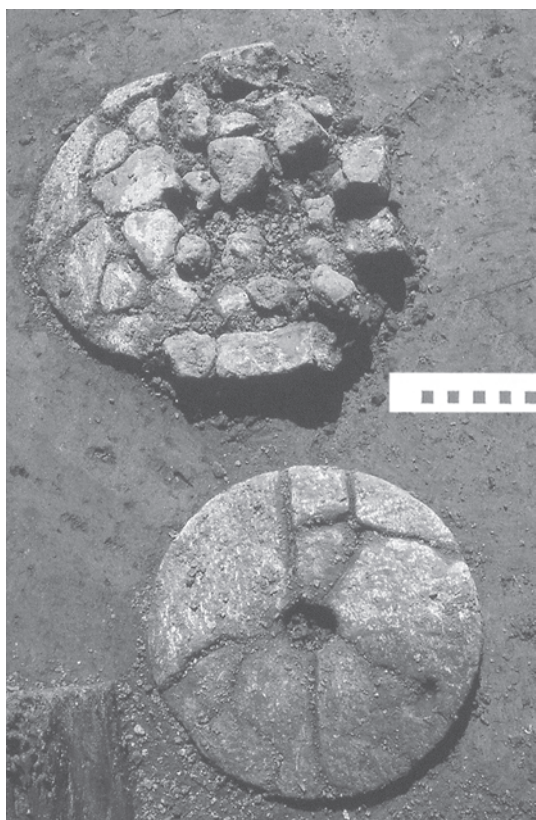


Figure 49 UB18: The watery area, to the west of the Nauwe Laan (see fig. 42), had materials indicating ritual deposits, including an inverted horse skull, with cattle horn placed between the teeth rows (r) and a complete rotary quern, the two stones deposited together.

4.4.5 MILKY WAY AS DISTINCTION BETWEEN HIGH AND LOW GROUND

Suggested for the SM-I horse was that he was taking off from the baseline of the linear feature filled with butchery waste at SM-I, whereby the baseline of his ride is referencing the sky phenomenon 'Milky Way'. The VbB6-Horse was running along water, a feature similarly aligned. Horse at Ub18 is lying over the field system marked with gullies, as the folded up figure similar to the SMI-type burial. The field system was also periodically flooded, one of the reasons for re-digging the gullies shown in Figure 47. The ditches forming Horse are also of watery spatial context, and f1321 received many deposits. Aside from the cattle deposits, there were very few materials associated with the Cow pattern.

However, while the figures have a more iconographic style, or in any case through the motif of circles, deposits may have been made within the larger watery context. The medieval ditch, with the name of Nauwe Laan (fig. 42 or fig. 47), shows the approximate border between high and low lying, prehistoric landscape. To the west, was the low-lying area, the depression of the Oer-IJ channel. Prehistoric ditches were dug along the slope, demarcating the difference, as can be seen in that part of the trench shown in Figure 47, to the west of the Nauwe Laan. Within the silted up depression, features of late Iron Age/Roman Iron Age mark and re-emphasize the distinction of the border zone. The nature of the fills indicated they were at times under water. The features along this zone had deposits, including:

- two complete horse skulls, one inverted with a complete horn core on the palate (fig. 49), the other right side up in a linear feature. Particularly the first deposit brings together the Horse and Cow theme.
- butchery waste along with two complete (but somewhat lopsided) cubed dice made from clay.
- a round pit with cremated bone and a roundel from a human skull, and pot base containing ash and an ox astragalus.
- a round pit with bone material including an ox skull

Later, during the 1st c. AD, this area had become generally swampy, whereby natural silts built up over the dug features. These layers contained all but one of the metal finds recovered from Ub18. They were in extremely corroded condition due to later drainage, but at least 12 fibulae and three coins (unidentifiable), had been deposited. A rotary quern, consisting of two complete stones, was also deposited in the watery context, not in a dug feature (fig. 49). Wood, if deposited, had not been preserved.

The metal finds as distributed in watery context are analogous to the channel finds of the Velserbroek B6 site.

Similar to the definition of place at SM-I and VbB6 may be a landscape marked into three. If emphasizing the border between high and low marked the sky feature of the Milky Way, water is again associated as it was at VbB6, as are deposits in water. Later chapters will go into this possible dimensioning of pagan as opposed to Christianised cosmological space (Chapter 6), and how to read texts accordingly (Chapter 7).

While the VbB6 Horse pattern had good indications for being remembered in the medieval period, the indications are here less direct. There is some evidence the field with the constellation patterns of Horse was named 'Horse-field',⁷³ a regularly occurring field name in Noord-Holland. Future research could better define how the names arose in connection to prehistoric tradition. As mentioned, the small mound of position C11 was still visible at field level at the time of excavation.

4.5 VELSERBROEK HOFGEEST (VBHOF) 650/600 BC HORSE AND COW

The earliest site discussed here for the aspect of patterned constellation features is the site of Velserbroek Hofgeest. It had a stratigraphy spanning the period from around 2000 BC to the present. The depth of the layering was about 3.5 meters whereby feature phases were separated from one another by swamp silts, flood layers, plough soils and wind-blown sand. The section in Figure 50 shows the level of the trench Middle Bronze Age traces. The Early Iron Age traces discussed here occurred c. 60 cm above, where plough soil is visible in the section, heightened by cut turf, within an area of the site used for cultivation. Preservation of organic materials was excellent and such finds as basketry, twigs and other organic materials were recovered. Short interim reports on the excavations have appeared (Perger & Hendrichs 1991, Hendrichs 1992, Therkorn & Oversteegen 1995).⁷⁴ The c. 650/600 BC use of the site was that most completely recovered as a single farmstead complex within the area excavated. This period was represented by cultivated ground adjacent on the west of the dwelling, and pasture further to the west. The



Figure 50 Part of the main section at the site of Velserbroek Hofgeest (VbHof) with traces of Early Bronze Age to modern habitation and use. The depth shown here is to the Middle Bronze Age, with ard marks at the bottom of the trench, and plough soil enriched with cut sods directly above, visible in the section. The features shown on plan (fig. 52) of the Early Iron Age, c. 600 BC, were at the level c. 60 cm above the trench floor.

dwelling was approached by a roadway from the south. The two constellation patterns of Horse with Rider and Cow are near complete, laid out over arable and pasture, respectively (fig. 51).

In contrast to the complexity of the Ub-18 site, above, which had primarily a horizontal stratigraphy, feature periods could be established here at VbHof through vertical stratigraphy. All of the Early Iron Age features are shown in Figure 51, and in line with sites of the region such as those at Schagen, all could relate to one generation inhabiting the farmstead. Ard marks and plough soil characterized the area with gullies to the west of the house. Further to the west, pits were recovered with a backfill of sods/turf. Pollen and seed analysis reveal the area was originally dried out swamp silts, with subsequent vegetation indicating pasture. The Early Iron Age inhabitants laid out their two patterns over these respective use areas.

4.5.1 VBHOF-HORSE

The Horse pattern at VbHof is given primarily as a form of dug features, the occasional horse bone and wooden beams. Horse was laid out within an area used for cultivation, as shown by the ard marks enclosed by the features defining the iconography and the clear ploughed soil of raised, cut turf heightening. He is imbedded, in the vertical sense, in the agricultural area of

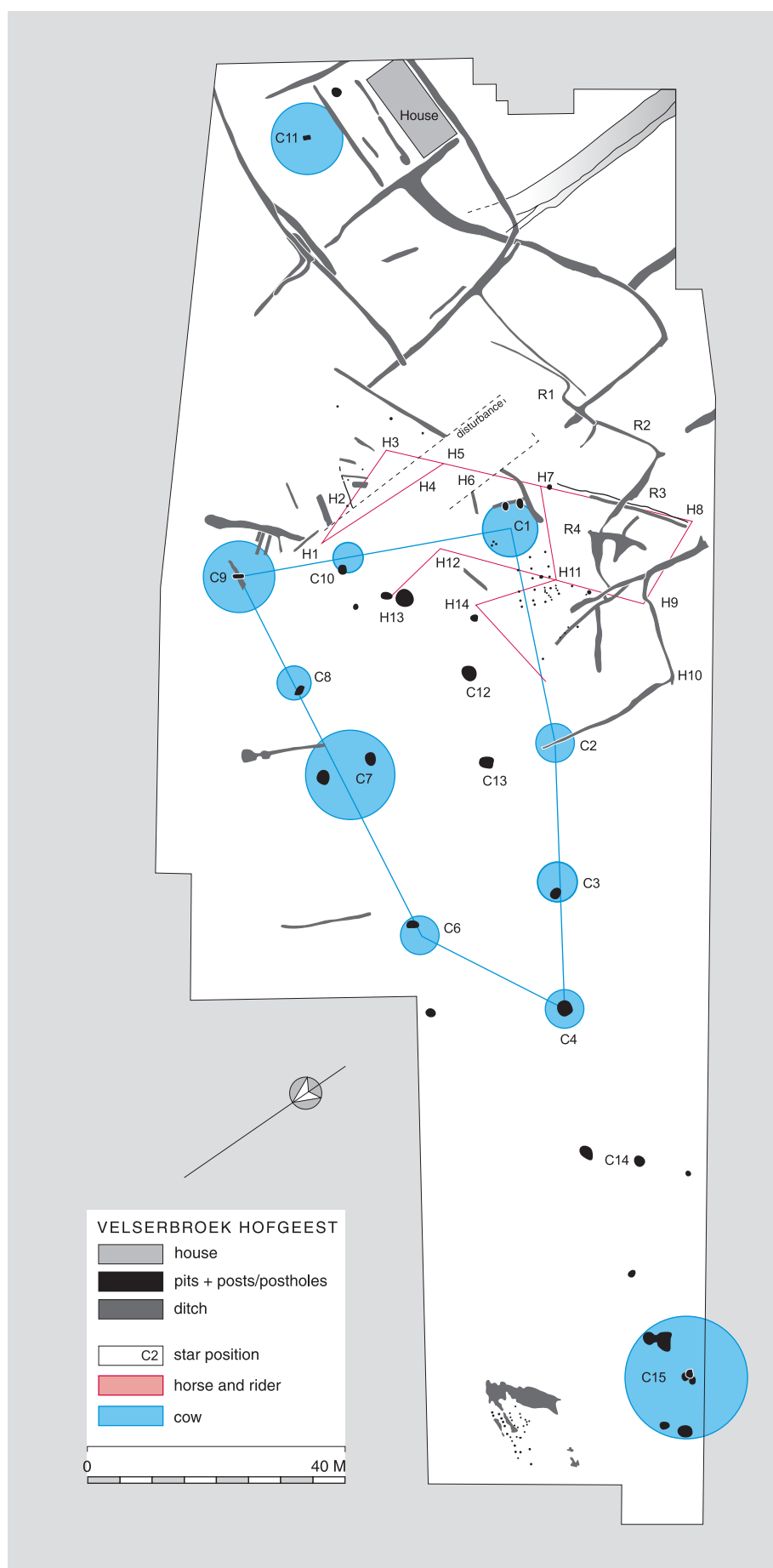


Figure 51 VbHof: All of the Early Iron Age features of a farmstead complex with house, arable and pasture. Over arable is the Horse and Rider pattern, indicated by their position numbers (cf fig. 53 for overlap SM-I and UB18). Mainly over pasture, the pattern Cow is shown over the features. The pattern now consists, as a composite, of features from SM-I/III+UB18, and here extended with positions to C15.

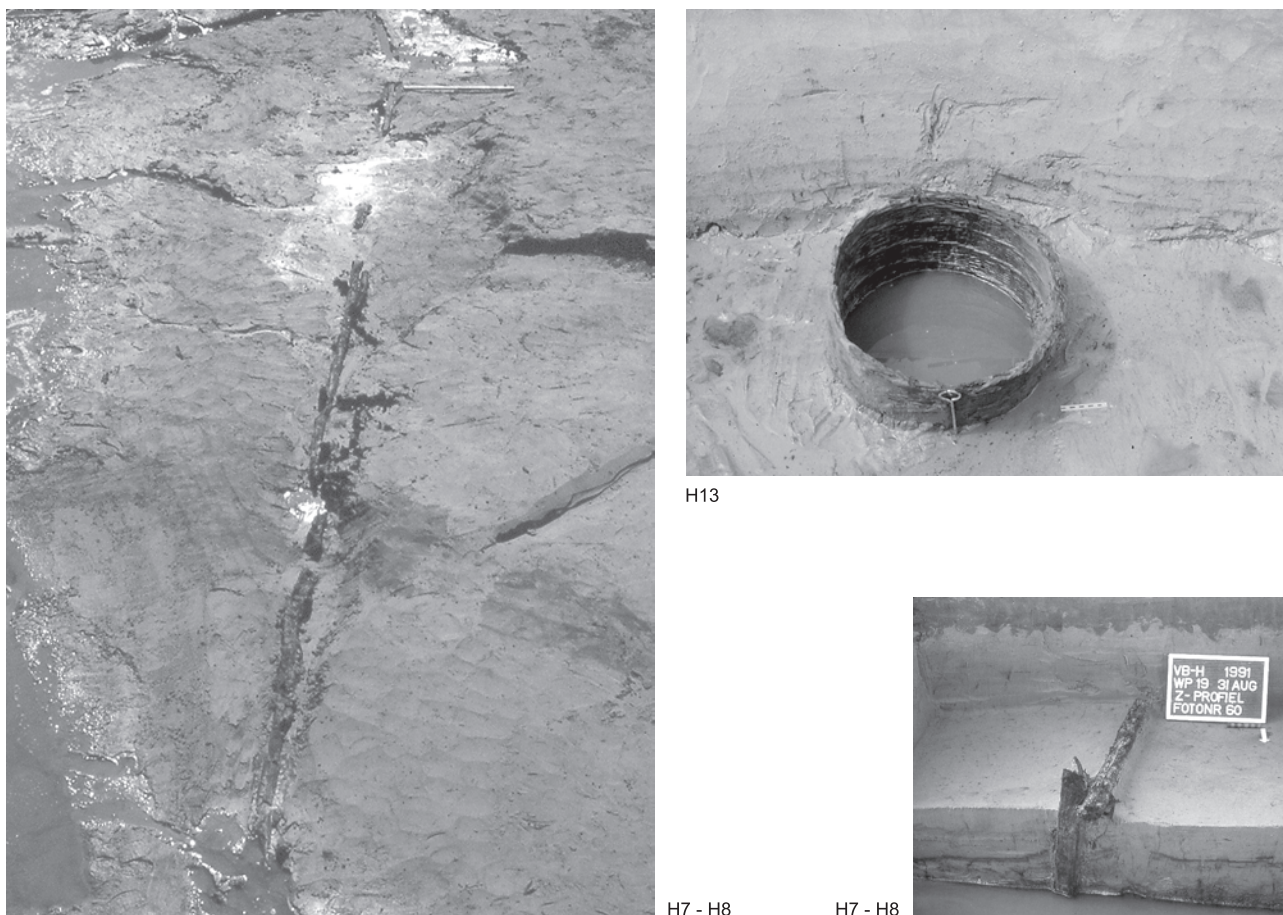


Figure 52 VbHof: Some of the features associated with pattern Horse, including the wooden beams, on the left (with 2 m scale at the top) and a detail (lower right). H13 included a woven basket, here emptied of contents of white sand.

this site. Ditches/gullies, lengths of beams, pits, still present stakes and stake-holes are taken up (fig. 51) shown with the Schagen form. Both the Schagen model and Ub18 circles are shown superimposed over the VbHof features in Figure 53.

- H1--short linear features 'point' to this position, as does a longer feature filled with bone.
- H2-3--short lengths of gullies point to the outline of the figure; there were oak stakes near position H2 and H3 (emphasized on plan).
- H4-6: positions destroyed by deep medieval ditch.
- H7-H8--a shallow pit or post-hole is at H7; the entire length to H8 consisted of sleeper beams and vertical stakes. The horizontals were of alder, the stakes of oak, juniper, fruitwood, and willow. One vertical consisted of an ash stake through a hollow alder length (fig. 52).
- H8--the end of the beam to the end of a ditch marking the beginning of feature H17
- H9--position is near the split of H8-H9, to H10.
- H10--corner of ditches. The position (as shown here; see fig 53) is at a feature very near the relative trajectory of SM-I, linear feature 107. The other end falls within position C-2.

H11--numerous stake-holes, enlarged as they are on plan (fig. 51), could be seen as having the character of granaries. The holes however were definitely of the stake variety, and not at all of the type associated with heavy posts encountered where the granary interpretation is applied.

H12--absent. The area was many times cultivated, perhaps in itself a way of marking. Alternatively, Figure 53, showing the Ub18 circle positions, might indicate the narrow gully (no finds) connection with the position.

H13--the position is well marked and consequential for interpretation relative to the later sites, and land use at this site. As Horse's hoof, it will be looked at in detail in Chapter 6 within the 900-year span of triangles and circles, as deposits and activities, and as inhumations of two males and a female at the SM-I site. The position is at the border at this site of patterned Horse over cultivated area and the Cow figure marked into pasture. The distinction is also evident in the fills of the three features. The three pits are also taken up in more detail for facets of activities and gender represented in Chapter 6, in comparison to the same position at the later sites.

One pit had an initial deposit of a woven ring (fig. 52), a basket without bottom. Subsequent deposits were placed outside the ring. These consisted of a complete, horse's shoulder blade and an antler from a red deer, probably a cultivation implement; there were further three small, eroded sherds and two unidentifiable fragmentary bones. The large round pit had an initial fill of very humic sand and two complete saddle querns, triangular in section impressed into the side of the pit. The second layer of strong humic/turf fill had deposits of a triangular loom weight, bone and wood. There is clear selection evident in the horse, dog, sheep/goat and pig elements as representations of the species of domesticated animal and there was a human tooth. There is clear selection in the wood as well. Large sherds represent at least three partial pots. There was one decorated sherd. The smallest pit of the group had no finds.

H14--one pit with a turf and a clay lining; the one find was the complete fused calcaneus of an ox; this ankle bone as fused element did not occur in SM-I, which was connected to Tree symbolics through generative power and acorn in Chapter 3. It occurs in this position marked by the round pits of SM-I, one of which had tree roots.

H15--absent

4.5.2 VBHOF RIDER (FIG. 51 & 53)

A conglomeration of shallow features is very similar to the 900-year later site of SM-I and the overlapping patterns are shown in Figure 53. Whereas the pattern at SM-I was recovered as sections of ditches, this series of linear features is joined together:

R1--head of Rider is an enclosed area formed by a gully.

R2--back extends to a star position, a circular pit within the gully, possibly indicating the pelvis cup bone.

R3--thigh to knee.

R4-5--curving rather than the straight shin of SMI-Rider.

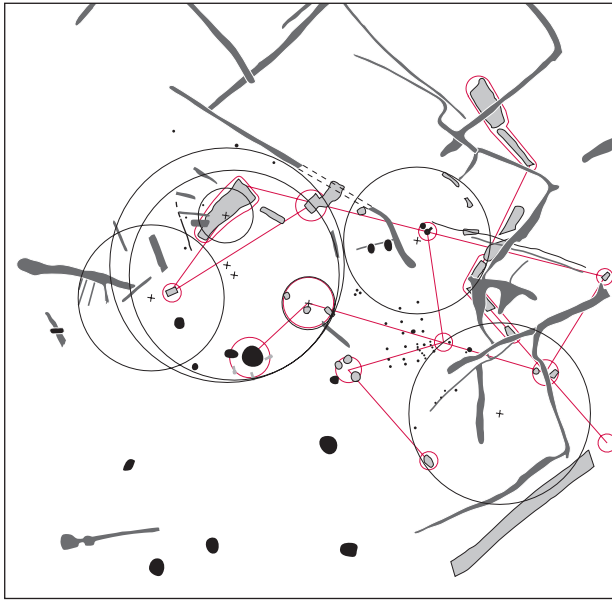


Figure 53 Features of patterns at VbHof of pattern Horse with the SM-I model (features in grey) and the circles as derived from the UB18 Horse. The Rider pattern from SM-I is here also included and would seem part of the pattern of dug features at this site.

4.5.3 VBHOF-COW (FIG. 51):

The Cow here is positioned relative to Horse in similar fashion as the patterns at Ub18. This Cow is probably complete and at this site, the star position is added to the model of real stars (fig. 34) and has pits (C12-14) as well along clear sight-lines (fig. 55). There are very dim stars (magnitude 6.4-7) which could be represented by these points, but they have not been taken up due to controversy on visibility. Wood species have been itemised in Table 12.

The top of the skull overlaps the zone of field and pasture. Further to the west, the fill of all of the features clearly indicates pasture in the back-fill of re-deposited, cut turf.

C1--two shallow pits fall within the position as well as three stake-holes. All with no finds.

C2--the end of the linear feature, extending from H10.

C3--a round pit with a complete wooden bowl (fig. 30) on side, opening to the southeast, and one-half of a black burnished pot.

C4--a round pit with bone elements, a pig foot bone, medium mammal jaw fragment, ox astragalus, sheep/goat metatarsal. The top layer contained bones of eating waste.

C5--absent

C6--oval pit with an initial layer of turf and wood and foot bone of a calf; second layer with upper jaw from a pig as well as eating waste (partial femur, radius, ulna) from ox. This layer also contained a partial pot, and a few single sherds, one decorated.

C7--two pits, one with two layers of sand and two pot bases, and the other with a turf fill and six sherds in the first layer, and root wood and a fragment of an ox astragalus.

C8--rectangular pit with three layers, the first of turf with one unidentifiable medium mammal bone. The orientation and measurements parallel the position of Ub18-C8, there containing the burial of cow with foetus.

C9--a ditch length and a shallow pit, with no finds.

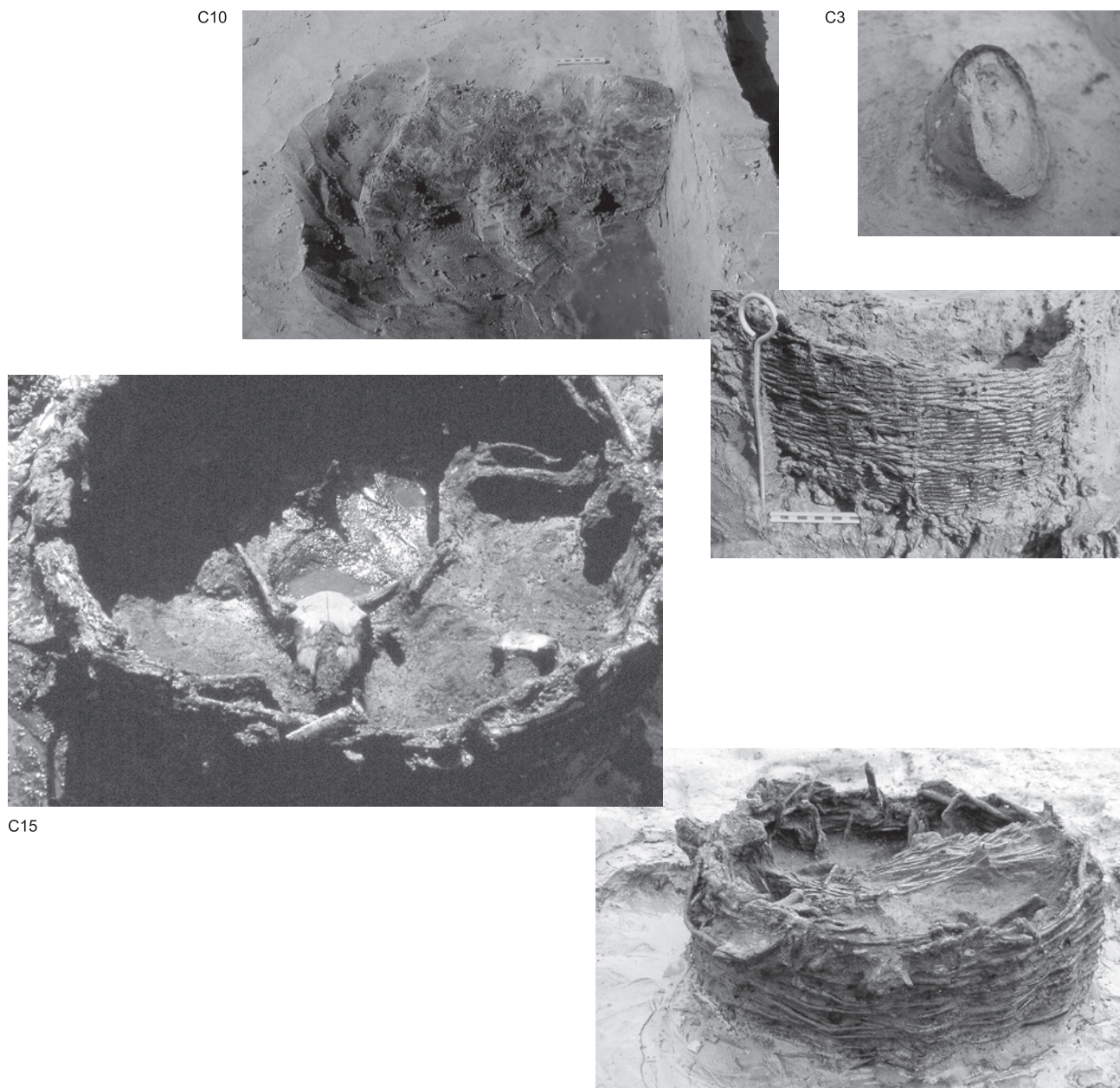


Figure 54 Vb-Hof: Some of the features of pattern Cow (cf fig 51) showing the wooden bowl within pit of C3; two aspects of C10, cut sods (top left) covering a woven basket (middle right); at the bottom right is the larger woven feature of C15 with, at the back, the only stake of juniper showing and the bundle of branches over the top of the fill, and (bottom left), the cow skull at the bottom of the fill.

C10--this position overlapped with H1 at Ub18; a round pit falls within the position here. It was lined with turf, into which a wicker ring (fig. 54) was placed and filled with white sand. It was thus similar to H13, above, except for the use of turf. The first deposit was from the skull of an ox; above these were two horse jawbones.

C11--a mound of white sand with an occasional cut turf covered numerous stake-holes; a pit containing calf bones was cut into the top of the mound. A mound at Ub18 also marked this position. If a star is represented it is not evident within relative proportions of the pattern.

A sightline to the western horizon (suggested as being to the Pleiades, and/or the Hyades as the pattern itself: Chapter 6, fig. 55) from the mound C11 is marked along the way by the following positions of C12–C15. Only an actual star position of C15 has been suggested in Figure 34, as other stars within the face are extremely dim, and C14 is not present:

- C12--in the bottom of the near round pit was a selection of four sherds and ox bone; subsequently, a turf layer with horse tooth and footbone, ox bones and pig jaw had been deposited and the upper two layers contained ox, pig and sheep/goat bone fragments.
- C13--the oval pit contained the skull of a calf and teeth and upper and lower jaw fragments from an older bovine. The layer above had a jaw fragment from a pig. A 40 cm pointed stick with holes is the only holed wood from these pits. (Although the model has been turned directionally relative to the pattern at SM-I and SM-III, this pit is the position of the dwelling hearths of the suggested pattern there.)
- C14--three pits on line to southwest, only one with deposits. Lower deposits were cattle bone of the lower leg (metacarpal, astragalus), lower jaw, and pelvis fragments, and a sheep/goat molar. Higher up were deposits of a quern fragment, gaming disc, round wooden disc, and one-half of a pot and sherds including one black burnished rim.
- C15--three pits of the seven pits in this area had recoverable finds:
 A large woven ring (fig. 54) was set into a pit, 2 m in diameter. There was no natural silting at the bottom, so it had not been left open (to serve as a well, for example). It had been back-filled with turf, while deposits had been made. One higher, vertical stake of juniper was used on the southern side, among a remainder of alder and willow verticals and horizontals. The primary deposit in the wattle ring was a complete skull from a cow (fig. 54), without lower jaw. A complete left horn from a bull had been jammed through the side of the wattle. A quern fragment was deposited with the few bones higher up. A bundle of first year branches was deposited above the turf covering this deposit. A small, near complete black burnished pot was in the top layer, above. A selection of bones for deposit in the two top layers is in line with selection representing domesticated animals: there were mandibles and teeth from horse, ox, sheep/goat and pig; and, a foot bone from a dog.
 Another round pit had alternating layers of turf and sand, a small clay ball, a few sherds and an ox bone.
 Another 'bottomless basket', a wicker ring, such as found at C10 and H13, was set into the pit, and filled with white sand; there were no other finds.

4.5.4 MILKY WAY AND BORDERS

If there was a larger, natural or dug feature marking a watery Milky Way, it falls under the modern road and could not be examined. The linear feature analogous to SM-I feature f107 is here bound to Horse as the edge of the circle H10, ending in the position of Cow's eye, C2. This feature does not form the exact demarcation between arable and pasture. The border was a line from H10 to H1 (fig. 51). Position H13 will be discussed further on this point, as falling at the border, in Chapter 6, as interpreted as various 'borders' within activity spheres and gender shown by the selection of materials in these three pits, and connected with the three burials at this position at SM-I.

4.6 REMARKS FOR FUTURE RESEARCH: CIRCLES AS STARS AND MEASURING TOOLS

Except for the somewhat different VbB6 Horse pattern, specific patterns were used for over a 900 year time span, c. 600 BC – 350 AD. This also implies conscious application of traditional formulas for setting out the features at each site. The site of Ub18 indicates most clearly that circles were a main component within mechanics of laying the images into the ground. At the same site, circles are individual stars, suggested for some of the positions of the Cow pattern. The latest sites of Schagen possibly have small circles implied representing the seasons marked as groups of three pits. And, at the early sites of Ub18 and VbHof there are mounds, at Ub18 within a circle, and at VbB6 a medieval mound marks the place of an earlier constellation pattern. Circles, mounds and stars would seem to be connected. This is consequential for considering circles as signs and symbols, and mounds, as archaeological features elsewhere.

While based on the same measurements and scale, the variation shown through time in the iconographic sense is differently styled at each site. The patterns are the measurements, but only brief mention will be made here on the subject, before going on to more of the cultural implications in subsequent chapters. Preliminary work points to a unit of measurement of about a yard; that is, about 91.4 cm, but used almost exclusively in multiples of three. Implied is a measuring stick, or rod, with a length of about 2.73 m. For the greater distances a rope could well have been used, particularly for defining circles. Although there is some exactness over the longer distances, definition is here neither attempted to the centimetre of ‘the Noord-Holland Yard’ (NHY), nor comparison to other measuring units defined elsewhere.⁷⁵ Modern measuring mistakes are inherent to the way the sites were recorded. The NHY will for the present be regarded as 89–94 cm.⁷⁶ This is exact enough – contraction and stretch does not only apply to plastic measuring tapes of archaeological practice, but to ropes as well, as one might expect the circles of Ub18 were set out. Pacing off distances is also a possibility, and this is as well variable.⁷⁷

For the pattern of Horse, a number of features of the ditch lengths and pits show definite placement through setting-out by the principles of arcs and radii, most visible as dug features at the site of Ub18. Comparing placement of Schagen features with complete circles derived from the Ub18 arcs shows an association of groups of pits with these circles (fig. 53) and it would seem likely the basic principles were a shared tradition throughout the time period spanned by the sites. Why there is a somewhat different pattern at the VbB6 site is also something for future work.

Triangles have been mentioned for aspects of layout at the small scale of the patterns, especially in regards to Horse’s legs. They were also used as part of the system for setting out at least pattern Horse, as is implied by the arrangement of large circle centres (e.g., fig. 53). That is, a triangle seems to have been used to establish the distancing of the circle centres, after laying a line forming H1 to H7.

Settlement planning was noticed by laying one plan over another. Separated in time by 2 to 3 generations, c. 300 and 350 AD, and in distance by 450 m, the Schagen sites served to find patterns which are thought to have enough correspondences, but also single family individuality, as far back as c. 600/650 BC, at the sites available to the author. Finding the patterns was culturally unexpected, which has to do more with shared mentality with the present, created in the not too distant past, part of the discussion of the next chapter.

Chapter 5 Sky Matters: some background

‘Perceptions of the sky are culture-specific. What one society might perceive as significant might arouse little or no interest in another. Thus, just because people brought up in the Western tradition generally feel that the brightest stars are the most prominent and hence the most notable or consequential, others would not necessarily do so: the Borana of southern Ethiopia, for example, attach key importance in their calendar to the relatively dim stars in our constellation of Triangulum, and many traditional peoples in the southern hemisphere attach great significance and meaning to dark patches in the Milky Way’ (Ruggles 1999, 147).

The interest of the last decades in sky perception and integrated concern by those of specific cultures, as specific traditions, is mainly carried out within research in the growing field of ‘cultural astronomy’, now the preferred term for what was up to the late 20th c. termed ‘archaeoastronomy’.⁷⁸ While not a few archaeologists abhor the subject in general, others do not. Clark (1992,55), for example, stated: one ‘ought on *a priori* grounds to be prepared to accept that pre-historic man engaged in astronomical speculation beyond what his circumstances required.’

Patterns of constellations, such as suggested in the preceding chapter for the Noord-Holland features with associated materials, in addition to suggesting practices involving conceptualisations of patterns in the sky, also implies a greater age of forms and general designation than the earliest mention in texts and traditional thought on Babylonian and Greek derivation. Astronomists, those who study the history of western astronomy, do not know who was responsible for seeing which stars as constellations, when. As the history of astronomy is their subject, the main focus is on how astronomy developed as a science, not on the history of constellations as cultural categories.

Some argue that on morphological grounds patterns of stars will suggest themselves as certain images, wherever, such as the widely recognized Greater Bear constellation, where the stars in the past

‘would have even more vividly suggested a bear than they do now, and that having noted and preserved this depiction, our remote ancestors invented various tales and legends to commemorate it. This appears to have happened independently in different parts of the world, so that stories about the great bear here have been found in Asia and North America, as well as in Mediterranean lands’ (Room 1988, 158).

Whether the stars suggest anything at all of a ‘bear’ is a subject for a debate within cognitive theory. Constellations are a typical cultural category, whereby one must be taught to see them at all in conceptualising an image around a few spots of lights, or joining dots to form an object. They are, but they are not there; it is a matter of perception.⁷⁹ Most people (including the author, until 1992) in the West do not know how to ‘see’ them, find them, or know they can be used

to tell time. How the patterns arose is a matter of discussion, which has been going on for some time, apparently, and can be characterized by the Uniformist and Gradualist Model. The first argues that the classical sky map was created at one place and time, by astronomer priests, while the Gradualist position, and that gaining ground, argues synthesis through unrelated sources, and a long development, with a place for very ancient cultures (cf summary, references and discussion Frank & Bengoa 2001). That some Native American tribes recognize the Greater Bear constellation (e.g., Hall 1989, Frank 2001), as did the Greeks (but see Blomberg 2003), is reason enough to argue a very ancient origin for some constellations. Gurshtein (1997), for example, considers a Palaeolithic origin for the Greater Bear pattern likely exactly because of the exact designation between the continents. And, although researchers expressed the idea in the beginning of the 20th c., academic theses are gaining more attention with interpretations of Palaeolithic objects (Rappenglück 2003) and cave paintings as representations of constellations.⁸⁰ However, origins of the patterns presented in Chapter 4 is not a subject here. Theoretically, a common framework of at least Indo-European scope is considered more likely than a late chronology and the Uniformist, diffusion model via the Greeks and the Romans to the nether regions of Europe, for at least some of the patterns.

This chapter is concerned with bringing something of the subject to attention of those with little knowledge of the scale of research in sky matters presently, or on modes of perception which one can gain through historical texts. The following aspects will be briefly addressed within the following sections:

- two forms of cultural astronomy as research of the later 20th c.: on questions and structured frameworks of the anthropological approach, with which most archaeologists are not familiar; and some points on the early megalithic alignment debate, aspects of which are familiar to many.

- examples of early European texts that illustrate a concern with heavenly bodies, including some Greek, Roman and Christian texts, and comments on Germanic areas.

- a brief excursion into the rise, reaction to, and the descent of Solar Mythology of the mid-19th c. to the beginning of the 20th. The paradigm remaining included adherence to the precepts of the evolution of religion and became directly associated with assumptions on who could be interested in the stars, as a stage in 'development'.

- a brief look at some European, ethnohistoric source material and some 'folk' ideas on stars, as well as past assumptions about the derivation of the ideas, as part of mentality.

Through these brief historical excursions into various aspects of cultural astronomy, and possible indications in texts, the subject could be related to historical anthropological frameworks more than is now the case. Time-telling, mythical figures, and seasonality are facets yet to be explored for late prehistoric society, such as the small farming communities of Noord-Holland. Some

facets of interpretation mentioned in this chapter will be brought up again in Chapter 6 for suggesting cosmological concerns of inhabitants in these settlements. The examples below are also chosen as to some possible implications for the wider context, Chapter 7, as Pagan vs. Christian in categorization of conceptual concerns joined to practical landscaping, as finds and texts.

5.1 THE 'SKY' AND RECENT TEXTS

Research examples cited in this section stem from approaches within what became termed the Brown and Green approaches. An international symposium in Oxford, 1981, led to publication of the papers in two volumes: The volume with brown cover, edited by Aveni (1982), is on research done within anthropological frameworks. The collection of papers bound in green, edited by Heggie (1982), is on British megalithic astronomy. A melding of the two approaches is now under way (cf Ruggles 1999).

5.1.1 THE BROWN APPROACH: ANTHROPOLOGY

Archaeoastronomy and ethnoastronomy have become over the last forty years a respected specialization within anthropology. Certainly early ethnographers had noted types of interest shown by various non-western cultures in celestial matters, and by the 1970's, the study began to be systematized and broadened to a great degree through an interdisciplinary approach involving art historians, astronomers, historians, architects, ethnographers and archaeologists working towards increasingly specified anthropological goals.

Within the broad goal of defining what the relationship is between astronomical phenomena and culture followed greater specification, as formulated by Aveni (1989, 7): which particular phenomena mean what to people who note them; why specifically these and not other phenomena; how are they taken up in ritual, myth, calendar, religion, architecture and historical chronology; what role does astronomy play in shaping ideology; and, how is the phenomenon used as a way of creating order within particular cultural frames of reference.

Methodological concerns are neither on how closely Native American epistemology, for example, conforms to that of the western world, nor 'whether or not American Indian systems of astronomy and cosmology constitute a "science"' (Aveni & Urton 1982, vii). Depending on the research focus, the same also applies to the study of (early) state systems. The following examples were chosen for a brief outline here to demonstrate similarities despite a difference of scale.⁸¹ Many of the concerns within cosmology are shared, and symbolic intent is certainly shown to be equally present between state and small-scale communities. There are also numerous instances of associated materials, archaeologically retrievable, and also included are examples from archaeology as part of anthropology.

China: Questions addressed on ancient Chinese cosmology conjoin with those put forward by Wheatley (1971), an urban ecologist:

'Underpinning urban form not only in traditional China but also throughout most of the rest of Asia, and with somewhat modified aspect in the New World, was a

complex of ideas to which Rene Berthelot has given the name astro-biology...This mode of thought presupposes an intimate parallelism between the mathematically expressible regimes of the heavens, and the biologically determined rhythms of life on earth, (as manifested conjointly in the succession of the seasons and the annual cycles of plant regeneration)...’ (cited in Carrasco 1989, 50).

China has an unbroken history of sophisticated astronomy stretching back to at least the middle of the 2nd millennium BC (Sivin 1989). Probably the most extensive studies, fitting within the above quote, of architecture and cosmology have been carried out on 15th-16th c. features of the ‘cosmic temples’ of Old Beijing based on ceremonies which had arisen by the 2nd c. BC. ‘The emperor was the pivot of the world. As heaven’s agent, he ruled with a celestial mandate. It was the foundation of his authority. His ability to establish and maintain order originated in the cyclical patterns of night and day, lunar phases, seasons, and planetary movements, all monitored by his own court astronomers’ (Krupp 1989, 65).

Within a mode of what Wheatley terms ‘cosmo-magical thought’, the Emperor integrated space with time by moving through seasonal rounds, by paths set out and defined by the sacred capital layout. The emperor’s personal relationship was materialized through sacrifices at specific times, at specific places, and they were explicit evidence of his mandate. The most important ceremony was that accompanying the winter solstice that took place on the Round Mound, representing the heaven, bringing the Emperor closer to the sky, emphasizing his personal bond with the supreme ruler of the universe. Among other things, meat, skin and the blood of sacrificed animals, and wine were offered during the nine-act ceremony. The offerings were subsequently burned, smoke rising to the heavens. Cosmological content is also clearly symbolized by the structure of the mound:

‘Cardinal stairways provide access to the stack of three elevated decks, and each section of staircase has nine steps. Nine is heaven’s special number at the Round Mound. The pavement on the upper terrace is laid out in concentric rings, and the number of stones in each ring increases as a multiple of nine around the central disk. These rings presumably symbolize the nine heavens, and the ninth and outermost ring has $9 \times 9 = 81$ stones. The scheme of multiplying nines continues on the middle and lower platform as well, and there were nine acts in the emperor’s winter solstice sacrifice’ (Krupp 1989, 68).

Complementary to the winter solstice ceremony was that of the summer solstice, directed to the earth rather than the sky, when terrestrial divinities received their due; instead of being burnt, the offerings were buried in the ground. The two most important ceremonies, dividing the world and year in half (Summer/earth:Winter/sky) are the dualistic principles (yin & yang) represented in other contrasts such as feminine & masculine, dark & light, soft & hard. Symbolic correspondences can be found in the scheme of materials, colours, and animals based on the principle of cardinal directions.

Aztecs: Carrasco (1989) uses the framework provided by Smith (1978), on Mesopotamia and Egypt, to view Aztec remains. Five facets were found to dominate society of the Near Eastern world for over two thousand years:

1. there is a cosmic order that permeates every level of reality;
2. this cosmic order is the divine society of the gods;
3. the structure and dynamics of this society can be discerned in the movement and patterned juxtaposition of the heavenly bodies;
4. human society should be a microcosm of the divine society;
5. the chief responsibility of priests and kings is to attune human order to the divine order.

The Aztec New Fire Ceremony (recorded in 1507) is an example of the fifth aspect whereby Moctezuma II carried out his chief responsibility ‘... to ensure the rebirth of the sun and movement of the cosmos for another cycle of 52 years, through discernment of an astronomical event’ (Carrasco 1989, 49). The procession of the Pleiades through the meridian was the event, followed by human sacrifice, the lighting of the new fire, on the ‘Hill of the Star’, which was then carried to the Templo Mayor. There followed a distribution of the new fire by messengers, priests and runners to outlying towns and cities in what Carrasco describes as a deeply meaningful social and symbolic gesture.

Inhabitants then received the new fire after having in preparation ritually extinguished their fires, cast statues and hearthstones into the water, and swept clean houses, patios and walkways. ‘They’ (only males?) then climbed onto their roofs to watch for the fire on the hill; reported is also that women were locked up in granaries for fear they would turn into wild, man-eating beasts. The night of the ceremony was further filled with anxiety that the event would not happen.

This element of fear is something Carrasco finds permeating other ceremonies and bound directly to the perceived uncertainty of astronomical events, which if they did not occur would mean the non-alignment of the natural world leading to disorder in the cultural world. Concomitantly, the king is not a king if his temple is out of alignment to the natural world: important for the Feast of the Flaying of Men was the orientation of Templo Mayor on the equinox sun. Moctezuma was not satisfied it was exact, and ordered a rebuilding; excavations have shown this major complex had been rebuilt seven times within a century (Carrasco 1989, 52).

Modern Maya: Sosa has among the contemporary Maya of Yucatan ‘compiled and compared data sets on both belief and practice from the general public, as well as from the *hmèen*, a Mayan ritual specialist, who also acts as teacher, doctor, diviner, priest and advisor’ (Sosa 1989, 132).

For this society, the earth is a square and directions are sides, not points, although the rain deities are at the four corners of the limit of the earth, at the interface of the sides; their names are prefixed by colours – white, black, yellow, green – relating to the perceived colour of clouds of these regions. This four-corner structure with accompanying guardians is also the protective structure perceived for town, hamlet, cornfield, cattle corral, house-plot, or a section of the forest. The understanding, shared by both priest and public, is thus of multi-scaled space (ibid. 135).

The most important deity is the sun as Jesus Christ, *Hahal dios*, who is believed to have created cosmic order. The sun’s path, the earth’s delimitation and importance of the rain deities to the main crop of maize are interlaced through language, village layout, ritual processions and markers. Offerings are placed at certain times at the ‘holes of the town’, or ‘entrances to the town’, on stone altars of the wooden crosses marking the ‘holes’. Special attention is given to those of the four corner points of the primary guardians, with attendant tree symbolism, of a

cross with upturned arms, painted green. Leaving through one of the 'holes' of the community, many Maya can be seen picking up a pebble, touching it to their foot and placing it on the stone altar at the foot of the 'living cross', as an offering to the deity for protection.

The *hmèen* also has an altar table, which is a model of the quadrilateral earth, and called 'the world', used in his many rituals in asking for benefits or eradicating evil. The sides of the table represent the sky, and gourd vessels mark deity positions on this earth. A candle atop a stick representing the 'hole in the sky' marks the centre. Especially when the sun is at its highest point, prayers are made to the sun deity, reaching him/it through the hole in the sky, a sort of 'cosmological conduit' (ibid. 140).

Pueblo: A few aspects of the historic Pueblo Indians of the American Southwest will be mentioned as outlined in a study by Zeilik, based on early ethnographies. He states: 'In particular, the sacred and planting calendars, kept by observations of the sun and the moon, control [Pueblo] ... life – an essential integration of astronomy, agriculture, and ritual' (Zeilik 1989, 143).

Zeilik makes a distinction between astronomical *purposes* and astronomical *practices* deriving from the purposes:

'In the Pueblo Southwest context, astronomy serves the purposes of establishing and validating (1) sacred directions and cosmic patterns, (2) cosmic mythology, (3) certain ritual sites and shrines, (4) the ritual planting calendar, and (5) times for hunting and gathering. These desired ends prompted the development of horizon calendars, light and shadow markers, and lunar phase counts for tracking the calendar. The main task of the calendar watch centers on methods to anticipate festival dates' (ibid. 145).

Sun and moon calendars both were used. Two main methods were used to make observations to arrive at dates just by the sun. The one involved using a sun-watching station, a small rock enclosure to which the priest went to watch the sun appear at a point on the horizon. The other method was through watching for light and shadow cast through windows or portals, such as recounted in the diary of John G. Bourke, November 19, 1881 (cited in Zeilik, 146):

'After breakfast, Cushing, Pedro Pino [the Governor of Juni] and myself went to the upper story of one of the highest houses on the Eastern side of the Pueblo; here in the West wall was an old blue china plate fixed there, so the head of the house said, in the time of the Spaniards, to conceal a painting of the Sun, which faced a small rectangular aperture in the eastern wall. When the sun shone through the aperture farthest to the North, Spring had come and the season of planting had arrived; the more Southerly aperture allowed the rays of the Sun to fall upon the center of the plate (in ancient times upon the face of the sun picture) about the period of the Autumnal equinox – and when the light struck a certain point in the wall, it was the time of the Winter Solstice.'

In another passage, Bourke remarks the sun priest also had a stone pillar, a place to make sacrifices and watch the sun (ibid. 156). Archaeological sites of the American Southwest have been analysed by Zeilik (among others: see Zeilik 1989, 149–156) dating to hundreds of years earlier which show with some certainty the existence of portals of astronomical importance analogous to the ethnographic record as well as probable horizon calendars. Much discussion has also been spent on whether or not petroglyph sites, with celestial symbols, were shrines only, or also used

as watching stations in calendrics. Zeilik concurs with the view that some rock art was meant to interact with light and shadow, as shown at some spectacular sites. Somewhat before the summer solstice at the Holly site at Hovenweep, for example, 'two shafts of light move horizontally across a petroglyph panel that includes spiral and circle shapes. Only about seven minutes pass from the first appearance of the beams and their merging near a spiral' (ibid. 156). Some symbols on the panel have been interpreted as relating to the Twin War gods (Venus as Morning and Evening star) and a snake/serpent as water symbol.

Navajo: Other sites with star motifs for which use for observation has not been suggested are the Navajo Star Ceilings. Chamberlain (1989) discusses thirty-nine of them. They consist of clusters, ranging from a few to large numbers of stars, most often as equal armed crosses in red, black or white pigment, occurring twice with bird motifs and twice with crescents. The type of petroglyphs occur on small overhangs, large and small, shallow and very high alcoves, the last with no obvious way of getting up to the ceilings. The star ceilings date from about 1700 to 1864, but contrary to what some authors have maintained, Chamberlain does not agree they sometimes represent constellations as recognized by the Navajo, and as known from clear depiction in other art forms and ceremonies. Single stars are taken up particularly in the Great Star Chant, having to do with the myth of a hero's trip into the sky where he acquired ritual knowledge from stars, used when back to earth to cure illnesses perceived as a result of evil:

'The Star Chant is one of the few Navajo ceremonies in which the sand paintings are made at night. This is necessary, for the stars made with colored sand must be lighted and given spiritual power by the star shine of a particular star, which looks down through the opening in the roof of the medicine hogahn....In the star ceremony there are not many sky maps such as we find in the Hail Chant and in the Shooting Chant, nor are there any real constellation groupings. Each medicine man chooses one or more that he believes he can influence, and then directs his ceremonial prayers and rites toward that particular one or group of stars' (Chamberlain 1989, 335-336).

Star ceilings have been suggested as shrines visited by medicine men, with the stars placed as prayer offerings to stellar deities. The star crosses are also sometimes found on Navajo prayer sticks, which were objects offered. A modern Navajo medicine man stated the stars hold the sky together and the stars on rock ceilings hold the rocks together. A Hopi medicine woman questioned as to similar practice, replied: 'Not stars – they make prayer feathers and put them on ceilings so they won't fall on you', but she thought it likely the old people might have put the stars on ceilings to keep them from chipping and falling – 'to hold up the ceilings, like whoever holds up the universe'. Chamberlain notes that according to the Navajo emergence tradition, First Man raised the sky over the world like a giant hogahn.

In reference to the colours used for the stars, Navajo recognize both black and red as threatening colours, but both are used to protect, as well; white is the colour of perfect ceremonial control. The combination of red and black, found in some star groupings on the ceilings, could indicate impending danger.

Barasana: As many people do, the Barasana believe they live at the centre of the world, in this case the Colombian Vaupés region on the Río Pirá-Paraná. They are slash-and-burn agriculturists, fishers, hunters and gatherers. Hugh-Jones (1982) collated ethnographies of the area and did

anthropological research to provide a detailed description of cosmology and rituals as bound to economy, landscape, house content and layout, and language.

Barasana recognize more than twenty constellations, with mythical derivations, and single stars as being fruits, animals, fish, birds and insects, as well as things such as a fence or an adze. These constellations or single stars are mainly along the Milky Way, which is called the New and Old Path, and are seen as travelling in progression, sequentially, announcing and causing certain yearly occurrences. The most important regulator is the Star Thing or Star Woman, which is the star group of the Pleiades, whose appearance announces the New Year. The Pleiades are taken to be the night counterpart of the sun. Rites occur when the Pleiades appear at dusk in the west, near the end of the dry season. The oppositions at this seasonal point are summarized as

dry season:wet season :: Pleiades:Scorpius :: male agricultural activities:female agricultural activities :: cultivated fruits:wild fruits

At this point as well, the sun around the time of the equinox is in balance, described as ‘sitting squarely on its seat in the center of the house’ (ibid. 200). The myth concerning the rite describes two solar beings who travel together up the underworld river. At midday (midnight on earth), they stop, test each other’s powers, and conclude that they are of equal strength. Chanting and hallucinogenic drugs are part of the rite where space and time are united when the house becomes the universe, and day and night become symbolic of the cycle of the year. Thus, the climax of the ritual calendar links the dwelling to cosmological landscaping. The dead are rejoined with the living as symbolized by taking musical instruments, representing ancestors’ bones, hidden at the bottom of rivers – the underworld – and given life/voice by the men who subsequently play them, on earth. At midnight, initiates eat coca powder from a sacred gourd. The gourd represents the Pleiades, the sky, and Woman Shaman as female principle.

The flutes being played up and down the east-west axis of the house represent the male principle as the sun’s path. Houses, each having between 20 to 30 inhabitants, are representations of the Barasana cosmos: The roof is the sky held up by posts, the mountains. Light shining through the roof holes are the stars. The floor is the earth, underneath is the underworld. The house is oriented as the cosmos, always conceptually, but not always in actual fact, east-west. Through the middle runs an invisible river, the Pirá-Paraná, which bisects the world. The beam running along the axis of the roof is the sun’s path. Women use the west door, men the east. The centre of the house – that is, the centre of the world – is reserved for men and public ritual. Above the centre in the roof is a vertical post: ‘the seat of the sun’, a name used as well for midday. The rise of the Pleiades in the west at dusk and the associated rites are essential within Barasana cosmology. They ‘believe that if this rite were not held regularly, the universe would come to an end’ (ibid. 201).

These are but a few examples from a vast subject matter, and anthropologically it would be hard to envisage integrated symbolism without analysing sky referents as culturally perceived agents within categorizing and integrating earthly life. Material culture is clearly taken up in cosmology, and some objects have concrete, specific, correspondences to constellations in cosmology and earthly differences such as gender and social groups (cf e.g., constellations referencing moieties: Hall 1989). Some of the elements of the above briefly mentioned analyses will return in Chapter 6, on Schagen specifics, especially this last example on the Barasana. The aspect of one night, as metaphor of the year, is also useful for interpretation in Chapter 7, in regards to the Voluspa.

The ‘Green’ studies are typically of the Old World, when megalithic monuments were brought into connection with telling time, as some form of astronomical calendar and/or observatory.⁸² Single stones or stone alignments and points on the horizon have been analysed under the broad assumption that they form sight lines on lunar and/or solar occurrences. Work done in Britain became that best known, with Alexander Thom’s work, starting in the thirties, becoming widely known through his publications (Thom 1967, 1971), and when the public’s imagination was captured by Stonehenge as a computing observatory (Hawkins & White 1966), which for some archaeologists (as part of the public) is still fixed in their minds. For many facets, of many monuments as alignments, there never was acceptance, or through further research, acceptance is now questionable (for summation of points and problems cf e.g., Heggie 1982, Ruggles 1989, MacKie 2002; but particularly Ruggles 1999 for discussion and references).

The British monument alignment discussion, particularly, was characterized in recent decades by hot debate, and a call to and application of statistics. As primarily mathematicians and/or astronomers carried out the studies, the end result was to be scientific rigour. Significance becomes somehow ‘natural’ whereby the study of calendrics in regards to megaliths was placed in a non-transformable series of solar and lunar alignments of importance. Additionally, exactitude of the present must be mirrored in the past, otherwise findings were unacceptable; ‘sight-lines’ are not sightlines because of variously, and in the present, defined degrees of exactitude. As Platt remarks (1991, S80): ‘...while statistical methods may sometimes confirm the significance of certain alignments, they cannot prove lack of significance in isolated ones.’

Despite the many analyses of Stonehenge in regards to astronomy, Atkinson concluded: ‘...there is only *one* built-in alignment which can be accepted with confidence, namely the axis of the first straight stretch of the Avenue directed on the first-gleam solstitial sunrise at the end of the third millennium BC’ (Atkinson 1982, 114), something already recognized by the antiquarian William Stukeley in the mid-18th c. (ibid. 112). The determination by Atkinson still holds (Ruggles 1999, 139).

Much less attention began to be given to claims of megalithic science connected to high-precision astronomical observation. As Platt observes, the concept was ‘born under the star of positivism’ and tended to seek its own ‘origin of “Western scientific” astronomy among the megalithic cultures of Northwest Europe’ (1991, S76). At the same time one was categorizing along one’s own recognized important sky phenomena. The search for megalithic certainties has been described as a form of archaeoastronomy, but as a subdivision of the history of science, looking for prehistoric Einsteins (cf especially Gingerich 1989). Because of the apparent (statistical) uncertainties of megalithic alignments in general, many of the analyses were slotted into the ‘science vs ceremonial’ debate which smouldered on through the 1980’s

‘fuelled by those who insist that evidence in favour of high-precision observations becomes evidence in favour of “scientific” astronomy, while refutation of high-precision indications and evidence in favour of low-precision ones becomes evidence in favour of “ceremonial” astronomy’ (Ruggles 1989, 23).

Ruggles pointed out that consequential to emphasis placed on precision or non-precision matters, little understanding had been reached about the sites themselves in conjunction to the

builders and users. Little use had been made of archaeological data, as mainly engineers and mathematicians/astronomers did the research.

Other issues still drag on as archaeologists use outmoded semi-anthropological suggestions, and an adherence to ‘evolutionary’ stage descriptions (theocratic and necessarily a chiefdom) within which members of a society could achieve the skills for obtaining alignments (cf MacKie 2002).⁸³ And, anthropological examples must still be cited for bringing aspects of actual cultural realities to the fore for dimming the evolutionary stage approach as mode of interpretation. Barclay and Ruggles (2002, 671)⁸⁴ note, in reply to MacKie:

‘...certain “experts” amongst the Mursi, a group of transhumant cattle herders and pastoralists in southwestern Ethiopia, watch the sun moving along the mountainous eastern horizon and use this to help regulate the calendar. However, they simply acquire the skill from their fathers and are accorded no special status in a society that is broadly egalitarian.’

Despite the disagreement on the exactitude of alignments, the general assumption is these monuments do have to do with ‘time’ and contextualized ritual, sometimes over very long periods.⁸⁵ Particularly Ruggles has brought the discussion towards a dialectic of Green and Brown approach within studies of cultural astronomy and British monuments:

‘The way forward here, as in archaeology as a whole, must surely lead from the middle ground where contextual ideas are developed using the widest possible range of pre-existing (but from a formal statistical point of view, ultimately subjective) knowledge and serious attempts are made to ‘test’ these ideas (in the broadest sense) by examining patterns in the material record’ (Ruggles 1999, 161).

5.2 GREEKS AND ROMANS, MISSIONARIES AND CHURCH FATHERS

The patterns described in Chapter 4 are testable, as models. Within the long term, marking in the early Christian period is shown to have occurred, in an unmistakable manner at the Velsersbroek-B6 site, where the constellation Horse was partially re-marked with a mound and horse-shoes before the 13th c. Such indigenous concern with marking landscape as star patterns is not noted in early texts – unless in indirect form, as ‘worship’ of stars (see below). Various texts are cited in this section for showing concerns of other later pagans, and through to missionary and church fathers on examples of what they had to say when altering practice.

Out of context from the works in which they appear, each is dissociated from discussions as to how they should be interpreted. How they ‘should’ be interpreted is a function of the time the interpretation takes place and within a mentality shared by many that civilization came to the northern West via the Greeks and Romans. There is little room for (cultural) astronomy at a time earlier than contact situations. Within various specialist studies of the last century, the tendency has been in definition through difference – for example, early Greeks to later Greeks to Romans, to Celts, Germani, and missionaries. Texts cited here are used to illustrate concern, not to analyse the concern, and the focus is in similarity of concern, or recognition, of sky phenomena as supernatural powers. Known, but rather ignored, but something which can be read in the following texts is that gods are part of the sky landscape.

Of the 8-6th c. BC Greek writers, there are examples of sky phenomena as the mythological figures and their attributes. For example, taken up as two of the Homeric Hymns are here parts of *To Selene*, the moon, and *To Ares*, the planet Mars:

‘... the long-winged Moon. From her immortal head a radiance is shown from heaven and embraces earth; and great is the beauty that ariseth [5] from her shining light. The air, unlit before, glows with the light of her golden crown, and her rays beam clear, whensoever bright Selene having bathed her lovely body in the waters of Ocean, and donned her far-gleaming raiment, and yoked her strong-necked, shining team, [10] drives on her long-maned horses at full speed, at eventime in the mid-month: then her great orbit is full and then her beams shine brightest as she increases. So she is a sure token and a sign to mortal men’ (ed/trans. Evelyn-White 1914).

‘Ares exceeding in strength, chariot-rider, golden-helmed, doughty in heart, shield-bearer Saviour of cities, harnessed in bronze, strong of arm, unwearying, mighty with the spear. O defence of Olympus, father of warlike Victory, ally of Themis, [5] stern governor of the rebellious, leader of righteous men, sceptred King of manliness, who whirl your fiery sphere among the planets in their sevenfold courses though the aether wherein your blazing steeds ever bear you above the third firmament of heaven; hear me, helper of men, giver of dauntless youth!. . .’ (ed/trans. Evelyn-White 1914).

Attributed to Hesiod of Boeotia and probably of the later 8th c., *Theogony* has explicit mention of stars and the moon, and where the immortal gods are placed, for example:

‘And Earth bore starry Heaven, first, to be
An equal to herself, to cover her
All over, and to be a resting-place,
Always secure, for all the blessed gods’ (ed/trans. Wender 1973, 27).

‘Last she [Phoebe] bore Hekate, who above all,
Is honoured by the son of Kronos, Zeus.
He gave her glorious gifts: a share of earth
And of the barren sea. In starry heaven
She has her place, and the immortal gods
Respect her greatly. Even now, when men
Upon earth, according to the rites,
Make handsome sacrifices, and entreat
The gods for favour, Hekate is called...
In courts she sits beside respected lords;
In the assembly of the people, he
Whom she has chosen, shines...
And she is helpful in the stables, too,
Along with Hermes, to increase the stock. . .’ (ibid. 36-7).

Also attributed to Hesiod, *Works and Days* is of a different nature, being a practical work setting the times for carrying out activities within a yearly cycle, according to time as marked by the rising of stars and constellations. For example:

‘When the Pleiads, Atlas’ daughters, start to rise
Begin your harvest; plough when they go down.
For forty days and nights they hide themselves,
And as the year rolls round, appear again
When you begin to sharpen sickle-blades;’ (ibid. 71).

‘The sun’s sharp fury and the drenching heat
Subside, and mighty Zeus sends autumn rain,
Our bodies move more nimbly; then, by day,
Sirius passes overhead less time
And travels more at night. The tree you cut
At this time, when it sheds its leaves and stops
Sprouting, will be most free of wormholes...’ (ibid. 72)

Leaving aside the question of what Zeus is, if not the planet Jupiter, the brilliant star Sirius is in any case used for marking time, as are other clearly stellar phenomena mentioned in Hesiod’s work such as Acturus, Orion, Andromeda. Hesiod also has advice for not offending the immortal gods. Gods are out and about at night, and can see you, as the Sun can see you during the day:

‘Do not make water, standing toward the Sun
Unless he has not risen, or has set;
And when you travel, do not urinate
Upon the road or near it; and do not
Expose you body, for the night belongs
To the blessed gods. A man who’s reverent
And knows much wisdom, sits or goes beside
A courtyard wall, where he will not be seen.’ (ibid. 82–3)

In the *Odyssey* (15.329) Homer uses a (solid) vault designation for the heavens/sky. In the *Iliad* (18.478) Homer specifically mentions constellations in the description of the intricate ‘cosmic’ shield made in heaven for Achilles,

‘First fashioned [Hephaistos] a shield great and sturdy, adorning it cunningly in every part, and round about it set a bright rim, threefold and glittering, and therefrom made fast a sliver baldrick. Five were the layers of the shield itself; and on it he wrought many curious designs with cunning skill.
Therein he wrought the earth, therein the heavens therein the sea, and the unwearyed sun and the moon at the full, and therein all the constellations wherewith heaven is crowned – the Pleiades, and the Hyades and the mighty Orion, and the Bear, that men call also the Wain, that circlet ever in her place, and watcheth Orion, and alone hath no part in the baths of ocean’ (ed/trans. Murray 1924).

These are not ‘all the constellations’, and regarding the remainder of the lengthy description as also referencing the sky touches on the debate of the 19th c., discussed below. Achilles (the sun)

has then a shield of the night sky. A 'shield' description, *The Shield of Herakles*, with reference to Sirius as the only clearly named star, is attributed to Hesiod, although it is also considered to be of later date (OCCL). About 467 BC, Aeschylus describes Tydeus' shield: 'He has this haughty symbol on his shield: well-crafted sky, ablaze with stars, and the brightness of the full moon shining in the center of the shield, the moon that is the most revered of the stars, the eye of night'. And, a few lines further: 'And regarding this night which you describe on his shield, sparkling with heaven's stars perhaps the folly of it might yield to one some prophetic understanding.' (*Seven against Thebes* 386, 400; ed/trans. Weir Smyth 1926). A much later, Germanic mythical shield description, cited by Snorri Sturluson, can also be likened to the sky full of images, moving about, mentioned in Chapter 7.

Less lyrical versions of the cosmos are found in the Pre-socratic philosophers of the 6th/5th centuries who agreed the earth was flat, a floating disc or the top of a cylinder. The sky is an outer dome or a sphere, implying finite space and a fixed place for stars. The following summary is from Pannekoek (1961, 95–105):⁸⁶ Anaximander of Miletia (611–546 BC) conceived of the heavenly bodies as wheels of fire. The light that we see is only a part of the wheel – an axle, pipe, vent, or bellows-nozzle – through which fire jets. Anaximenes (585–526 BC) thought the stars moved as a cap about the head; but also that stars are 'fixed like nailheads in a crystalline vault'.⁸⁷ Fixed stars, but then within a sphere, rather than a dome, are found in Anaxagoras of Clazomenae (c. 500–428 BC). Parmenides (c. 450 BC) had the heavenly bodies moving between an inner wreath of fire and an outer solid sphere. Around the same time however, according to Empedocles of Acragas, the stars were again fixed on a hard outer sphere. He also thought there was an inner sphere consisting of two hemispheres of fire: the one with lighter fire is day; the darker hemisphere is night. Sun and moon were polished spots on the inner surface of the hemispheres, reflecting the outer fire.

The Pythagoreans later placed the 'Hearth of the Universe' in the centre, rather than the earth. As the uninhabited side of the earth faced the hearth, you could not see the hearth. The sun, a transparent globe, was itself lighted by the central hearth and the outer fire. The stars were still fixed to an outer sphere.

5.2.2 LATER GREEKS AND ROMANS

In the fourth century, Plato's work *Timaeus* is a rounded off cosmology which takes up the results of the science of the day in combination with how everything came to be created, including who was responsible. The philosophy of Plato included cosmology, as the call to empirical observation of the universe – particularly stars – cannot be separated from his definition of the nature of stars. In *Timaeus* (38d) 'the star sacred to Hermes' is mentioned, and the other planets are referred to and are the visible divinities. *Epinomis*, written by someone well-versed in Plato's works,⁸⁸ attributes the naming of the planets as a tradition taken over from foreigners of 'Egypt and Syria', and the author mentions that there the ordering of the planets had long been understood. Due to climatic conditions, the Greeks were 'so much later in imparting the cognisance of the order of these deities' (trans/ed. Lamb 1986, 987d; and, cf particularly 986–987).

Plato's ideas concerning the transmigration of souls are generally thought to have derived from 'Orphism', from the misty times of the early authors (OCCL). The work *Timaeus* sets out

in very concrete terms what Plato thought stars were, also in terms of the science of gender and the superior sex, as women are failed men:

‘And when He had compounded the whole He divided it into souls equal in number to the stars, and each several soul He assigned to one star, and setting them each as it were in a chariot He showed them the nature of the Universe, and declared unto them the laws of destiny, – namely, how that the first birth should be one and the same ordained for all, in order that none might be slighted by Him; and how it was needful that they, when sown each into his own proper organ of time [transl. note: i.e., star], should grow into the most god-fearing of creatures; and that, since human nature is two-fold, the superior sex is that which hereafter should be designated “man.” And when by virtue of Necessity, they should be implanted in bodies, and their bodies are subject to influx and efflux, these results would necessarily follow, – firstly, sensation that is innate and common to all proceeding from violent affections; secondly, desire mingled with pleasure and pain; and besides these, fear and anger and all such emotions as are naturally allied thereto, and all such as are of a different and opposite character. And if they shall master these they will live justly, but if they are mastered, unjustly. And he that has lived his appointed time well shall return again to his abode in his native star, and shall gain a life that is blessed and congenial; but whoso has failed therein shall be changed into woman’s nature at the second birth; and if, in that shape, he still refraineth not from wickedness he shall be changed every time, according to the nature of his wickedness, into some bestial form after the similitude of his own nature...’ (*Timaeus* 41/42, trans/ed. Bury 1929).

Plato then sets out how the rest of earth’s creatures derive: birds are men, evidently after they have again failed in women’s bodies, who are harmless but light-minded; four-footed and more-footed creatures are men who have neither paid attention to philosophy nor studied the nature of the heavens; the most foolish become footless earth dwellers (snakes and worms?); the most utterly thoughtless and stupid of men become fish and shellfish. ‘Thus, both then and now, living creatures keep passing into one another in all these ways, as they undergo transformation by the loss or by the gain of reason and unreason’ (*Timaeus* 91E-92B, *ibid.*). Within Plato’s philosophy:

‘Vision, in my view, is the cause of the greatest benefit to us, inasmuch as none of the accounts now given concerning the Universe would ever have been given if men had not seen the stars or the sun or the heaven. But as it is, the vision of day and night and of months and circling years has created the art of number and has given us not only the notion of Time but also means of research into the nature of the Universe. From these we have procured Philosophy in all its range, than which no greater boon ever has come or will come, by divine bestowal, unto the race of mortals’ (*Timaeus* 47,A; *ibid.*).

The nature of the revolutions of the five visible planets is generally taken to have been discovered by Chaldean priests, whose empirical knowledge reached the Greek scholars certainly by Plato’s time, and Plato then reasoned an invisible supreme being as creator of the visible deities, the immortal gods, the planets.

‘Of the other stars the revolution have not been discovered by men (save for a few out of the many); wherefore they have no names for them, nor do they compute and compare their relative measurements, so that they are not aware, as a rule, that the “wanderings” of these bodies, which are hard to calculate and of wondrous complexity, constitute Time’ (*Timaeus* 39, C,D, *ibid.*).

From this statement primarily comes the conclusion that ‘others’ did not connect the wandering stars to the gods, nor were other cultures elsewhere in Europe doing anything with any of the heavenly bodies, except possibly the sun. Obviously, Plato could not know what others, outside of his range of knowledge, were doing. More popular belief in stars as souls is given around the same time as Plato by Aristophanes (*Peace* 828-840). At the most reductionistic level, Romans supposedly took over Greek religion and attached the names of their gods to the natural phenomena. Cicero correlates stars with divine symbols in a legend concerning the Spartans:

‘...the Spartans had set up some golden stars in the temple of Castor and Pollux at Delphi to commemorate the glorious victory of Lysander over the Athenians, because, it was said, those gods were seen accompanying the Spartan fleet in that Battle. Now, just before the battle of Leuctra these divine symbols – that is, the golden stars at Delphi, already referred to – fell down and were never seen again’ (*De Divinatione* I.xxxiv.75; trans/ed. Falconer 1979).

The stars are the gods Castor and Pollux, and they have divine symbols of golden stars, which one could also read were visible ‘accompanying’ the fleet. Virgil is very clear, around 29 BC, in correlating star status with Augustus:

‘Yea, and thou, O Caesar [Augustus], whom we know not what company of the gods shall claim ere long; whether thou choose to watch over cities and care for our lands, that so the mighty world may receive thee as the giver of increase and lord of the seasons, wreathing thy brows with thy mother’s myrtle; ... or whether thou add thyself as a new star to the lingering months, where between the Virgin [Virgo/Erigone] and the grasping Claws, a space is opening (lo! for thee even now the blazing Scorpion draws in his arms, and has left more than a due share of the heaven!)...’ (*Georgics* I, 24-42, trans/ed. Fairclough 1994).

Here is the idea that Augustus will join the company of the gods as a star, some of the spaces as/between constellations shifting a bit to make room when he returns to heaven. He is doing something similar with the vault of heaven and the souls of animals and men when Anchises answers the question: ‘But, father, must we think that any souls pass aloft from here to yon sky, and return a second time to sluggish bodies?’ (*Aeneid* 6.719, trans/ed. Fairclough 1994). Aside from this soul=star=divinity idea, polestar and constellations, seasons and weather are also linked by Virgil:

‘One pole is ever high above us, while the other, beneath our feet, is seen of black Styx and the shades infernal. Here, with his tortuous coils, the mighty Snake glides forth, river-like, about and between the two Bears – the Bears that shrink from the plunge ‘neath Ocean’s plain. There, men say, is either the silence of lifeless night, and gloom ever thickening beneath night’s pall; or else Dawn returns from us and brings them back the day, and when on us the rising Sun first breathes with panting steeds, there glowing Vesper is kindling his evening rays. Hence, though the sky be fitful,

we can foretell the weather's changes, hence the harvest-tide and sowing-time...' (Georgics I, 242-254, *ibid.*)

The position of the constellation Dragon, as a snake, which separates those of the Greater and Lesser Bear are referenced, clearly. 'Here', would seem to reference the 'the other' pole, and would be the Pole Star.⁸⁹ The 'shades infernal' are then to that side of the Milky Way of the named constellations. This area of the sky will be associated with the sea/underworld, in perception of the night sky as three parts (Chapter 6 & 7) something as yet unrecognised as framing texts.

Onians (1991, 93-167; esp. 163-165) discusses the 'head' as the seat of genius, the soul, associated with fire and stars in a manner blending Stoicism and astrology harmoniously with native Roman belief. Among these many examples are Horace's dictum (*Epis.* 2.2): the reason why one man chooses one course of action and his brother another 'is known to his genius, the companion who tempers his natal star, mortal god of human nature, one for every head, changeful of countenance, fair and gloomy'.⁹⁰ Planet and comets are also brought together by Horace (*Odes*, I, 12) in regards to Caesar's place as the comet, next to Saturno the planet. The greater the energy – the potency of the soul, the brighter the flame, the star – is also the idea behind Roman, possibly following Greek, use of the crown with rays (*corona radiata*), 'as a sign not of kingship but of deity' (Onians 1991, 165).

Archaeologists ponder what Romans were saying about 'Celts' and 'Germani', but usually without the framework of Roman recognition and name-giving of the stars and planets, taken over from the Greeks, or not. Caesar on the priestly Celts, *Bello Gallico* (trans/ed. Handford 1985):

'6.14. ...A lesson which they take particular pains to inculcate is that the soul does not perish, but after death passes from one body to another; they think that this is the best incentive to bravery, because it teaches men to disregard the terrors of death. They also hold long discussions about the heavenly bodies and their movements, the size of the universe and of the earth, the physical constitution of the world, and the power and properties of the gods...

6.17. The god they reverence most is Mercury. They have very many images of him, and regard him as the inventor of all arts, the god who directs men upon their journeys, and their most powerful helper in trading and getting money. Next to him they reverence Apollo, Mars, Jupiter, and Minerva, about whom they have much the same ideas as other nations – that Apollo averts illness, and Minerva teaches the principles of industries and handicrafts; that Jupiter is king of the gods, and Mars the lord of war...

6.18. The Gauls claim all to be descended from Father Dis, declaring that this is the tradition preserved by the Druids. For this reason they measure periods of time not by days but by nights; and in celebrating birthdays, the first of the month, and new year's day, they go on the principle that the day begins at night...

In 6.14, the heavenly bodies and the properties of the gods are in the same sentence, as though they could be separate entities, or as a dialectic of properties connected to the phenomena. But Caesar was also setting up a dichotomy. These 'Celts' were seen as superior to the Germanic barbarians as 'The only beings they recognize as gods are things that they can see, and by which

they are obviously benefited, such as Sun, Moon, and Fire; the other gods they have never even heard of' (BG 6.21).

Tacitus in the late 1st c. AD, however, included some other aspects of Germanic concepts:

'Above all other gods they worship Mercury, and count it no sin, on certain feast-days, to include human victims in the sacrifices offered to him. Hercules and Mars they appease by offerings of animals, in accordance with ordinary civilized custom. Some of the Suebi sacrifice also to Isis. I do not know the origin or explanation of this foreign cult; but the goddess's emblem, being made in the form of a light warship, itself proves that her worship came in from abroad. The Germans do not think it in keeping with the divine majesty to confine gods within walls or to portray them in the likeness of any human countenance. Their holy places are woods and groves, and they apply the name of deities to that hidden presence which is seen only by the eye of reverence' (*Germania* IX, trans/ed. Mattingly 1970).

But evidently not so hidden, some Germani were noted at least as also finding gods in the sky. Tacitus' mention along these lines would seem clear:

' "This used to be the territory of the Chamavi tribe, and then the Tubantes, and then the Usipi. Just as heaven belongs to the gods, the earth belongs to man: and tenantless land can be occupied." He [Boiocalus] raised his eyes to the sun; he invoked all the heavenly bodies.... Lucius Duvius Avitus was impressed. But he replied that men must obey their betters, that the gods they invoked had empowered the Romans to decide what to give and take away and to tolerate no judges but themselves...' (*Annales* XIII,55. trans/ed. Grant 1983).

This passage demonstrates a clear tug of war between the interpreters of the will of the gods within legitimising authority. It is clearly stated that Boiocalus was invoking 'all the heavenly bodies', and that a Roman recognised their power, as well. Whether or not Tacitus could actually know this about the barbarians is beside the point. A Roman is saying the gods are heavenly bodies, and evidently attributing the same perception to this Germanic tribe. Again, from *Annales* (XIII,57; *ibid.*):

'... the Hermunduri and Chatti fought a great battle. Each wanted to seize the rich salt-producing river which flowed between them. Besides their passion for settling everything by force, they held a religious conviction that this region was close to heaven so that men's prayers received ready access. And by divine favour, they believed, salt in this river and woods was produced, not as in other countries by evaporation of water left by the sea, but by pouring it on heaps of burning wood and this uniting the two opposed elements, fire and water. In the battle, the Chatti were defeated – with catastrophic effects. For both sides, in the event of victory, had vowed their enemies to Mars and Mercury. This vow implied the sacrifice of the entire beaten side with their horses and all their possessions.'

Ready accessing at a place close to heaven puts Mars and Mercury as heavenly bodies. Again, this is literal as in the previous passage, as to Roman recognized categories of sky phenomena. Hercules is also a constellation that could be the literal translation of the *Germania* IX passage. All could be accessed via the sky as categories of visible phenomena.

5.2.3 CHRISTIANS AND THE CHURCH, ALIGNED

Later, St. Augustine was concerned (while studying Varro) with how the wandering stars could be named after pagan gods, and if they were the gods. There are also ponderings on how the same name could be used for different phenomena, and the metaphor of ‘golden apple’ as referencing a star:

‘But possibly these stars which have been called by their names are these gods. For they call a certain star Mercury, and likewise a certain other star Mars.... There also is that brightest of them all which is called by them Venus, and yet they will have this same Venus to be also the moon: not to mention how Venus and Juno are said by them to contend about that most brilliant star, as though about another golden apple. For some say that Lucifer belongs to Venus, and some to Juno. But, as usual, Venus conquers. For by far the greatest number assign that star to Venus, so much so that there is scarcely found one of them who thinks otherwise’ (*The City of God* VII.15; trans/ed. Dods 1993).

What Christian missionaries and other observers meant is not obvious when they wrote about later Celts or Germani. Columbanus, working among the ‘Suevi’ in the later 6th century in present south-western Germany, was recorded as convincing heathens to convert by the following:

‘They had a large cask that they called a *cupa*, and that held about twenty-six measures, filled with beer and set in their midst. On Columban’s asking what they intended to do with it, they answered that they were making an offering to their God Wodan (whom others call Mercury). When he heard of this abomination, he breathed on the cask, and lo! it broke with a crash and fell in pieces so that all the beer ran out. Then it was clear that the devil had been concealed in the cask, and that through the earthly drink he had proposed to ensnare the souls of the participants’ (text from Jonas’ *Life*, cited in Cusack 1998, 79).

The devil = Wodan = Mercury is not, in this form at least, an embodied planet.

Well known is Pope Gregory’s letter to Abbot Mellitus in 601 and his tolerant views on the content approach rather than changing the forms of pagan practice, but it is unclear what the ‘devils’ were:

‘....And because they are in the habit of slaughtering much cattle as sacrifices to devils, some solemnity ought to be given them in exchange for this....Do not let them sacrifice animals to the devil, but let them slaughter animals for their own food to the praise of God....Thus while some outward rejoicings are preserved, they will be able more easily to share in inward rejoicings’ (cited in Cusack 1998, 178).

Clearer on the connection of worship of (wandering) stars is Martin of Braga, missionary among the Suevi in Portugal and north-western Spain and later bishop of Dumium. In *De correctione rusticorum* (c.574), Martin had put forward the following to explain pagan practice, summarized (text cited in Harmening 1979, 281–283): After the Deluge, people began to populate the earth again, but some had forgotten their creator and his teachings. They honoured created things, rather than their creator – some worshipped the sun, others the moon, the stars, fire or the deep waters/springs. They saw not that God had created these things, but saw these things as if they

were gods. Seeing that man was worshipping created things, the devil and his demons took on different forms and gave themselves names of evil men. The people sacrificed to them – on the mountains/hills and in the forest. The gods called themselves Jupiter, Mars, Mercury, Saturn and Venus.⁹¹

Martin considers Jupiter, Mars, etc., to have taken their names from evil men of Greece, which is an interesting sequence of events: first there were ‘men’ in Greece with these names; the names were taken over by the devil and his demons; they then took on forms (including sun, moon and stars) and the rustics worshipped them.

The ecclesiastic Jordanes (*Getica* XI, 69 & 70) remarked that the Goths had names for 346 stars moving from their rising to their setting, and how heavenly bodies whirled around, to be brought back by the rotation of the heavens. They also studied the waxing and the waning of the moon and solar eclipses.

For northern regions, the historian Procopius of Caesaraea (d. 560; *Polemon* II, 15) had described that on the island of Thule people gathered on the top of a mountain, thirty-five days after the longest Winter night – that is, the Winter solstice – to watch for and then to announce the return of the sun to those in the valley below, whereby all proceeded to have a great celebration. He remarked further that he had the impression that the people lived in fear that the sun would disappear completely. Mention of how the inhabitants charted the course of the sun is for A. Ström (1986, 242, 253) an indication for ‘observatories’.

In a homily *De falsis diis* – On the False Gods (Baker trans/ed. 1967/68) – Ælfric Grammaticus of Eynsham (d. ?1020) drew from Martin of Braga, but he was also more specific in connecting planets to northern deities. He supplies the ‘Danish’ names for some of the gods, from his perspective of Anglo-Saxon England (cf Flint 1991). As Martin, he goes on the chronology that originally they were men, worshiped as gods. Interesting are the following statements:

‘Now the Danish say in their heresy that this Jove [Jupiter], whom they call Thór, was the son of Mercury, whom they call Óthin; but they are wrong in this, for we read in both heathen and Christian books that the malignant Jove [Jupiter] was truly the son of Saturn.’

‘They wished to worship the gods with even greater veneration, and gave them stars (as if they owned the stars!): the seven stars, that is the sun and the moon and the other five. . . .’

‘They established the sixth day in honour of the shameless goddess called Venus, or Frigg in Danish’ (Baker 1967/68).

The first passage is interesting, as it shows actual knowledge of the Scandinavian system in his remark on the differing genealogy of the gods. What the ‘Danish’ said – that Thor/Jove is the son of Odin/Mercury – is consistent with that given throughout Old Norse literature (cf ref. in Simek 2000, 316–317), and is different to the classical genealogy, causing some confusion if they were believed to have been actual men. In the previous passages, not mentioned are ‘Danish’ names for Saturn, sun and moon or Mars, although Mars is specified as the son of Thor and that Thor (Jove/Jupiter) was more loved than his father, Odin/Mercury, among the ‘Danish’. The second remark is

a direct referencing to venerating the planets and could also be a reflection of knowledge of actual practice. When summing up the weekday naming of the planets/gods, Frigg is also mentioned as Venus. Frigg is the wife/consort of Odin/Mercury in northern mythology, which is also apt in connection to time of rising, as the planets closest to the sun, visible after sunset and before sunrise.

There do not seem to be more specific texts than Ælfric's on connection to northern mythical figures and sky phenomena. Indirect are some notations, among various other practices in the 13th text by brother Rudolf on Silesia where there is reference to 'evil women' calling on the moon and stars, wanting to know of the future as though they were God (*Summa de confessionis discretione* 8–10, [Mostert] 33; Mostert 1995b, 246; cf 257 for other examples).

the Church aligned

The sun is well-known as important for the early Church. However, before everyone became aligned on the sun=son, some confusion within the Church evidently also existed, and continued into the medieval period. Books finally determined for inclusion, after editing in the fourth century as 'the Bible', contain a number of clear, possibly not wholly metaphorical allusions, to the sun or light as Christ.⁹² The Bible is not contradictory as to light source, and it is impossible to say how much editing occurred in which books (cf Fox 1991, Slavenburg 1995).⁹³ Other sources (cf Timmers 1978, 39, 57), however, of the early Church are less aligned: Liturgical practice for the last day of advent mixed 'lights' of Christ – as morning star (*Oriens*) and sun; or, as 'Lucifer', a Latin designation for the Morning Star, who never disappears, returning from the underworld, illuminating humanity with his clear image. There was also transposition via mythology, where Christ was associated with Helios in his sun chariot (2nd c.), Orpheus (4th & 12th c.), and as a giant (12th c.). These various interpretations of imaging Christ continued thus long after the official Church stance that the sun was the symbol of Christ.

The official word had been given on the subject by Bishop Athanasius who put forward during the Council of Nicea in 325 that churches should be oriented towards the East. Reporting on practice, he commented (cited in Barlai 1989, 436):

'...the location of the churches was generally such that the faithful, in praying, with their faces turned toward the altar, would be looking toward the rising sun, the symbol of Christ, who is the sun of justice and the light of the universe.'

It was officially ruled upon at this council that priests everywhere must turn to the east during prayer and that a church should be oriented west-east. Unclear is to what extent and why this was already practiced and by whom, where.⁹⁴ In the fifth century, the sun as a symbol 'only' was again reiterated when Pope Leo the Great (440–461) issued a decree against the veneration of the sun as a *deity*, to be seen rather as a *symbol* of Christ entering his church (Firneis & Köberl 1989, 430).

Outwardly in keeping with sun symbolism, churches were literally aligned on the sun's rising at various dates. There are a growing number of studies of actual practice, which can be brought round again to the matter of religious context and scientific exactitude. This could seem to be a factor applicable to megalithic 'science' and alignments, and the ceremonial debate, in the types of discussions cited under the 'Green' approach in section 5.1.2, above. The idea of church alignment towards the position of the rising sun on certain dates was put forward in the mid-19th c. by Alberdingk Thijm (1858). Later in 1902, and apparently independently,

Charlier had the same idea. Faulty measurements led however to severe attacks on the idea (Firneis & Köberl 1989, 430). Again, interest in the reasons behind alignment arose but was now accompanied by more support through textual research on the building of specific churches and accompanied by modern exactitude in measurements to demonstrate particular cultural conceptualising.

Various studies of Central European churches have shown axis orientations to be linked with the position of the rising sun on important festival days (for example, Annunciation Day, the medieval New Year: March 25). The place of the rising sun on the patron saint's day is also specified as the reason for a particular alignment. Instances have also been found of rules set out in texts on solar alignment to be taken in a line with the lives of monastic founders of a particular building (Firneis & Köberl 1989). Alignments are also in cases correlated to the day of the laying of foundations (Barlai 1989). In some cases, when a church had been rebuilt the axis orientation has changed slightly, but measurably, possibly to account for the discrepancy between the Julian and the Gregorian calendar. Even without the official change, it would have become increasingly clear that the sun was not coming up at the proper place on a particular saint's name day (*ibid.*).

These studies show as well that orientations can be very exact, but in this case would by some be termed 'ceremonial' in nature, in reference back to the above discussion (section 5.1.2) on megalithic science. A 'date' is marked by the buildings, through the place of the sun on the horizon, and conversely, one could in medieval times predict a coming date, exact however only insofar as Julian calendrics were exact. Certainly, what is being referred to could be termed an alignment without clear significance found in absolutes of meaning, that sought and sometimes characterising the debate on megaliths. The church alignments to the sun have no meaning in themselves in these studies. The meaning is only to be discovered through sources external to the church buildings, within the Church as historical context of important dates of feasts, name-days of saints, and founders of certain institutions, at least for certain areas.

The East as a sacred direction was in some areas at least authorized as being very wide in arc, to fit the symbolism of Christian heroes on earth, the saints. In Austria, for example, no case of a true equinoctial orientation has been found. It is as yet unclear how church alignment practices are geographically bound as regional traditions, but it has been stated for example that 'English church orientation shows an absolute lack of coincidence with specific feasts' (Firneis & Köbel, 1989, 435).

5.3 THE 19TH CENTURY DEBATE AND LATER REPERCUSSIONS

The texts from those of various backgrounds are unclear as to what pagans were doing, but there are certainly enough indications whether in nomenclature or actual statements of worship/interest in heavenly bodies. The subject for the archaeological interpretation of the pits of Noord-Holland is stars forming constellations; the *Germania* IX passage combined with constellation patterns led to the suspicion that Tacitus was being literal as to visual phenomenon. As to Roman nomenclature, why was Tacitus not referring to two planets and a constellation – Mercury, Mars and Hercules – which he could see, and which he recognized were 'seen' also by Germanic peoples he

was describing? Must we presume ‘Mars’ the god was a trope, with unknown connection to Mars the planet? The phrase ‘Interpretatio Romana’ takes on a somewhat different meaning when taking some statements literally, as referring to categorizing of visible sky phenomena shared by both the Romans and those of more northern areas. There is no lack of stars and wandering stars – that is, planets – in later texts in reference to pagan practice. This is something other than emphasis on the sun as all-important sky feature, as the main focus on the sky from the mid-19th century, onwards. Why such textual indications as there are on late pagan practice have been ignored can be understood as an extension of the reaction against the ‘Solar Mythologists’.

5.3.I SOLAR-MYTHOLOGY

Disbelief in pre- or protohistoric Germanic interest in sky-matters seems within academic endeavour mainly to have been bound to the discrediting of the 19th c. paradigm of ‘nature-mythology’, also known as ‘solar-mythology’ and ‘meteorological-mythology’. It is sometimes seen as a branching off from Grimm’s school, as an alternative to using folk culture to understand or to create a past. However, the general topic of myths and nature and connections to religion in the later 19th c. is not often cited as being a more specific form of what caused vehement discussion at the end of the 18th c.: the three volume work, *Origine de tous les cultes, ou Religion universelle*, of 1792–3 by Charles Dupuis. Including Chinese, Siamese, Greek, Molluccan, Persian, Philippine, Norse, Madagascan, Formosan and Japanese myths, Dupuis ‘attributed the origin and order of all myth ... to nothing more than the unnecessary veil of allegory drawn across the visible events of ... the equinox, solstices, seven planets, and 12 signs of the Zodiac’ (cited in Sullivan 1983, 14). Religion stood in the way of acquiring real knowledge, that is, science (ibid.). Dupuis’ message seemed to be taken as a call to stop the study of religion and concentrate on studying the phenomena therein masked. Researchers by the middle of the 19th c may have been influenced by his enormous amount of material more than is generally acknowledged in connection with Solar Mythology. Although the interpretative framework is criticised, Grimm’s *Deutsche Mythologie* (1835) is still an often-cited work for the practices reported on. By contrast, the works on which the solar-mythologists based their arguments are rarely cited and interpretations are most often characterized as nonsense.

Solar/Nature-Mythology was most forcefully propagated by Max Müller and Adalbert Kuhn, consisting, according to their (later) critics, of a very superficial (cf e.g., de Vries 1956/57, s37) comparison of Germanic, Iranian, Indian and Greek mythology. The school of what was called Linguistic Mythology at the time it arose was founded by the German-born philologist Müller, who after his education in Leipzig, Berlin and Paris, became a professor at Oxford University after settling in England at the age of twenty-eight (Briggs 1978, 6). The conclusion reached by 1856, and that subsequently most quoted, was that ‘all Indo-European myth essentially reflects the primeval struggle of light against darkness’ (Strutynski 1973, xxi). Myth was the product of a ‘disease of language’ arising through the inter-weave of the concrete with images thereof in an original language of reality. All Indo-European mythology was declared to be based on ‘Sun-Worship’, with later ‘accretions and aberrations’ being due to forgetfulness and misunderstanding (Briggs 1978, 6). According to Briggs, Müller’s theory presented in 1856 (*Oxford Essays*) appealed to the scholarship of the day and was ripe for reception by some, by others certainly not. Some probably read into ‘disease’ that beloved (Greek) myths were ‘sick’. Fernandez (1991, 4) draws a line from Müller back to Giambattista Vico’s 17th c. figurative ingenuity of *Homo non*

intelligendo fit omnia (Man, in not understanding, makes his world), and dependence of human understanding on vulgar reasoning, also a stance taken by Dupuis.

At the time of the rising of both the studies of folklore and mythology, philology could supply answers, especially as the new study of Sanskrit, in which Müller became particularly interested, was beginning to define similarities between classical myths and the Vedas (cf Müller 1867–75). The puzzling survival of ‘savage and primitive myths’ among the sophisticated Greeks gained an explanation in relation to the linguistic similarities in names of the supreme god in Sanskrit, Indian, Greek and Roman if seen to be of very ancient age.

In his analyses, for example, a figure such as Heracles was interpreted by Müller as a solar hero, his twelve labours being the path of the sun through the twelve houses of the zodiac. The entire confusion of Indo-European affairs began to arise where natural phenomena provided the explanatory framework for similarity, as was suggested more than a half century earlier by Dupuis. One was looking for evolutionary origins of western civilization. Mallory (1989, 266–272) summarizes the understandings of culture, racism and racial supremacy, and the misuse of scholarship and/or scholars misusing their findings. He notes:

‘The great Indologist Max Müller, annoyed by the madness he had helped to create, blasted those who spoke of an “Aryan race, Aryan blood, Aryan eyes and hair” as a lunacy comparable to a linguist who spoke of “a dolichocephalic dictionary or a brachycephalic grammar”’ (Mallory 1989, 269).

The entire field of study became warped by the societal context of the time. The matter had not been helped by those professing to be Müller’s disciples, such as Sir George Cox, who heaped into one pile such heroes as Odysseus, Achilles, Heracles, and Theseus as solar deities. There were degrees of analogy being made: from Kuhn (1859) going overboard, again according to critics, in concentrating on and finding traces in myth of meteorological phenomena of storm and weather (de Vries 1956, s37). Others found an explanation of Little Red Riding Hood in the atmospheric phenomenon of the red morning sky; yet others interpreted folk beliefs about ‘mice’ as a deeper analogy to thunder and lightening storms whereby mice teeth correspond to lightning (cf these and other examples in Sloet 1887, a critic; and, discussion in Davidson 1993, 146–147). The main source of Germanic myths, The Eddas, were similarly examined and solar gods were found.⁹⁵ These texts had much to do with western identity and mentality, but the problems of ‘myth’ were not resolved. Later on in the early 20th c., the main criticism was that these types of interpretations effected nothing of a structural understanding of myths (cf Grimal 1973). Sun and weather analogy were still accepted explanations for some up through the thirties (e.g., Guerber 1934). And, as well, the swastika is still interpreted as a sign/symbol of the sun (e.g., Green 1991).

For others, the full import of seeing one’s favourite classical hero brought down to just a natural phenomenon is perhaps under-emphasized as having been unacceptable within the prevalent ideology of highly creative culture and inextricably bound to the evolution of religion, Greek culture and western civilization.

5.3.2 EVOLUTION AND RELIGION

Focus by others was on studying ‘primitives’ for understanding aspects of European primitive ancestors. Witchcraft, magic and objects as amulets had already been modes of categorization

since the pagan:Christian conflict of interest, of which a few examples were given in Chapter 3. The rising interest in the later half of the 19th c. in anthropology, or rather primitive people, according to the mentality of the time, served as a scholarly platform from which to attack solar mythologists. What came to be known as the ‘School of Ethnology’, its cause championed most forcefully by Alfred Lang in full-scale attack on Müller, gained attention and its star rose, as did the created understandings of totemism, fetishism, and all else savage (Briggs 1978, 6). Most importantly, parallels could be set up and drawn between existing ‘others’ and those of the European past with its primitive holdovers, in myths and folk belief, within religious evolutionism, not sameness. Formalized frameworks were being set up by the later half of the 19th c.

Tambiah (1990) discusses Tylor at length in his genealogy of (western) anthropologists and their mentality towards religion, science, and magic. Tylor had already drawn the linear connections from animism to ancestor to possession cults to fetishism to a higher revealed religion, such as ‘in the Christian mode’ in his work *Primitive Culture* in 1871. Types of sacrifice were also correlated to these stages: going from the earliest as ‘gift’ reciprocity, which was

‘modeled on human relations between chiefs and ordinary persons, in which the worshipper stands to benefit because he strikes a bargain; sacrifice then develops a higher form which is based on the notion of homage to a deity: the sacrificer does something to gratify the deity as his superior; finally we reach sacrifice which expresses abnegation, in that the sacrificer voluntarily parts with a part of himself, and this intentionality represents an ethical conception appropriate to high religion’ (summarizing Tylor: Tambiah 1990, 48-9).

Tylor made a distinction between religion in various stages of development as opposed to magical arts and occult sciences. Magic and the occult are exemplified by sorcery, witchcraft, astrology, divination with bones, and palmistry (ibid. 49). At the beginning of the 20th c., the line was differently stacked by George Frazer. Again, examples from the entire contemporary world were used, but also more of the ‘primitive holdover’ idea to relate the ancient Greek to the then modern western world. Frazer saw that the line, ‘so far as we can trace it, has on the whole been from magic through religion to science’ (Frazer/Fraser (ed.) 1994, 804).

‘Thus the keener minds, still pressing forward to a deeper solution of the mysteries of the universe, come to reject the religious theory of nature as inadequate, and to revert in a measure to the older standpoint of magic by postulating explicitly, what in magic had only been implicitly assumed, to wit, an inflexible regularity in the order of natural events, which if carefully observed, enables us to foresee their course with certainty and to act accordingly. In short, religion, regarded as an explanation of nature, is displaced by science’ (ibid. 805).

Magic is an extension, ‘by false analogy, of the order in which ideas present themselves to our minds, the order laid down by science is derived from patient and exact observation of the phenomena themselves’ (ibid.). More than one hundred years earlier, Dupuis (see above) had called for a halt in the study of religion to concentrate on studying the phenomena through science. Frazer postulated how religion had led to science. But,

‘In the last analysis magic, religion, and science are nothing but theories of thought; as science has supplanted its predecessors, so it may hereafter be itself superseded by

some more perfect hypothesis, perhaps by some totally different way of looking at the phenomena – of registering the shadows on the screen – of which we in this generation can form no idea' (ibid. 806).

On the one hand, most would agree thought through anthropology of other cultures has altered ideas, but there does not seem to have been a commensurate realignment of thinking about the Greeks. Many ideas held over derived from putting them at the top of the evolutionary line, and ordinary phenomena of sun, moon, stars and planets became taboo as an integral part of religion except for charting the rise of science in studying the phenomena. The Babylonian priestly class, Chaldeans, had much to do with the progression, but they practiced Astrology, already determined by Tylor to belong to the occult sciences, not high religion.

Astrology as effecting the roots of western astronomy, as science, was at the same time a subject embroiled in the Indo-European question, insofar as Greeks vs. non-Indo-Europeans, particularly the Babylonians. An example illustrates the point, from another internationally known scholar, Frans Cumont:

'The Babylonians after all had studied astronomy only empirically. By applying to it trigonometry, of which their predecessors were ignorant, the Greeks attained a certainty hitherto unknown, and obtained results previously impossible. But for several centuries, the development of the two sciences went on side by side in East and West, and to a large extent independently. It would now be impossible to say to whom amongst the Greeks or the Babylonians belongs the credit of certain discoveries. But it is the peculiar distinction of the Chaldeans that they made religion profit by these new conceptions and based upon them a learned theology. In Greece science it always remained laic, in Chaldea it was sacerdotal....

There is every reason for believing that religious origins were much the same among the Babylonians as among other Semitic peoples. Here as elsewhere differentiation comes only with progress. Numerous traces are found of a primitive "animism" which regarded as divinities animals, plants and stones, as well as wind, rain, and storm, and believed them to have mysterious relations with mankind.... All this was set down in writing and codified by the priests – for every kind of superstition was codified by these Semites as well as the laws of Hammurabi. But among the countless multitude of gods who peopled the realm of nature, the Babylonians attributed a particularly powerful influence to the stars' (Cumont 1912, 10).

Professor Franz Cumont was at the time a leading authority on Greek astrology and Mithraism, and held the Chair of Roman Institutions at the University of Ghent from 1892 to 1910. He was not particularly, at least not explicitly, interested in deciding Indo-European homeland questions. He took the precepts of Nature Mythology – wind, rain and storm – and combined them to animism as being a low stage in evolutionism to shore up ideas along 'racial' lines. In his introduction, his stated purpose was to answer the question: 'How could this absurd doctrine [astrology] arise, develop, spread, and force itself on superior intellects for century after century?' (ibid. viii). The superior intellects were to be found in the West, as the Greeks.

'Every sidereal [i.e., star] cult, properly so called, was originally foreign to the Greeks as to the Romans – a fact which undoubtedly proves that the common ancestors of the Italians and the Hellenes dwelt in a northern land, where the stars were fre-

quently concealed by fogs or obscured by clouds. For them nearly all the constellations remained a nameless and chaotic mass, and the planets were not distinguished from the other stars. . . .

Aristophanes characterizes the difference between the religion of the Greeks and that of the barbarians by observing that the latter sacrifice to the Sun and the Moon, the former to personal divinities like Hermes. The pre-Hellenic populations very probably shared the worship of “the barbarians” of whom Aristophanes speaks, and survivals are found in popular customs and beliefs. Perhaps, also, certain distant reminiscences of the original naturalism of the Aryan tribes led the common people to regard the stars as living beings’ (Cumont 1912, 22).

These passages are of the same page. It is clear that Cumont would like to have the Greeks and Romans originating as ‘Aryans’ who did not have a sidereal cult because of clouds, because Aryans come from northern regions, implying Germanic. His initial designations of ‘Babylonians’ or the ‘Chaldean priestly class’ become ‘Semites’ (as Babylonian is a Semitic language), the designation he uses throughout the remainder of the work, completing the opposition set up between western science and eastern absurd doctrine, of Aryan derivation vs. Semitic. It is also a good instance of choosing to ignore large parts of Greek cosmology, as exemplified by Plato’s ideas on the universe. He was definitely not ‘laic’ – that is, only secularly interested in stars – as the few quotes from *Timaeus* above show.

However, the remainder of Cumont’s book is not further along this set of oppositions, but is more concerned with discussing the intricacies of the priestly science of the Chaldeans and the effects on and borrowings by the Greeks, and influence up to his modern day. Perhaps, if Cumont had a hidden agenda, it is found in that comment above – northern, c.q. germanic peoples could never have achieved science unless coming into contact with the East, through migrations, becoming Greeks, as science is environmentally determined by cloud cover and fog. Plato has been cited above on what he thought about stars and Cumont (ibid. 110) considered that:

‘The doctrine of sidereal immortality is certainly the most elevated that antiquity conceived. It was at this definitive formula that paganism stopped.... Even after the stars had been despoiled of their divinity, it survived to some extent the theology which had created it.’

The nature of the ordering of the planets having been determined, something was held responsible for that ordering, the monotheistic ‘He’ in the text from Plato’s *Timeaus*. The rise of Christianity is inextricably bound hereby to Greek knowledge and conception of star and immortal souls, divinities and planets. Survivals of the pagan tenets, stemming from Chaldean astrology, remained throughout the Middle Ages (ibid.), but were held to be the result of the direct line from Babylonian priests to Greeks (to Romans) to dispersal to the nether regions of Europe.

Jacob Grimm died in 1863; Max Müller died in 1900. Somehow Nazi misuse of folk practice, such as seasonal feast days, sun symbols and Scandinavian mythology bound to ideas of how pre-historic ‘Aryans’ had spread themselves over Europe became inextricably bound to these scholars’ names. And because of this, the crux of the matter and the crux of the blockage seems to have led to a consistent disassociation by the masters of post-war mythology with anything even resembling explanation to do with ‘natural phenomena’ as somehow shaping any sort of cultural phenomena. As the Greeks (e.g., Aristophanes, Posidonius, Plato, Herodotus) knew, barbarian others practiced nature worship; the civilized do not. What is not now common knowledge is

that Plato equated stars with souls and planets as the visible deities (cf 5.2.1). That is, ‘nature worship’ did not include the heavenly bodies, but purely facets of earthly landscapes.

Religious evolutionism became the front on which the battle of the texts was fought. The lines of development as formalized in the 19th c. are not however explicitly mentioned, but there is certainly implicit use of distinction between higher and lower, religion and cult, abstractions and nature worship.

5.3.3 MORE RECENT TEXTS ON TEXTS

Using relatively recent translations, and knowing something of the pre-World War II history of text interpretation, one can understand disclaimers made on what the texts seem to be saying. Wender insists for example on the passage cited above (5.2.1) from *Theogony* on Hekate: ‘Hekate here is not the witch-goddess (associated with magic, death, and the moon) of later [Greek] literature, but a particularly powerful and benign personal deity’ (1973, 152–53). So in this early Greek literature, there are personal deities, and implied is that later (after Plato?) one does find the same name attached to a natural phenomenon, the moon, with negative associations. This is bending over backward not to read what is in the passage cited above. Even within Greek mythology, transformations could occur from a positively conceptualised female deity, to a later negative deity – within societal transformations. That correspondence to the moon is not suggested could well be due to relatively recent historical tradition. Suggesting ‘moon’ would again dredge up the 19th c. discussion of the very obvious similarities found within such medieval texts as the Icelandic *Voluspa* of the Poetic Edda and this ‘Hecate’. Plato’s ideas on stars are not especially in the forefront of memory when it comes to ideas on Greek erudition. Plato is interpreted as saying something essentially different than Homer or Hesiod. However, Cumont thought ‘the piety of the multitude was full of reverence for the celestial luminaries, rulers of the day and of the night’; it had been eliminated however by anthropomorphism in the Greek city-states, but had been revived and justified by the philosophers (Cumont 1912, 23).

Generally, the Romans are thought to have taken over Greek religion. Overly simplified and evolutionistic again, the explanation is non-anthropological and little is taken into account of how, again, Roman writers would like to explain the things around them by drawing parallels to respected civilization. Plato’s ideas on cosmology and the importance of male heads revolve as well around the idea of ‘head’ as the seat of seed/life bearing-generative power. Onians (1951, 163–4) has succinctly summarized the classical sources on ‘flaming heads’ in combination with the thesis of the head as the seat of the soul (*genius*) and the belief in the divine soul that survives and manifests itself as a flame around the head. Examples from Virgil and Horace have been given above; there are also Roman coin finds illustrating the belief: Augustus placing or touching a star upon the head of Agrippa on a coin of the year of her death (ibid.). Stoicism and astrology, according to Onians, thus blended harmoniously with native Roman belief: ‘That the departed soul or head of the emperor was believed thus to ascend to the heavens fitted the belief that the *genius* manifested itself in flame and the Stoic belief that souls passed at death as fire to the heavens’ (Onians 1951, 164). As Cumont thought the philosophers rationalized more commonly held belief, some scholars are then agreed on attributing stars as souls to both native Romans and common Greeks. But then the problem arises of what the Romans had in common with the ‘barbarians’. By definition, barbarians could not be as abstract in their belief system as the civilized.

De Vries illustrates a different train of thought through religious evolutionism when he discards the statement made by Caesar on what is taken as nature worship among the Germani (*B.G.* VI, 21), cited above.

‘Schon Müllenhoff [in pub. 1870–1908] hat die Richtigkeit dieser Mitteilung bezweifelt, und es lässt sich kaum leugnen, dass eine solche Religion nicht nur in schärfstem Widerspruch zu den von Tacitus beschriebenen Glaubensformen, sondern auch zu allen unseren anderen Quellen steht. Eine Verehrung des Mondes und des Feuers tritt gerade bei den germanischen Völkern durchaus in den Hintergrund, und schon die bronzezeitliche Religion war weniger primitiv als Cäsar sie für seine Zeit beschreibt. Er war auch in zu oberflächlicher Berührung mit den Germanen gewesen, als dass er genaue Kenntnisse über ihren Glauben besessen hätte’ (De Vries 1956/1957, s253).

Thus, such a primitive religion certainly could not have existed as late as the 1st c. BC, but may have in the Bronze Age. What Caesar had to say, more importantly, is taken as being in sharp contrast to that reported by Tacitus. The sharp contrast, if it is one, is of course the *Germania* IX passage that the Germani make offerings to Mercury, Mars and Hercules, also cited above. Gods, according to the usual interpretation of this passage by Tacitus, are personifications, as a stage in religious evolution. It would not seem, however, in contradiction to Tacitus’ *Annales* (XIII, 55) report concerning Boiocalus of the Ampsivarii that gods are in heaven and heavenly bodies can be invoked; and, that these are the same gods as are in communication with the Romans.

The contradiction lies not in what the classical authors recited, but with later interpreters who separate entities into categories of personified gods *or* heavenly bodies in forcing dimensions of belief into abstractions within religious evolution for the society being studied. A multi-faceted approach might be more interesting.

Classical writers were agreed on barbarian practice as being unsophisticated in regards to religion. It is something of the long term from Greeks, Romans, early (and late) missionaries up to certain schools of academic research of the 19th–20th centuries. What missionaries had to say of pagan practice in Europe is clear, one would think, in being unclear on what exactly was happening. There is a rationalization of why the situation was as it appeared to be. Very simply, logically, the cure was to be found by teaching, done by those who had ‘real’ knowledge of the situation, by Christian missionaries working from Spain to Norway. The text from Martin of Braga does include the determination that the planets, moon and stars were forms taken by the devil and demons. They did exist, but should not be worshipped.

But, evolutionism in analyses has been found to deny even the content of missionary texts. The most disturbing is the 20th c. ‘chronological’, philological ploy. Harmening (1979), for example, maintains the text by Ælfric could not be indicative of a belief in northern regions in the 11th c. because its content was too similar to the centuries-earlier text by Martin of Braga on inhabitants of northern Spain. Boudriot had earlier on declared Martin’s text as not possibly applying to Germanic derived worship of celestial bodies as the passage ‘clearly pertains to late classical astrological superstition’ (Boudriot 1928, 35). He concluded the references made to practice had been derived from the description of Gaul given by Caesarius of Arles in the early 6th century. Caesarius’ texts, and those interpreted as having derived from them could then only apply to that region of Gaul, at the time of Caesarius. And, because these were Celts with a specialized priesthood, they could indeed be looking at the sky and analysing it – Caesar had

said as much. In short then, both what Martin and Ælfric had to say on their respective regions is seen to have no meaning in itself, because someone else had said something similar before.

Undoubtedly later missionaries were influenced by Caesarius, in some instances even paraphrasing him. Implicit in the assumptions behind the philological ploy of origins is that missionaries teach budding converts by preaching against practices of which those pagans had no knowledge. It is certainly not far-fetched to consider the texts more literally as showing broad similarities in various areas of Europe, despite the time frame, rather than instances of plagiarism, to be brought back to the first time someone thought to write it down. Not supplying more specific information, showing up expected, regional/tribal characteristics and traditions could have been simple disinterest in dissecting what was per definition bad form, that is, pagan. After all, the writers were missionaries, not anthropologists.

It seems the arguments against the validity of the same texts referring to pagan worship of celestial bodies have ranged from having contents describing a religion as too primitive, given the assumptions of a long oral tradition and complex nature of northern mythology when first written down. Or, as being too sophisticated for northern areas, as the inhabitants could not at the time of the suspect texts have had the benefits of classical knowledge, even if it was only ‘astrological superstition.’

The passage from Jordanes mentioned in section 5.2.3 (*Getica* XI, 69–70) had been declared by DeVries (ibid. s.255) as worthless because Jordanes wanted to show the Goths had carried out astronomical studies, an impossibility for some reason. However, DeVries (ibid. s.588) does put the gods in the sky, and the very widely distributed understanding of World Tree is seen within a pole star and heavenly context. But there does seem to be a post-war distinction between acceptable ‘cultic’ practice and something else, whereby some texts are acceptable, mentioning sun and moon, such as that by Procopius, but it is doubtful constellations were of interest. But, then again, perhaps they were, if folk designations are taken into account:

‘Eine kultische Verehrung bestimmter Sternbilder bei den Germanen ist nirgends bezeugt. Nur kennt die altnordische Mythologie einige Beispiele dafür, dass Helden als Gestirn an den Himmel versetzt worden sind, wie das z.B. der name *Aurvandils tá* bezeugt. Immerhin ist es nicht unwahrscheinlich, dass einige besonders auffallende Sterngruppen (wie Orion, Venus, Polarstern) auch zu einer gewissen Verehrung Anlass gegeben haben. So hiess der grosse Bär im niederländischen Sprachgebiet *Woenswagen*; das beweist wenigstens einen Zusammenhang mit dem Wodansglauben’ (de Vries 1956/57, s.255).

Within that monumental compendium *Handwörterbuch des deutschen Aberglaubens* (HWDA; 1927–1942) there is also the initial assumption, and then analyses. For example: ‘The zodiac, sun and moon belong to the fundamental pillars of prognoses of the future in folk belief of all astrologizing periods’ (my trans.; HWDA, NXI:596). In Germanic areas this could only be a result of introduction of Greek/Babylonian derived astrology in the medieval period (HWDA, NXI:663).⁶ One could be certain astronomical concerns were completely uninteresting to pre-historics (I, 61). Bald statements are made through reaction still to Solar Mythology of general sameness, and belief in linear developments, played out through the stars. Ceremonial is acceptable, as is cult in regards to sun and moon, both in connection to ‘fire’ (and cf de Vries 1956/57, s.253–256), anything more complicated borders on science.

The cult approach is often viewed as being the pagan precursor leading to rural tradition, such as the Norwegian practice of placing a lump of butter, as an offering, on the spot where the sun first touches the roof in the Spring; or, the seasonal ritual festivities associated with setting afire a wheel wrapped in straw and letting it role down the mountain. Rock engravings in combination with early and later texts, place names (e.g., *Solborg*), and later practices are, when taken together, generally agreed to indicate a sun cult from the Bronze Age onwards, at some-time deified within an evolutionary scheme of reasoning. Within the evolutionary scheme, even the native names for the weekdays as Germanic divinities, could also only be a late development. Traditionally they were regarded as a translation of Roman weekday designations of the gods/planets. By the seventies, however, Strutynski (1975) was carefully suggesting this might not be so. And, by the eighties, influenced by British megalith studies and similar theories on Scandinavian stone settings, Ström (1986) was suggesting the texts indicating native interest in the heavens should not be summarily disregarded.

The various means used to explain away texts on glimpses of NW European practice indicated by late texts seems inextricably bound to the belief that only the Greeks, and then the Romans, via the Greeks, could be doing anything of an organized nature with the stars within the major step towards monotheistic religion and Christianity. Somewhat ironically perhaps, the late 19th c. call for studying ‘primitives’ through doing anthropology as a means to understanding European prehistory could also effect taking notice of what cultures outside of Europe are doing with stars. Within the later 20th century, definition of cultural structuring includes perception of ‘stars’ within cosmology, as the very few examples of the many researched anthropological examples, which start off this chapter illustrate (section 5.1.1).

It may even be that the concentration on the sun within European studies on prehistoric societies, as all-important phenomenon, is possibly in itself coloured by Christian ideology. Even within 19th c. Solar Mythology – especially the conflict between dark and light, good and evil – the sun as main framework may have arisen via Christian categorizing.⁹⁷ Assumptions of Greek derivation and (assumed) earthly referencing of myths, and assumptions of the power of sun in controlling earthly matters, may be blinding one towards retrieving specifics of concerns through a shorter term projection of a western past.

5.4 MYTHS, POLITICS AND FARMERS

Categorizing along evolutionary lines of religion and analysing texts of the past has led to various ways of perceiving what the texts say and could easily be in itself a study on the subject of heavenly bodies, science and mentality. The subject of long term tradition and shorter term research mentality and politics prevents even asking some questions on ‘barbaric’ practice, when working within a paradigm of religious evolutionism. As far as the classical to later texts one could read an unbroken line of concern with sky phenomena, as the examples demonstrate above. The only argument that northern societies were not doing anything with the stars or planets is based simply on the later date marking, and along the trail of, missionary texts. The anthropological examples serve to show extreme variations in what people find as culturally significant in the sky within cosmology.

Religion, myth, and politics became inextricably bound with the Indo-European debate from the mid-19th c., onwards to World War II.

‘On the one hand, a myth always refers to events alleged to have taken place long ago. But what gives the myth an operational value is that the specific pattern described is timeless; it explains the present and the past as well as the future. This can be made clear through a comparison between myth and what appears to have largely replaced it in modern societies, namely, politics’ (Lévi-Strauss 1963, 209).

The rise of anthropology in looking at ‘primitive’ cultures in the later 19th c. did develop through stages that shows up the fallacy of the assumptions of the analyses of categorizing through evolutionism in interpreting early texts. That one should ‘a priori’ think European prehistorics were engaged in sky matter speculation (Clark cited above) is effected exactly through regarding anthropological studies. While ethno-astronomists were defining the interest and complex integration of sky matters within various cultures, there was some wonderment on why little seemed to be happening in Europe along similar lines:⁹⁸

‘While the significance of ethnoastronomical studies in the New World has recently been recognized, studies of contemporary folk astronomy in Europe are practically nonexistent. Perhaps one assumes Europe has evolved so far beyond the preliterate world of Homer and Hesiod that peasant astronomy is non-existent. Yet, the planting seasons, general ecology, and certainly the skies of the remoter regions have not changed all that much’ (Aveni 1989, 11).

Why there was little noticeable within *mainstream* research may be due to the paradigmatic indigestion through the forceful reaction to Solar-Mythology, which did become identified with Aryan matters. This, together with Nazi reification of folk practice, exactly in regards to seasonal festivities, has made the subject very suspect for many. Nazis picked up on the swastika, then interpreted as sun symbol. In Chapter 7, taken in context with bracteate iconography, it will be suggested as the sign for the planet Mercury.

As to less heavily laden symbols, stars and something on folk belief were noted in the 19th c. The compendium of sources HWDA (NIX 762-782) gives an overview of star lore for some Germanic language regions. A variety of attributions are recorded: stars are regarded as rubies, silver nails or eyes, various animals and plants, and for use within divination within coming welfare. For example, many stars on Christmas Eve were a sign of a good catch of fish or fertility; or, if one counted nine stars each night for nine nights, marriage was foretold for the coming year. Yet, these types of belief were interpreted as stemming from medieval science, introduction of astrology, and bad weather conditions for seeing stars:

‘Der Nebel des Nordens entzieht den Sternenhimmel stark dem Blick der Bewohner, so dass erst aussernordische Einflüsse hinzukommen mussten, durch die die Deutschen zur Beschäftigung mit dem Himmel und den Einzelsternen angeregt wurden. Dies ward dann zuerst durch praktische Gründe (Osterberechnung) bedingt’ (HWDA, NIX, 764).

For a believer, establishing the dates of Easter might indeed be termed practical, as religion is very much about practical concerns of well-being. Stars as ‘souls and gods’ is also recorded, possibly very ancient, but difficult to separate from the imported knowledge (ibid. 770). Recorded are also that a falling star is someone dying; or, a star falling in the direction of a house means someone will die in that house; or, with each death, a star is born. Whatever the recorded beliefs may indicate, single stars played no role in early Germanic cult: ‘Einzelsterne spielen daneben zunächst [sun and moon]

bei unseren Vorfahren im Kult keine Rolle, und mehr als dass bei der Weltschöpfung “die Sterne” ihre Stelle nicht kannten, wird in der Völuspá nicht gesagt’ (HWDA, NIX 763).

In Chapter 7, suggested will be that the major source on Germanic belief, the Voluspa, has much more to say on stars. Generally, in snipping time away from long tradition, for whatever reason, conclusions on Germanic ancestors are drawn via others:

‘Die Belebung des antiken Sternenhimmels, der von uns übernommen wurde, mit tierischen Ungeheuern ist bekannt: wir haben Bären, Schlangen, einen Drachen, eine Glucke, Widder, Stier, Löwe, Pferd, Hunde u.a. in den Sternbildern zu sehen. Doch hat erst die Zeit der Herrschaft der Astrologie in Deutschland diese Gestalten auch für die Allgemeinheit lebendiger gemacht, und zwar in ihrer griechischen und orientalischen Form’ (HWDA, NIX: 769).

The above reflects general assumption about how folk practice derives. It is a hypothetical dribble-down interpretation of how the folk get their beliefs, practices and traditions. This is not now a recommended standpoint within research of European popular culture (cf e.g., Ginzburg 1988 [1986], Gurevich 1992, Rooijakkers & Van der Zee (eds) 1986, Vovelle 1990). Study of long-term transformations within belief could be given an impetus through gaining ideas from such texts as there are, as indicated above, be it those passages from Plato or an anonymous folk. These texts are incomplete and subject to many interpretations.⁹⁹ Recorded for some folk in Swabia and Hessen, at least, was the conception that stars were holes in the dome of the heaven:

‘Der Sternenglanz wird dadurch erklärt, dass man die Sterne als Löcher im Boden der Himmelsdecke anschaut und glaubt, der Glanz käme von innen her. Das Funkeln der Sterne sei der Schatten, den die Himmlischen zeitweise auf die Löcher werfen, wenn sie darüber hinwegwandeln’ (HWDA, NIX 767).

Chapter 4 was about archaeological holes in settlements, an interpretation of replicated patterns as stars, constellations. The following chapter is on constellations as night features pulling up the sun in integrating earthly practices of daytime activities within ritual, economy, time-keeping and space as dominated place.

Within belief in scientifically obtained models, we know that stars are burning ‘suns’, emitting light which has been travelling to our eyes for many millions of years. Space is infinite. Stars also stand for excellence and authority; as signs and symbols they are quite prevalent as part of popular culture, and as denotation, for example of ‘stars’ as immortal gods and goddesses of the silver screen. Negative reactions by colleagues to some of the conclusions from Chapter 4 presented in 1992–1993 were a mix of what has been briefly discussed above: some absolutely knew (i.e., believe) constellation perception derives from the Greeks or Babylonians; others were sure it is too sophisticated for proto-Dutch farmers; others seemed to have a deep-seated resentment to ‘the stars’, as somehow dangerous and very suspect. Interestingly, all three types of reaction could be bound to a not so long tradition of culturally imbedded belief in the evilness of these Powers of Darkness, as they may have been literally regarded by missionaries, and in opposition to the sun as symbol of Christ, newly introduced. All cited above were writing on other regions. The next chapter suggests how an integrated system of perceiving stars, as patterns, may have worked in Noord-Holland through the archaeological retrievable traces.

Chapter 6 The Powers of Darkness and Light: night and day of settlement space

Various strands from the proceeding chapters are used here for suggesting concepts of late pre-historic cosmology enfolded in settlement features. Basically, the interpretation concerns time and place, as various aspects of seasons, economy, settlement duration and the content of features. A few gender considerations are also put forward within these facets of meaning.

The logic of the foot-symbol to Tree-symbol analysis of Chapter 3 included materials stretching back past that of Schagen, and forward to historical points of discussion. A very long-term logic was suggested through finds and analogy. It is a historical argument, whereby some reflection puts one within long-term transformations by still being able to think in terms of material feet as Christmas stocking in association with Christmas Tree and seasonal ritual. The practices are still retrievable as embedded in modern thought patterns and action as transformations through continuous time. Not traceable as directly recorded is that pits form sky-constellation patterns and refer to the phenomena of stars. The patterns and accompanying deposits carry the argument in Chapter 4, and Chapter 5 delved into some texts of other areas, by which those of missionaries are considered most telling on pagan practice. Rather than illustrating later texts with archaeological findings, pre-historic traces can be used to define and then present tradition, as well as filling in the rather vague texts.

A common (religious) metaphor is thought decoded along the way, as materialized features are the pointers to aspects of the literal 'powers of darkness and light'. The 'Powers of Darkness', suggested here to be the night-time features (including the planets and moon) were evilized within later Christianising endeavour. The phrase 'Powers of Darkness' is now commonly understood as a metaphor, but here these powers are taken in a literal sense within timekeeping, economy and religion for the pre-Christian period of the settlements. One must conclude that while planets, sun and moon might have been seen as gods, the constellation patterns were images, as pictures. The holes were filled with materials for the afterlife, for the inhabitants themselves.

This chapter first regards the layout of the constellation patterns and general directions common to the sites discussed in Chapter 4, but here in regards to motion of the revolving star patterns in conjunction with the sun. Features as lines pointing to the revolving patterns and the sun are discussed. The model of three seasons, as put forward in Chapter 2, is further specified and related to the four constellation patterns at Schagen Muggenburg-I. Subsequently, one position is taken through time of the sites, as a tradition, of the suggested iconographic Horse's hoof, while the anthropological theme of 'binding' is taken in looking at materials for one site. Different horizontal scales and directions are used of settlement features of both Schagen sites to begin suggesting structural relationships between the patterns and inhabitants. Then, vertical dimensioning of features is taken through the theme of inversion to combine inhabitants with ideas on gods and images. A short section on implications for surrounding settlements, as com-

munity of ritual, follows. The close of the Schagen sites, and many other settlements of the region, were marked by covering them with mounds, and an interpretation is put forward for this aspect of dead settlement landscaping in the 4th century. Scale as different state of the settlements includes a place within the natural landscape as tri-partition, for the coastal settlements, within conception of the tri-partition of the night sky.

6.1 TO ORIENT THEMSELVES

Risings and settings of constellations can be used to tell time in their cyclical rounds through the year. Alignments and exactitude was a topic touched upon in Chapter 5 as part of the megalithic debate. This section does not use lines of settlement features as an argument for existence of the figures. Most important are the patterns of features at the different sites and materials interrelating with the earthly and the sky phenomena. Spatial orientation and movement within ritual has long been a theme of anthropological studies (cf Parkin 1992), and some of the examples of cosmology given in Chapter 5 illustrate the point. The following general statement within cosmology as broad research field can be taken as the broad meaning of why 'orientations' should be sought at all:

'...symbols of space and its order most clearly illustrate the religious act of orientation, that is, the fundamental process of situating human life in the world. Orientation is the conscious act of defining and assuming proper position in space' (Eliade & Sullivan 1987, 105).

There are obviously numerous lines one can draw through features of the plans. Some of these lines seem more sensical within an internal logic of seasonal concerns. These story-lines are more important than any exact alignments to the horizon. The general place on the horizon is important for combining time with the time of economic activities.

Some constellations are large figures; coming up over the horizon, sightlines can intersect with them at any number of points, on certain stars, or on 'empty' areas, as body parts, that may have been a target, enclosed by the stars of the figures. The reoccurring patterns, arranged similarly within the sites, were activities as cycles within a subsistence economy practiced at specific places:

place:time::activities:seasons

Two types of concerns are interpreted as having been marked: those formed by the ground iconography pointing to themselves in the sky; and, the directions to the sun, but built-in to the night-time figures. General alignments are read as integrating night *and* daytime phenomena enfolding the yearly segmented but cyclical time of daily life. It is through looking at these spatial arrangements as time/activity constructs that something of the gender economics of a settlement can also be suggested.

The dome of the heavens is still an apt phase, whether it applies to that stretching from horizon to horizon, or that seeming to revolve at night around a point, in the north (if you are standing on earth within the northern hemisphere). Many still know how to find the direction of 'North' through using the Greater Bear/Big Dipper to find the Polestar/Polaris, the near north, celestial pole. Standing on the north Pole, the Polestar is straight above; at the equator it is at the horizon. In Amsterdam, Polaris is now about 52° above the horizon. Stars appear to rotate along the same path around the Polestar (it is not yet celestial North; stars are measured in degrees from the celestial equator, at 0° , which is called their declination). For all appearances (thus, from earth and not within the science of why it is so) the background of stars is a revolving 'dome', the centre the celestial pole, now approximately the position of the Polestar. The dome is tilted relative to the horizon. At the latitude of Amsterdam (c. $52^\circ 35'$), those constellations closer to the celestial pole, that around which stars seem to be revolving, are always visible such as the Greater Bear/Big Dipper, Cassiopeia, and Dragon that follow a path around, and c. 30° , from the Polestar (thus, a declination of about 60°). The stars of these constellations are always above the horizon. Other constellations are further away, including three of the four discussed here, which dip below the horizon, and are not always visible at night. The fourth constellation, Hercules/The Kneeler remains partially visible. The constellations have a yearly 'life-cycle'. The point for the discussion is important (cf also Chapter 7).

Of less importance is the changeability of the night sky through a very long period. While stars seem to circle around the Polestar now, this is a changeable situation due to what is known as the precession of the equinoxes. Within a cycle of about 26,000 years, the north pole of the earth, wobbling on its axis, describes a circle around a part of the heavens. Hereby, for the long term, the position changes about which the stars seem to be revolving.¹⁰⁰ For example, in 1 AD the Polestar was about 12° away from a point (marked by a dim star near the tail of Dragon) around which the stars seemed to be circling. In contrast, about 7,500 BC the stars would appear to be circling around the star of the right heel (τ Hercules; position K6) of the constellation Hercules,¹⁰¹ and the 'Polestar' was circling around this point c. 44° away. If one were charting through the millennia where stars rose over the horizon, there would be a marked, but gradual change.¹⁰² Exact alignments could have been set out to one star, but the alignments would differ through time (cf North 1996, 23–26). Correction is made¹⁰³ for determining where and when (there is also a time difference) stars arose due to this gradual change in the relative positioning of the earth's north pole to the stars, as the shift in the celestial pole. For the time period in question (600 BC–350 AD; Amsterdam), the difference is small. For example, Aldebaran, the brightest star of the face of Taurus/the Bull, would have shifted 7° during the period rising more to the north over the horizon (from azimuth c. 78° to 71°), and about three days earlier. When exactly is another problem, as it has to do with how far above the true horizon it could be seen.

Visibility of a star at the horizon (extinction angle) has to do with the magnitude of the star, the quality of the lower atmosphere, the altitude from which one is viewing, the height of the actual horizon, and how far the sun is under the horizon. Viewing conditions were certainly not optimal for places such as the settlements here discussed, not far from the sea and hardly above sea level. The earthly landscape of the settlement was (is) more or less flat, with only low dunes to the west, near the sea. Stands of trees may certainly have been at some distance.¹⁰⁴ As noted, conditions for seeing stars generally would have been exceedingly better in the past, now dimmed through increasing

atmospheric and general light pollution, certainly in the Netherlands.¹⁰⁵ However, neither exact days of the year nor exact alignments to certain stars are important for this present study.

The patterns were set out and there was some adjustment to actual proportional distances between how the pattern looks in the sky, and looks on the ground. This could have been done for purposes of aligning certain features on areas of the horizon. As stated, and obvious, one can draw numerous lines joining up feature dots on plans, going various directions: those few to be discussed and shown (figs. 55 & 56) could show interest in general directional indicators. These seem to make sense within the framework of stars, or areas framed by stars, as parts of constellation ‘body parts’ of the patterns distinguished.

Keeping track of time through constellations can be done by charting the positions, for example, before the light of dawn or at the close of day – that is, coupled to the arrival or departure of the sun – watching what happens near the borderline of time between night and day, along the horizon, the border zone of lived and cosmological space. As cited in Chapter 5, Tacitus had mentioned that Germanic people (as had Caesar on the Celts) started the day at night. This is still done in ‘The West’, where the new day begins rather arbitrarily at midnight. ‘Night ushers in the day’, as the saying goes.

Through the classical text indications, the system of charting the hours before dawn was that system first regarded for the constellation movements through the year. Importantly, these constellation movements before dawn better specify the times of two economic high-points of the year, suggested as correlating to ritual events and types of initial deposits, bound to digging and filling pits as suggested in Chapter 2 (fig. 11). In concert, as combinations of constellations rising and falling simultaneously, the storyline becomes even better defined through regarding both eastern and western horizons, at the time before dawn.

The constellation figures could be perceived as pulling up the sun, which then frames the time of many human daily activities. As months go by, the same constellation is progressively higher – away from the eastern horizon – before being blighted by light. Then, descending towards the western horizon, the time comes when it is no longer visible during the hours before dawn.¹⁰⁶ The star or constellation is absent for a period of weeks or months before dawn, until it is ‘reborn’ again in the east, as an eastern horizon figure in the year. The constellations are however visible during various nights, doing their rounds, coming up and going down in the same positions at the horizon as they do for the yearly cycle, as defined by dawn and the rising sun. Thus, within this system of tracking time, what is happening along the eastern and western horizon about two hours before the sun comes up, is the seasonal cycle through the year. But, the longer-term cycle can sometimes be seen within one night, and some mention will be made on this aspect in section 6.2, on the Schagen Muggenburg-I site.

A few general lines to the horizon are shown in Figures 55 & 56 for the patterns of three of the five sites. Plans of directional indicators are not presented for two of the sites: Uitgeesterbroekpolder 18 has too many features and at Schagen Muggenburg-III the area excavated was rather small.

Four of the sites are settlements characterized by a traditional mixed farming economy, primarily concerned with livestock rearing, with a very great emphasis on cattle. The exception to an enfigured spatial context may be the Horse pattern at Velsbroek-B6, with the relatively large number of metal finds in the channel adjacent to the pattern. Implied may be a more communal context and special ritual site. Digging the channel itself would not seem to have been an individ-

ual family enterprise, and for the region, it would be extraordinary if one family had the quantity of metal finds deposited in the watery channel. However, it must be mentioned again, the duration of use of the channel is unknown; the Roman import finds cannot be used for dating the site.

6.1.1.2 CONSTELLATION MOVEMENTS OF HORSE AND COW

Standardization is used below and all mention of times is approximate. The stars mentioned are at an altitude of 5° degrees above the horizon, unless otherwise noted and the altitude of the sun is minimally -12° below the eastern horizon, thus at least two hours before sunrise. The visibility of the constellations after the sun has set is not taken into account, unless noted. The latitude used is for Amsterdam (52°35'). Azimuth is measured from north. By convention, Netherlands grid north¹⁰⁷ is shown on the plans, which is less than 1° difference (to the west) than geographical north for the positions of the sites discussed. There are therefore variously inbuilt factors to stymie discussion on 'exactitude'. Drawn 'lines' can be juggled variously over the features, and obtaining differences is easily accomplished, and those shown are to the stars, and sun, as described below (and in section 6.2).

First, the general characteristics of Pegasus/Horse and Taurus/the Bull (but here considered a Cow) will be gone into for the time in the night sky before dawn. Then, the sites of Velsbroek Hofgeest, Uitgeesterbroek Polder 18 and Velsbroek-B6 will be briefly discussed. (Both Horse and Cow, and the two additional figures of Greater Dog and Hercules/the Kneeler will be taken up in section 6.2 on Schagen Muggenburg-I)

constellation Horse (Pegasus/Horse) and the sun

Horse is the largest of the four figures in the sky. On the ground, the pattern consistently has inbuilt directions of features, which seem to be referencing the Winter Solstice set/Summer Solstice rise. During his cycle, Horse rises up in the east, nose first with his back angled (to the south) to the horizon, legs higher in the sky. He is upside down. A very large constellation, the stars (hind leg to nose) came up over the horizon between an azimuth of about 69° to 96°. Horse has a life cycle in the sky from eastern horizon, arching around to the south where he was higher and about halfway between horizon and that directly overhead (the zenith) and then around and down to the west. The officially recognized 'mouth' as the star Enif, on the ground position H2, rose almost due east in mid-January.¹⁰⁸ The entire constellation had fully risen on the east by late March, with the centre of the square of Pegasus almost due east. The sun around the time of the Spring equinox would be coming up where Pegasus had been.

Early September, Horse's skull (Enif, H2) went down almost due west. During the hours before the Autumnal equinox rise, the square of Pegasus was going down, Algenib (H8) about at the place the equinox sun would set. The hind leg corresponding to the settlement pattern (H10, δ Andromeda, not now officially part of the constellation) would disappear in the hours before dawn before mid-October,¹⁰⁹ between west and northwest.

Horse as fully risen constellation starts off the period of regeneration of plants and livestock. If the first rise of his skull (Enif) was recognized, there would have been about a month between winter solstice and the beginning of the rise of the constellation, which precedes – foretells – the growth cycle of the year. The 'Winter' pits (Chapter 2) were distinguished through a horse bone deposit as initial deposit. There was however no good ageing criteria present for an exact

period, except possibly the occurrence of wild fowl. Northern text indications were taken for the importance of ‘mid-winter’, and was taken to be the winter solstice (Chapter 2). The inbuilt lines to the sun within the Horse pattern, and horse deposit as part of the form of pit layout in threes within the late settlements bind the period as looking forward to Horse’s rise.

The figure of the ‘Rider’ as astride the pattern Horse at two sites, Velserbroek-Hofgeest and Schagen Muggenburg-I, but not an officially recognized constellation, was suggested to extend to part of Aquarius – the head (R1) with dim stars (ψ 1–3 Aquarius). These would have come up in the southeast and set into the horizon in the west-southwest. As with other dim stars (such as H10, δ Andromeda), the entire pattern would have been known from darker areas of the sky and probably where they would fall at the horizon as relative positioning to those stars that were visible of constellation Horse.

constellation ‘Cow’ (head of Taurus/the Bull)

The constellation of Cow (Taurus/the Bull) follows the constellation Horse along a similar path. The head/face of the constellation rose on its side, the bottom of the V-shape to the south. The head position of Taurus/the Bull, with brightest star Aldebaran (position C9), would have been visible to the east the second week of July, spanning only 9° of the horizon (about azimuth 84–93°: Aldebaran to λ Taurus, position C15, but a dim star) or only about 4° when taking just the Hyades and Aldebaran into account. The group of Pleiades, which are important for many cultures, and within western astronomy considered part of this constellation, preceded the rise of the face of Cow, around the time of the Summer Solstice, but most probably could not be seen.¹¹⁰ They are about 11° above the Hyades, during rise of the Hyades on the east.

Following Horse around the sky to the south, and then to the west, Cow also disappears on the west. For the earliest site dated about 600 BC, the face of Cow, with Aldebaran (at alt. 8°) almost due west (az. c. 272°), was preceded by the Pleiades somewhat further to the north (at c. alt. 5°, az. 286°). For the dating of the latest site (c. 350 AD), this had become about 279° and 292°, respectively. The V-shape of the constellation sinking into the western horizon was upright, and thus the pattern on the ground at the two earlier sites might be as considered as a mirror image. The situation of the pattern at the two later sites, Schagen Muggenburg-I & III, is more of a very approximate map of the eastern horizon figure, but turned towards the northeast in the ground. The constellation disappeared before dawn during the first (earlier sites) and second week (later sites) of November (Aldebaran alt. 5° on the western horizon; sun -12° under the eastern).

6.1.3 ON DIRECTIONS AND ASSOCIATIONS: VELSERBROEK-HOFGEEST (600 BC), UITGEESTERBROEK POLDER I 8 (2ND/1ST C. BC–1ST C. AD) AND VELSERBROEK-B6 (2ND/3RD C. AD)

The two constellation patterns of Horse and Cow are thought delineated at the sites earlier than the Schagen sites. There are possible indicators for the patterns Hercules/The Kneeler and Greater Dog at these sites, but the subject will await complete publication of these sites.¹¹¹

Velserbroek-Hofgeest Horse pattern (fig. 55)

Figure 55 shows some lines of features which could demonstrate inhabitant interest in pointers to the sky where Horse rose and set. There are also built-in pointers to the sun. In using this

marked Horse as time-keeper, one could stand on the mound (or anywhere), and look to the east to have a view of the horizon.¹¹² Most conspicuous as a feature, however, is Horse's back, as wooden beams laid into the ground. This feature could have been laid out as an approximate orientation to the Summer Solstice rise–Winter Solstice set, and similar lines are associated with the pattern Horse at the other sites. The beams had been buried prior to agricultural activities, forming the backbone to this part of the settlement economy of cultivated soil, as it forms the backbone to the Horse pattern.

The beams join the star-dot points of H7–H8. Directionally, Horse on the ground is going away from the Winter solstice set, pulling up the sun towards the highest rise of the year in the northeast. This is opposite to what is happening in the sky, as Horse is moving towards the south. The sun, rising higher up (that is from the southeast to northeast), is going in the opposite direction. As time, however, Horse is rising higher (in vertical aspect) as the sun rolls up the horizon.

The constellation Horse, as fully present in the sky by late March, would be correlated to a number of activities getting under way, including getting livestock out to pasture, if they had been stalled indoors during the winter. Regeneration of plant life would be marked by this period and preparing the ground for cultivation could begin. Piglets and lambs would increase the livestock holdings, and in June calves would be born. In the period of the Summer solstice, Horse was above the southeast (thus above where the Winter solstice sun would rise, six months later).

Horse goes down in the west, and looking from the mound over the area of cultivation, and over the buried pattern in the ground, the constellation would start setting in early September, and could be associated with harvesting.

At this early site, Horse also has the possible Rider pattern, similar in layout to the Schagen Muggenburg-I features. Suggested is therefore that by about 600 BC, an anthropomorphic figure is already associated with Horse, as is wood, in the beam of Horse's back. Following the indications of finds and positioning at two of the other sites, through time, and classical texts of the most important god as being 'Mercury', one arrives at an Odin/Wotan/Wodan figure, here as image by 600 BC, on his Horse. Taking 'Mercury' as literally meaning the planet, it is associated with the sun at dawn and sunset – hard to see, mysterious, as is the figure of later, recorded myth. There is here also the association of this Horse pattern with wood – his back as oak beams. The text of 'Yggdrasill', the Tree of Life, is a compound word meaning 'Odin's Horse', which will be gone into more fully in Chapter 7. As mythical object/figure of regeneration, life and death, the figure of Horse with Rider can be identified as rising and falling during the year and period of regeneration in plant and animal life.

Velserbroek-Hofgeest Cow pattern (fig. 55)

The position of the rise of the constellation Horse in time is the place of the rise of constellation Cow. As a literal extension of features, this is seen through the end of Horse's hind leg position (H10) on the ground, leading into Cow's C2 position, where it stops. The ground pattern of Cow is primarily dug into an area of pasture. The period of rise of the constellation in late June/early July is associated with the calving period, and could have formed the association with the close of this economically important phase of the year. Calves were also those last-born of the livestock holdings, and brought the filling out of the herd to a close.

The mound (with calf burial) could have been used to see the constellation rise to the east. Or, for example, as Figure 55 shows, with a line to the general direction if standing within the ground pattern (on C4), looking over C9. Position C9 in the ground is that of the brightest

star, Aldebaran, and looking over C9 from C4 would be the direction of looking towards this star rising in the sky. Mentioned for pattern Horse was the beam oriented to Summer Solstice rise–Winter Solstice set. The Winter solstice is nearer to the rise of Horse. Cow rises nearer the Summer Solstice, and referring to this event could be the arrangement of three pits of position C14, as a line with orientation similar to Horse’s back.

Cow, the big picture on the ground, as she is the biggest economic asset, vanishes rather quickly, within a very small part of the sky. Features not apparently star positions (C12, C13, C14) are present, and if joined from mound to C15, give a direction for the Pleiades to the west. The end of the story, as the face of Cow sinks into the western horizon, could be seen standing on position C9, Aldebaran, looking towards this same star in the sky, over the feature with a cow’s skull (in C15), within the woven circle. This happened around the time livestock would have been slaughtered, rounding off the life of some livestock, and possibly near the time the cattle remaining may have been put back in the byre for the winter season.

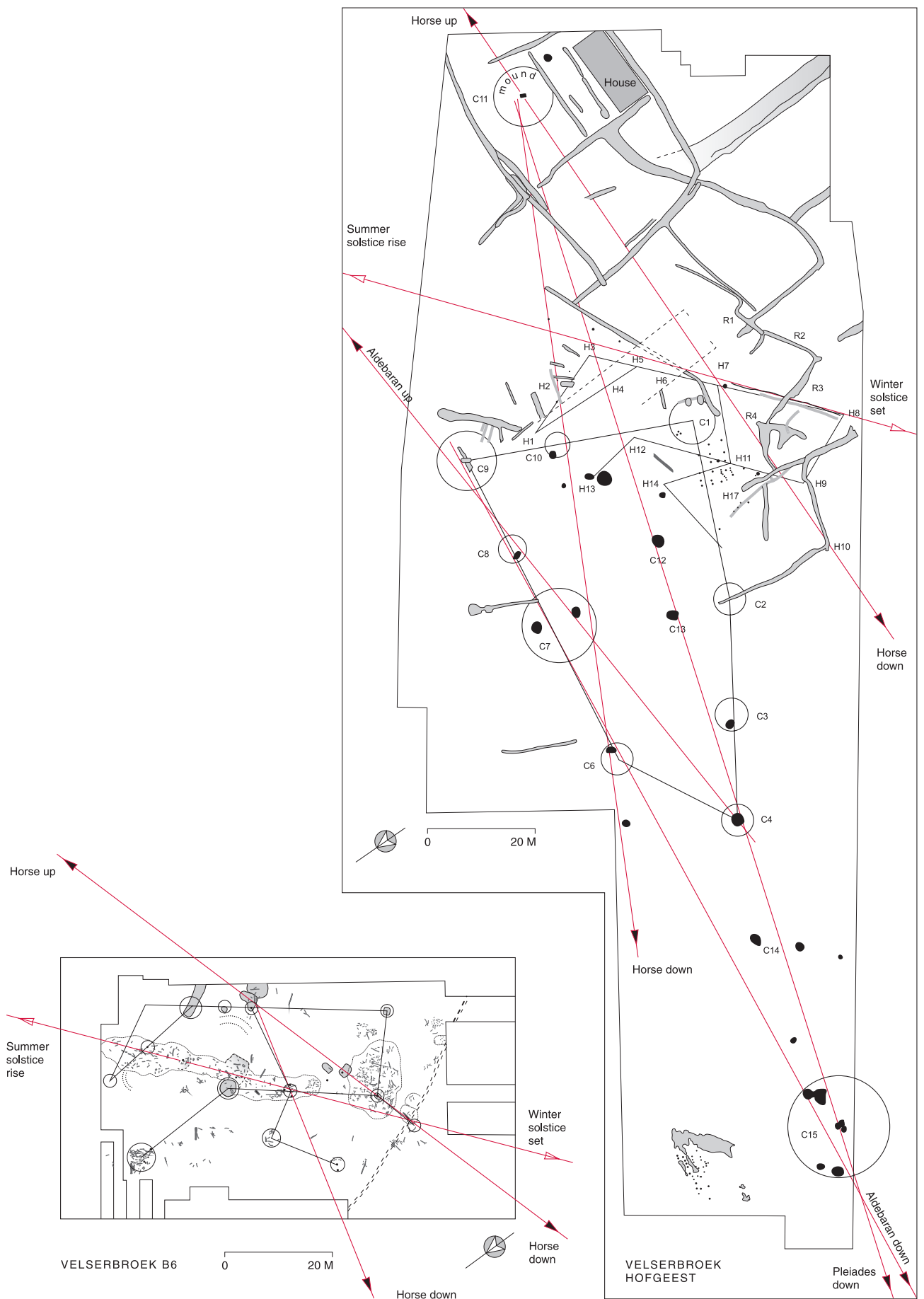
The entire cycle of ‘birth’ and ‘death’ of the constellation could be followed during these November nights as well: after the sun had set, Cow rose on the east, and before dawn, the pattern had circled to the south and had died in the west. Through the year, both the rising and the setting of the constellation can be considered as having framed those periods most important to the subsistence welfare of the inhabitants of the settlements, of the end of the birthing period to the time of slaughtering livestock.

Uitgeesterbroek 18 Horse and Cow pattern

The Uitgeesterbroek site obviously has a lot of lines, as features etched into the ground. Patterns of Horse and Cow (figs. 43 & 47) are laid out similarly to the relative positioning at the 500–600 year earlier Velsbroek–Hofgeest site. But Horse, as an ‘activity area’ is above – to the southeast of the field system – rather than imbedded in a cultivated area as at the earlier site in the Velsbroek. Here in the Uitgeesterbroek, the pattern made up of large circles, the area could have been used for enclosing livestock. Enfolding livestock as area would be analogous to the time of the constellation rise, enfolding the time of birth of new livestock. This could also be the form association of the large arcs of features 1321 and 1385, forming the iconography of a horse (fig. 43): starting in the east going around to the south and ending in the west, similar to the path of the constellation in the sky. Two circle centres, that by H7 and a smaller partial arc in Horse’s head between H2 and H3, could have something to do with a line very roughly approximating the Summer Solstice rise–Winter Solstice set (at the centre, and approximate to within 4–6°), or to the western side of the inscribed circle which is better (c. 50° azimuth for the Summer Solstice).

Directional indications for Cow’s rise are the numerous gullies dug into the field over the area in which Cow, as the pattern, was imbedded. The site was periodically flooded, the earlier phases of gullies were obliterated, and set out again and again in the same general direction. There was no slope of ground. The later phase of pattern Cow had features with a more humus rich fill,

Figure 55 VbHof & VbB6: Lines drawn along features of the constellation patterns which could show interest in charting the figures in the sky in rises and sets along the horizon.



indicating that the area had gone from arable to pasture. Some positions of pattern Cow were re-marked by the burial of large parts of cattle. For this later phase, the association of pasture and the pattern Cow are similar to Velsbroek-Hofgeest.

Also similar to Velsbroek-Hofgeest is the positioning of a mound (C11), but because of the difference in layout relative to north, one could look over the rump of the Horse pattern to see the Horse constellation setting, but one would not be looking over the pattern Cow at all to view her demise. The directional line splitting Cow's skull (to the Pleiades) was well marked at Velsbroek-Hofgeest for the slaughter period. At this later site, it appears more attention was given to the Horse figure – in the ditches and deep shafts – than to the features of the pattern of Cow. Deposits of the later period of the cattle burials were considerable, however.

Velsbroek-B6 Horse pattern (fig. 55)

Only the figure Horse was distinguished at this site, along the northeast of the watery channel with deposits mainly of metal and wooden juniper 'spears'. As the star positions were still marked with standing posts, the lines drawn (fig. 55) are along point positions.

A Summer solstice rise – Winter solstice set alignment is found through the lower part of Horse's body. In this case, it is the very well marked path from H2-H11 (H1 was marked by a horse's partial jaw). The broad, linear feature along this trajectory had the character of a trampled rather than a dug feature, aside from the clear pits along the way. The processional is implied, possibly in conjunction with throwing materials into the channel, and could be directionally towards the setting Winter Solstice Sun, about a month before the start of Horse's rise. Again, Horse is also directionally as the ground pattern pulling up the Winter Solstice sun to the later, brighter months.

A line to rise and set generally is shown for the constellation, through the square:

From the position H10 – marked with tibias of livestock, and a juniper trunk in form similar to a tibia, at this part of Horse's patterned anatomy of 'tibia' – one could look across over H7, and see Pegasus passing (az. c. 71°; at an altitude of c. 9°) beginning with the foreleg (H12, 1 Pegasus) if visible, to Scheat (H11) to Alpheratz (H9), the top of the tibia, and δ Andromeda, H10, the distal tibia position on which one was standing. The deposits of tibias of sheep/goat and pig at the ground position of H10 could be in reference to the rising of Horse as spanning the time of birth of this part of the livestock package. Looking the other way, standing on H7 looking over H10 (c. az. 258°, also at a higher angle in the sky, c. alt. 30°) one could see the stars of head, back and rump (c. alt. 16°) going down.

Horse and the set of the Winter Solstice sun can be combined in the sky, as they are on the ground by the direction of the worn path – possibly a 'processional way' – and the deposits in water along the west of the pattern Horse. Mention of planet Mercury was made in combination to Odin/Wotan/Wodan, and Horse. The planet is apparently difficult to see, but would perhaps be visible above the horizon every 6-7 years, after the Winter solstice set. The constellation Horse would have been visible, more to the west, when it got darker, going down during the night.

6.2 SCHAGEN MUGGENBURG-I: 300 AD FEATURES POINTING TO CONSTELLATIONS RISING AND FALL- ING (FIG. 56)

Of the two Schagen sites, only Schagen Muggenburg-I will be gone into for directional indications.¹¹³ A few have been shown over each of the four constellation patterns in Figure 56A-56D. Again, many could be drawn, but those shown could demonstrate inhabitant interest in aligning the figures on the patterns in the sky. With four overlapping figures delineated, the Schagen settlement area forms a storyboard, whereas interpretation can be done through combinations of materials interconnecting the patterns, as seasonal timepieces.

6.2.1 HORSE'S RISE AND DESCENT (FIG. 56 A)

The position of Horse's foreleg joints are marking an area with traces of iron-working and other outside production activities. For the remainder of this Horse and Rider pattern, there were no specific surface finds to suggest specific activities. The recovered features are all part of the patterns. Lines are shown to Enif (Horse's mouth, H2) rising and falling, going through the horse burial (H7) and hoof (H15), or the rise and set of the square in general. A line to the west incorporates the horse burial and the foreleg group of pits, well filled and one with cut tree roots. This line is towards the setting of the foreleg joint position (H14) through which the line has been drawn (Matar: c. az. 300, alt. 5°) and finally to the disappearance of the back leg, H10 (δ Andromeda: az. 300, alt. 5°).

Lines of Summer solstice rise – Winter solstice set are also shown over Horse, and incorporate many of the features, including those of Rider and the horse burial, and Horse's foreleg joints as aligned point positions. The general direction of the dwelling is parallel to these lines, but may have more to do with the pattern Hercules/The Kneeler and Cow, in association.

6.2.2 COW'S RISE AND FALL (FIG. 56 B)

The Cow figure is lying here in settlement space turned as a model differently oriented than at the two earlier sites. She also has the house between the eyes, a difference in activity area between pasture land, at Velsbroek-Hofgeest, and cultivated fields and pasture at Uitgeesterbroek Polder¹⁸.

The best-filled group of pits found for this pattern is position C2, containing many deposits including a pit with an inventory of ten complete pots, and a pit with wooden objects, and two partial piglets, at death 7-10 weeks old. As the 'Spring' indicator of the pit of this group (Chapter 2), the designation can be better specified as having to do with the rise of the constellation 'Cow' early July. Using the position of C9 (Aldebaran), looking over C2 (δ 3 Taurus), the Pleiades could be found, and somewhat more to the southeast, the rise of the Hyades and Aldebaran, two days later. This line also passes along a post in a pit, of the knee of Hercules/The Kneeler (position K5). Another line, two-directional, starting at a large pit (f268) not taken up within a pit grouping, is shown through C1, and through position K1 of Hercules/The Kneeler. Both of these lines to the rise of constellation Cow start at or near the border of settlement space on

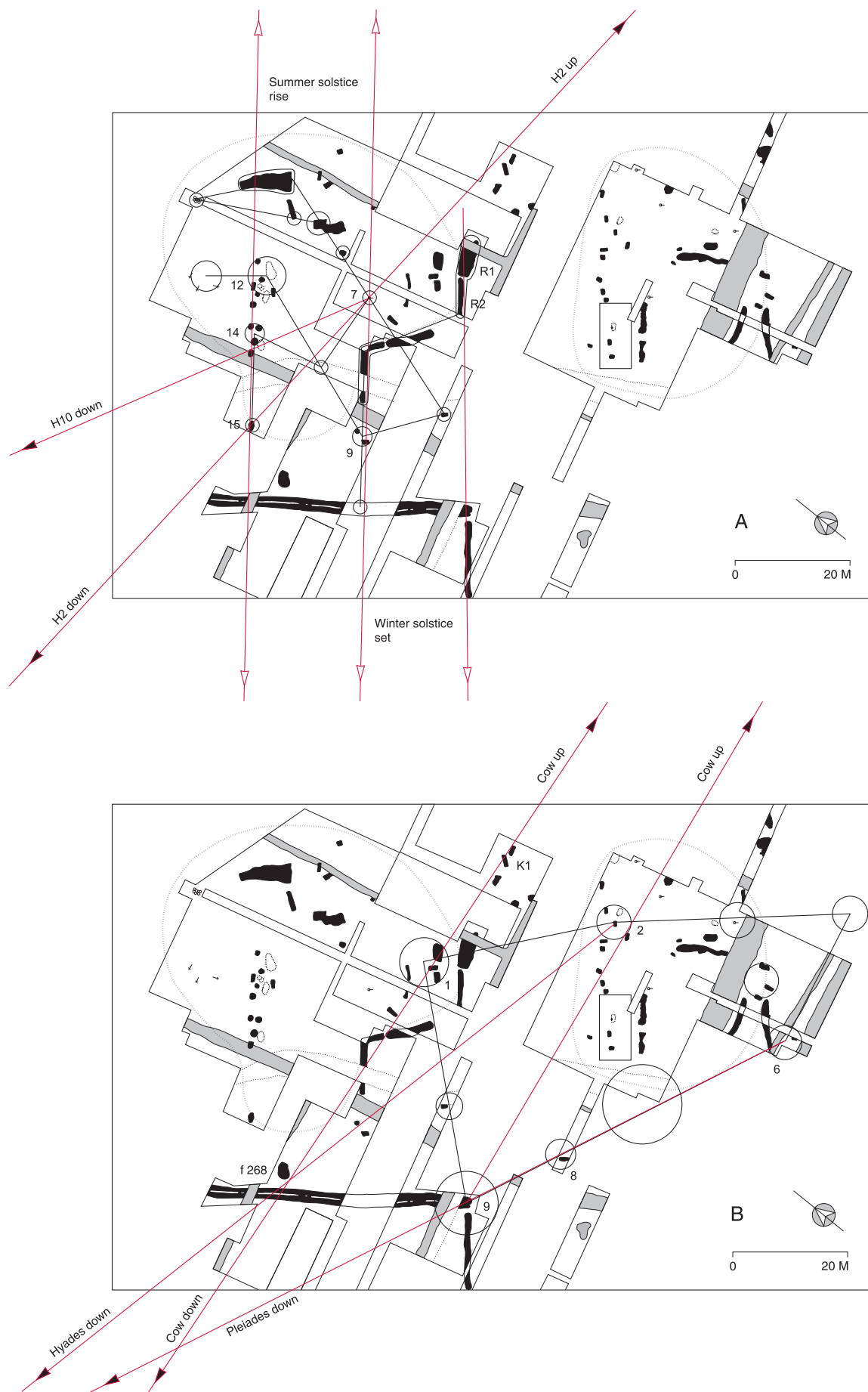
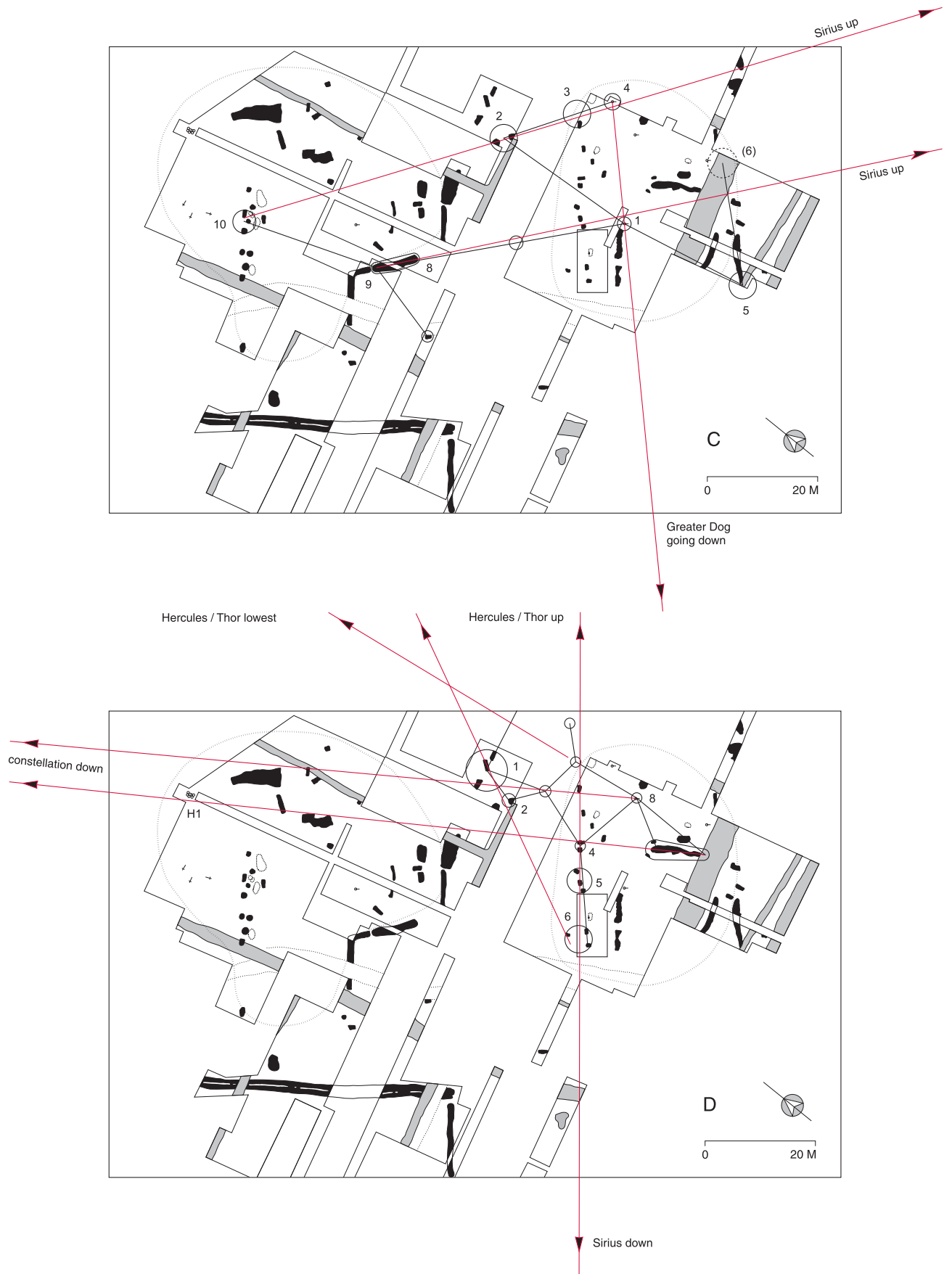


Figure 56 SM-I: Lines along important features of the four constellation patterns, to the figures at the horizon. The patterns of Horse (A), with sun orientations; Cow (B), Greater Dog (C) and Hercules/Thor (D).



the west as defined by the linear feature filled with butchery waste of bones, 91% from cattle. Thus, regeneration of the Cow figure in the sky could have been lined up with standing near remains of slaughtered cattle.

The same line to the west is to the constellation (alt. 15°) going down at the end of October.

Particularly for the start of the slaughter period, a story-line is told on Cow's demise: Standing near Hercules/The Kneeler position K1, which is his raised right hand, with a pit containing a pseudo hammer-axe and a club-like tibia of a horse, and another pit with two complete cattle skulls, one could look over position C1, the corner of the pattern's head, toward the large pit f268, with split skull. Cow as constellation sinking into the western horizon conjoins with the time Hercules/The Kneeler rises on the northeast, a combination that will be gone into further, below.

Low altitude directions to the Pleiades (c. az. 295°, alt. 3°) and Hyades (c. az. 283°, alt. 4°) are shown as well, the first along the side of the face (the line of the model itself) to the corner of the butchery waste ditch and the other from C2 to the large pit (f268) with split skull (fig. 56 B).

If there is some action as time told through these lines, the period is the start of the fall to disappearance of the constellation Cow, and again could be marking beginning and ending of the slaughter period, the first two weeks of November. Before this had occurred, however, the two other constellations had come up. They both overlap Cow on the ground, and this is an aspect where marked place combines overlapping time.

6.2.3 GREATER DOG (CANIS MAJOR) PATTERN (FIG. 56 C)

After Cow, the next of the patterned settlement constellations to rise was Greater Dog. On the ground, he sprawls over the entire settlement from the features bordering the area to the south of the house, to the activity area in the north of excavated settlement area. Greater Dog is pulled down out of the sky as horizontal aspect more closely related than the other figures to his vertical stance as figure at the horizon. He does not have a very long life span as sky feature at this latitude, but includes the brightest star in the sky, Sirius.

The rise of Sirius could be seen, before dawn, in the southeast the last week of August. This place on the horizon could be found standing on his right foot position (D 10) looking over positions D2 to D3 (pit f248 with kilos of burnt grain) and over D4, the burial of the very old, and very large, male dog (altitude sun c. -12°; altitude Sirius c. 4°, azimuth c. 124°). Or, as somewhat higher in the sky (altitude c. 7°), the star could have been found (if the roof overhang of the dwelling did not block the view) by looking over the linear feature of Dog's back, doubling as Rider's thigh, along the post in Hercules/The Kneeler's K5 position, along the end of the dwelling, and along the burial of the young, great dog (f238) buried next to the dwelling.

Sirius moved along to the south, at the highest only about 22° above the horizon, by the end of September. The time could have something to do with the harvest, also considering the exceptional pit with grain (D3) in his pattern.¹¹⁴ His rise can also be seen in combination with the fall of the constellation Hercules/The Kneeler, described below.

From the end of September, Greater Dog started descending to the southwest. His demise in the sky could be seen looking from the burial of the old dog, across that of the young dog, along the side of the dwelling, to the southwest. Although the line could refer generally to the constellation, the line shown could also point to Sirius (azimuth c. 225°) about 10° above the

horizon. It is the same time, and a similarly high elevation as that found in the line shown for the general Cow (fig. 56 B), with Aldebaran at about 13° , almost due west (line K1-C1-f268). Cow and Greater Dog are together on the horizon, going down at the time suggested to have been the beginning of the slaughter period, and disappearing during the second week of November, before dawn. Also on the horizon, in-between the two figures, and also a striking combination, is the constellation Orion, the three stars of the belt c. 12° above the horizon (Alnilam, azimuth c. 248°). Thus, a line of brilliant stars were visible from Aldebaran, the three of Orion's belt,¹¹⁵ and Sirius, sinking for the next few days, closer to the horizon. On the eastern horizon, the last figure of the suggested constellation patterns in the ground, has been circling around, and must be seen in concert with the others.

6.2.4 HERCULES/THE KNEELER: THOR AND HIS PILLAR (FIG. 56 D)

A human figure, Hercules/The Kneeler takes a different path in the sky relative to the animal patterns. Horse pulls Cow along a path similar to his own. Greater Dog has a shorter trajectory (being further away from the celestial pole), remaining relatively low in the sky, but ending a 'life cycle' at the same time as Cow, going down about 45° apart. Of the four constellation patterns of the settlement, Hercules/The Kneeler is that nearest the celestial pole, and he never entirely disappeared. He is in general a dim figure, as far as magnitudes of the stars are concerned (tab. 13). As for the suggested Rider pattern (which is even dimmer), astride Horse, better conditions were required for seeing Hercules/The Kneeler, relative to the animal patterns.

Remaining in the sky at his lowest position above the horizon, due north (keeping a minimum of altitude 5° for visibility), were the right hip star (η Hercules at c. 6° above the horizon; K4) and his right leg to foot (knee as σ Hercules, K5; and foot as three stars (τ, υ, ϕ Hercules) at an altitude of about 13° . The left leg was also above the horizon, through the recovered patterns, altered to include the very dim M92 globular cluster through the linear features at both Schagen Muggenburg sites (cf the 'dimness' factor within inversion as heavy marking on the ground, Chapter 4).

From this lowest position at the horizon in the north, the constellation rose from mid-September to a position over the northeast by the end of October (centre of the torso c. 16° above the horizon azimuth c. 47°). His stance was with right hand angled to the east, legs higher to the north: that is, nearly upside down, something he shares with constellation Horse. During this time, Horse had been going down and had disappeared over the west-northwest. Constellation Cow had reached the west, and Greater Dog the southwest.

One of the lines to Cow's demise in the sky (fig. 56 B) used the right hand position (K1) of Hercules, with the hammer/axe, and club, and the pit with two cattle skulls, to the pit with split skull (f268), near to the bordering slaughter waste ditch with cattle bones. As movement and reflected by deposits in his pattern, the rise of Hercules/The Kneeler in the sky is at the cost of Cow. It is the slaughter period.

Figure 56 D shows a line from the ground pattern of Hercules's right foot (K6) to position of the elbow (K2) to the right hand (K1). In the sky, this could refer to the centre of the torso, around mid-October. A line is also shown along the house, along the post in his right knee position (in K5), over an important position of pattern Cow (C2), and the grain pit of pattern Greater Dog (D3), to the horizon. Looking over these features the first week of November, the middle of the torso, c. 20° above the north-eastern horizon (azimuth c. 52°) could be witnessed.

The same line, in the other direction, to the southwest is where Sirius is going down, the second week of November (lower, c. 6° and later than the line of pattern Greater Dog, joining the two great dog burials, Figure 56 C). Here then, overlapping as settlement space, as time, are the patterns in the ground of Cow and Greater Dog, with referents to the same time, as part of the pattern Hercules/The Kneeler. The figures overlap at the site of the dwelling.

The harvest was long gathered, livestock had been slaughtered. Until the rise of Horse, Hercules/The Kneeler was the only constellation, of the four patterns, which had the distinction of being in the sky during the time before dawn for the coming period. From a position over the north-eastern horizon, the constellation rose to a high (more than 50°) position over the east by the winter solstice. By January, when Horse had started his rise, Hercules/The Kneeler was nearly overhead, and by the end of January, his right foot was directly overhead. From that position, he swivelled around and started a descent towards the northwest.

Early July, the three figures of Cow, Horse and Hercules were visible before dawn above the east, south, and west/northwest, respectively.

Somewhat later, the line of features of Dog's back (fig. 56 C) to Sirius on the southeast, could be used the other way around. Standing by the post (K5), looking over Greater Dog's back/Rider's thigh, to the northwest, Hercules/The Kneeler could be seen, upside down. His right hand/club, the brightest star of this constellation Kornepheros (K1), about azimuth 307° was near the horizon (c. 5°). Looking the other way, Greater Dog would be seen a month later, and Hercules/The Kneeler was nearing his lowest point in the sky. Two parallel lines are shown in Figure 56 D across Hercules/The Kneeler pattern towards the northwest, a direction to the torso (azimuth c. 328; ε and ξ Hercules, both stars c. 5° above the horizon). By the time Greater Dog as a fully visible constellation was up on the horizon, Hercules was at his lowest point on the north. Connected as overlapping figures in the ground, the two figures are interconnected as a period, the one falling, and the other rising.

'Hercules' is one of the Germanic gods mentioned by Tacitus. A Thor/Donar figure is usually taken as the northern myth counterpart to the classical Heracles/Hercules; the thunder god Donar, was the Germanic predecessor of Thunor or Thor; he was associated with the seasons, fertility, crops, and lightening as positively influencing crops (Davidson 1988, 214; 1993, 47; Simek 2000, 316–326, 332). He was also connected to Jupiter/Jove, through texts on northern areas (cf. also Battista 2000). Adam of Bremen in the 11th c. wrote on belief in Thor: 'They say he rules the air which controls the thunder and the lightning, the winds and showers, the fair weather and the fruits of the earth....Thor with a sceptre seems to represent Jove' (History of the Archbishops of Hamburg (IV, 26) cited in Davidson 1964, 84).

Within the seasonal interpretation of Chapter 2, it was suggested that pit group 3 (fig. 5) was the first at the settlement, as there were only two pits (Spring and Fall). The group is here taken up as the right hip (K4) of the constellation pattern. The importance of the figure may also be indicated as that pit group was dug first.

At SM-I, there was only one, large, standing post placed in a pit. The post has been taken up variously in preceeding chapters. In Chapter 2, the post was part of the interpreted, horizontal 'settlement axis' (fig. 5: f120, fig. 14), as a point of a line through dwelling area, and burials of one of the great dogs, horse, infant, to three graves of older humans. In Chapter 3, Pliny was quoted

on the wood species of the post – poplar (*Populus* sp.) – as the tree of Hercules, in Roman context. Chapter 4 took it with the other pits having poplar, single standing pots and hammer(stone) as characterizing the partial Hercules/Kneeler constellation pattern. Using this right knee star of the constellation Hercules (σ Hercules; K5), there were lines mentioned above which could have been used in charting the revolution of the constellation, at the horizon.

The post, at the corner of the dwelling, could be brought into connection with ‘high-seat pillars’ associated with Thor, and Irminsul, similar to Jupiter pillars (Davidson 1988, 22–4; 1993, 101). The ‘high-seat pillar’ has usually been interpreted as something carved with an image or on which a statue image of Thor was sitting.¹¹⁶ Here the ‘image’ could be differently approached through translation as an ‘image’ referring to a constellation: sitting on high. The constellation position was directly above, at the end of January.

The constellation Hercules takes a markedly different path in the sky relative to the animal figures, and it would have been at least partially present during the entire year, as part of the yearly cycles of risings and fallings of the other three constellations before dawn. The post of poplar (K5) is used within horizontal lines for directions which could have been used to chart constellations Cow, Greater Dog, and, as Dog’s back, as well as to the Hercules constellation at the horizon. When the image was ‘sitting on high’, the right foot position was directly overhead. Foot-symbolics in regards to generative principles was gone into in Chapter 3. Here is a figure that overlaps the house, in horizontal aspect, and is ‘pointed to’, in vertical aspect which would bind generative concerns of the inhabitants and the sky position.

Starting at the end of January, Figure 57 shows Hercules in his near zenith position, when constellation Horse is coming up on the east, and then three points in time as aspects of the night sky, before dawn, as subsequent months of the coming cycle of the year with the four constellations.

Mentioned in regards to the Horse pattern were the summer solstice rise/winter solstice set directions built into the pattern. The same could have applied to setting out the direction of the dwelling, and as combination, the northeast (thus, summer solstice rise), as also the place where constellation Hercules/The Kneeler became fully visible. Hercules falls towards the northwest, which could again be a possible inter-connection to the sun, setting at the summer solstice. The summer solstice is however more closely associated with the time of Cow’s rise, and exactly with the rise of the Pleiades, if they could be seen during the shortest night. Both figures of Cow and Hercules/Thor overlap the house which has the same approximate alignment of those shown through Horse (fig. 56A) for the line Summer solstice rise – Winter solstice set. In section 6.5, more will be done with the implications for gender, inhabitants and constellation patterns.

6.2.5 MILKY WAY

The Milky Way is included in Figure 57 and mention must be made of the movements of this sky feature. It separates the constellation Hercules from the others, and revolves with the three animal constellations, which have their places on the massed band of dim lights. Better conditions were necessary for seeing the Milky Way, even then (moisture in the air, sites near the sea), than for most of the stars of the constellation patterns. When it is visible, Horse (with Rider) runs along on it while Cow and Dog are more imbedded in the band of the Milky Way.

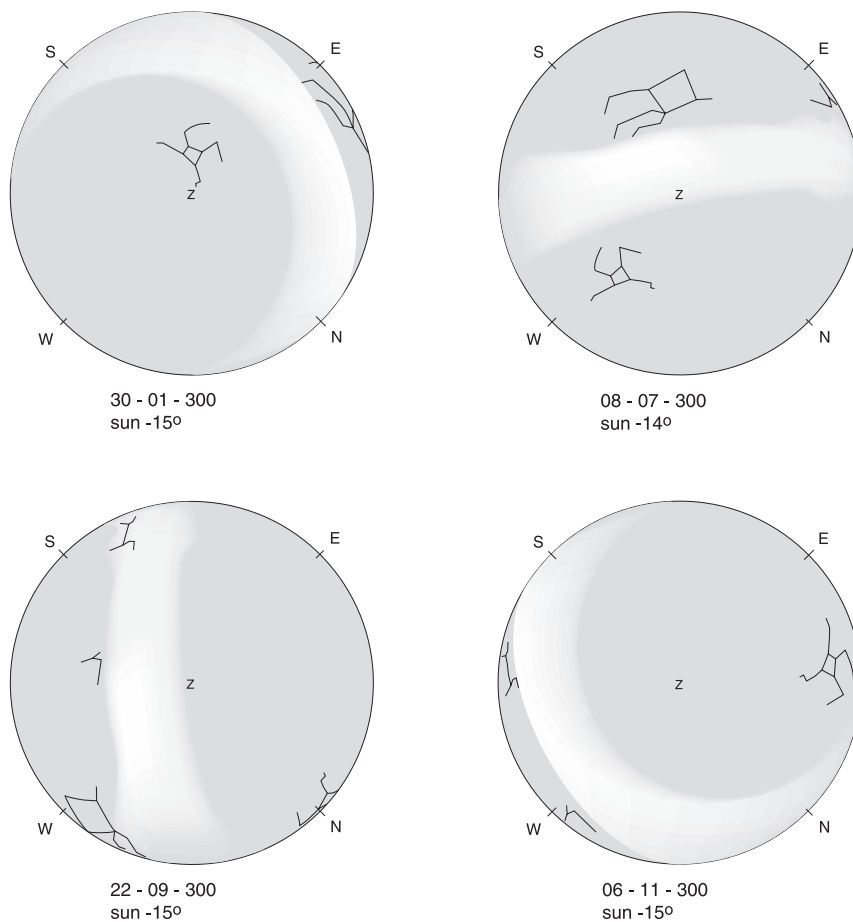


Figure 57 The sky at night, before dawn, 300 AD (lat. Amsterdam: 52° 35') with four aspects and the position of the constellations found as settlement patterns at SM-I:

- The end of January, Hercules/Thor is directly above (right foot at Z: zenith). Horse/Pegasus is coming up in the east.
- In early July, Hercules/Thor and Horse/Pegasus are visible, and Cow/Taurus is coming up in the east.
- At the end of September, Horse/Pegasus is going down in the west, followed by Cow/Taurus. Greater Dog has come up in the southeast. Hercules/Thor is at his lowest position, but does not entirely disappear.
- In early November, Hercules/Thor starts to move higher—towards his zenith position in January—and Cow/Taurus and Greater Dog are dying in the west and southwest.

The Milky Way as revolving sky landscape feature is also shown along which the animals are situated, and is separating the three constellations from Hercules/Thor. The tri-partition of the night sky, based on interest within settlement space, is important for insight into perception and cosmology.

Except for the earliest site (Velserbroek-Hofgeest) discussed in Chapter 4, the Milky Way was suggested as reproduced as a feature on the ground, and as border, as water (Uitgeesterbroek Polder, Velserbroek-B6). At this Schagen Muggenburg-I site, there is a long ditch bordering settlement place on the west which was filled with bones of slaughtered livestock. The square enclosure of linear features at SM-III may be marking a similar position, and perhaps this is where livestock was slaughtered.

In the sky, the Milky Way is a ‘linear’ feature, which in good conditions cannot be missed. The Milky Way and the areas to either side form a type of tri-partition visible to all. Join the dot images of stars are certainly a matter of perception and tradition, but the feature of Milky Way is simply a striking feature.

During part of the year (at the time before dawn) it cuts the night sky into parts. It crossed overhead, horizon to horizon, during the warmer months to the beginning of November at these farming communities, as Figure 57 shows schematically. As the path of the animals, that part of the sky ‘above’ the Milky Way with Horse, disappears from view as the colder months begin. The area to the other side of the Milky Way is that visible, and of those marked in settlement place, constellation Hercules/Thor remains. Correspondences to division within settlements and the night sky – of inside, borders, and outside – leads to redefining pagan sky-space as tri-partite, relative to the Christian mode of a unified ‘heaven’. This tri-partition of the sky formed in the sky by the Milky Way will come up again, in relation to a larger scheme of cosmological space as earth and sky. And for later texts, the three parts of the sky are seen as the areas of Asgard, Midgard and Utgard (Chapter 7).

6.2.6 POSITIONING IN SPACE AND THE LONGEST NIGHTS: THE COMING YEAR

General orientations through features, as the patterns laid out, can be read to the horizon when regarding materials deposited in them. Telling time, for the yearly cycle, through the seasons within the context afforded by constellation patterns, is through settlement space. Clearest, as sequence and time, is that of Thor/Hercules and his club to split skulls, and the ‘dying’ constellation Cow. There is also the ‘dead’ aspect of the dogs to the dying Greater Dog constellation and the same applies to the horse burial, and constellation Horse. Taken together, the dialectic of sun and night features also seems to be present in general orientations.

The tradition of building Horse around a reasonable orientation feature to the sun, slicing the year, at the summer solstice rise and winter solstice set, shows this figure most clearly in combination to the day for the tradition of Noord-Holland sites. The aspect of night and day will gain more attention below (esp. section 6.6).

Synchronising ‘alignments’ through overlapping the figures, certainly at the Schagen sites, is an ingenious system for bringing night into day. Unfortunately, it cannot be said whether or not Greater Dog and Thor/Hercules patterns were late introductions in marking settlement space. How the figures as distance relationships were achieved is a matter for a subsequent work. For the patterns, the key is probably in the dug arcs, circles and circle centres of the Uitgeesterbroek Polder Horse. Concentrated upon above were the orientations as pointing to the constellations through the year, at the time before dawn.

However, there is a period when the yearly cycle could be foretold, and this could be done only through absence of light, during the longest nights. The system of risings and fallings as sketched in this section for the four constellation figures could be seen from December to January as a nightly feature. Future time could be told by the movements, and here positioning in space is positioning in time. Foretelling – as a progression, as a story – as the metaphor of the coming year (see Barasana example, section 5.1.1) could have been done with these images during the period of the winter solstice. It is also the time of the start of the New Year, for the

Germanic system as mentioned by Bede (cf Chapter 2) and Martin of Braga (cf Chapter 5); but also through the reasoning put forward to explain the two pit group, within the pattern Thor/Hercules (Chapter 2), which had criteria for Spring and Fall, but not Winter. It was regarded as the first group, and it is within the pattern Thor/Hercules.

After the sun went down, these longest nights could be used to watch much of the progression of the year to come, as the movements of the four figures. Constellation Hercules would have been low in the northwest, and constellation Cow and Horse, on the Milky Way, moving along, Sirius coming up later. The progression had been made with Hercules falling further, and subsequently rising towards the zenith. However, even during the longest night, at this latitude, Hercules did not reach his highest point. This could not be seen until the end of January, and then it was before dawn. The direct connection between the sun, in shortest days, and length of night enables one to see the progression for the coming economic year. It is that time opposite (6-7 months earlier) to the high-point of activities being foretold. The night-time figures foretell the growing length of days' activities.

The 'metaphor of the year' was suggested by an anthropologically gained example of cultural astronomy of the Barasana (Chapter 5) and foretelling was gone into in Chapter 3 as undoubtedly inherent to Germanic practice. Text indications could be further filled in for other Germanic regions, as will be gone into in Chapter 7, for decoding the Voluspa as a more intricate manner of telling time through constellations as mythical figures. Here the economic year is both foretold in long nights, and drawn out for the yearly cycle, but must be looked at again, in regards to the model set up in Chapter 2 on pit contents and ritual.

6.3 TIMES OF RITUAL: PITS GROUPED IN THREES, BUT FOUR CONSTELLATION PATTERNS

For the two Schagen sites, Chapter 2 set out a model of the general economic and ritual year based on a pattern of mainly three pits per group. Taken up were text indications for feast-days, some correlation through aging criteria, and seasonal markers of first deposit in each pit of a group. These were horse bone (Winter: December/January); skull parts (other than horse)/hazel/holed wood (Spring: May/June); and, no discernible deposit at the bottom of the third pit for October/November. It was also suggested one group of three pits was dug and filled per year, within ritual, during the duration of the settlement. There are however the four suggested constellation patterns at Schagen Muggenburg-I (and implied at Schagen Muggenburg-III). As timepieces, the four can be combined with the apparently inbuilt sun alignments into the ground patterns of the night sky and the three points of ritual suggested for the pit groupings.

As the sun orientations are built into the constellations patterns on the ground, and extending the 'foretelling' theme, the sun at the solstice points foretells the arrival of two constellations dug as patterns, while three constellations are combined in the Fall season:

--*Winter pits* – winter solstice: the start of the new year, foretells of Horse rising in January combined to Hercules/Thor rising to his zenith position.

--*Spring pits* – summer solstice: foretells of Cow rising in July, and possibly the Pleiades rise connected to the Summer solstice, conceptually, if they were not visible.

--*Fall pits* – early November connected with the rise of Hercules/Thor and the death of Cow, during the slaughter period. Greater Dog as a timepiece is also connected with this last occurrence, as he goes down with Cow.

There were exceptions to the seasonal criteria. The ‘model’ was set up using SM-I data, through those pits containing the most finds: those stretching off from the dwelling and those in the northern metal working/pot firing area. In-built as part of the night-time figures, these lines have now been connected with rise and set of the sun, at two time-points within the year. The third point marked is the slaughter period, and is part of the internal argument of Cow constellation, setting in November.

In rounded off months, the sequence would be: 6 months – 4 months – 2 months, as the intervals between the occurrences now modelled for the pits. Or: Winter solstice – to Summer solstice – to the beginning of November – to Winter Solstice.

Coming up in August, Greater Dog’s rise was not taken up as a time, within the model of Chapter 2 of three ritual occurrences marked by three pits through the year. The pattern of Greater Dog has only one group of pits entirely his own at SM-I (fig. 31). However, it appears from SM-III (fig. 36) that he had more positions there, and D7 was present as three pits.

At SM-I, some positions were suggested as being used for more than one figure, and this applies to the pattern Greater Dog, with one exception. The exception is the overlapping position of H8/C10/D11. Based on only one pit in a trial trench, a lot is assumed. But if there were three pits, implied would be a set of pits as a standard, even though three constellations were being marked. Greater Dog also shares positions with Cow, C3 (as D6) and C6 (as D5). With Hercules/Thor, shared are K2 (D2), and Rider (D9 & D8). D3 could have been shared with K7. Single great earthly dogs mark two other positions (D1 & D4) and could be special deposits, and done in addition to, or not associated with, the times of pit digging/filling.

D10 is the only position at Schagen Muggenburg-I where Greater Dog clearly has his own pit group: it is his right hind foot. It was very well filled with complete jars, standing in a deep pit (Spring, f154) with a thick layer of dung, as exception to the re-deposited peat fills of all other pits. The combination might be taken as a clear referencing to cattle, through milk (for the containers) and the dung. The Winter pit (f156) was packed with non-worked wood, and the small Fall pit (f155) was packed with pottery, exceptional in this regards for Fall pits in general. The pattern of Greater Dog might through these deposits be considered associated in this outside production area with female activities of pottery making, if they occurred here, and/or cattle. The two constellations, Greater Dog and Cow, go down together in November, whereby they are also associated, as time. And/or this area, and the larger number of bones from wild species associated with it, could have a hunting-dog association, as the male associated activity area of metal working.

The rise of Sirius can be placed with harvest activities, and D3 was marked with a pit packed with burnt grain and worked wooden objects. It is a position possibly shared with a Hercules/Thor position, K7. The pit was regarded as a ‘Spring’ pit, through the holed pieces of wood and an ox molar. Insect remains amongst the grain also indicated ‘Spring’ (tab. 8). Thus, the specific time of harvest correlated to Greater Dog’s rise cannot be argued through the pit fill, although his rise could have something to do with the harvest. The matter of why things were deposited

at all is gone into in section 6.6. Interpretation as offerings will not be the path taken in regards to pit contents.

It was mentioned that the groups of generally three pits could be taken as marking three rites per year, but not that it was assumed only three rites took place each year. If there were harvest rituals, they could well have been in the fields. Any traces left would be outside of the excavated area, except in 'grain', as the last sheaves saved, such as may be represented in the pit of Greater Dog, D3. From the pits excavated, it appears it was a one-time occurrence, as a massive quantity of 'seeds'. These can be seen as directly commensurate with the overall generative theme (Chapter 3) of seeding deposits in the earthly context of pits. The time of harvest is marked through the alignments of the Greater Dog figure to itself as the pattern in the sky.

Sirius, the head of Greater Dog, is the brightest star in the sky, but of the four constellation figures, he has the shortest period in the sky. Yet, it is this figure found covering much of the settlement area. Symbolically, the general watchdog, lying over the entire settlement place, was generally needed, and not season specific. In Chapter 7, the figure of Garm, the 'greatest of dogs' in Norwegian/Icelandic myth, will be identified as the constellation. He seems to howl, only, in this later text.

6.4 MARKING AS TRADITION AND BINDING PLACE WITH MATERIALS

To reiterate: to tell time by constellations, one does not have to mark them at all, and certainly not with two-meter deep pits. The interpretation of the figures as features has not yet included underlying meaning. The figures and their sky actions are a framework through which suggestions as to concepts may be made through specific finds and features in specific layout. This section takes two approaches. Firstly, through the different sites with the constellation Horse pattern, one position of Horse's (left) fore hoof is regarded through time, as reflecting a tradition, and binding tradition. Secondly, for the one site of Schagen Muggenburg-I, 'binding' is taken as an anthropological theme regarding different positions as networked through particular types of traditional materials.

6.4.1 THE TEXT OF HORSE'S HOOF: TRADITIONS OF POSITION H13

In reading possible intent, the position of Horse's hoof (H13) may be decipherable as it was recovered as points in a chronology of the 900 years spanned at the different sites. The features of H13 are shown for the four sites in Figure 58. Interpretation here takes into account Horse's sky path as described above and variation in form and finds can be related to earthly events. Due to the quality of deposited materials within the position, the earliest (VbHof) and the latest site with the recovered position (SM-I) are most telling and gain the most attention below.

VbHof hoof finds

At the earliest site here discussed, the inhabitants of VbHof made recoverable deposits in Horse's hoof in two pits in position H13 (fig. 55). While this earliest site does not show the three-pit pattern generally, Horse's hoof was marked as three pits, as were some of the alignment positions over Cow pointing to the Pleiades and Aldebaran.

Forcefully stated in Horse's hoof position, VbHof-H13, are aspects of winter and spring in two of the pits; an absence of recoverable finds characterizes the third pit, and that is commensurate with the Schagen model of some of the early November pits. The designations below of 'Winter', follows the horse bone criteria; 'Spring' is through skull parts, although horse bone is also present. 'Fall' is that remaining, and has no finds. While the designations have little to recommend them except for some correspondence with the 900-year later Schagen model, the story here is one of internal consistency. Pit-finds of this earliest Horse's hoof will be regarded therefore in detail in how they may be read as facets of activities, as arcs of time, and processes thereof, as applying to subdivisions of the year, and gender associations as deposits.

winter: The winter pit is probably directly associated with the rise/rebirth of Horse in the east. Although finds in this pit are few, they can be read as wider in timely scope, of spheres broader than those of the Spring pit. The winter pit was roughly rectangular. In the dead of Winter a total reactivation is marked as deposit combinations that can be read as a general recycling of time in the three complete finds:

1. The bottomless basket find was the first deposit. Originally, the basket was complete, the purpose possibly for (crop) storage, an important part of winter. One cannot know if it was purposefully destroyed for making the deposit. What was recovered was in perfect state, without sign of damage, wear or rot.

Without bottom, the basketry in the round is a circle with depth. It is literally analogous to a 'star' in form and colour as it was back-filled with clean, white sand. At the same time, it is a small-scale 'well' deposited as a non-functioning entity.¹¹⁷ The woven circle could also then also refer to 'water', as the objectification of the means of obtaining water, given the circumstances of the subsoil, as activity. The means for storing/containing crops and water is through weaving willow branches. Within 'water' another facet of the deadened aspect of (mid)winter signing is towards ground water welling up.¹¹⁸

Woodland management in the form of pollarding and/or coppicing has been delineated by Maisie Taylor (Therkorn et al. 1984) as the method to obtain the type of straight, first year growth of willow branches found at sites of the region.¹¹⁹ A pollarded tree gains a bulbous 'head' atop the trunk out of which growth renews and the branches stem, in the later spring.

2. After the woven ring was back-filled, the two-pronged implement made from a shed red deer antler was deposited. It had wear traces along the tips of both prongs. The distance between prongs is that found between cultivation marks of initial ground breaking traces at the site. This implement had wear traces when deposited, but it was complete.

Red deer shed their antlers in April, and new antlers are completely grown by about the end of September (Ryder 1968, 14). As (rather strange) natural materials, antlers are thus also seasonal, cyclical markers – branching, sprouting out of wild animal heads, and falling off. Again, in the 'winter' pit, the referencing could be as dead antler/branch, but forward-looking to the activity of human control of plant regeneration through cultivation. Red deer antler 'branches' regenerate in the spring, thus also paralleling the natural cycle of tree branches. The 'knot', the crown of willow branches atop a pollarded trunk, or that sprouting out of the 'foot' of a coppiced willow, start producing its crop for weaving baskets/circles with depth, the initial deposit, about the time deer heads start sprouting their antlers.¹²⁰

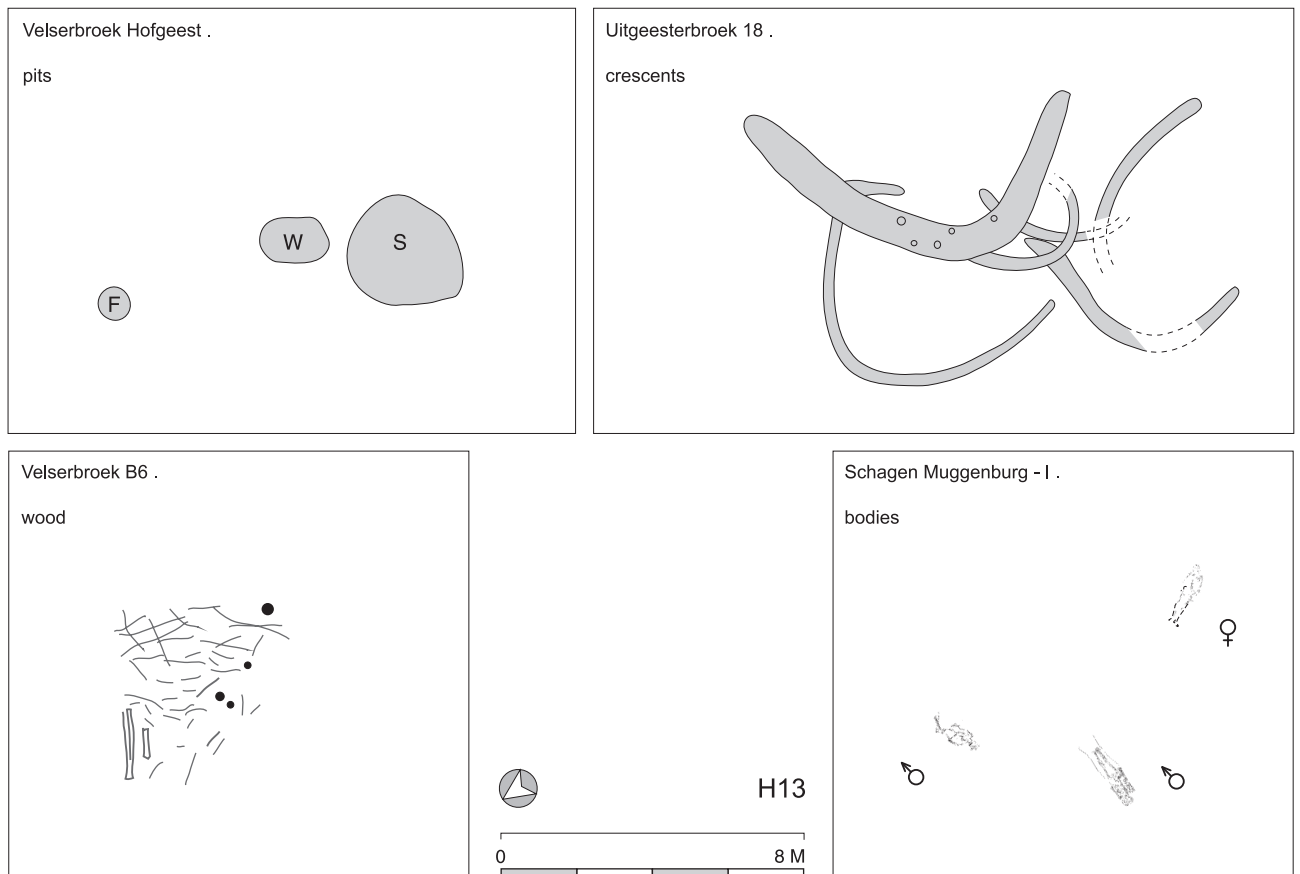


Figure 58 The features of position H13, Horse's (left) fore hoof, at the four sites.

During the season of (coming) 'frozen' ground, the object was deposited looking ahead to the flow of activities leading to regenerated plant life, similar to the 'water' idea woven into the bottomless basket.¹²¹ The water and plant theme are intertwined as parametric to life. As basic, they may have been as part of ritual actively induced through being attached to the hoof of Horse – of sky action – frozen in the settlement area, where it will all occur. As he comes into motion in the sky, he reappears to pull up the days that will become increasingly longer, as constellation, fully visible by April.

3. The third find, in the winter pit is the complete shoulder blade of a horse. With no wear traces, it may not be a recycled implement. The deposit could just stand for horse, as direct referencing, and in reference to pulling day into place, that is, over settlement space, and/or even as an object of divination (Chapter 3). When constellation Horse is higher and Cow on the horizon, the birth of livestock has been rounded off by that of calves. As Horse spans – is visible throughout – the period wherein all livestock are born, this third find could be symbolic of all of the livestock species, that is, the facet of domestic 'animals'.

Generalized in the three organic finds of this pit are facets of water, agriculture and livestock, as farming life necessities, within the framework of ritual action in forming one-third of Horse's star-hoof. The three finds are organic materials, and refer to 'upwards' as they are parts of animals and tree elements, which grew and walked on earth.

Spring: This pit contrasts markedly in various ways to that of winter. In the sky, by early June, Horse had been pulling up the lengthening days until he is overhead, somewhat to the south; that is, the constellation is all the way 'up'. By this time lambs and pigs have been born, and foals in May. If rites preceded the next series of occurrences, the spring pit will have been dug and filled prior to the rise of the constellation Cow, possibly around the summer solstice. Preparation of the ground for planting would have occurred. At this site, Horse lies on the area of cultivation. The pit of Horse's hoof contains finds falling within his cycle through specifying activities more fully within those suggested as generalized in the winter pit.

As a progression through time, the circle of white/star 'water' is taken through to the circle form of the Spring pit. In sharp contrast to the white sand fill of the winter pit, 'Spring' was back-filled with black earth ('green' was not suggested through grass remains or sods with grass). Re-generation of the season, along with the broken bits of materials (pots, bone and wood) are in contrast with the above described pit, and perhaps an early form of 'spring-cleaning' could be implied. Within this dug circle-with-depth is included the triangular for two specified activities:

1. The two complete querns are triangular in section and of the type known as 'Napoleon hats'. The querns specify a stage in the production process towards crops for human consumption. Again, as the antler implement of the winter pit is in anticipation of ground breaking, the spring deposited querns are in reference towards a future time. The find is 'inorganic', a product gained from the earth.
2. The pit circle also contained another 'triangle' as a form, as a complete clay loom weight, referring to an aspect of secondary product of wool, a product which is gathered, 'harvested' in June/July, and woven later in the year. Weaving, as it was referred to in the woven basket ring, as binding action as time, will be taken up as a theme below. This complete triangular find is again made from an earthly-won, inorganic substance.
3. Pot sherds were deposited in this pit, especially in one layer, that with the human tooth. Various pots are represented from coarsely made to thin-walled, black burnished ware. As fragmentary incomplete pots, the sherds are a selection that could have been made to reflect activities involving containers for storing, cooking and serving. Rims are overly represented, as incomplete circles/incomplete mouth-openings. Represented in broader terms is the activity of making pottery as cycle to the end of the use-life: broken pots, returned to the earth, from which the clay was won. Again, inorganic products are represented, made from earthly won materials. However, the 'state' is fragmented, coinciding more with the two following categories of felled animals and butchered trees.
4. Re-deposited, fragmented animals are well represented particularly in the selection of incomplete jaws/'mouths', analogous to the over-representation of rim/mouth sherds from broken pots. There is also human 'mouth' represented by a tooth. A foreleg bone represents dog, however. Perhaps then represented are just for those species 'feeding' on grass/crops of the period to come. Together, with human tooth, there are certainly six species represented – possibly seven as goat bones were not distinguishable from sheep. Thus, possibly all of the domesticated animals and humans could be represented. Two horn cores from cattle were also deposited, paralleling but also in contrast, as the animal is domesticated, to the head sprouting elements of the wild animal of the winter pit, in the antler implement.

The bone material of eating waste could be the remains of 'ritual meals'. However, the symbolic meaning of deposition is not touched with this often used designation. Forward looking, the selection and deposit of bones could have been done within an aspect of burying bones and regeneration of livestock, spanned by the time of constellation Horse. Cattle bones are most numerous and can be seen as bodily 'trunk' elements aligned with troping of trees discussed in Chapter 3 (fig. 28).

5. 'Broken' trees are represented in thirty-one finds as short lengths of thin branches and thicker parts of 'limbs' and trunks, without any sign of leaves (which would have been preserved). There were also three deposits of bark and one of root wood. That is, all 'body parts' of trees are represented, from feet to crown, but as broken bits, similar to the fragmented bone and pottery. One of the two oak lengths was charred. Worked objects of wood were not deposited in this pit. Thus the tree finds, as was put forward for Schagen in Chapter 3, could be signing/standing for just what they are: parts of Trees, and deposited within a theme of reflection of and regeneration of the landscape. There are seven species of trees represented, an example of selection.
The number of species could also correspond to the number of animal species represented. There were more willow deposits as wood, as cattle bone is most numerous of the animal bone.

Fall: The third pit is the smallest of the three. It is round – of the same diameter as the woven ring in the winter pit. It was back-filled with slightly grey, sand fill – that is, in colour, midway between the white and black of the winter and spring pits. The layers of the site did not include a naturally occurring 'grey' colour. There were no recoverable finds in this third pit of the group. The designation of later October/early November could apply from the SM-I model, as could the suggestion of blood or organs, made during slaughter season. Taken with the above two pits, the colour scheme implied may be winter-white, spring-black and fall-red. This would take the liquid of water, welling up, from the first pit, to blood down into the earth at the time the surroundings moving to the period of apparent 'lifelessness'. Horse was already 'dead' in the sky. Cow is descending.

At least the winter and spring pit can be read in direct relation to the seasons spanned by the constellation part of hoof into which they were placed. Importantly, finds of completeness are contrasted. From the winter pit, they are obtained from above the earth (antler, woven branches, horse shoulder blade) in white. The stones and clay of the black spring pit are earthly won and complete as triangles. In the dead of winter, absence of the broken is also in contrast to the Spring brokenness – of pots, animals, and trees – exactly at the time plant growth and newly born livestock have become evident in the surroundings. The facet of the fertile black earth deposited in the Spring pit, cut deeply into white sand, is reminiscent of the Schagen colour scheme. Here at this earlier site, the aspect of fertility and re-generative concepts as the deposit of broken materials (seeded in the earth) might be more evident, through the contrast between pits with light-fill/complete/Winter and dark-fill/broken/ Spring, than at the Schagen sites. Time is contrasted as well, opposite to each other by six months, as the sun takes opposite positions through the alignment of wood as Horse's back position, at the solstice positions (cf fig. 55).

As an aspect of the horizontal, the 'hoof' pits are situated at the border of cultivated fields and pasture areas. The areas are dominated by the figures of Horse & Cow respectively to the east

and west. The complete finds show conjunction of daily life tasks and show patterns produced as part of production processes; the partial finds, the broken bits of life, are ends of pot/animal/tree as objects to be buried, seeded in the earth.

The activities represented can be ascribed as well to male and female spheres, and further to the up:down aspect of white:black, the rectangular around a circle, the circular around triangular; the activities of cultivation and Horse spanning the livestock package. The tellurian/female aspect of regeneration is given through the broken to the complete, and reflections of activities of weaving and grinding, in transforming domesticated materials into fabric, and food cooked and stored in pottery products. Especially the aspect of re-generation will be taken up with the Schagen hoof position, below, as burials of people.

the Ub18 crescent hoofs

There were no recoverable deposits at Horse's H13 position at Uitgeesterbroek Polder 18 (figs. 43 & 58). The position as crescent form – although 'triangular' can also be recognized – was drawn most clearly three times, but possibly as many as six times. Redrawing the form at this site may be connected to the same seasons as suggested for the above three pits based on the SM-I model. Suggested in Chapter 4 was that the emphasis at UB18 was on an unnaturally resting Horse with drawn up legs, whereby the stretched hoof position may not have been conceptually important to people at this site. The same themes illustrated in the VbHof site are present, but less directly. The 'agricultural' is not a deposit, but the area to the west, under Horse's hoof and folded legs, where narrow gullies weave the area (as the cultivation marks of VbHof), overlying the seasonal, or fallow periods, of pasture.

The 'circle' with broken animals in the 'Spring' pit, was not carried out here in the hoof position, but in the large scale, through deposit of much bone waste in the Horse figure's head-neck-legs (f1321) as possible livestock enclosure; the large-scale circle was an open ditch and could have (seasonally) held water. The three-pit model is not at all in evidence at the site, and without spatial definition, it is impossible to define succinct units, features, as timely units. The deposits within the enclosing ditch could of course have been made through the course of the year; and, horizontally the ditch is made up of three lengths. However, no clear patterning of finds could be delineated within the three ditch lengths of f1321.

triangle of VbB6: points on a circle.

The triangle formed from wood of this Horse's hoof H13 position (figs. 39b & 58) directly combines the 'foot' to 'tree-symbolics' as was discussed in Chapter 3. In contrast to the later Schagen sites with almost exclusive deposits of wood from deciduous trees, the evergreen of juniper was used at this site for Horse, marking particular positions in addition to oak, which marks point positions as posts. In this hoof position, the three sides are the bonds between the three points. Represented are the upper elements of 'trees' as branches and trunks. There were only three species: oak, alder and juniper. This is certainly in contrast to variation shown in the deposited tenons of the other features, representing a larger selection of species.

The largest trunk is from alder, lying down; the standing posts from oak. With three wood species, and three sides of a triangle, perhaps the three-season theme was being designed. As one feature, the three sides show completeness perhaps as one year. 'Threes' are only clearly in evidence here, in this feature, and in the three stakes of oak at position H11 (fig. 39b).

the Schagen human hoof

Spare bodies are obviously a necessity for marking stars, or one star, in the manner exemplified by the Schagen Muggenburg-I human remains. Sacrifice, a subject much debated in the past (e.g., Ström 1942, de Vries 1956/57, s283–85, Jankuhn 1967) will not be suggested. How these Schagen people died could not be defined. Along with the other burial, the newborn infant in Horse's foreleg joint (H12), all could have belonged to this settlement as could the at least one (older) woman included in the cremation remains of Horse's mouth (H1). Another human, a man, is represented by the one-half pelvis in Horse's head (H2-3). All six people represented could have lived at this settlement at some time. It seems too neat a package however – a fossilized family – the age and gender composition being one where parents, three children and a grandchild are found represented in a contemporary death situation.

An alternative suggested here would also start solving the problem of where everybody else of the Noord-Holland coastal region was deposited when they died. This involves putting the Horse before the humans, taking the humans as just one particular way of marking a large-scale hoof, whereby humans are suitable deposits, and other positions are suitable for cremated remains or single elements. Associated are aspects of ideas of the afterlife, in the combination of a sky pattern as Horse carrying bodies and cremations.

The Horse at SM-I received the marking by human bodies and a body part, as he received human skull parts at the earlier Ub18 and a thighbone at VbB6, in addition to all the other things stuffed into his star positions. The humans did not receive 'grave gifts', except for the older man with a wild duck's wing which could indicate various aspects: fly-away, upward/sky, the wild and (cyclical) migrations, and Winter. The man with this duck wing was in his mid-fifties. In any case, 'wild' concurs with the 'wild'/cyclical of antler at VbHof in the winter pit.

If in general Horse's hoof position involved concepts broadly bound to seasonal activities and to the phenomena in a tripartite expression marked through form and objects, the burials of SM-I may be subsumed under these as again illustrating a point. The burials are then also points on a triangle, as the built form of Vb-B6 hoof entirely made from wood. The arrangement of bodies can be likened to the VbHof pits of Horse's hoof. The young woman can be aligned to the position of the activity specific, black, turf-filled, spring pit. The young man is nearest the suggested grey/red of the possible November pit. And, the older man is in the woven white-star position of the winter pit.

There is a nine-hundred year difference in date between these sites, but perhaps the correspondences between gender and activity divisions indicated by materials in the two pits of VbHof can be carried over to the gender of the later layout of burials.

The older man would be then in a position overseeing general concerns, and possibly specified at least to tasks of cultivation, or ground breaking, water-winning and/or basket-making, divination and/or the livestock package as symbolised by the horse scapula. The burial of the young woman corresponds with the pit having objects for weaving, grinding, pottery making and use of pottery, animals as food – the sphere of domestic maintenance activities. Without deposits accompanying the pit of the young man's position, only the colour and possible blood, and slaughtering would be suggested. He is also found on the Horse, below, as the mirrored Rider pattern.

The three humans at this position could form a unity, as a metaphor of the year, of three seasons and associated rituals, and in direct reference to the cyclical nature thereof. Thusly, the people as dead humans would have been taken up in concepts of cycle of states of life, death and regeneration.

Subsuming humans as symbolizing points in cyclical time and short-term expectations, as the other materials in the similar position seem to be modelled, also implies a selection was made of those having died. Whether or not the burials represent deaths of one year, corresponding as well to season of death (that is, December/January, June/July, November) is unknown. The people could well have been related, whereby lines of kinship drew inhabitants back to the settlement for burial. ‘Horse’ in particular settlements could have been used in the sense of death monument, within rules for inclusion which could have included age, gender and time of death. As mentioned, human burials and cremations are exceedingly few and far between along the coast for whatever period, and presence of human burials seems more of an exception than the rule. Human bodies or parts may be reflective of exchange within a cycle of death and rebirth. Through the materialization of Horse’s cycles, going along for the ride suggests the cyclical of another life. And, as shown through the other sites, Horse’s hoof or mouth was not necessarily a receptacle for humans. With one exception, however, all human remains for the sites discussed are in star positions of Horse. The exception is the left, human thighbone in Hercules/Thor’s left thigh position at SM-III.

6.4.2 BINDING: SPINNING, FASTENING, MEASURING

In this section, the networking of finds and the theme of binding are considered as a tradition of the SM-I settlement deposits. ‘Weaving’ time was a theme touched upon above through the pits finds of basket, loom weight, and lattice of cultivation marks at the Velserbroek–Hofgeest site. A short anthropological interlude is used here to put into a more global perspective the importance of ‘binding’ through daily life activities within facets of cosmology. Binding within studies on religion has quite a scope of history, topics and materials. In the last century, researchers such as Frazer, Van Gennep, Dumézil and Eliade had examined the theme, as set out in an overview of aspects of these works by Piccaluga (1987). She noted however:

‘...in general the scholarly world continues to address the issue [of binding] merely on the phenomenological level, thereby leaving the question of the historical foundations of the binding motif unresolved.

On the properly historical level, however, it seems possible, and indeed necessary, to establish the precise relation between the sacred value of the bond and the type of reality that lies at the origin of this value, to explain why such a phenomenon arises, and under what circumstances’ (Piccaluga 1987, 159).

Continuing for the features at SM-I, the occurrence of other gifts in pits further binds the settlement traces. In addition to finds of spindle whorls at SM-I and at least one wooden element of a loom, there are the tenons and possible measuring rods in pits that can be included in the theme of binding. (No basketry was found at the Schagen sites.)

The binding motif within various (including archaic) cultures has much to do with, for example, deities binding enemies and ensnaring evil human beings; making sins concrete within ritual by tying knots; capturing animal/fish souls through ritual lassoing, netting, and ensnaring; and, of gods netting deceased humans. The functional categories of everyday use are often transposed to the superhuman. Those appearing in ritual and myth also at times bind and/or capture sun,

moon, or clouds (ibid. 160; B. Rappenglück 2003). ‘Stars’, as constellation patterns, could be added here as one of the outcomes of Noord-Holland settlement research, as they are bound to the earth as settlement place.

One can argue the spinning/weaving traces within a global research theme, illustrated by the archaeological features with finds. ‘Weaving time and spinning fate’ are understood still as metaphor and, similar to the suggestion of ‘life’s path’ (Chapter 3), could well be imbedded in long term logic of actual practice. The usage is also clearly present in Germanic and classical myth.

However, as those traces are only textual, it remains undefined to what extent myths are evidenced as more ordinary traces of people’s activities. The concrete and important activity of weaving shown as deposited materials, but representing quite an involved and specialist process, has already been discussed above for the VbHof Horse’s-hoof time as settlement space. Through the Schagen burials, the often (implicitly?) held assumption is supported that weaving was probably a female activity and housebound. Later, the earliest codified customary laws, *Lex Frisionum* (c. 801 AD) for the more general region of Frisia, specified a higher penalty for injuring the hands of weavers, specified as female, goldsmiths and harp players (both male) than injury done to the hands of others (Eckhardt & Eckhardt 1982). Evidently these activities were valued as those of very skilled hands.

The cultivation marks at VbHof also ‘weave’ the place as patterned – a different way of looking at ard-marks – although ritual marking under barrows through ard-marks has been long accepted. It is doubtful criss-crossing is strictly functional for cultivating fields, certainly in the light sandy soil conditions of the VbHof site. Literal, materialized myth referencing could be a feature of the homespun traces of small settlements, through the seasons and the configurations marking them particularly clearly at the SM-I site.

The stars of the Schagen sites are here the captured features spun into the settlement fabric. Between the literality of Schagen and the metaphors of today are the texts with the mythological referents that are not yet translated to everyone’s satisfaction. Plato’s ‘spindle of necessity’, accepted as the workings of the universe and the night-sky context, is turned by the three Fates, singing of things past, present and that to come (*The Republic* X.11; Lee 1974, 460–464). Frigg’s spindle, as a Scandinavian designation of the constellation Orion has been mentioned. The three Norns, as the fates, will be found at the base of the World Tree in Chapter 7, also in the sky. A few of the more obvious deposits, possibly used to weave pits together are gone into.

spindle whorls: Activities of spinning and weaving are parts of a process working toward a product. Weaving was well represented at the earlier site on Horse’s hoof in basket and loom weight and further interpreted as to male and female spheres of activity. Loom weights were not apparently deemed fit for pit deposits at the Schagen sites, although they did occur near the dwelling at SM-I, on the subsided habitation surface.

The spindle whorl deposits in pits were not bound to a particular season. They also occur in pits of all four constellation patterns. At SM-I, a spindle whorl occurs in each pit group which go to form the line to the sun along the NE-SW of the settlement as well as in the groups extending from the dwelling to the northeast, possible also a sun orientation.

The find imbedded in the dwelling floor of SM-I has the form of a giant spindle whorl (Chapter 2, fig. 6). If it was meant as a spindle whorl – for a giant figure (see more on upscaling, below) – it may certainly indicate the regular sized whorls deposited in the pits were not only reiterating the importance of spinning on earth, as activity, but also to the concept of earthlings

responsible for spinning together daily-life time to stars and sun, the time keepers. As the star, pit-points form alignments to the sun, spinning materials would refer to binding night:day of the seasons as well as settlement space, as different strands of activities through time.

At SM-III spindle whorls occurred in features of the figures close to the dwelling: in Kneeler's right foot (two features within the dwelling) and Cow's right eye (one feature).

tenons: Use of tenons to connect beams together is the earthly-ordinary of farmstead constructions. Tenons are most notably connected to the VbB6-Horse which as a whole was formed primarily as deposits of unworked wood and standing posts. Binding could also contextualize the 87 unused tenons, as symbolically holding together the wooden construction of Horse, as the star-pattern holds together much of the year in spanning the sky. Alternatively, or additionally, tenons could also have been deposited for pinning the pits holes to the ground. The revolving sky feature would be therefore not only mapped and marked, but also constrained as an inverted superstructure of the otherworld. At the same time, the male:female principles could also be signed, along the lines suggested in Chapter 3 of worked wood within tree symbolics, planted in earthly holes.

There were no tenons in pits at SM-III. At SM-I, none of the wooden objects with holes, a criterion used for defining spring pits, contained complete tenons, as the spindle-whorls contained no spindles. At SM-I, ten pits contained twenty tenons made from six species of wood. They were recovered from all four of the constellation figures.¹²² Although tenons were deposited in pits of all constellation figures, the Kneeler with ten tenons in three pits of his right foot and knee positions has the majority of these finds. As the spindle whorls, the tenons are not a seasonally specific deposit. The large scale House-as-Settlement will be discussed below, whereby tenons are seen also as a practical gift idea to oneself for a later life.

rods: One material category is represented of which the use is uncertain, but they may have been remains of measuring rods. They are in any case rods, and as the features were measured in, these objects could well be that used to do it. None are complete. They could be distinguished through the knobs, and in one case because of the clear working of a relatively long length. It is not certain they were used for measuring, but it would be an interesting type of binding category – binding the stars together as settlement place through measuring by long existing formulas. The broken rods, as far as can be determined (3 of the 5) occur in Winter pits: Cow's left eye (maple), Dog's right foot (wild cherry or wild plum), and Horse's left foreleg joint (cornelian cherry). Feature 27, Horse's skull, interpreted as representing three seasons in one feature, contains two rods (cornelian cherry and hazel). Only hazel overlaps with the wood species used for the tenons. Rods are not in Hercules/The Kneeler, which contrasts to the majority of tenons in his pits, pinning his right knee and foot to the dwelling position. However, the figure was only partially excavated, and following the suggested pattern, two important star positions of the upper torso were not excavated.

Although the number is small, it possibly indicates a season-specific pit context – winter – in contrast to spindle whorls and tenons. This could be associated with the time they were used, as measuring the new group of pits to be dug that year, if the interpretation is correct that the cycle started around the winter solstice.

6.5 THE HORIZONTAL OF SMALL AND LARGE SCALES: MIRRORS AND MAPS

Scales and directions are themes of this section. Regarded first is the way the shallow pits with burials of animals and humans are reflected as small scale figures relative to the large scale patterns. Secondly, various scales and directions are approached, and specific deposits become associated with engendering place. Within the long term of the interpreted patterns, it is again the Schagen sites where the themes will be developed.

Although Hercules/Thor and Greater Dog were not recovered from the earlier sites, they could in any case not have overlapped Cow and Horse as they do at SM-I. The spatial relationship between Cow and Horse remained similar from the earlier to later sites. The main difference is that the dwellings of the earlier sites were not evidently taken up within the figures. The late dwellings are integrated, as built into the figures at SM-I and SM-III.

It is tempting to see this as something also caught up in social terms of domination, if there is a change through the 900 years, rather than examples of individual family ingenuity. Somebody along the line thought up the overlapping system whereby the pattern Cow was turned on her axis, losing an area of pasture as an earlier settlement area, but gaining a house between her eyes at the later sites. The house is at the same time however underfoot, as it is the right foot-to-knee of pattern Hercules/Thor.

If the sites do represent transformations and real change within the system of marking and making time, integration of differently used areas of settlement space – house, cultivated area, pasture – forming a completeness, give way to domination of areas through being overlapped by particularly male figures of the sky. As time, counted and measured-in, orders activities carried out, socio-economics are implicated as well through the spatial placement of engendered figures. This idea is illustrated by the burials of SM-I in a specific sense.

6.5.1 BURIAL PLACEMENT: CONSTELLATIONS AS REFLECTIONS

While the constellation patterns are moving about in the sky, doing their yearly rounds, they have been mapped in settlement space as inactive figures, captured. Horse and Cow patterns are more akin to a map of setting and rise, respectively. Greater Dog as ground pattern is a good map of his rise. Hercules/Thor is a map of his near zenith position, but already falling towards the west-northwest. Relative to the constellation patterns as maps in the ground, the burials of animals and humans are mirror images. Figure 59 shows the animal and human bodies and the scaled-down versions of the constellation figures.

The burial of the stallion, although bound, is a reflection of the ground pattern as sky figure. As betwixt and between his rise and death cycle, and positioned in central position in the ground figure, the meaning here could reflect the rise, looking at his death, but ever present as he is pinned to the ground. Mapped as features in SM-I, it is running away as the October Horse. The stallion, presumably sacrificed, reflects the direction of the rise of Horse, beginning in January. Cutting the back leg tendons to achieve the positioning in burial emphasizes the unnatural re-ordering. Reordering is bound to gaining control of natural revolutions going on above one's head, and then bound to a point in one's settlement.

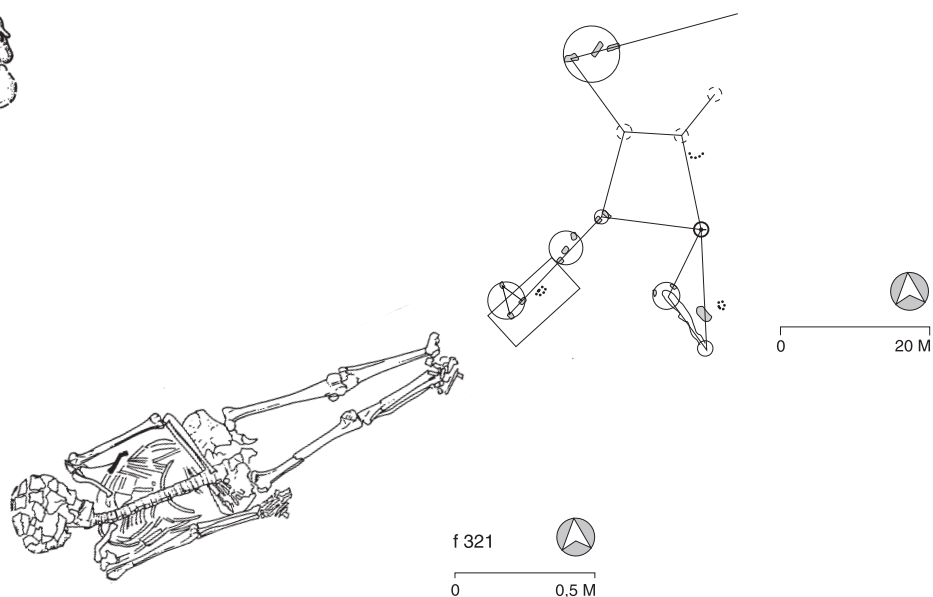
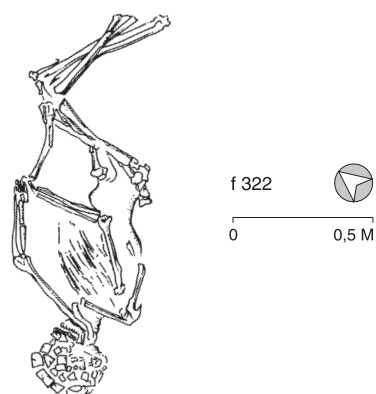
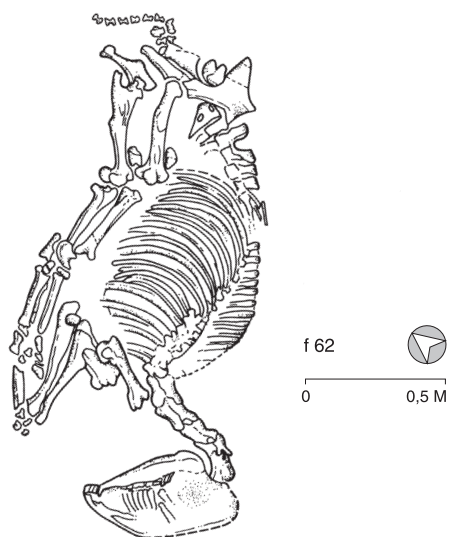
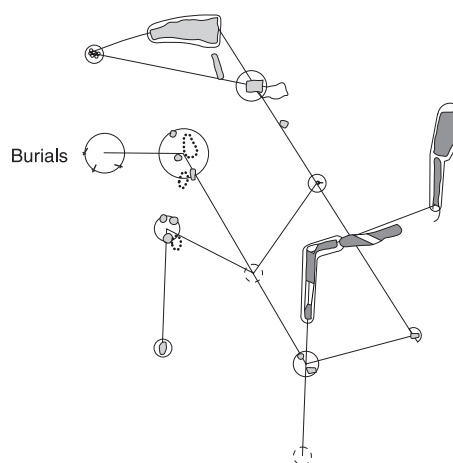
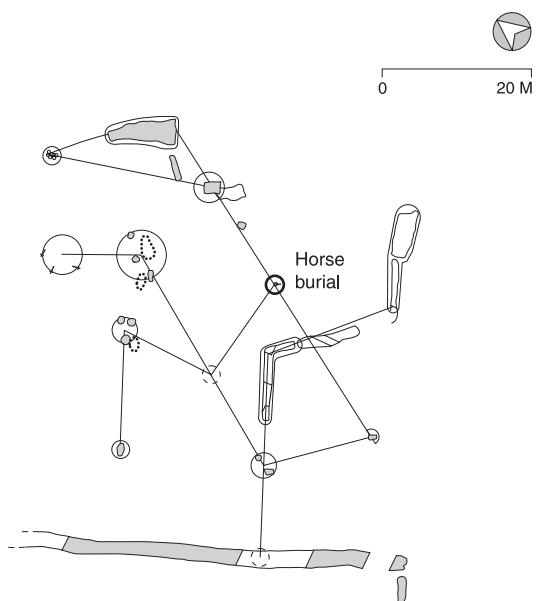
The young male, human burial from Horse's hoof position seems to reflect the defined constellation 'Rider' of linear settlement traces tracing dim stars. His flexed position is in mirror image, feet missing. The features defined as the constellation part of Rider's leg also seem 'footless'. The missing feet of the young man, as mentioned in Chapter 3, would be a reification of the feet, possibly used as relics, and saved and/or deposited elsewhere. The flexed position in death is then here reflecting the action of 'riding' in death to the north.

The older man is at rest, on his back, all body parts present and naturally positioned. The next constellation figure along the settlement axis to the southeast is Hercules/The Kneeler whom he could be reflecting, as the positioning of the constellation just falling from his zenith point, towards the southwest. The older man is the only burial positioned to have a view of eastern sky phenomena as rises/beginnings/renewals/regeneration. This, in combination with body positioning – peaceful and complete, his age in the mid-50's, and reflecting the giant guardian (but armed) figure, with dwelling as lower leg – puts the human figure in position as head of the family. In combination to the discussion of the Horse's hoof (H13) position through time, and the types of deposits in the Velsbroek-Hofgeest pit position, this reflected position of Hercules/Thor on high puts both human burial and the constellation in better perspective as to general meaning. The 'overseeing' quality of the constellation, because of the higher path relative to the other constellations to an overhead place in the sky can be correlated to the overseeing position of this man as burial reflection. 'Head' of the household is the highest figure, above the house.

One of the great dogs – male and old – seemed to have been purposefully laid in his grave in twisted position. Greater Dog's stance is rather unnatural in the sky as well. This buried dog is somewhat similar to a mirror image of the pattern. (The one SM-III settlement dog is similarly laid out in twisted position and is also a reflection.) The other great dog, young, at SM-I could be a mapped rising position, as the head is to the southeast, but peacefully laid out on its (gender could not be established) side (fig. 6).

If the inhumation of the woman has to do with the remaining constellation of Cow, imaging is different and less direct. The constellation pattern is the head of Cow. Along the life-death continuum of the settlement axis, the young female from position of Horse's hoof (H13) and newborn infant (H12), are shown. Directionally, the young woman has some relation with the ground pattern within the theme of reflections. At the later Schagen sites, the Cow patterns are over the house, and as area would be associated with activities of daily maintenance and women. Household inventory of pottery within the pattern and the one-half quern stone, for example, emphasize this, as well as consistent occurrence of very young livestock as bone material, emphasizing the aspect of nurturing. Within the life-death axis, there was a very shallow and empty cradle/grave suggested at the end situated to the southeast of the dwelling (grp. 14, fig. 5; also C5, fig. 31). The infant burial may have to do with this feature in ground pattern Cow, and the position could be the muzzle/mouth area. The creation myth on the gigantic Cow, Audhumla, will be taken up in Chapter 7.

The infant and young man were positioned in death looking towards the north, as may have been the young woman, although she could be looking up. Pattern Horse on the ground is



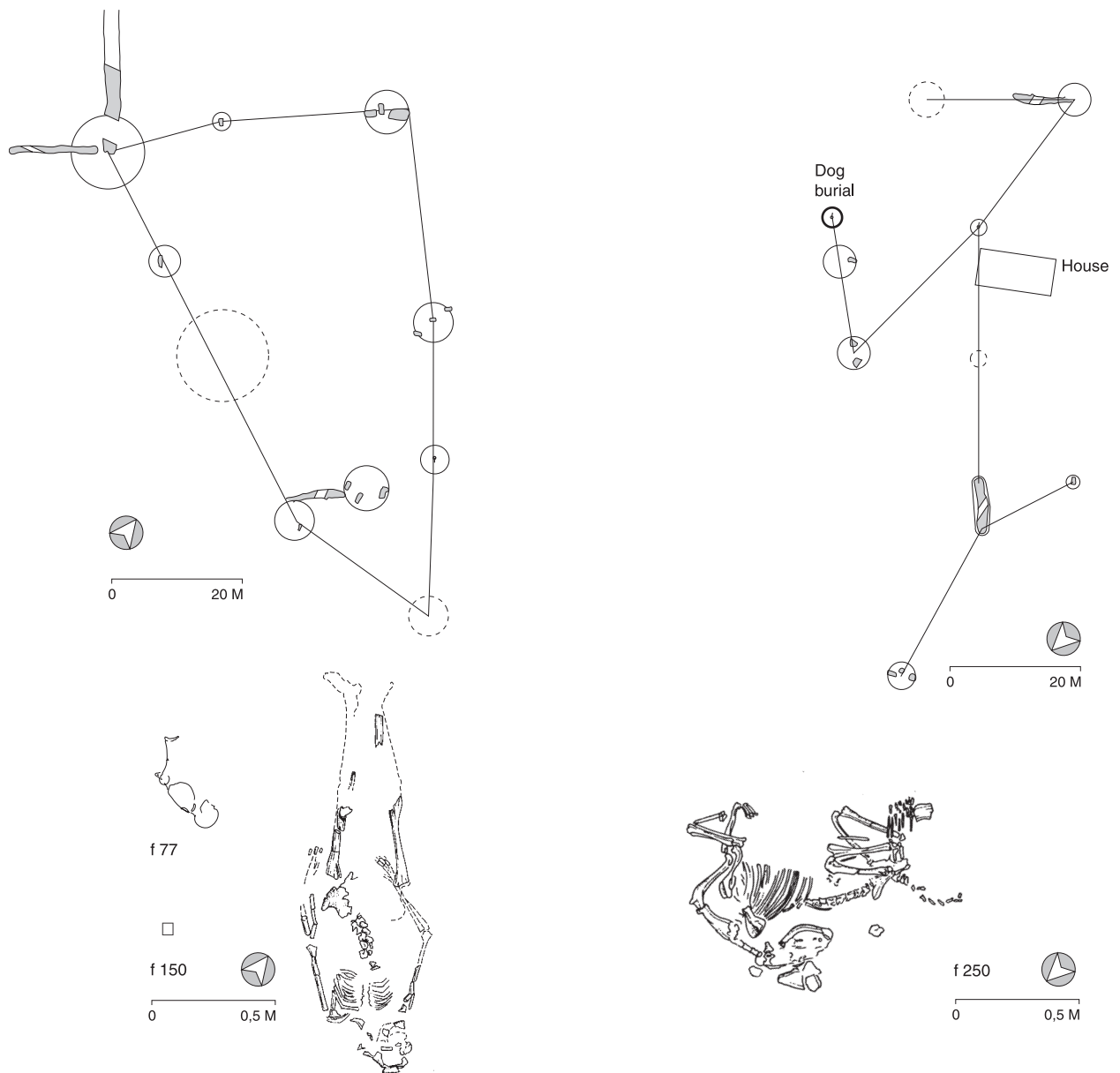


Figure 59 Up-scaled burials and the large-scale constellation figures at Schagen Muggenburg-I. The horse and humans mark positions within Horse. The horse and younger man burials are mirror images of the constellation figure and Rider. The older man could be connected to aspects of the Hercules/Thor figure; the younger woman (shown with the neonatal infant recovered by the hearth at position H12) could be associated with the Cow figure. One of the large dogs was laid out in a strange position and is shown relative to the Greater Dog pattern (the other large dog, by the house, was laid out in the opposite direction).

carrying them to the north. The burials of older man, horse burial and great (old) dog were positioned looking more to the eastern horizon. Their respective figures rise here in an arc on the horizon similar to that of the sun, through the year from northeast to southeast. The horse was presumably sacrificed (he was 5–7 years old). More work needs to be done on these aspects of age, gender and burial position, and certainly the greater, encompassing context of pattern Horse, for researching patterns as (regional) tradition.

Importantly, earthly animals are taken up in the system, as actors ordering the life–death cycles. The night figures in the sky and the everyday figures of settlement are not in opposition, but are reflections of different states and scale. Humans and animals, as reflections, would then be metaphors, and conceptually part of rises included as part of a continuing cyclical scheme of regeneration. Afterlife, for animals and humans, and the otherworldly of the sky is implicated.

6.5.2 GENDER AND MAPPING SPACE: SCALES AND DIRECTIONS IN HOUSE AND SETTLEMENT

Directions, gender indications, and different scales are used in this section to suggest similarities in structuring. At the largest scale, the overlap of the constellations at SM-I is also spatially structured as a house layout. And, the other way around starting with the smallest unit of pit, Hercules/Thor, besides having the dwelling at both Schagen sites as a block on his leg, also appears to have a small-scale house in his right arm at SM-III, as pit feature 58 (fig. 61, 51, 36 position K2, fig. 19).

At right angles to a line of three, the fourth pit (f58) is similar in having the NE–SW alignment of the actual dwellings of both sites. The main divisions of the SM-III farmhouse seem to have been replicated in the pit: seven pots, deposited as complete, varying from a miniature to cooking pots and very large sherds from storage pots were placed exclusively in the south-western end of the pit, commensurate with the dwelling end of the house here at SM-III. The pots were atop an upstanding calf's lower leg and a shaped (5 x 3 cm) horn core and section of ox skull. There is then pottery, cattle and calf, as female associations within the one end of this pit. Near the centre, the pit division was marked by an oak post, placed upright, the only post in a pit at SM-III. It could be representing both the main roof supporting element of the superstructure, and/or that aspect of Thor's 'high-seat pillar'. (The latter was mentioned above in section 6.2.4 in connection with the post outside of the north-eastern corner of the SM-I dwelling, and part of Hercules knee position: as part of lines to the horizon, but also as vertical element pointing upwards to Hercules/Thor at his zenith position.)

Placed in the north-eastern half of the pit were only a few deposits of branches and charcoal. At this site, charcoal was limited to this pit. On surfaces, charcoal is linked to the male sphere of outside hearths of the north-western end of the settlement (SM-I) and inside hearth at the north-eastern end of the SM-III house. The fuel was found in proximity to these features, in contrast to the turf remains of fuel of the dwelling-end hearths (fig. 13).

The dwelling is expressed then – at least at this latest site – within the double-scaled ordering in relation to Hercules/Thor: dwelling as large body part of right leg which carries Hercules/Thor in his rounds, while he carries the small 'model pit-house' in his right arm.

It can be assumed the inhabitants sheltered themselves first, building their dwelling, before using the seasonal cycles of time to make the ground patterns as shelter of the sky through the

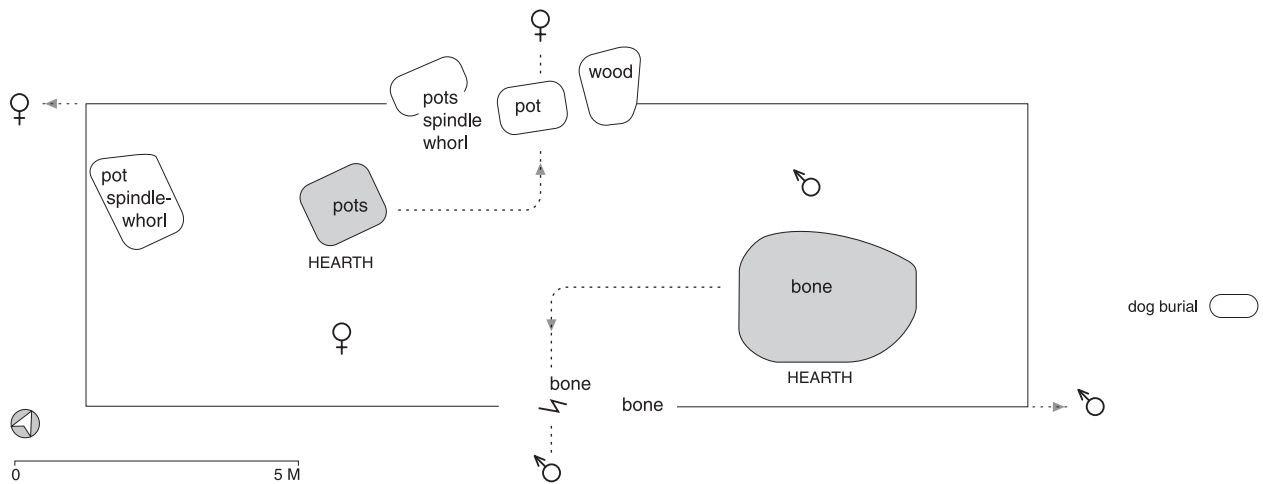


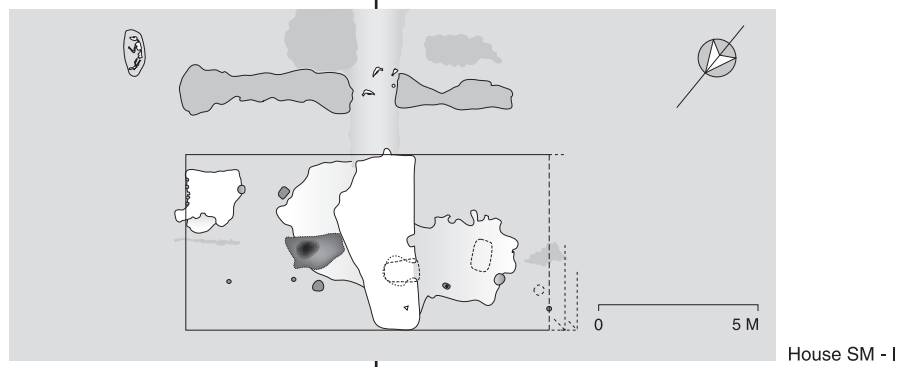
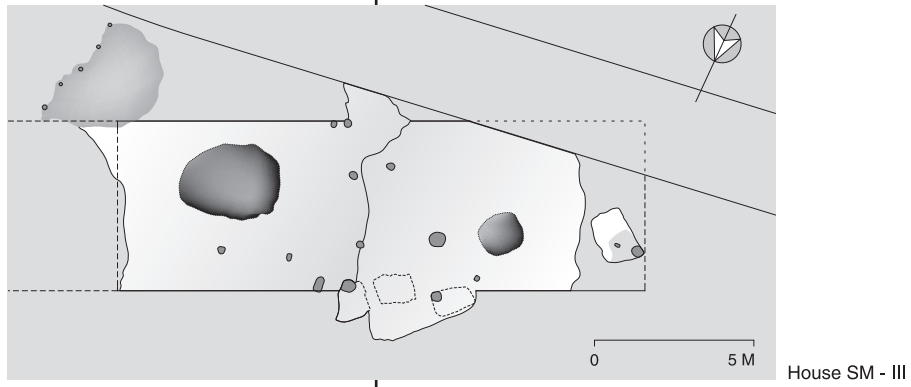
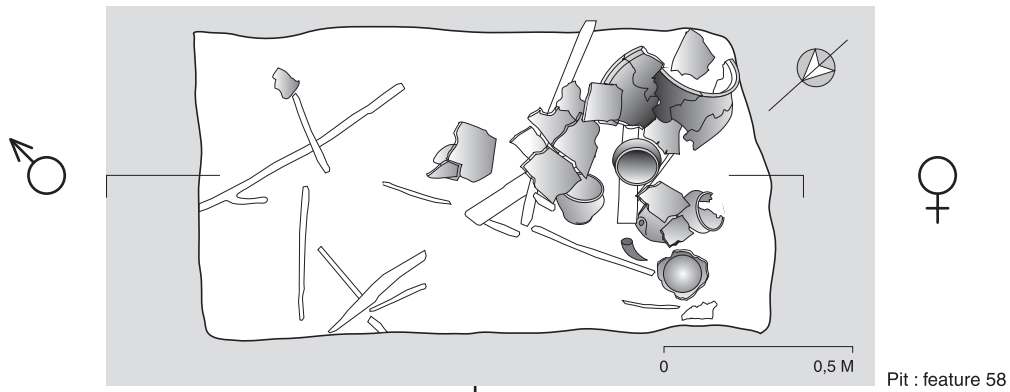
Figure 60 The dwelling of Schagen Muggenburg-III and dwelling divisions and door openings related to gender as activities and directions.

duration of settlement years. At SM-I, it was suggested that Hercules/Thor's right hip position (K4) was the first pit grouping to have been laid on in the new settlement. The two pits (Spring and Fall) lacked small bits of settlement noise inclusions. Through subsequent years, the other groups as patterned constellations were set out. Dwarfed by the images amongst whom they walked as figures created by digging and filling time-bytes as pit-stars, the inhabitants were at the same time constructing a house plan for their images, similar in plan to their own.

The SM-I dwelling was apparently one area, the well-ordered hearth in a near central position. A find near a possible NW doorway at SM-I was the giant 'spindle whorl', connected to the female activity sphere and theme of binding discussed above. The finds of the SM-I dwelling somewhat outside the opposite doorway were the ox mandibles and stone. Although there were no definite internal activity areas at SM-I, the deposits near the long wall and threshold position are similar to SM-III, as direction and gender attribution.

The SM-III dwelling was longer and divided into two areas, lending a good spatial analogy to larger settlement space, as excavated at SM-I. Within the dwelling of SM-III, the double-gender sphere deposit was found to northeast of centre. Near the junction, but closer to the NE end, of the two main areas was found together a small, complete pot and an astragalus of an ox (Chapter 2; fig. 16). The pot would refer to the female sphere, and analogous to the partial pots under the SW hearth of the living area. The astragalus – although also in reference to cattle – could be read as the means used for divination. As set out in Chapter 3, defining the 'lot of life' was probably more associated with males (e.g., Tacitus, *Germania* X), and the astragalus deposit is mirrored by the deposit under the hearth of the north-eastern end, where an astragalus was placed with a foot-bone of a horse. This end with traces of metal-working and charcoal around the feature is marked in line with a male activity area.

The pot and astragalus deposit is near to the place of the two opposing doorways, each with a deposit under the threshold. In the north-eastern long-wall was an entrance marked by a complete (but imported) pot, upside down, with the 'mouth' downwards. As to positioning, this pot is reminiscent of the seven inverted pots over the female cremation remains in the star position of Horse's mouth at SM-I (H1). A threshold deposit of a complete horse's leg marked the



opposing entrance. Directions of female and male areas within the house therefore can also be drawn through to entrances: the northwest as female and the southeast as male. Figure 60 shows these gender and directional/material relationships.

Up-scaling the house of SM-III produces a spatial arrangement, when turned 90°, not unlike the layout of the total SM-I settlement area, where SW = SE (fig. 61). SM-III with large hearth in the area with traces of metalworking corresponds to the outside work area with hearths to the northwest of the SM-I settlement, and both house and settlement demonstrated metalworking, with charcoal at this end. The south-western dwelling area of the house is equivalent to the southeast of the settlement with the dwelling. Entrances as settlement space directions would be given as northeast: male :: southwest: female.

On the west, the 'entrance' of settlement space, in analogy to the doorway, is formed by the arrangement of the line of Rider's back to the ditch (f 162), at right angles to the bordering ditch (f107), dug to the southwest. The junction of the two ditches is the top right side of Cow's skull, and the overlap of the ground patterns Horse and Cow is positioned similarly to the junction of the two main areas of the dwelling (fig. 61). The Cow constellation patterned within settlement space is not a stalling area, but was the living end of the dwelling. This was also suggested through the small pit model, with calf bones under pots. For the position of the north-eastern 'settlement threshold' there is Hercules/Thor's raised right hand (K1), the equivalent to the male, south-eastern dwelling doorway at SM-III.

The protective/guardian aspect is in settlement part and parcel of the domination theme. The constellation Hercules/Thor is always at least partially visible in revolution in the sky and the pattern is built in the house, and the dwelling is the site of continuous activities throughout the year. As the older man reflected, there is also the facet of continuance binding settlements, as family generations. As Horse's (left) hoof of death is defined as burials, the image of Hercules/Thor's right foot and leg is dwelling construction. The settlement axis is dominated by these male feet, in life to death.

Foot symbolism discussed in Chapter 3, as to the generative, male, and domination aspect argued by various authors can here also be distinguished as a dominated place as the house, the equivalent to the feminine as shoe/stocking. This would be a literal hierarchy of space as scaled relationships: giant sky figures as settlement place/dwelling structure dwarfing humans. The dwarfed male humans, probably directing the positioning, and other cosmological concerns, have given themselves a direct connection to the figures, as reflections, as Rider and Hercules/Thor, and taken male animals up within the scheme, as the stallion and great dog. There is only an indirect association of women to the animal/Cow pattern.

Coming back to the un-worked wood at SM-I, almost exclusively from deciduous trees, the branch and root finds are associated particularly with Horse and Rider – the roots are in Horse's right foreleg joint. There are willow branches in his (f27; H2-3) featured head, as there are in Rider's head (f185; R1).

Figure 61 Scales of place and gender from the smallest pit f58 (SM-III), the dwellings (SM-I & III) and the settlement (SM-I). Hercules/Thor has the house of both sites associated with his right leg, and pit f58 is at position K2 (cf fig. 36).

The large patterns dominate settlement place, as static parts, but as movements in the sky they are like earthlings relating more to their respective place of transitory duration, but moving through the days' activities, lit by the sun. The 'doorways' of the settlement as being the overlap positions of the four constellations are also the axis NE-SW of sun and reiterate the interweave of night and day. The axes form corridors of conceptions, mental pathways, through and along which daily life took place within sky-seasonal-time phenomena. Figure 62 summarizes these relationships within day and night practice.

The west, as related to the female threshold, is the place of the death of constellations, while the east is more associated with the risings and males. The point positions of space along the east-northeast were contrasted with the bordered aspect of settlement place along the southeast-west (fig. 13 & 14). Figure 62 takes this further in relating gender attribution, 'thresholds' for people and horizon figures in their rising and fallings.

The season of constellation Cow, her connection to the June rising sun and the earthly economics of cattle breeding, inhabitant welfare through livestock as food, and various secondary products is perhaps masked at this site by the overlap of the Hercules/Thor figure, and domination implied of the dwelling. Tasks done by women and the importance of the dwelling as site of family welfare are obvious.

Cow has her own territory as patterned in the ground at the two earliest sites (Velsbroek Hofgeest & Uitgeesterbroek Polder 18). Perhaps livestock were born in the pasture, although bringing them inside might have been the practice. In both cases, the female sphere (one as pattern, the other as dwelling) is involved. The importance of Cow as a pattern to be laid out at the earliest site is given by features, particularly the mound (with calf) and the line of features towards the setting constellation. Pattern Horse is rather sparingly marked, in contrast. Although the care is not particularly shown at Uitgeesterbroek Polder, there are large, articulated cattle deposits built into her image.

The slaughtering aspect within imaging shown by the later settlements has however gained the upper hand, through altering the layout of the ground figures. This is assuming sites show a difference as a chronological difference. Renewal becomes the effect of sacrifice of Cow, as ordering time/activities is altered through reordering the spatial placement of the featured figures. The blow dealt by Hercules/Thor to Cow with his alignment hammer directed at Cow's skull in the sky, over the pattern in the ground, is the equivalent of aiming a blow to the position of dwelling between Cow's eyes (SM-I & SM-III) on the ground. At SM-I, complete cattle skulls are in Hercules/Thor's position (K1), the same position as the pit with hammer. A large deposit, of about 1/3 of an articulated bovine is in a Horse position (H6). The bone deposits, elements of very large, non-indigenous cattle, which were used to define the Cow pattern at SM-I, were likely trade items, and obtaining them was then likely a male activity. By the time of SM-III, as far as one can see from the positions recovered, there is even less deposited within pattern Cow, while at the same time, there is 'more', within the Hercules/Thor pattern.

More sites will of course have to be considered for this aspect before binding societal transformations to these patterns. Not argued particularly is an erosion of women's position in this 900 hundred years, but perhaps a masking of importance, as transformations within religious precepts, although the two would be of course inter-related.

The horizontal aspects of sky as male and female spheres of divided, oriented farmstead/settlement scales will be suggested to be distinctive in redefining pre-Christian prepositions of space, retrieving under-earth as underworld within tri-partite, *horizontal* sky relationships derived through mapped horizontal earthly imaging within the settlements.¹²³ Why the patterns were laid out at all, as part of religious belief, is better illustrated through taking vertical inversion into account.

6.6 VERTICAL DIMENSIONING: THE WORLD TURNED UPSIDE DOWN AND BELIEF

While the above sections have attempted to suggest some of the horizontal dimensions of inhabitant action in combination to the sky figures, this section has to do with the layered-ness of the vertical. The settlement/sky features bring a mix of seasonal fortune or misfortune, but the finds in the pits might too facily be labelled propitiatory, for appeasing the gods. If correct that the features are landscaped ‘stars’, as parts – as holes – of complete figures, visible and cyclical, the least abstract interpretation might be sought in the figures as the means through which the otherworldly is accessed. The idea of different scales and states of animals and humans laid out as reflections of the sky patterns (6.5.1) would seem to have direct associations with expectations of cyclical life, as afterlife.

The first section of Chapter 2 noted the actual geology/stratigraphy of the two Schagen sites. Here, the interpretation stems from the literalness of archaeological features seen through the interpretative framework of star patterns, as landscaping the settlement and the heavens.

As set out in Chapter 2, the burials of animals, animal deposits and humans were in pits dug through the c. 1 m deep peat surface deposits to be placed on the *top of white* subsoil. These burial pits were back-filled with peat turfs. The pits more deeply dug – *into the white* subsoil – were also filled with black peat turfs. If the interpretations of the preceding sections apply, it is difficult to imagine of the figures as having been conceived as actual ‘gods’, and here the mirror imaging idea will be extended into the vertical as relationships of symmetry, but expressed through different scales.

The verticality of the animal and human burials in shallow pits related to other types of deposits in deep pits can be brought back into the scheme of analysis through the house-floor deposits. Deposits were made in the clay floor, not through it. The sandy-clay, laid floors form the vertical border on which life took place, within the dwelling. Deposits were made in/on material laid down within a relatively dark area formed by the superstructure of the dwelling having the same shape, rectangular, as many of the pits with ‘gifts’. Dug through the dark peat accumulation into light material and filled with dark material, the pits in form and fill are then as the dwelling: surrounded during the day by light, darkness enclosed. This applies except where the deposits concern animals and humans: these were laid in shallow pits, dug only to the top of sandy-clay, white, natural deposits. Burial of animals and humans (inhumations and cremations) are analogous in positioning then to the colour scheme and material of the laid clay floor of the dwelling of the living.

The dead arrive at a ‘new’ surface, at a border-zone within natural layering. The verticality of down must have to do with landscaping of the sky at night, as the burials are all part of the mapped star positions, and thus refer downwards-as-upwards. As these shallow burial pits were

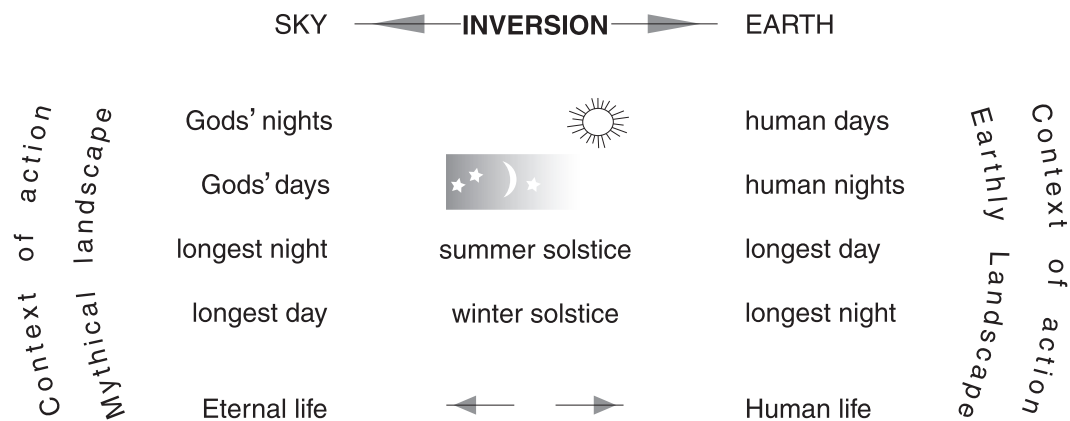


Figure 63 Contexts of action and inversion in night and day: the gods' world and the human world through the year.

filled with turf, the animals and humans were also surrounded by dark. The change in 'state' living-dead is then from light into darkness, the dead animal/human deposits surrounded by the dark natural layering, in pits filled with re-deposited dark turf. This 'state' is analogous to the dwelling at night – dark without, dark within: the inhabitants 'resting', somehow, on their constructed light-coloured, clay floor.

The living humans (and animals) walking on their created mapped and landscaped settlement sky are themselves during the day the dwarfed images of the figures as they are active at night, in their active revolving stances. The mirror imaging of burials is here possibly the best indication for inhabitant conception of a temporary state in passing time of day/night as points within continuity of activity/daily life:inactivity/sleep.

Within inversion, as humans and animals are invisible as covered, blanketed, during their night, so the giant figures in the sky are covered and made invisible by daylight. The importance of day and night also has to do with when the figures and wandering stars – the planets, moon – are out and about. Wandering about during the night of planets and moon is structurally similar to inhabitants out and about during the day. In Chapter 5, it was noted how texts are unclear on planets as deities, but that this is also a matter of interpretation in regards to 'evolution of religion'. If the planets and moon were conceptualised as deities, there is a correspondence within inverted night:day and movement between inhabitants and wandering sky features. Both move among the constellations – the planets and moon in the sky, and inhabitants among their own created constellation patterns. Carrying this analogy further, the length of night as gods' day is also inverted with the solstices, relative to that on earth. The longer the night, the longer their day. 'Seasons' would also be inverted: that is why one could 'tell' the story of the coming human year during the longest night, with all of the constellation movements (6.2.6). Figure 63 sums up the relationships of inverted situation of gods:humans::night:day.

If the layering of the site has to do with how vertical space was perceived, the layering of day and night was concrete. The stars are 'holes' as the pits are holes within spatial inversion. The idea was also expressed in the ethnohistorical example given in Chapter 5.4. The shades of night

– as a layer – is filled with holes, through which light remained visible as night is pulled over ‘day’. People are dwarfed figures walking over the earth, while the wandering stars, the gods and moon, are moving about the sky. The figures/stars are the pre-figuration of constant day, and the otherworldly.

So who gets the gifts?

Within inversion and the above construction, deposits are made downwards into the earth, into the light of constant day. Do gods really need these things in propitiation? They are mainly practical objects for common activities – pots, a rake, beams, tenons – and natural landscape elements of trees. There is also seed corn for cultivation. There are broken bits of life – pots and bones and wood. Considering the power attributed to inanimate objects of later texts (Chapter 3), ideas of regeneration could also have included these things, buried in the ground: the inverted sky.

The pits can be seen as otherworldly storage pits – to be retrieved by the depositors when they got there, activity specific and gender specific to be taken up again within a state in the future of the other-worldly cycles.

As some of the deposits clearly show expectations of the short term of coming seasons, they add up to represent all three, in providing necessities for otherworldly life. Or, perhaps less egocentrically, useful for those already arrived, pits could be supply lines – inverted conduits – of practical necessities including animals through the visible star holes to the other-earth. All things are therefore ‘sacrificial’, through taking materials, as legacy, out of a current circulation into an expected aftertime. A concept of meeting old familiar objects/animals/humans and parts of one’s landscape in an afterlife, as gifts given through sending off through appropriate doors as pits – to the otherworld – keeps communication channels open throughout the duration of a settlement lifetime.

However, gifty things were not deposited at all sites. They are most in evidence at Schagen Muggenburg-I. How best to put things on deposit may have been an individual (family) decision, changing concepts or signs (bad seasonal results) that what had been done was not effective. Earthlings in mapping by marking their settlement space could have been doing this within a belief that the wandering stars had imaged themselves. Thereby earthlings were mirroring actions, and as actors modelling themselves as deities. The relationship is symmetrical apart for scale and duration. As the images of the gods would be the signs of their presence, so imaging them would be symbolic of anticipating a perceived everlasting state, drawn from the natural reappearance through the years of the sky phenomena.

The iconographic action of drawing and marking is that most important when taking into account the variation of how imaged parts are marked at the various sites. To join up with the gods in their figured place evidently required imaging earthly space as such. Non-deposition of gifty things in the images is a feature of the grounded body parts exemplified by the VbB6 and Ub18 sites. There, the area of (archaeologically recoverable) deposits for both of these sites, as was outlined in Chapter 4, was mainly in the areas of water, suggesting the conduit was through these means for some types of deposits, at that time, by those involved. The positioning and linearity was suggested to be paralleling the Milky Way – a watery way – as sky landscaping perception therefore accessing the otherworldly. Whether or not this is a chronological difference or more individual family way of sending off and storing ‘symbolic capital’ for the other life is a research question for the future.

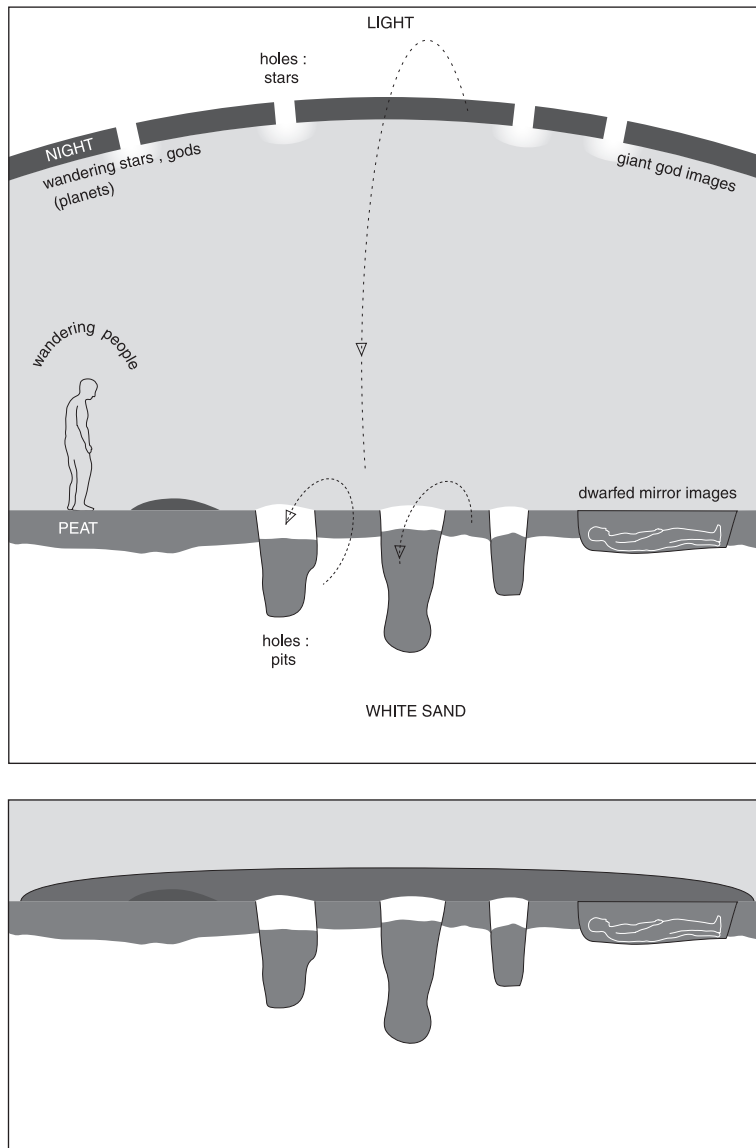


Figure 64 Above: vertical inversion of lived settlement place, the layering of dark peat above white sand sediments and inverted material of dug features, the dome of the heavens, and structural relation between people and wandering stars, the suggested deities. Below: the dead settlement covered with the mound.

An interpretation of night as a layer, with holes, shielding one from eternal light, constant day, can be derived from texts of diverse date and place possibly induced through similar perception and even common origin. Constellations on a layered shield is not something thought up, but was drawn from Homer (*Iliad* passage cited in chapter 5). For a later Germanic account, Snorri Sturluson cites skalds and what they see on a 'shield', and could be a similar metaphor (cf Chapter 7). The 'world upside-down' is a widely analysed theme of medieval practices (e.g., Le Roy Ladurie 1974) that could as well have a base in prehistoric conceptualising. The example cited in Chapter 5, of 'folk belief' in stars as holes, twinkling caused by the gods walking around casting shadows – that is, evidently on one or the other side of the night's surface – is seriously

to be considered within the long term, and perhaps very widely held ideas of 'stars'. Of another context, John of the Revelation (1st c.) claimed one reached constant light through the gates of heaven, which were twelve single pearls (21,21), and some other connections with stars are mentioned briefly in Chapter 7.

If proto-Noord-Hollanders saw stars as conduits to their heaven, landscaped as pits, they did not conceive of stars as souls, as did Plato for example (cf 5.2.1). These conceptions would seem to be mutually exclusive. Most importantly, since animals and humans of both genders and diverse ages are represented by burials and the cremated remains, and by activity related finds, all seem to have been included and enabled in reaching the other side of night. They all have star positions.

If the 'gods' are considered as imaging themselves, there would then also be some sense of causality wrapped around these 'powers of darkness' bringing the seasons – and something very definite to rail against during the introduction of Christianity, in advertising the powers of light and causality of sun/son. Rather than relying on historical texts, models of Superhuman Agency (cf Lawson & McCauley 1990) will have to be developed along a more anthropological vein than the historical one of unclear texts. If the constellation figures were believed to be representations, not the gods in themselves, the actions taken within ritual may have led early observers, for whatever their political/religious reasons and/or lack of observation, into writing down just part of the message, within interpretative frameworks understood. Offered here is a reading of multi-dimensioned complexity drawn up through settlement duration, going through time to provide ideas on aspects of medieval practice, as well as the unclear texts on pagan practice. If through the star figures the gods were conceived as bringing 'gifts' of seasons, as imaging something of themselves and announced by forms, these people by mapping and aligning their living space thought themselves and marked themselves into the cycles, which for all appearances they might have assumed never end.

6.7 PRACTICALITIES OF CONTEMPORARY PRACTICE: OTHER FAMILIES

Setting out the figures was no doubt one of those activities involving much discussion and measuring, walking back and forth checking the layout. Perhaps these were first marked with posts, pits dug only after the correctness had been checked through the actual phenomena, visible on many nights rising over the east, or setting in the west. One could suppose predicting and witnessing a presence and/or exactness through stars and sun was also fraught with meaning bearing on the expectations of the coming year, analogous to examples cited in Chapter 5 whether from anthropologically known cultures or from historical, European popular culture. Divination as an aspect of interpretation for some of the deposits was gone into in Chapter 3. As 'feet' following paths of animals and human figures, they are also present in the sky, and bring the seasons. At night, layout and charting could practically be done with fire lines and/or torches along the way as small points of light towards the horizon. The outside hearths at certain points, some functioning within day's activities, have already been mentioned for Schagen Muggenburg-I, in Chapter 4. These could have been lit and used as fire-points at night.

Someone was probably also directing the process, with accompanying status, although assuming a 'specialist' is not necessary. Due to Tacitus' remarks on divination being the provenience of the head of the family, and the manner of overlap suggested for Cow and Kneeler at SM-I (and SM-III), the activity was probably male dominated of setting out and controlling the ordering of the settlement cosmological space. Knowledge of the formulas had been passed down through time for at least nine hundred years for at least the patterns of Cow and Horse. Applying traditional formulas within expectations and knowledge of what would happen in the sky, when and whereby one's hopes are pinned on the stars (as the saying goes) for settlement welfare, would be an important activity in making material specific directions as time past, as time to come.

One thing that must be emphasized here is on the one hand the individual – (male head of the) family – character of what people within one settlement were doing as seasonal rites, within religion, and building each settlement as micro-cosmos. As far as is indicated for the period and the Schagen area, other families were apparently doing something similar, if one can judge by pits and deposits. If the same constellations were being set out, contemporarily, there is again an aspect that mapping the figures was most important, the action inducing their appearance, continuing the cycle. If families of the area were similarly aligned in their practices, allowing for individual and family traditions, and good and bad years influencing perhaps what went on deposit, these constellation figures were scattered about the landscape, not ritualised within a collectivised 'special place'.

Within communality and the sociality of ritual, as feasts and festive types of events, inhabitants of single farmsteads may have been brought together especially for ritual, exchanges of visits, and even gift giving: for featured positions. As a type of grave gifts, they would have been given during life, with all the attendant status factors. The period around the winter and summer solstice could have been a time of exchanging visits between settlements with various types of contributions. Perhaps filling some positions was considered more important than others, and as each settlement would be laying on patterns within staggered time, and if there was a set ordering of positions, some farmsteads would have perhaps greater feasts than others during the same general rites for marking certain positions.

The only trace of communality noted for the Schagen traces is possibly the position of Horse's head (H2-H3), the large pit with much of the bone recovered at the settlement. There were complete lower leg bones (metatarsals) of at least 14 individual cattle represented. This is too many for one year's slaughter, and inhabitants from other settlements may have contributed some of these. Perhaps there was even an element of sport: digging some of the pits was certainly a matter of ingenuity, which had to be accomplished quickly after reaching ground-water level (in any case higher than the bottom of most pits), and then making deposits and backfilling.

Dissatisfaction with the system, and/or the manner in which action was authorized and dominated, might be seen in the quality of 'gifts'. Two really poorly made pots, really thrown together (Abbink 1999, 234, 270) were recovered from Greater Dog's foot position (f154; D10) at SM-I. Jars were in general recovered from this area (ibid. 308), defined as the male activity sphere. Comparing other pit positions and further delineating this aspect has yet to be done for the individual constellation patterns.

The process of digging pits ended with the settlement. All of these activities stopped, possibly with the older male's death, as suggested head of the family, at the end of settlement. Those settlements above the Oer-IJ seem in general to have been capped off by mounds, as were the Schagen settlements.

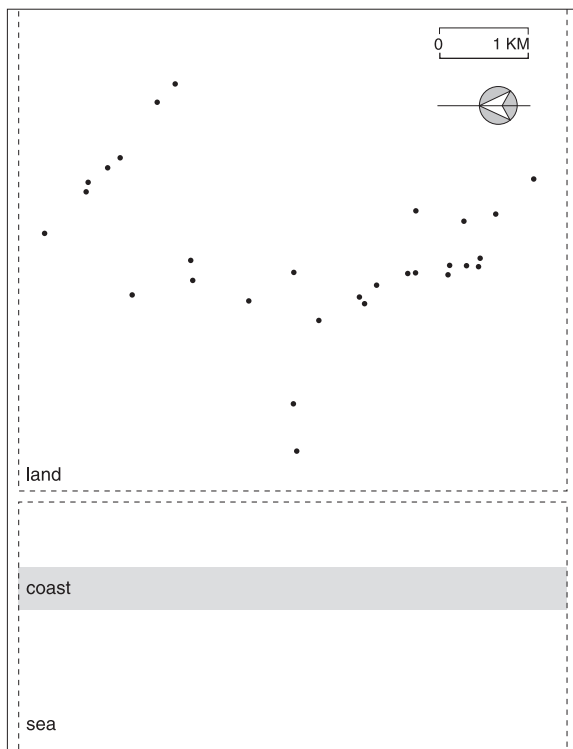
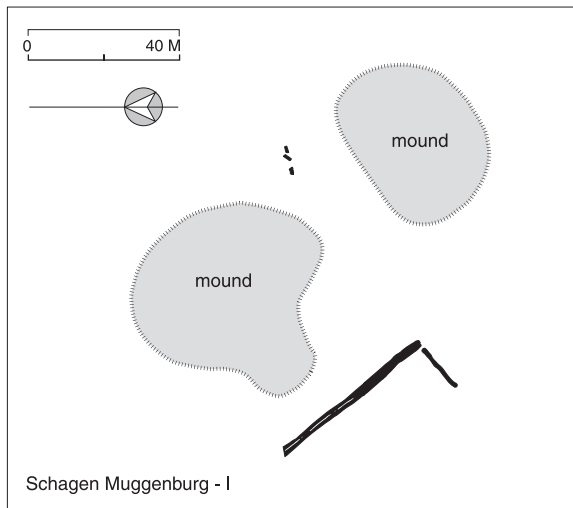


Figure 65 The larger scale of inclusion of mounds, covering 'dead' settlements: the mounds of the SM-I site (above) over the two areas of the settlement (cf fig. 5). Within the larger spatial, regional context, mounds cover many dead settlements, and shown are those of the Schagen area (below; from Diederik 1989). The bordering of settlement place is transposed to the larger scale of border, as the coast. For cosmological landscaping, the tri-partite division of the heavens is reproduced as was done at the settlement level. Mounds correspond to pits at the settlement level and could be 'stars' within the larger scale.

6.8 SCHAGEN MOUNDS: END OF THE SETTLEMENT, BLANKETED FIGURES

The analogy of pit-digging as marking time can be further extended to what happened to the farmstead at the end of the span of habitation: the 'sum' of the years represented by the settlement is marked by covering the area of the dwelling, and in some cases at least, the other main activity area. For the long term, mounds can be traced, with possible parallels in meaning, but here only the Schagen near contemporary settlements are taken up.

The low mounds mark a 'dead' habitation site, covering various burials, and the constellation figures. Very low mounds dot-

ted the landscape of the region (fig. 65), as shown by survey and other excavations within the area. The SM-I and SM-III dwellings were certainly dismantled. The bare floor with undisturbed hearths became the surface buried, but hearths remained intact. At SM-I both areas of constellation: human, male and female spheres, were covered (figs. 5 & 65). The material used had the character of normal settlement rubbish, with massive amounts of pottery and bone, derived from an accumulation over the years. Cut turfs and clay were also used, however, implying a winning of new material in re-layering the dead settlement upwards.

While the main activity areas of dwelling and industrial activity hearths were completely covered, some parts of the constellation features were not. All features of Rider were avoided,

as was the hind part of Horse; if the Kneeler had a head, it was not covered, but in any case, his right hand was not. Cow is masked somewhat from above to below her eyes. Structurally, it would seem that the female aspect of 'hearths' was reproduced by forming the mounds, with a vast amount of sherds, and through the layering, it was obvious turf was used to form most of the mound. Both mound areas over both of the dwellings at SM-I and SM-III had been set afire.

The settlement is re-layered, upwards. Fossilized as a marked landscape feature, some mounds at least were the site of seasonal use. Both of the mounds at SM-I were used for cultivation, as shown by plough marks. The activity could not be distinguished at SM-III. All very rational is the use of a raised area for cultivation, within a peat area. As well, the activity bound the horizontal possibly through generational succession, in continued use by inhabitants starting a new settlement, probably nearby.

Marking dead settlements, these mounds have been mapped for the Schagen area (fig. 65). They were landscape features. In a hierarchy of scaled landscaping as scaled time, mounds cover and mark the place of digging pits in patterns of constellations (assuming other settlements were similar). They mark many stars, but become analogous to one 'star', as seen in the treatment of firing. Within the larger regional landscape, the coastal area became dotted by these mounds, as the settlements were dotted by pits. A duration of time is buried, which consisted as small segments of seasonal time. In contrast to the reordering of earth downwards in the pits during the settlement years, the totality is marked by re-ordering earth upwards in these mounds.

The Milky Way was suggested to be represented as the western boundary of the settlement, within the temporary duration of a single farmstead. Within the larger scale, the Milky Way could have become a conceptual landscape feature, within cosmology, as shifted to the west, to the coast as boundary. In this suggested larger-scale, cosmological conceptualisation, seeing the Milky Way as coast, the mounds are to one side taking their place within horizontal landscaping of the sky, on the east. With western aspect, the 'sea' at the large scale is then analogous to that suggested for the settlement scheme of inward:outward, and under-earth, c.q. underworld, and the tripartition of the night sky, in horizontal aspect (fig. 65).

Suggesting deposits of dead humans, not needed for marking star positions inland, were made in the sea is by absence and analogy of scale. The suggestion also serves to bind some texts together. An article on traces of the region closed with the following:

'To condone the present, the legitimation of practice refers to the past, as the Frisian King Redbad more or less informed Wulfram in the late seventh century (Halbertsma 1984, 27): but a link in a chain, tradition, not he, determined punishment. The case at hand involved death through drowning by the incoming tide, a not inconsistent sanction considering the long term, cyclical, influences of marine transgressions and regressions permeating decisions on the place of settlement through 'Frisian' (pre)history and throughout the Middle Ages' (Therkorn 1987a, 110).

The text demonstrates the coastal region as connected to 'death' and bodies, in an interesting penalty through a naturally incoming tide, about three centuries later than the Schagen sites. Within earlier large scale landscaping as cosmology, the area was not so negative. As with the watery offerings at the settlement level, access to the otherworldly could have been through the sea (or rivers), if they did not gain a place in an iconographical Horse. Besides explaining away

the lack of bodies for the coastal region, aside from a very few burials, and a very few body parts found in settlement context, the suggestion anticipates some of the facets of text interpretation of Chapter 7, of ‘corpse beach’ (Nastrond) identified as the coast of the Milky Way, in the *Voluspa*, within a sky context.

Mounds, circles and pits have a long history as markers,¹²⁴ here for some sites and a period of c. 600 BC to 350 AD they have been interpreted as part of religion within cosmological landscaping of stars. It is doubtful the perception was confined to the region or the period, but arguing the point is for another work. Between generalizations towards the Principle of Super-human Immediacy or Agency (cf discussion in Lawson & McCauley 1990) or more simply, in the dictionary sense of ‘gods’, as who/what is worshipped as having power over nature and the fortunes of mankind (OED) lie a number of suggestions as to what these images could have meant to those tracking them. Just one has been presented above, in connection with stars, sun and seasons. According to Le Goff (1987, 44) it was especially since the ‘naturalistic’ 12th c. that theologians maintained: *Natura, id est Deus* (Nature, that is God). Which theologians, where exactly, and with what backgrounds – that is, if it was a (regional) traditional way of looking at things – will have to be examined more fully to see if the idea dropped out of the sky into the minds of men as late as the 12th century, also a work for the future. From about the same time is the quotation from Snorri starting off the next chapter. It was placed there, as the construct presented above arose through thinking through an internal logic of settlement traces, using inversion and the patterns of sky referencing to obtain the interpretation. Snorri’s text was ‘discovered’ much later, but it could indicate that the construct above has something to do with actual reality, and archaeology could be part of history. The next chapter goes into some points along similar lines corresponding to interpretation within sky phenomena, but through the possibilities supplied by well-known materials.

Chapter 7 Wider implications of space through time: suggestions on other star landscapes

‘Odin set in his land the laws which had formerly been upheld by the Asa folks; thus, he bade that they burn all the dead and bear their possessions on to the firebale with them. *He said that every man should come to Valhall with such riches as he had with him on the firebale and that each should use what he himself had buried in the earth.* They should bear the ashes out on the sea or bury them down in the earth; for a renowned man they should build a howe as a mark of remembrance, and for all men in whom there was some manliness they should raise standing-stones, and this custom held good for a long time after’ (my emphasis; Snorri Sturluson, 13th c. *Heimskringla, Ynglinga Saga* 8; Monsen trans/ed.1990, 6).

For the Noord-Holland sites, the interest in marking stars has been interpreted as minimally from 600 BC to 1000 AD. The 1600-year span includes the medieval remarking of the late prehistoric Velsbroek-B6 Horse pattern with a mound – of white sand, over turf covering horse-shoes – a pit with a horseshoe, as well as bundles of juniper. Both ends of the time-scale are still open, and suspected is an even longer tradition, but a matter for further research for the region and adjacent areas. Certainly for later periods, there are myths, legends and folklore that concern horses, as carriers of the dead to the Otherworld, with a sky association (cf Brown 1993).

Within a cultural historical approach, some of the suggestions made in Chapter 6 can be seen to supply an interpretative framework for well-known finds, including texts. The text cited above is from the 13th Icelandic situation. Burying materials in the earth is specified for the afterlife. Via another route, the same conclusion was reached for the late prehistoric sites to interpret pit and watery channel deposits, but placed within a multi-dimensioned interpretation of cosmology for those of the Noord-Holland region. The interpretation of Snorri’s medieval texts will be taken up below for what he did not state, but what he may have implied.

First in this chapter is something of a chronological trail of famous horses, and some cows, which are here interpreted as sharing a night-sky context as the primary religious referent, but known through various materials.¹²⁵ Briefly gone into will be the aspect of landscape iconography; coins/amulets as the dialectics of day and night; and text as myth of the heavens, perceived as three parts, telling time. The last section, as conclusion, looks very briefly at a text – the Revelation of John – that is suggested as a point where actual substitution of one way of looking at the sky as structured into three is replaced by a new version in the Christian unified landscaping of heaven.

If something of the preceding chapters is applicable, (late) pagan practice was structured within a cosmology of sky referents, but not, as Solar Mythologists maintained, through a perception of opposition of light and dark forces, good:evil. Interpretation as opposition, rather than dialectic, could have been the effect itself of Christianised categorizing. An apparent difference would be



Figure 66 The White Horse of Uffington (Oxfordshire, England), about 81 m from nose to hind leg.

that the powers of the dark, night sky moved in conjunction with those of daylight and the sun, as within perception of world:otherworld. The following examples gain an interpretation below, through a commonality of unknown antiquity, but if the base of cosmological tri-partition as sky regions seems to apply, Indo-Europe mythology is implicated, and pertains to many other materials.

7.1 THE WHITE HORSE OF UFFINGTON

The most famous and oldest large landscaped British Horse, about 110 m long, is the Uffington White Horse in Oxfordshire (fig. 66). The Celts were long held responsible for creating it somewhere around 100 BC due to iconographic style and proximity to an Iron Age hillfort. However, the figure has now been dated to the Late Bronze Age (Miles & Palmer 1995). Marples had argued for a Bronze Age dating, also due to iconographic style, by 1949 (Marples 1981 [1949], 46). The White Horse was first referred to in a text in the 11th c. (ibid. 53).

It had been long assumed as well that this Horse owed its original existence to people stripping sods from the hillside, exposing the chalk underground, which thereby defined the visual substance of the figure. Limited excavation has shown that at least some of the outline was originally made through features cut into bedrock, about 1 m deep, and backfilled with chalk blocks (Miles & Palmer 1995). This landscaped Horse had meaning as people took action to keep it alive, through the pre-Celtic, Celtic, and Anglo-Saxon periods through to modern times. On earth, the figure can be viewed from Dragon Hill, across the chasm from the horse, but a better view is from 3–4 miles away. It is visible up to 20 miles away and the positioning must

have to do with this aspect. However, it is best seen from the air, and most images of the Horse are aerial photographs. On a WNW-facing slope, its back at the crest, the figure goes from left to right, and is angled somewhat upwards. It is running towards the south.

Through the constellation interpretation of the Noord-Holland Horses, one may posit a similar significance to this figure. In contrast to the Noord-Holland constellation figured Horses and associated features, the Uffington Horse would be a reflection, a mirror image, rather than a map in rock of the constellation. As a reflection of the constellation's eastern rise, the constellation's back, as it is now generally understood, is angled higher upwards. The White Horse is in any case not an iconographic representation similar to the Noord-Holland horses, nor one of the join-the-dot configurations more or less standardized on modern star charts. It is difficult to wrap the pattern of the stars around the figure of the hill; the hill figure seems a stretched version due to the length of the back.

However, as the square of Pegasus seems to be lacking entirely, a likeness to the stars could be a result of perceiving the constellation form by connecting the stars of Markeb and Alpheratz, ignoring Algenib, to form its back (see fig. 32: connecting positions H7 with H9; leaving H8 out of the picture). As a mirror image, the horizon as the figure's back is along the horizon of the crest of the slope. The line in the sky of Markeb and Alpheratz might also be possibly parallel to the horizon of the slope, but calculations of slope and angle and directions have not been made for the period of the Late Bronze Age and the hilly topography of the situated figure.

The feature of Dragon Hill is off the slope, across a chasm/roadway, NNW of the White Horse. It is considered a natural hill, with an artificially flattened top. One does get some view of the Horse standing on the hill, but it is not good. Calculations could be made for the positioning for establishing where the constellation would be visible. There would be a view of the constellation horse coming up and moving to the south, and further around going down in the west (depending on topography).

Dragon Hill is an interesting feature through its name and can also be connected with the sky. Marples notes that the combination of the legend of St. George + Horse + Dragon has its own logic as a grouping in the landscape. Some, including Marples (*ibid.* 50) hold that St. George is the descendant and successor of a pagan deity, a horse-god, probably relating to the Anglo-Saxon myth-cycle and Wodan. However, this linear idea is probably more complicated (cf Attwater & John 1983). The horse theme is also evident in the chambered long barrow one-half mile distant named 'Wayland Smithy', known as such by 955 (Marples 1981, 50). 'Wayland' is Weland, the supernatural smith of Anglo-Saxon tradition, the Volundr of Old Norse saga (Davidson 1969, 239).

When Dragon Hill got its name is unknown, but as a positioning, across a chasm, and across from the horse figure, it can also be interpreted as relative positioning to the Horse constellation and constellation Dragon/Draco in the sky. For a more exact positioning, it should be opposite the horse figure, if the head of the dragon was the referent. If the tail of the Dragon was referred to, the positioning is closer to the sky pattern positioning (when the constellation is to the south/southwest). Celestial north has changed (mentioned under precession in Chapter 6). It was near to the tail of the constellation Dragon/Draco 2000-3000 years ago. The point of Dragon Hill could also be in reference to this, as relative positioning to the figure of the White Horse, as a constellation figure. Standing on Dragon Hill would then have some similarity, within cosmological landscaping, of standing on the celestial pole. (The Dragon as constellation is also found within the text of the *Voluspa*, below, as it is in John's Revelation.)

The entire landscape is full of the history of naming, as well as festivities surrounding the figure of the White Horse. Marples (*ibid.*) recounts the legends recorded in early sources which associate the figure with St. George, Hengist and Alfred, and superstitions such as it being lucky to stand in the horse's eye, with one's eyes shut, turn round three times and make a wish. Records exist from 1738 onwards of the figure being cleaned every seven years, an activity accompanied by festivities ('pastimes') usually held in the nearby Iron Age hillfort, known as Hardwell Camp. The pastime was not held after 1857 and scouring of the horse was irregular such that by 1880 it was nearly obliterated by vegetation.

The figure has now regained a permanency, as the in-filled rocky figure of Uffington, now suspected of being at least 2700–3200 years old. Within the interpretation of the Noord-Holland figures, this landscaped figure would also have importance with activities, seasons, and marking earth as the heavens.¹²⁶ Names, traditions and transformations in religion are imbedded in the landscape containing it, through archaeological periods and transformations within religion, and a continuity of landscape use. Other earthly materials transformed by people translating towards immortality of the phenomena in the sky are often in gold.

7.2 CELTIC COINS: NIGHT AND DAY

The themes of horse and the night sky, and light/sun and day, as two sides of the coins are the subject of this section. Within an evolutionary framework of interpretation, the iconography of Celtic coins appears a dead-end subject. It is as if there is no more to be said after one has led these configurations back, chronologically, as being 'debased' copies of coins from the reign (359–336 BC) of Philip II of Macedon. It then becomes somebody else's problem for explaining why coinage arose, and why 'coins' were illustrated at all, within the context in which they were made and used.

Northern Gallic coins have been extensively studied (see discussion in e.g., Roymans 1990). After the first generation of exact copies (ca. 250 – 125 BC), the coins become 'increasingly abstract'. The first are faithful copies of the original; one side bears the beardless head of Apollo and the other depicts a chariot and two horses or two horses with riders. Importantly, that side with horses sometimes has stars (e.g., Roymans 1990, 118). The Dioscuri, the twins, on their white horses are here given in conjunction to a direct referencing of their context through the star motif, and specifically to the constellation Gemini/Twins.

During the following phases, the coins are described as becoming abstract, debased, degenerated. But as interpretation, these terms pay witness to lumping all manner of action together, called then acculturation, whereby it is (implicitly) inconceivable that symbolic/sign substitution may have taken place as to iconography on coins, within Celtic traditional categories of meaning. It is highly unlikely coins meant anything like our sense of money until the late Roman period (Hodder 1979).

Already by phase 2 (c. 125 – 60 BC), the 'coin designs become increasingly abstract, and sometimes new motifs are added, giving these coins a distinctive style. The coinages are always anepigraphic, but some bear "pseudo-legends", such as the Pegasus type of quarter staters' (Roymans 1990, 123). Here is then a direct reference to which horse is being depicted, within Greek mythological sphere, but also as the horse recognized as constellation. Recognition of the figure of a horse in the stars could well have long been part of Celtic perception, but here given a

borrowed, classical name. As the coins gain a distinctive style, one must presume they had been given an associated but distinctive meaning with signs/symbols accompanying the more obvious imaging.

While the horse remains particularly recognizable, the reverse, Apollo side becomes 'abstract' indeed. Perhaps substitution occurred whereby Apollo as 'light' became more specifically imaged as the sun. By the third phase, this side was often illustrated with a very clearly executed three or four-armed swirling motif. Accompanying the horse on the other side are often symbols, which could be referring to stars. Design motifs such a crescent, spiral or flower-type design mark as well the position above the backs of the horses. The position of marking is similar to bracteate examples, but thereon marked at times with swastikas, as discussed below.

If constellation Horse were the nighttime feature pictured on the coins, other markings would also have to do with the night sky. The ecliptic, the path of the planets – wandering stars – and the moon, is along the back of the constellation Horse (through Aquarius and Pisces). The design elements at this position on the coins could then be signing towards a planet or the moon. The other side of the coin would be 'day'. Intrinsic to life, night:day would be the two sides of the coin.

On the original Greek coins, Apollo is pictured designated among other things as the god of light (with the epithet Phoebus, 'the bright'). Lug, the Celtic god, has been similarly interpreted: 'The important but elusive Celtic god Lug bears a name generally taken to mean "shining" or "brilliant", and we are told in the literature that his face shone. Many earlier scholars assumed, therefore that he was a sun god' (Davidson 1993, 59). That could hold, but shining and brilliant are also applicable to stars and planets, phenomena also distinguished by certain Celts at least, as Caesar remarked commenting on the practice of priests. Caesar identified (BG VI.17) the gods of the Celts as Mercury, Apollo, Mars, Jupiter and Minerva (an Italic goddess sometimes associated with the Greek Athena). As they were for the Romans, these are things you can point to as 'light', all shining and brilliant, and in any case named are three visible planets, and the god of light, Apollo.

Although the feature of the night sky, a Horse, was named on one find as being 'Pegasus' during the earlier phase, within Celtic tradition Horse has a better association with Epona, The Divine Mare. A female deity, she is known from numerous inscriptions from Gaul and as personification consistently associated with horses (Davidson 1993, 47). In iconography, when shown personified, she is sitting sidesaddle and sometimes has a woven wreath, a circle, in her right hand. The single horses when taken up into the purely 'Celtic' style of coin could represent Epona, in her night-sky context, intriguingly then the 'nightmare'. Later legends and myths of the Grey Mare are associated with the sky and the Otherworldly (Brown 1993).¹²⁷

The symbolic value of the golden coins would be in using an everlasting, and thus valuable, earthly material for illustrating a miniature cosmos. Use of the figure of a horse, as the constellation, could well have similar meaning as sketched for the Noord-Holland figures as spanning part of the night-sky during important seasonal activities, and symbolic of the otherworldly. As the suggested symbolic or even direct referencing as a coin being night:day, there are also those controlling the flow of the resource, and controlling something of earthly life within Celtic society. The 'idea' of coinage is too often bound to a modern market mentality although the coins are often found within ritual contexts. Those controlling gold as resource, within socio-

politico-economic hierarchies would not necessarily be using these assets when depositing coins in propitiation of the gods, or in buying immortality as a trip into heaven. Putting resources on deposit for your own afterlife, as in 'grave-goods', could also apply to coinage. Those coins not of gold are very often recovered within settlements. Feature analyses of where these coins occur (pits?) could be given more attention for settlement sites.

7.3 GOLD BRACTEATES: DAY AND NIGHTTIME MYTHS

The archaeological contexts being what they are as single deposits, in hoards or as grave finds, gold bracteates have not been subsumed under explications of early market economies or earthly elite, gift giving situations between men. The images pictured on the world of the gods/goddesses are known mainly from texts of a later date, the Eddas.

Bracteates have iconography only on one side and they are assumed to be amulets. Some have a fitting for a thong for wearing about the neck. The suggestion here is that bracteates are imbued with the basic categorizing of night and day suggested above for the Celtic coins. Only one side of bracteates is published, simply because there is nothing to see on the reverse. While this side is generally ignored, it is the other side of the proverbial coin. Of gold, one sees a golden disc. Meaning is a golden disc, and would be the representation of day, as light, or disc as the sun. The enfigured side, would be the night-sky side. They also at times have small signs/symbols of star-like motifs (fig. 67).

There were 907 bracteates known from Europe as of 1988, made from 566 die (Looijenga 1997, 107). The distribution is mainly Scandinavian. Bracteates are not well dated; they could have been deposited from the fourth century to the sixth, although there is disagreement as to the duration of bracteate manufacture (Looijenga 1997, 23–25). Five categories are distinguished:

M: (Roman) medallion-imitations

A: man's head in profile

B: man figure, often with animals

C: man's head above horse-like animal, often together with birds and other animals

D & F: no human figures; animals in Germanic animal style I. (ibid.)

Again as with the Celtic coins, these bracteates were modelled in the first phase on Roman coins. They soon became illustrated in a Germanic style. Karl Hauck has most comprehensively studied what is being illustrated (e.g., 1980, 1984; cf also Bakka 1968), within a framework of Germanic meaning involving the world of the gods. Some bracteate iconography can be directly correlated to descriptions found in texts such as the Germanic belief that horses are in communication with the gods, where omens and warnings can be gained on earth from noting the neighs and snorts of the pure white, undefined horses kept at public expense (Tacitus *Ger.* X; cited in Chapter 3). Some of the bracteates appear to be showing the other end of the line: a god, by Hauck convincingly argued to be Odin/Wodan, talking or whispering in the ear of the illustrated horse. Another illustration such as the wolf biting (off) a figure's hand, is the figure identified as being the god Tiwaz and the wolf Fenrir showing the climax of a myth related in the Prose Edda by Snorri Sturluson in the 13th c.

Less attention has been given to design elements on these objects. Star-like motifs are clearly pictured such as that shown on two bracteates in Figure 67. On the one, a female figure spin-

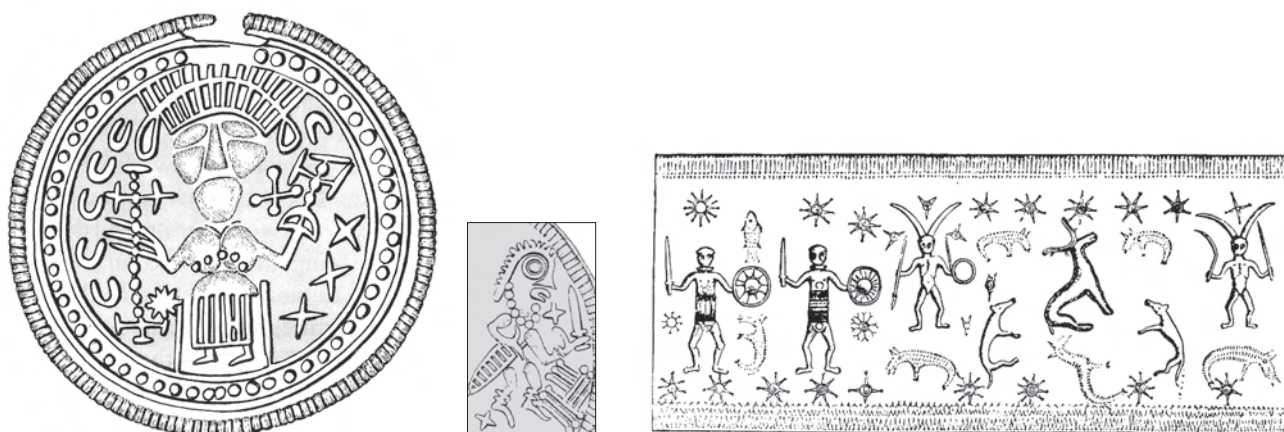


Figure 67 Examples of star-type motifs on bracteates: on the left with a spinning figure, possibly Frigg (from Davidson 1993, fig. 14) and a detail of a figure, with stars by jaw and heel (Hauck 1980 Tafel XV, 32b). Right: One of the sections from the Gallehus (Denmark) gold horns (Todd 1992, fig. 16), with star motifs.

ning is accompanied by clear star designs, suggested in Chapter 6 as the three stars of the belt of Orion, possibly in conjunction with Frigg's spindle, as folk designation, and another symbol as sign of a planet, for the goddess. The other example shows stars next to a small figure, also on a bracteate. Other materials in gold such as the gold Galluhus horns, of which one panel is shown in Figure 67, also have clear star images. Hartner (1969) interpreted the horns as the iconography of constellations, and related them to figures of the Poetic Edda.

C-bracteates have the combination of Horse, accompanied by a figure, the god Odin/Wodan, following Hauck's interpretation. All have signs/symbols, consisting most often of a single swastika, usually in the vicinity of the god's head, and as mentioned, some have stars-motifs. As with some of the Celtic coins, the juxtaposition of Horse with star-like motif indicates the night-time sky context portrayed. It could then follow that the associated motif of the swastika gains a night-time context. While Nazi use of the swastika as the 'sun' was probably drawn from solar-mythologist interpretation, the historicity of the interpretation rests not on specification of the sun, but on 'fire' (Davidson 1964,83). As the symbol/sign on Celtic coins, the swastika sign can be similarly positioned above the horse on bracteates.¹²⁸ Movement is wrapped up in the form of the swastika. Within the night-time context, movement would suggest a wandering star, a planet. Whether or not the same planet is being indicated is certainly another matter. As mentioned above, the path (the ecliptic) of **all** planets and the moon is in the sky along the area of constellation Horse.

Taking Tacitus literally on Germanic tribes in general that 'above all other gods they worship Mercury' (*Germ.* IX), the correspondence was made of Odin/Wodan and that planet. The swastika would be the sign for the planet designation and the figure of Odin/Wodan the personification. Again, the planet is something one can point to, a phenomenon known to the Romans and named as Mercury. Conceptions of Mercury (and Hermes) as god are dissimilar to Odin, and this would be a solution for the function and attribute problem if the same visible object is

referred to in naming, but through divergent traditions, different conceptualisations of the god.

After the initial copies of Roman type imaging, the style became indigenous, along more familiar imaging within native tradition. Germanic bracteate maker/users/depositors would have been recognizing a wandering star, designated with the sign of swastika, accompanied by associated images, as constellation, such as the Horse. At two of the four Noord-Holland sites, a Rider was also distinguished.

Wrapped up in gold, contextualized as gold, the iconography of the signs and the culturally derived patterns, through binding stars, are materialized. In the everlasting, eternal material of gold, the thing itself is the symbolization of immortality and in direct correspondence and commensurate with the patterns on them of the star patterns and pictured deities. As an earthly material, and in this manner culturally formed and manipulated into golden objects, the material is the closest earthly approximation to what is signed as immortal patterning, culturally perceived.

Great care was made in executing these often-complex patterns on discs of gold not more than 2 cm in diameter. The complexity of the one side is in sharp contrast to the ‘emptiness’ of the other, but the empty side could be essential to understanding the basic referents and the materialized dialectics of night and day.

The small scale depictions in gold of Celtic and Germanic design were fashioned through centuries of that long-term period in which people kept on cleaning the large scale iconographic Uffington Horse. Rising above the typo-chronological specifications of the materials, the long term recognition of the constellation Horse is a base from which transforming religious content could be viewed for tribal/ethnic entities; the figure remains the same, with the same specific reference to sky phenomena, while the associated deity could change. During the Anglo-Saxon period, new conceptions on naming and myths also arrived in the Uffington area, such as the name Weyland Smithy implies for the nearby megalithic structure, and perhaps Dragon Hill. The landscape was recognizable with a Horse, and the new arrivals kept on cleaning a large Horse image, commensurate with older, traditional meaning, conceptualising it as a stallion, rather than perhaps a mare.¹²⁹

The material of gold gives form to the objects discussed in these last two sections whereby an immortal cycle is the key configuring night:day. Gold in another form, as adjective and as an element to proper names, used in texts, will be considered within this category of immortality, referencing the sky.

7.4 LANDSCAPING OF THE HEAVENS: THE VOLUSPA OF THE POETIC EDDA

The Voluspa (The Seeress’ Prophecy) is the opening poem of the Poetic Edda. This section goes towards demonstrating how this one text can be read as iconographic, as an illustration of the entirety of the night sky through much of the year, of risings and fallings of constellations before dawn, or more quickly through one night, as an illustrated metaphor of the year. The text is at the same time a progression of Germanic mythical characters through mythical landscapes. The sky referent interpretation explores *one* facet of meaning, that the text tells time, as stories, and

as mnemonics. There is no attempt here to explain why it is possible to read the stanzas as time, nor why variously known constellations from the classical world can be recognized in this text, as they were in the settlement remains of Noord-Holland. That is, proposing origins is not the purpose here, and this will not be gone into.

The interpretation here does not particularly contradict numerous studies of this important text interpreted within research concerns such as the eschatological, comparative mythological, socio-political, ideological, or within societal issues such as gender.¹³⁰ The text – taken as a whole – can also be interpreted as a structured, literal referencing of the sky, which could have also served as a foundation upon which meaning became faceted between real world and otherworldly. There are still elements of translation which have yet to be resolved.¹³¹ Suggested here is a literal translation towards sky phenomena, with possible implications for the layered-ness of the metaphorical and symbolic, and mythological analyses based on written texts. Time and immortality, essential to any study of cosmology, is the aspect supplied by this interpretation, but based on settlement remains, rather than other texts.

The Poetic Edda together with the Prose Edda are the primary sources of information used in analyses of Germanic mythology, and in comparative analyses within Indo-European studies. The works are however specifically Norwegian/Icelandic. The Poetic Edda was written earlier than the Prose Edda, but unknown is the age of the content of the verses.¹³²

In the 13th century, Snorri Sturluson wrote the Prose Edda. He cites various passages of the Poetic Edda, as well as other texts, some of them otherwise lost. In *Gylfaginning*, one of the three parts of the Prose Edda, Snorri's narrative involves questions and answers, moving along with his story that serves as a vehicle for inserting verses of older texts, to illustrate his points. Thus implicated as well within the interpretation put forward here is a facet of meaning within Snorri's text. He could be explaining what the older texts are about while confusing the matter with yet another layer of riddling.¹³³ However, he is rather specific on where the action takes place, and here he is telling the reader exactly what he is describing, in the literal sense of the stars:

‘There are many beautiful places in heaven ...There stands there one beautiful hall under the ash by the well...’ (*Gyl.* Faulkes 1987, 18).

or,

‘Two birds feed in Weird's well. They are called swans, and from these birds has come that species of bird that has that name. Then spoke Gangleri: “You are able to give a great deal of information about the heavens”’ (*Gyl.* Faulkes 1987, 19).

That is, Snorri is giving a great deal of information about the heavens: The ash, the World Tree, is in heaven, as are the well, swans, and the hall, which is Valhall. As the materiality of the night-sky supplying points of reference as stars and constellations is used within this literal reading, there are also further demonstrations of cycles as timeless sequence in ‘gold’ as immortal referencing in adjective and in names (see below).

Other clear indications are also given in the second book of Snorri's Prose Edda, *Skaldskaparmal*. For instance, Snorri cites passages (*Skald.* 17–18, 22, 43; Faulkes 1987, 80–1, 86–88, 106) by two poets who are describing what they see on a ‘shield’, with involved stories and movements,

also of the shield itself.¹³⁴ And the giants are dwellers of the shield. It seems a bit much to be seeing so much on a decorated, literal earthly shield, and the dome of the sky could be an alternative interpretation.¹³⁵

Appendix 3 gives the complete text of a recent translation (Larrington 1999) of the *Voluspa*. An interpretation, per verse, is given through the progression of what could be happening according to constellation movements, as time told. This is done through three of the constellations thought delineated within the settlements of Noord-Holland. The three Schagen constellations which were defined – Hercules, Greater Dog and Horse – can be slotted into the stanza progression (and thus time) as the dead figure of Thor¹³⁶, the dog Garm, and the World Tree, *Yggdrasill*, which also translates as ‘Odin’s Horse’. As these constellations have classical correspondences, parallels were sought for figures as other constellations (for example, constellation Lyre=Egil’s Harp), but also as indirect reference, through an element as part of the constellation (for example, serpent in Ophiuchus=hall of serpent’s spines). A few references and remarks on passages from Snorri Sturluson are also given within Appendix 3 when it seems he is providing information pertinent to the interpretation here, although this is certainly not an exhaustive in depth analysis. The interpretation of some constellations also occurs through the progression of stanzas and directions mentioned therein.

Perhaps most important is using the element of inversion of day and night, between otherworldly and the actual earth, the structure of settlement into three, and of course, modelling through the seasons (Chapters 2, 4 & 6). The aspect of the seasonal conjoins with earlier studies of the Poetic Edda.

7.4.1 SEASONAL INTERPRETATIONS

Both Eddas have been gone over with various types of fine-toothed interpretative combs, and translation of Old Icelandic and shades of meaning are still under discussion. Some researchers have implicated the heavens within the cosmos.¹³⁷ There are also instances where text interpreters have suggested seasonality and natural phenomena as possibly being a feature of the Eddas and other northern texts. Martin (1972) for example opens his study on ‘ragnarok’, usually translated as ‘the fate of the gods’, with the following:

‘Little progress was made in research in ragnarok before the pioneering work of the great Danish folklorist Axel Olrik in the first decades of the twentieth century. Olrik set a new direction in the study of Old Norse eschatology. He rejected the idea of a coherent myth but saw ragnarok as a series of individual scenes to be examined critically in their present form.

In the decades since Olrik the field of Old Norse eschatology has largely been neglected, despite renewed interest in concepts of the latest things in philosophy and theology, and advances in sociological techniques. The latter have led various scholars in literary and ethnological disciplines to suggest that an intimate link exists between traditional patterns of seasonal ritual on the one hand and certain literary motifs and forms on the other. Examples have been found in ancient China, India, Israel and Greece as well as mediaeval Western Europe.

Eddic studies have not been able to escape some impact, even if slight, from the seasonal ritualists. The clarion was sounded by M. Olsen, who postulated the origin

of the eddic poem *Skírnismál* in rites of seasonal invigoration....Very little research has been done in the area of Old Norse eschatology in relation to the patterns of seasonal ritual. Scholars writing on other mythologies have made reference to parallels in the North, but since the time of Olrik this field has not been touched' (Martin 1972, 1-2).

In his work, Martin proceeds to examine many aspects of the texts as to their seasonal worth, recapping various arguments from earlier works, and coming essentially to a seasonal conclusion, the specifics of which remain unsolved. That is, one does not get further than Olsen in filling in the specifics of general indications. More recently and more generally, Lyle (1990) examined the seasonal as imbued with the godly/mythical within, and as basic to, Indo-European cosmological structuring through tri-partition. But again, any connection with mundane aspects of life and actual people are left unresolved, as they must when only myths are considered. Davidson (1993, 154-155) regards Lyle's seasonal approach favourably, but is somewhat reproachful that archaeological and iconographic sources are not used for furthering the specifics of a tri-partition model for specific texts. On the other hand, Hartner (1969) did consider seasonal feasts of Iceland and constellations movements as part of his interpretation of the iconography of the golden Gallehus horns. And, there are recent examples of research where Edda texts are being brought together with iconography and constellations.¹³⁸

The later prehistoric site-landscaping of Noord-Holland could indicate a spatial framework for understanding written textual structure, and that base on which metaphor is constructed. With this constellation/cosmos model in mind (Chapter 6), time – especially as seasons and years, and mundane time, towards a perceived eternity – can be witnessed in the progression of the *Voluspa*.

7.4.2 CORRESPONDENCE OF PIT FIGURES AND THEIR MYTHICAL PLACES

The places in the sky of three of the constellations from the settlements of Noord-Holland are the timely, horizontal reference points within the text sequence. The various types of ditch/water:land borders as settlement cosmos provide the structuring of three parts of the sky. Three constellations of the Schagen settlement and the areas as names in the *Voluspa* are here interpreted as:

- ❑ Thor – the constellation The Kneeler/Hercules, a dead image felled by the World Serpent
- ❑ Garm, the noblest of dogs (*Grim.* 44, Larrington 1999) – the constellation Greater Dog/Canis Major;
- ❑ Yggdrasill/World Tree/Odin's Horse/Valhall – the constellation Horse/Pegasus, with additional sky features to make a 'Tree'; including Capricorn (Snorri's Hedrun, a goat, nibbling on the tree's leaves).
- ❑ three main regions are named, and these can be seen in the regions of the sky:
 - ❑ Asgard, the area with Tree-Horse, world of the gods
 - ❑ Earth, as Midgard – middle earth – Milky Way, with Corpse Beach/Nastrond, along the edge adjoining

- ❑ Utgard as the underworld/sea, surrounded by the Watersnake (constellation Hydra), as the World Serpent.

Using Larrington's (1999; Appendix 3) translation and stanza numbering, the action of the Voluspa, as movement of the sky, is here interpreted as to main action:

- ❑ Stanzas 1-6: introduction, and as a brief referencing of the creation, including when moon, sun and stars knew neither place or power; when the gods gave names to nights/days and moon phases to tell time.
- ❑ Stanzas 7-29: description of the world of the Asgard; the gods' creation of dwarfs in the likeness of men; various descriptions of places, past exploits, the powers of the seeress, receiving offerings from Odin, to see what would come, which are the following:
- ❑ Stanzas 30-43: various places and negative figures, situated mainly in the vicinity of the Milky Way.
- ❑ Stanzas 44-58: the forces of evil are set loose, the earth plunges/tilts, the ship of the dead sails as the underworld/Utgard wheels into view; leading to the death/disappearance of the gods' world.
- ❑ Stanzas 59-66: prediction of the world renewed (with Eagle's rise) and reinstatement of the gods' world. The seeress sinks away, as the moon goes down.

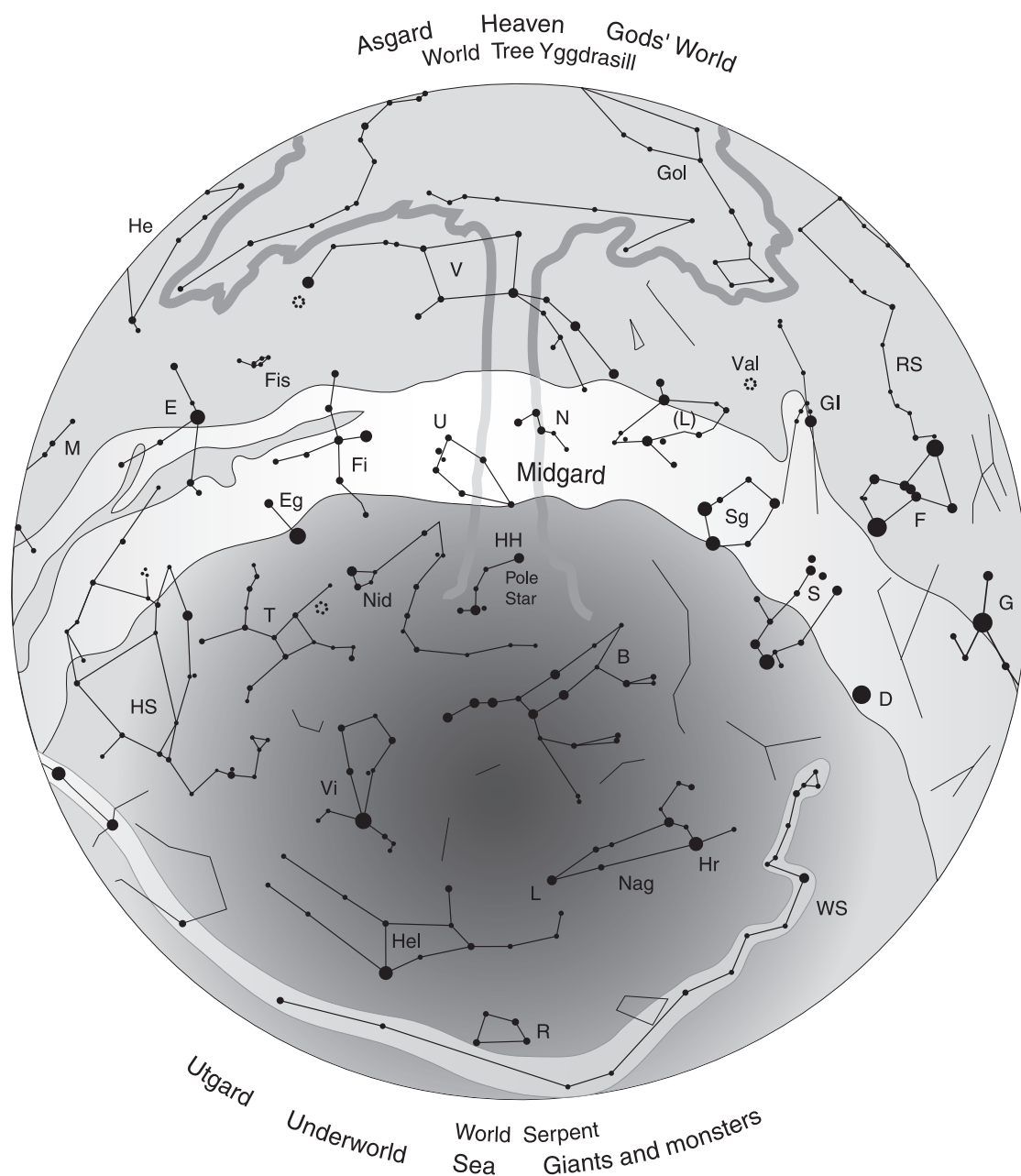
Using the progression of the stanzas, with the identifications obtained through the Noord-Holland interpretation, leads to positioning some other named figures. These are shown in Figure 69, and set out in more detail in Appendix 3. Constellation shapes have not been altered, but are taken from one modern version, shown for reference.

The literality of fate becomes clear, as through the model of the sky as three parts, the world of the gods disappears. Figure 69 shows the main progression in four time slices of the sky, with some of the constellation designations from Figure 68 for reference. Most important is how the aspect of the sky changes from visibility of Asgard to a near total aspect of Utgard, the place of evil and the ship of the dead, and the image of Thor, killed by the serpent. However, the gods' world of Asgard, is clearly stated as rising anew. What has been related is specifically denoted as cyclical, and we are also told where, and thus when, to start on the descriptive journey over Ithavol:

She sees, coming up a second time,
Earth from the ocean, eternally green;
the waterfall plunges, an eagle soars above it,
hunting fish on the mountain. (Larrington s59)

Constellation Eagle (Aquila), diving after fish (constellation Dolphin), is situated on earth/Milky Way. The early morning rise of Eagle (Reykjavik: lat. 64°15') is in December. If one takes the entire progression of the text with stars through a year, at this high latitude, one cannot see anything in the month around mid-summer. It is too light; the sun obliterates the stars. But, taking a long winter's

Figure 68 One result of the Voluspa read as to directions, three areas of the night sky, and progression of the verses as progression of constellations, using the Schagen constellation patterns as reference points. Correspondences could be those shown, related to space of constellation as now known. The constellation Horse/Pegasus is hung in a tree (Yggdrasill).



Voluspa places and names*

Garm
Fenrir
River Slid
Giantess in Ironwood
Valkyries
Sindri's Hall
Loki (vs 34)
Sigyn
Norns
Urd's Well
Motsognir, and other dwarfs
Heimdall's Horn
Valhall (Odin's Hall)
Heidrun
Gollinkambi
Fialar
fish
eagle
Eggther (playing harp)
mistletoe
hall of serpents
World Serpent
Thor
Nidhogg
Brimir's Beer Hall
Hrym
Naglfar
Loki (vs 48)
Vidar
Hel's Hall
red rust bird

stars and constellations

G Canis Major / Greater Dog
F Orion
RS Eridanus (the River)
GI Aldebaran in Taurus / Bull
Val Pleiades
S Gemini
(L) Algol in Perseus
N Capella (She-goat) in Auriga
U Cassiopeia
D Cepheus
HH stars in Milky Way as >60 dwarfs (?Procyon=Motsognir, the greatest)
V Ursa Minor / Little Bear
He** Square of Pegasus
Gol Capricornus / Goat
Fi star in World Tree, such as Mira
Fis Cygnus / Swan
E Delphinus / Dolphin
Eg Aquila / Eagle
M Lyra / Lyre
HS part of Ophiuchus or row in Milky Way
HS Ophiuchus/Serpent Holder
WS Hydra/Water Snake + brighter stars in Libra and Scorpius along horizon
T Hercules
Nid Draco / Dragon
B Ursa Major / Big Bear
Hr Regulus in Leo / Lion
Nag Leo
L Denebola in Leo
Vi Bootes / Herdsman
Hel Virgo / Virgin
R Corvus / Crow

* following Larrington's (1999) spelling

** from Snorri: Heidrun = goat eating leaves World Tree

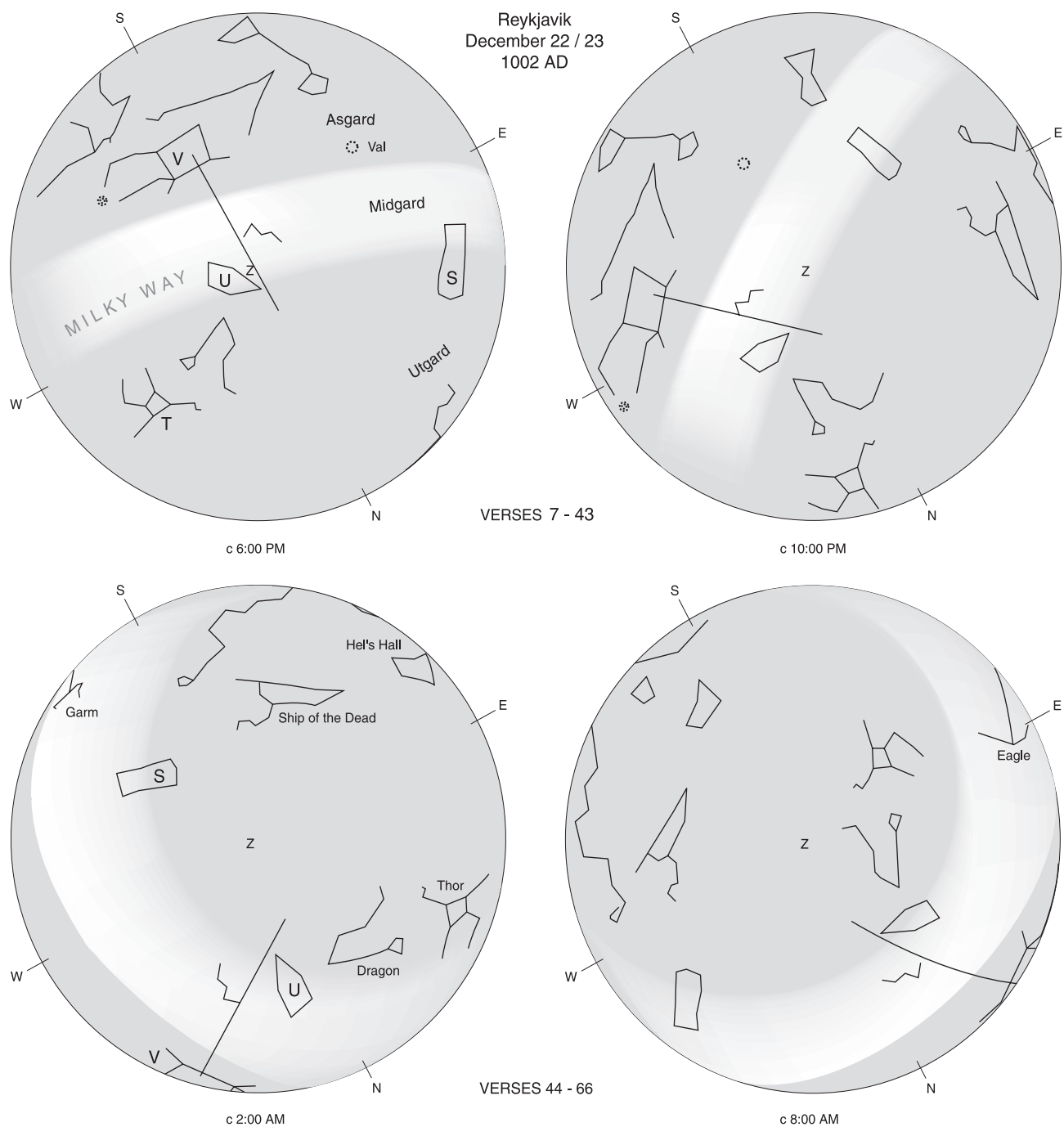


Figure 69 Voluspa: four time slices through the night (Reykjavik, lat. 64.15, 1002 AD; sun under the horizon from -12° - 18°) showing the different aspects of the sky and constellation movements as told within the verses. The constellation Horse/Pegasus is shown as the revolving pole, Yggdrasill (rather than the Tree of fig. 68). Asgard disappears completely (bottom left), as the end of the cycle. The Eagle (Aquila) rises again, to start off the new cycle in this one night. See Figure 68 for the constellation designations.

night in December, the entire progression can be told, telling time to come as a cyclical calendar of events. The least interference by light is during the longest night, winter solstice, although with the very long nights through December and January, the term hardly applies at this latitude.

The godly landscape is named as *Ithavol*. This word is translated by Otten (1994) as the ‘Wheeling Plain’. The understanding is apt, even if the translation is uncertain, as the night-sky rotates, as a plain revolving. Disappearing during the colder months, the plain of the gods wheels out of view, and at the same time, Utgard, the place of evil forces, becomes visible. As suggested for the inhabitants of Noord-Holland (Chapter 6), the darkest night could be used for telling the entire story of things to come, as metaphor of the year. One night-cycle would also have an element of prediction on the coming new year. Perhaps included is the need for assurances that all would be right again: that the days actually would start getting longer.

Davidson remarks: ‘Those who have tried to produce a convincing diagram of the Scandinavian cosmos from what we are told in the sources have only added to the confusion’ (1993, 69). The diagram presented here started from late prehistoric settlement and offering site divisions and pit placements. An existing ‘diagram’ star-chart, using connections to naming become recognizable as to the textual referents, some in direct relation such as constellations Lyre and Water-snake. The latter is extended to include stars belonging to Libra and Scorpio so that the World Snake surrounds the Ocean. Some identifications are based on text indications as subsequent rises and fallings, and directions named (Appendix 3). Attention is given to the use of prepositions, directions and in applying inversion as a key to the text in relation to the otherworldly.

7.4.3 ABOVE AND BELOW: DIRECTIONS

The textual use of prepositions ‘above’ and ‘below’ refer to horizontal rather than vertical dimensioning. For example, Hel’s region is not under the god’s region, but across from it, in our terms. Our terms however still contain this class conscious pre-positioning: below the tracks, the equivalent to determining status on earth, a line of demarcation within the horizontal.

The trunk of Yggdrasill reaches ‘downwards’ as it says in stanza 2: the measuring tree/pole under the ground. Others (cf. dis. in De Vries 1956/57, s587) have suspected this is in reference to the pole star, but the cosmological connections were to the axis of our earth, reaching up to the pole star. However, within this interpretation here of the horizontal shield sky, Odin’s Tree/Horse, Yggdrasill, is revolving as a wheel, with the hub being (near to) the pole star. The pole star is buried under the earth of Midgard/the Milky Way. The pole/trunk reaches ‘up’ to the region of Asgard. In Figure 68, the crown of the Tree is suggested to be formed with stars of ‘Water Carrier’, and Capricorn is then recognizable as Heidrun the goat (Snorri, *Gylfaginning* 38–9) nibbling its leaves. Above the hind part of Horse, constellations are strung together using the constellations of Pisces and Cetus to make a symmetrical tree. In Figure 69, that connecting the Horse constellation with the ‘pole star’ is done as a pole. Within the horizontal of sky space, or domed structure, in three parts, the remainder of the work can be seen relative to this, as indications are given of where to look.

The roots of the tree are always being gnawed on by Nithhogg, the flying dragon, the constellation Dragon/Draco. ‘Under’, that is across from, the gods’ Hall (Valhall/square of Pegasus), and also in opposition as to meaning is that of Hel’s Hall, identifiable as well through the designation of a bird (st. 9), the constellation of Corvus, near to Virgo/the Virgin.

Early morning sitings can be recognized in metaphors for what is happening along the eastern horizon in the phrase such as ‘one night old’ (st. 32), or in the opposite direction, on the west, as ‘far from the sun’ (st. 38). Specific directions are also given including: ‘from the east’ (st.

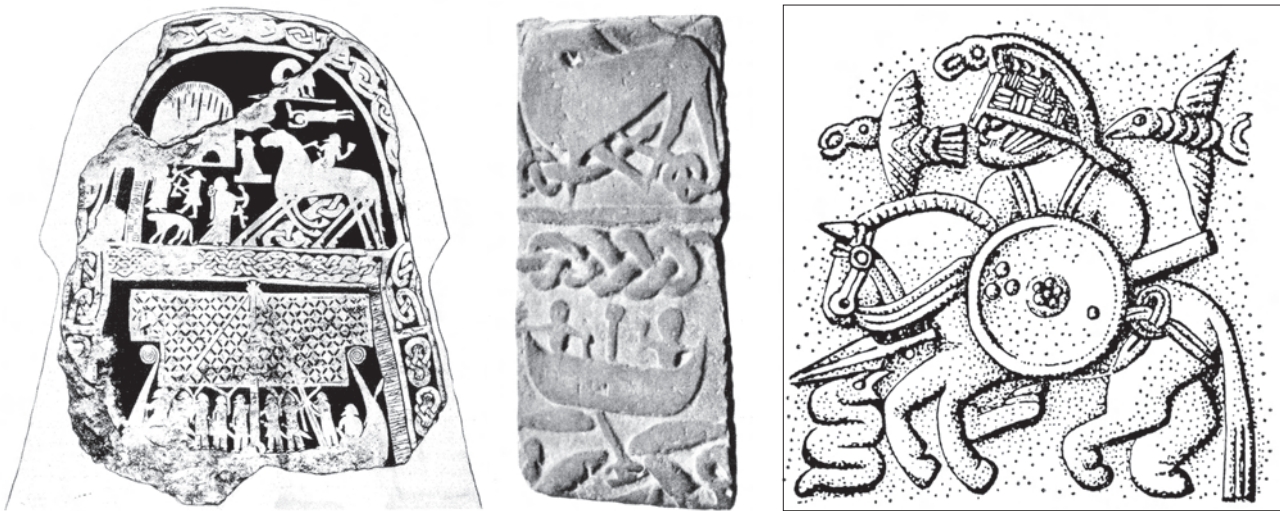


Figure 70 Examples of tri-partition connected to a horse, which could also be referring to the night sky as made up of three areas, according to the interpretation of Chapter 6: with constellation Horse, the Milky Way and the sea 'underneath' (stones from Alskog, Gotland and from Gosforth church, Cumbria). On the right, a helmet plate from Vendel, Sweden, with a figure usually interpreted as Odin/Wodin, showing the circle motif as his shield, with point/pit motif often seen on bracteates. (From Davidson 1993: figs. 7, 23 & 9).

36, 50, 51) and 'in the east' (st. 40), as well as north and south (st. 37, 52). The Ship of the Dead (Naglfar) made from men's nails is identified through the clear risings, following designations given in stanzas 49-51.

As iconography, the horizontal plane of the main structure given here for the sky is paralleled by arrangement of scenes including a Horse and a Ship, divided by a woven band, as found on the immortal material stone for graves of the period (fig. 70). Represented would be the Horse constellation, the Milky Way, and the ocean, with a ship (not always the ship of the dead) identified within the reading of risings (Appendix 3) in the *Voluspa* as the constellation Leo.

7.4.4 HUMANS AS DWARFS

Caught in the middle of all this, and that which gives each half of the sky definition is the Milky Way. Visually it has something of solidity being made up of a mass of light points. Midgard, as the world of men midway between the gods and the underworld/sea, is also the abode of the dwarfs made, as specified in the text, in the image of men.

The aspect of settlement inhabitants within relationships of scale was discussed in Chapter 6. The human creators of the sky figures on/into the earth, as pits, are dwarfed by those very images. Dwarfed beings compared to the large-scale, giant images they created through the seasons is extended here towards the dwarfs in the heavens, a long row of which are summed up as names, a long tally (Appendix 3, st. 10-16). Although the names are thought to be a late addition (e.g., Larrington 1999, 264), they are original to the manuscripts. They also lead into the finding

of Ask and Embla by the gods, and although generally taken as the point at which humans for this (our) world were created, within this interpretation they can be taken as dead humans, given new life within the otherworld, and represented by dim (dwarf) stars. The same could apply, and be the reason for the long tally of dwarf names, as humans already arrived.

7.4.5 INVERSION

The text is analogous to the settlement interpretation of pits as to perception of opposites and inversion of earth : sky. The earthly star-pits are dug down into white, and are filled with black, inverting the colour scheme of stars in a black night sky. Extending the analogy: on our earth, humans are out and about being active, taking action during the day. In the mythical, night-sky world, the suspected deities of planets and heavenly landscape features are out and about and visible during the night.¹³⁹ Correspondingly, that which lightens up that night-sky landscape is the moon. As the light source, it is the night's 'sun', and moves about. In the otherworld, dark is light. Seasonally, the inversion of time results in the longest day = longest night, and the reverse (cf fig. 63).

This solves the problem rather skimmed over by interpreters as being intuitively contradictory: the male gender of the 'moon', the female gender of the 'sun' (st. 5). This inversion of gender is from the perspective of the gods' landscape. As the text is being recited subsequently from the perspective of 'our' earth, testing knowledge on the other earthly, there is then no contradiction of the seeress, female in gender, being the (actual) moon, seeing far and wide (below).

7.4.6 WHO IS TELLING AND WHO IS TESTING.

Confusion on who is predicting, who is asking, in short what one of the functions of the Voluspa is could be resolved. Some ambiguity has to do with masking what is being related to test knowledge in the form of riddles. Since the aspect of the text as testing knowledge on constellation movements, as myths, has received little notice, the actual meaning has remained unclear of the reoccurring phrase in the Voluspa and why it is being asked. This seems to have led to interpretations within a framework of literal meaning rather than the riddle of metaphor towards the hidden reference, in this case, of specific phenomena.

The phrase demonstrating the testing element occurs nine times, unevenly spread between the stanzas, and has been translated variously: *wat weet gij nog meer?* (what more do ye know?); *Weten jullie het nu, of niet?* (Do you [plural] now understand/know or not?); would you know yet more?; know ye further, or how?; do you understand yet, or what more? (De Vries 1938, Otten 1994, Bellows 1936, Hollander 1962, Larrington 1999, respectively). Otten and Larrington have the element of testing as understanding. If it were just a matter of relating a myth/story, there would not be the need for this recurrent question. An exchange of information is being requested.

The last stanza ends with the speaker saying, 'she now sinks away' (Otten 1994, 12) or 'now she must sink down' (Larrington 1999, 13).¹⁴⁰ The 'speaker' would be the same person as that asking, through the reoccurring phrase, the listeners to add their insights. She sinking away is the seeress of the past and future, as the source of the recited text, sinking down. Within the same stanza, the place of the dragon carrying corpses is translated by Larrington as 'Dark-of-moon Hills', in contrast to earlier translations.¹⁴¹ This would be apt, as the moon does not move over the

area of the sky where Dragon/Draco is situated. Combining the descriptive information (st. 22) and especially as seeing widely into all the worlds (st. 29), it is evident she could be the moon – as immortal, she also has knowledge of past occurrences, which are at the same time present and future predictions, as the phenomena are cyclical. Time immortal, is time actual.

7.4.7 METAPHORS AS CONSTELLATIONS AND STARS: IMMORTALITY

In the progression as defined, the use of ‘Hall’ is a designation for a constellation. All terms using gold can be interpreted as symbolizing the immortality of stars, and as stars within the landscape of Asgard. These include round playing pieces, shingles and shields, and as used within proper names such as Gold-comb. For the underworld/Utgard, the terms used are also apt descriptions, in an ephemeral, but negative sense for the appearance of stars: men’s fingernails as forming the ship of the dead or the snake’s spine for the hall of serpents.

It could well be that only objects (halls, well, harp, boat) and non-anthropomorphic beings (e.g., Garm, Fenrir, Eagle, Snakes, Dragon) are constellations. There is one important exception, the constellation Hercules, interpreted here as the image of Thor. As one of the settlement patterns, he was found with a leg in the house, but also associated with the burial of the older man, as large scale mirror image. Both Bellows (1936, 21) and De Vries (1938, 34) consider Thor was killed by the World Serpent (in the Appendix, Larrington’s verse 56), as Snorri relates as much (Gyl. Faulkes 1987, 54). Perhaps this would account for the exception, as a slain god falling at a particular place, represented by an image. As mentioned (Chapter 5), Thor was associated with both Jupiter and Hercules (Davidson 1993, 47; Simek 2000, 322), and in literal association, the one can be considered the deity, the planet, and the constellation its anthropomorphic image. For the settlement interpretation of the Schagen sites, it was noted in addition to the ground position as house site (Chapter 6) that the actual constellation Hercules does not disappear entirely, in contrast to the animal constellations. He remained alone in the sky into January at the time before dawn. As image, Hercules/Thor constellation was ever-present to varying degree through the year, and it gains a zenith position, in contrast to the animal images. The large standing post, in one of the Hercules/Thor’s star positions, was also considered in conjunction to the zenith, as referring to ‘upwards’, as an important aspect of January, at the time before dawn.

Giants and dwarfs could be referenced as actual stars, and could be generally giant in the sense of bright stars (not in the scientific sense), and dwarfs as dim stars. Status achieved would become place, in the otherworld: of Midgard/Milky Way, if regular males become dwarfs, reserving Asgard for fallen warriors. All could be dim stars, and the connection could be made within this reading of the Voluspa, of stars to souls, as in some of the examples given in Chapter 5, including classical and folk belief. The place of women in all this is only suggested by the immortal place for Embla.

Stars-as-souls is different to that interpretation given for the settlement inhabitants of Noord-Holland, where stars of the constellation images were interpreted as actual holes to get goods, animals and humans to the otherworldly place. The belief shown by the quote from Snorri, at the beginning of this chapter, would seem to indicate some similarity for the Scandinavian context. While the same figures (as constellations) can be recognized within these later texts as mythical figures, the conception of what stars actually were is not necessarily the same, or an amalgam of

past and more recent tradition. Alternatively, single stars could at the same time be considered as souls, while images as constellations could be conduits of deposits to the otherworld.

7.4.8 ON EARTH

Above, Martin was quoted on his study of seasonality as part of Norse (c.q. Germanic) mythology, something long suspected by researchers. The visual tri-partition of the heavens here put forward serves to structure these suspicions for a reading of the *Voluspa*. The text is practical at a certain level in actualising stories *as* time as mnemonic device, the story-line concrete here in motion of the stations for sun, moon and stars (st. 5); afternoon and evening, to reckon up the years (st. 6). There is also the ‘Measuring Tree’ (st. 2), generally agreed to be *Yggdrasill*, for doing it. In accounting for seasons, this could be a device, such as is shown in Figure 69. The polestar is the point where the pole extends to constellation Horse, shown in Figure 68 more as a tree. This ‘pole’ (as in post) could have served some way in measuring seasons, as the cycle of directions. Seasons tell time through cyclical advance of death and regeneration, and for people, at least fallen heroes are taken up in the cycle.

Within an anthropological-historical framework, Gurevich has connected earthly landscaping with the cosmological in a ‘model of reality’ on the basis of comparing law, myth, language and land rights:

‘The world, as the ancient Scandianvians saw it, was formed by the opposition of Midgard (Middle-yard, the world of mankind) and Utgard (Outyard, the abode of monsters and giants). The lays of Edda recount the struggle between those two worlds, representing respectively, culture and wild nature, good and evil. Old Icelandic and Norwegian laws differentiated landed estates into two opposite kinds, the land *Innangards* (“enclosed possession” and the land *Utangards* “land beyond the fence”). Thus, the cosmos was modelled by the ancient Scandinavians on the pattern of their own farms, and this applied not only to the world of men, but also to the world of gods, Asgard’ (Gurevich 1992, 197).

What ancient Scandinavians seem to have done however, is (using Kus’ 1982 expression) to socialize the natural and naturalize the social: three areas of the sky first must be perceived as a structure, and then used as part of structuring cosmology, which also includes inhabited landscape. Not confined to ancient Scandinavians, as the preceding sections set out, it was probably widespread. Again, emphasized is the aspect of cosmology as integration at various levels of understandings concerning activities, from the mundane to the ritual, and as Gurevich remarks, as part of law.

The *Voluspa* as the first poem of the Poetic Edda, and within this facet of meaning, tells a story of the entire year, and all regions of the night sky, past, present and future. Smaller slices of time, concentrating on certain figures, are a part of other stories of the Edda, but with the tri-partite structure of the places of action, and some figures identified through progressions, these books can be similarly interpreted. Certainly, Snorri Sturluson had knowledge of classical texts, and the few remarks cited in Appendix 3 are but a handful of apparent puzzles which become clearer when taken as referencing constellation names, and classical referencing is taken into account.

One of the stellar-landscape patterns found in the settlements did not find its space in the Voluspa of the Poetic Edda: that of Taurus/the Bull. Two suggestions are put forward in Appendix 3 for parts of a disintegrated picture in the form of the Pleiades/Valkyries and Aldebaran as the giantess in Ironwood. Other myths do take up a giant Cow.

7.5 AUDHUMLA: THE GIANT COW AND SOME POSSIBLE ASSOCIATES

The settlement remains yielded the (parts) of the star-picture Taurus/the Bull at four sites, which was regarded however as female, a Cow, because of a myth told by Snorri, but also through associated deposits within the settlements. Connected with the picture at the sites were pit finds such as containers of pots placed on their sides, with mouth opening to the eastern horizon, and the bones of very young livestock. Expectations were interpreted as being associated with the summer solstice, looking forward to the rise of the constellation in early July. It will be remembered that at the two early sites, Cow had her own large part of settlement space of pasture/fields, while at the later sites she was set out over the dwelling.

Snorri relates a creation myth in *Gylfaginning* (Gyl 4-10; Faulkes 1987, 10-13), a creation myth referred to in the Poetic Edda, but which there left out one of the important figures, the cow, Audhumla, a name translated as Rich Hornless Cow (Davidson 1964, 227).¹⁴² The story by Snorri also features the giant Ymir, who is referred to in the Voluspa (st. 3), and his beer-hall was regarded as Ursus Major/Greater Bear (see Appendix 3). Here he will be found as a dead image, the constellation Twins. The cow, Audhumla, arises after Ymir, and then herself raises up Buri, by licking salty rime-stones:

‘Then spoke Gangleri: “Where did Ymir live, and what did he live on?”

“The next thing, when the rime dripped, was that there came into being from it a cow called Audhumla, and four rivers of milk flowed from its teats, and it fed Ymir.”

Then spoke Gangleri: “What did the cow feed on?”

High said: “It licked the rime-stones, which were salty. And the first day as it licked stones there came from the stones in the evening a man’s hair, the second day a man’s head, the third day there was a complete man there. His name was Buri. He was beautiful in appearance, big and powerful’ (Faulkes 1987, 11).

Taking the giant cow of the settlement remains in Noord-Holland, Audhumla can be considered to be the constellation of Taurus. Buri emerges, arising out of the horizon by stages. The next constellation rise is Orion, and certainly striking in appearance. (Within the Voluspa context Fenrir the Wolf was identified as Orion, tied to the River fetter, constellation Eridanus.) In Snorri’s story, Ymir was present before Audhumla, and was the first frost giant. His name has raised discussion certainly, most often as related to the twin concept of Indo-European breadth. Mallory sums up the twin myth and etymology for the larger context:

‘The significance of twins in Indo-European mythology can be readily seen in the creation or foundation myths of the Indo-Europeans. The Proto-Indo-European *yem- “twin” underlies the name of a god common to the Indo-Iranians (Indic

Yama, Avestan *Yima*) who becomes the progenitor of mankind. In a recent study, Jaan Puhvel argues that the underlying form for the name of Remus, the brother of Romulus in the story of the founding of Rome, was actually **iemus*, the early Italic form of Proto-Indo-European **yemos* “twin”. In Norse mythology, mankind is formed from the remains of a giant whose name Ymir, has also been derived by some from the Proto-Indo-European word for twin. Furthermore, Tacitus relates how the early Germans were the descendants of Mannus and Tuisto, the latter of which again means twin. Among the Celts we have the tale relating the foundation of Emhain Macha, the ancient capital of Ulster, which was explained by recourse to a myth in which Macha gave birth to *emuin* “Twin”, again derived from Proto-Indo-European *yem-*. Analysis of all these tales indicates that the Proto-Indo Europeans believed that the progenitors of mankind were **Man* (Indic *Manu*, German *Mannus*) and **Twin*, the latter of which was sacrificed and carved up by his brother to produce mankind. To this Bruce Lincoln adds the coincidental sacrifice of a bovine integral to this myth in India, Iran, and among the Norse and Irish’ (Mallory 1989, 140).

In Snorri’s story, giants descend from Ymir, but what happens to Audhumla is not stated. Creation and correspondences of constellation rises would be a way of spatially organizing the understanding of the Audhumla/Taurus constellation, the creation myth as told by Snorri, as well as combining the linguistic indications, which do point to the Indo-European understanding of Ymir as ‘Twin’.¹⁴³ If Audhumla is the constellation Taurus, she rises after the appearance of the constellation Gemini, the Twins. Taking Snorri’s account as a progression of events, the action is also taken up first by the appearance of Ymir – as constellation Gemini, fully risen in the northeast – then the rise of Audhumla as Taurus, more to the east, followed by Buri, as the constellation Orion, in the southeast. ‘Descendants’ of Buri were three gods, including Odin, who killed Ymir, and from his body parts were made the ‘world’, although all referencing could be to the sky context, the otherworldly.¹⁴⁴

For later recorded myths, legends and tales, attention has been given to the widespread concept of numerous otherworldly Cows by Davidson (1996) who has regarded the subject for the northern context. There are dozens of myths/legends concerning women and otherworldly cows which are very often gigantic and white. Davidson emphasizes the importance of milk and milk products as part of the structure of these myths and legends of giant protective, otherworldly cows, and the role of women. A tale of Yorkshire, for example, figuring a giant cow and a giant are considered to have originated with the Anglo-Saxons. Some objects, such as buckets and churns have carvings of signs/symbols including concentric circles, whirling discs and stars (ibid. 97). Again, stars contextualize the landscape referenced, the objects to the resource milk, which point to constellation Cow, and cosmology of the night-sky interconnecting with earthly events. Whether or not this was still recognized, by the time the objects were made, and legends recorded, might be doubtful, but would be a matter for future research into recognition of constellations long after the introduction of Christianity.

The prehistoric constellation was shown, for the Schagen sites at least, to be connected in time to the summer solstice (and rise of the Pleiades), and lined up to the horizon with (milk)jars with mouth opening towards the eastern horizon, where constellation Cow rose in July. In some regions there are indications for periods and dates within transposed belief to Christian deities, and the summer solstice such as in Norway: ‘On St. John’s Eve at Midsummer, when milking was

done three times a day for the first time, those going out in the evening should finish milking before the sun went down, so that it could shine on their vessels' (Davidson 1996, 98).

Sometimes the cow is associated with a time one would also expect stars. The legend of the White Cow from various parts of England is a case in point (ibid. 101). In Shropshire, in 'a time of famine, a pure white fairy cow appeared on a hill every morning and evening, and anyone might come to milk her so long as only one vessel was brought by each comer; this was always filled, whatever the size'; in some versions, the Cow dies of grief, having been milked dry by a witch, where the cow's huge bones were said to have been found on Cow Hill (Preston, Lancashire); or where it stamped its foot in rage, leaving a mark on the rock before it vanished (South Lopham, Norfolk). Huge bones of non-indigenous bovines were used to mark the pattern of constellation Cow at Schagen Muggenburg-I, and it was mentioned they occur regularly in settlement contexts of northern Europe.

Offerings were still being made, and there is a 'night' context, which is general for supernatural beings (Davidson 1998, 105). For example, the Celtic Brigid, transformed to the figure of St. Brigid, received offerings of cakes or milky porridge left for the saint's visit at night. These Irish beliefs include links with milking, the supernatural world and special cows, as well as images of the saint made from objects, such as the churning stick. The pagan name of the feastday *Imbolg* 'is thought to mean parturition and it may originally have been associated with the birth of farm animals' (Davidson 1996, 98).

Closer to the excavations in question, the information provided by Dautzenberg (1998) is revealing. In Wormer, Noord Holland, one celebration was noted about which little is known. About July 2, *Onze Lieve Vrouwen Melkdag* (Our dear Lady's Milk-day; the Virgin's Milk-day) was celebrated. There were exchanges of milk, and gifts of milk to the poor (Dautzenberg 1998, 16).¹⁴⁵ More generally, St. John's day (June 25) was celebrated with wreaths and boughs of greenery hung in houses and streets. The church council of Alkmaar complained in 1606 of the festivities, and in places such as Uitgeest and Enkhuizen they were forbidden in the 17th c. (ibid).

The above mentioned, very incompletely described contexts of myths, legends, objects with stars, nighttime and offerings of milk, could be connected to an earlier tradition of the summer solstice and later in July, the once recognized rise of the constellation Cow.

Some attention could be paid to fastening the place of tradition, and thus understanding more of the medieval mentality through combining traces spanning specialist periods. Long agreed is the pagan element wrapped in many popular culture beliefs and practices. As dates and transposition, some specificity could be given to a remark on early medieval practice: 'One could receive assurances for success by observing the revolution of the stars...' (Gurevich 1988, 97).

7.6 A NEW STRUCTURE OF THE HEAVENS: CONCLUSION

‘..And then believe me, my love is as fair
As any mother’s child, though not so bright
As those gold candles fix’d in heaven’s air....’

Shakespeare. sonnet 21

Shakespeare’s rural origins may have led him to still affix the golden aspect of stars to the fire element suggested in preceding chapters. Texts have often been thought useful for clarifying matters within archaeology. Above something has been suggested towards de-metaphorizing an understanding which has led implicitly to being blinded by the sun, within a mentality conditioned, whether one is a believer or not, by the Christianising process. It was suggested that prehistoric practice involved regarding the night sky as divided into three, whereby the risings and settings of constellations played an important part in ritual, myth and – through the settlement remains from which the entire series of hypotheses arise – economy, within a marking and binding of earthly space with sky space, and in time keeping. Landscape iconography or texts can be interpreted within such a framework. Not recognized has been the tripartite conception of the sky as containing three components: earth, underworld/ocean and heaven. It seems to have been effectively wiped out by the formal ‘Christian’ way of looking at things. The conceptualising is directly named in John’s Revelation, the last book of the Bible.

Fox (1991, 346–8) regards John’s Revelation as a ‘brilliant mental video’, an ‘astonishing torrent of imagery and sound’, ‘the most forcefully told vision of the “End”’. It is undoubtedly all this, and as Fox sets out, John of Patmos was drawing on Old Testament texts, and is enfolded something of then actual instances of persecution of Christians, and real examples of pestilence. Already by the mid-third century, Dionysius of Alexandria, arguing against the hot topic of millenarianism, ‘attempted the most thorough and perceptive piece of biblical criticism that has survived from the early church, to demonstrate that the book of Revelation could not have been written by the author of the Fourth Gospel....The Gospel and epistles of John were written in faultless Greek and ... sound reasoning...Revelation contained “inaccurate Greek usages” and “downright solecisms”’ (Frend 1984, 383, citing Dionysius). Who John of the Revelation was has remained a mystery. In any case, the text has supplied centuries of inspiration, in addition to theological matter, of various types: from the popularly known ‘Behold a Pale Horse’, ‘the Four Horsemen of the Apocalypse’, ‘the Seventh Seal’, the mysteriously encoded 666, or the pearly gates of heaven. However, not until recently have biblical scholars taken up the clear aspect of astronomy and astrology enfolded in this work, as Malina and Pilch (2000, vii) note, whereby the ‘...huge amount of astronomical and astrological (there was as yet no distinction between the two) documents from the Greco-Roman period makes it quite obvious that for the contemporaries of Jesus, Paul, and the author of Revelation, sky and land constituted a single environmental unit, a single social arena.’

With an eye of perception to some constellations and pagan organization of the heavens into three, John’s description makes sense, within the new religion. His description is not a mental video; he was not dreaming; he was looking at the stars and making new join the dot combinations. He can also be read as structuring the heavens differently, by unifying them into one, doing

away with the visual conception of ‘three’ parts within a night sky. He has redesigned the pagan conception and associated constellations, whereby at the simplest, transposition has occurred: the dots as stars making up Horse remain the same, as might the place of the Tree of Life (22.2). Just a few points of those John makes (Revised Standard Version 1952):¹⁴⁶

4.6-8 and before the throne there is as it were a sea of glass, like crystal. And round the throne, on each side of the throne, are four living creatures, full of eyes in front and behind: the first living creature like a lion, the second living creature like an ox, the third living creature with the face of a man, and the fourth living creature like a flying eagle. And the four living creatures, each of them with six wings, are full of eyes all round and within, and day and night they never cease to sing, “Holy, holy, holy, is the Lord God Almighty, who was and is and is to come!”

19.11-12 Then I saw heaven opened, and behold, a white horse! He who sat upon it is called Faithful and True, and in righteousness he judges and makes war. His eyes are like a flame of fire, and on his head are many diadems;

20.1-3 Then I saw an angel coming down from heaven, holding in his hand the key of the bottomless pit and a great chain. And he seized the dragon, that ancient serpent, who is the Devil and Satan, and bound him for a thousand years, and threw him into the pit...

21.1 *Then I saw a new heaven and a new earth; for the first heaven and the first earth had passed away, and the sea was no more.*

21.21 And the twelve gates were twelve pearls, each of the gates made of a single pearl, and the street of the city was pure gold, transparent as glass.

4.6-8: The four living creatures around the throne would be the constellations (going counter clockwise) Leo/Lion, Taurus/the Bull, Aquarius/Water Carrier and Aquila/The Eagle. They form a rough rectangle (cf fig.69). Later, these animals and the man become associated as the attributes of the gospel writers: Mark with the lion, Luke with the ox, John with the eagle, and Matthew, the man.

19.11: The clouds open, Horse has remained, but with a new rider.

20.1-3: The Dragon, as the constellation Draco, still remains in his pit under heaven (the old tri-partition position). And, then the heaven became one or two parts.

21.1: The tri-partition into heaven, earth and sea were wiped out, as the visual landscape of the sky.

21.21: The twelve gates to New Jerusalem were single stars. The metaphor of gold, as a street – but transparent – could refer to the Milky Way.

Stars can be read as eyes, flames, diadems or pearls among the many metaphors John uses. John of the Revelation redefined cosmological space to such an extent, and with such an infusion of images such as to make unrecognisable any other conception of the heavens. Belief systems alter perception in concrete ways. But, if there was a tri-partition of the sky recognized by John as something of the pagan past, how would this work its way through to popular belief? For medieval Europe, visions including Purgatory, can perhaps be read as revealing a continuing cosmo-vision of three parts of the sky.¹⁴⁷

In terms of later practices and modern mentality, within some cultures stars and super-stars are now people. Stars would seem to be used more frequently as everyday images, and surround westerners in daily life more than the sun. Stars are on the flags, among others, of the United States and the European Union, for marking states and countries. Gold stars are passed out for quality, and sheriffs wear them, as a mark/badge of authority. Stars are attached to the end of wands waved by fairy god-mothers. Various companies (for example, Philips and Chrysler) have them in/as their logos, as do various lines of clothing. Within cultural logic, it might seem common-sensical that the terms 'dwarf' and 'giant' stars were launched early in the 20th century by a Danish astronomer.¹⁴⁸ As nomenclature, it is a melding of folklore and science.

Stars are signs and symbols, still associated with the sky but seemingly divorced from a scientific reality of what stars are (ironically 'suns'). They are used in a positive fashion, and the study of how the 'folk' use stars, how they are used as common metaphor, signs and symbols, does not stop as a subject with the 19th century. Perhaps they surround us too much, as at times it does not seem they have even been noticed as part of past forms of iconography, as denoting another landscape. There are numerous facets of research brought up through the suggested imbedded settlement iconography, most in this work only briefly touched upon, but which could be easily researched further.

Samenvatting

Dit proefschrift komt voort uit een dissertatie-voorstel dat in 1989 gedurende drie jaar is gefinancierd door NWO (Nederlandse Organisatie voor Wetenschappelijk Onderzoek). De doelstelling was als volgt, kort samengevat:

"De resultaten van uitgebreid archeologisch onderzoek in Noord-Holland zullen worden gebruikt om te komen tot een interpretatie van de aard der nederzettingen gedurende de periode ca. 400 voor Chr - 400 na Chr. En tevens om een vergelijking te maken met nederzettingen in naburige regio's van *Germania libera* en het Romeinse Rijk. De samenhang tussen patronen in materiële cultuur en de interpretatie daarvan op cultureel niveau, zullen worden onderzocht met behulp van recente theoretische en methodologische ontwikkelingen."

De hiervoor gebruikte gegevens werden verkregen door middel van een reeks noodopgravingen van vooral nederzettingen in de kustprovincie Noord-Holland. De sporen in de vindplaatsen overspannen een periode van ongeveer 600 voor Chr tot 300 na Chr, ofschoon sommige sporen zich tot in de middeleeuwse periode (tot rond 1200) uitstrekken.

Aan het eind van de subsidieperiode rees het vermoeden dat de sporenpatronen, met de bijbehorende specifieke materiaaldeposities, mogelijk konden worden geïnterpreteerd als seizoensgebonden rituele handelingen van de bewoners. De analyse vanuit dit perspectief leidde geheel onverwacht tot het vaststellen van grootschalige patronen, waarbij individuele sporen konden worden geduid als de weergave van sterren binnen nog herkenbare constellaties. Daarmee deed zich de mogelijkheid voor tot een veel meer omvattende interpretatie van bewoningaspecten binnen nederzettingen, waarin vele betekenisragen een rol kunnen spelen en waarin ondermeer de vervlechting van alledaagse met kosmologische aspecten van landschap, hemel en aarde kon worden onderzocht. 'Ritueel' kon worden bekeken naar eigenlijke inhoud op het niveau van individuele boerderijen.

Daarnaast konden overeenkomsten en verschillen op langere termijn worden geanalyseerd door het sporennet(werk) en zijn materiële associaties binnen twee nederzettingen te Schagen Muggenburg te vergelijken met die binnen andere uit de Uitgeesterbroekpolder en de Velsbroek. De nederzettingen laten elk hun specifieke patronen zien, die niettemin in grote lijnen met elkaar overeenkomen. Verondersteld wordt dat deze grootschalige sporenpatronen in de provincie Noord-Holland te maken hebben met het bijhouden van tijds- en seizoenberekening in relatie tot economische activiteiten en ritueel. Deze analyses worden aangevuld en ondersteund door het gebruik van antropologische begrippen en theorievorming, schriftelijke bronnen en studies over culturele astronomie, in een steeds meer omvattend netwerk van interpretaties en over grotere gebieden, met name binnen Europa.

Deze werkwijze is terug te vinden in de *structuur* van het boek. De hoofdstukken 2 en 4 gaan uit van de archeologische data van in totaal vijf sites. Deze hoofdstukken worden afgewiss-

seld met hoofdstukken (3 en 5) waarin andere bronnen worden gebruikt, namelijk historische teksten van diverse ouderdom. Gekeken wordt in hoeverre de teksten de interpretaties van de archeologische data ondersteunen dan wel aanvullen. Bij elke combinatie van hoofdstukken wordt de schaal van de interpretaties vergroot, zowel in tijd en ruimte als in de lagen van culturele betekenissen. Deze werkwijze houdt in dat de archeologische en historische bronnen in wisselwerking met elkaar worden gebruikt, waardoor steeds een hoger niveau van analyse en interpretatie ontstaat. Uiteindelijk wordt in hoofdstuk 6 het meest omvattend niveau van interpretaties bereikt voor de archeologische vindplaatsen in Noord-Holland. In hoofdstuk 7 wordt gekeken naar de toepassingsmogelijkheden van het verkregen model in relatie tot andere soorten vondsten en teksten van verschillende regio's van Europa.

De *inhoud* van het boek kan kort worden samengevat:

Hoofdstuk 1: Korte inleiding tot themata, theorie, oud onderzoek in de regio en samenvattingen van de hoofdstukken.

Hoofdstuk 2: Twee sites worden besproken: Schagen Muggenburg-I en III (300 – 350 nChr). Beide worden gekenmerkt door uitstekende conservering van zowel vondsten op het prehistorische loopvlak als het materiaal dat in de sporen is gedeponeerd, inclusief bot en hout. Kuilen en hun inhoud zijn de sleutel voor de code van de vondsten in de netwerkanalyses, ook en met name van de deposities van huisdieren en mensen. Het depositiepatroon leidt tot de interpretatie dat alle kuilen zijn gegraven en gevuld in het kader van een seizoensritueel. Deze rituelen vonden tenminste drie keer per jaar plaats en zijn voornamelijk te herkennen door hun ruimtelijk voorkomen in groepen van drie kuilen.

De Schagen Muggenburg-I site is voldoende volledig opgegraven om een nederzettingsgebied met een gestructureerde leefruimte te kunnen duiden, waarin het woongebied en andere activiteitsgebieden van elkaar worden onderscheiden. De begravingen van mens en dier lijken een horizontale as te markeren: een leven-dood afbakening binnen de nederzettingsruimte. Dit afbakeningsproces is cyclisch, waarbij tijd wordt gemarkeerd en in zekere zin herschapen door de gelijkheid in depositiematerialen gedurende de gehele bewoningsperiode, tot de nederzetting werd verlaten en met aarde werd bedekt door twee lage heuvels.

Hoewel het seizoensmodel voor de kuilgroepen in hoofdstuk 2 wordt gepresenteerd, is daarin nog niet uitgewerkt waarom de basis ervan wordt gevormd door de soorten en vormen van deposities. Dit gebeurt in een andere vorm in de hoofdstukken 4 en 6, waarbij de algehele ruimtelijke plaatsing van sporen binnen deze en andere nederzettingen een belangrijke rol speelt.

Hoofdstuk 3: De eeuwenlange discussie over voetsymbolen wordt weer opgepakt om een bredere Europese context te vormen voor de zeer opmerkelijke deposities van voetbeentjes in de kuilen van Schagen Muggenburg. Dit type depositie maakt veel sporen, uit verschillende periodes, vergelijkbaar. De archeologie wordt bekeken aan de hand van vroege tot midden 20^e e teksten over de voetsymbool discussie. Een overlappende discussie over divinatie, en het actieve gebruik van voetbeentjes en andere materialen als lot, en levens-lot, wordt geplaatst in een breder kader binnen een mentaliteit van het inzicht krijgen in de toekomst door middel van manipulatie van materialen. Klassieke en middeleeuwse teksten worden gebruikt om in het kort een blijkbaar algemeen geldende traditie van voorspellende praktijken bij heidenen en christenen te belichten.

Voorspellen bleef (en blijft voor sommigen) belangrijk, ofschoon andere materialen bot en hout vervangen binnen de geautoriseerde vroege kerkelijke traditie. Missionarissen beweerden niet dat andere goden niet bestonden; het aanbidden van oudere goden (de duivel en zijn demonen), associeerden zij o.a. met het actieve gebruik van kleine, alledaagse voorwerpen ('amuletten' e.a.) zoals in laat-prehistorische kuilen voorkomen. Tenslotte wordt voorspellen teruggebracht tot contracten sluiten met de goden door middel van sommige materiaalgroepen zoals gevonden zijn in Schagen.

In dit hoofdstuk wordt ook een verbinding gemaakt tussen linguïstiek en menselijke lichaamsdelen. Botten kunnen door vorm en gelijkenis in verband gebracht worden met bomen (hout). Zo biedt het gebruik van tropen een basis voor de interpretatie van een heidense relatie van lichaamsdelen met onderdelen van bomen. Op die manier wordt ook een relatie gelegd met het hout dat op de Schagen sites als depositie is opgegraven en met mogelijke verbanden tussen bomen en kosmologie, inclusief een 'wereldboom' en zijn vruchtbaarheidsaspecten.

Hoofdstuk 4: In dit hoofdstuk worden een deel van de sporen (patronen) van de twee Schagense nederzettingen en drie andere vindplaatsen geanalyseerd, waarbij de tijdschaal wordt vergroot. Twee sites zijn gelegen in de Velserbroek en dateren van ca. 600 voor Chr en 150 na Chr. De derde ligt in de Uitgeesterbroekpolder (ca. 50 voor Chr-50 na Chr).

Kuilen en lineaire sporen geplaatst rond de nederzettingsplek worden geïnterpreteerd als grootschalige figuren die op sterrenbeelden zijn gebaseerd. Deze constructie is op een grotere ruimtelijke schaal dan de kuilgroepen in hoofdstuk 2 beschreven, omdat dit te maken heeft met de precieze plaatsing van de sporen in de nederzettingsruimte. Er worden vier patronen voor de Schagen Muggenburg-I nederzetting gesuggereerd. Deze zijn het Paard (met een ruiter), het hoofd van Taurus (hier eerder gezien als koe dan als stier), Hercules, geïdentificeerd als een Donar/Thor figuur en de Grote Hond. Aldus geïnterpreteerd maken bijna alle kuilen en lineaire sporen deel uit van deze figuren in specifieke ruimtelijke positionering. Er bestaat eveneens een nauw verband tussen de soorten deposities (de materialen) met de geïdentificeerde figuren. Een lineair spoor ten westen van het Paard-patroon kan eveneens verbonden worden met een hemelspoor, de Melkweg, die de ruimte binnen en buiten de nederzetting verdeelt. Hier wordt dan ook een driedeling van het aardse landschap en dat van de andere wereld (*Otherworldly*)—het hemelse landschap—weergegeven.

Iets dergelijks is ook te vinden bij de vroegere sites, waar de traditie om Paard en Koe uit te zetten weliswaar iets anders werd uitgevoerd, maar voldoende overeenkomsten vertoont met de latere sites om er eenzelfde interpretatie aan te geven.

Belangrijk is dat hermarkering van een laatprehistorisch Paard-patroon (in de Velserbroek) in de middeleeuwse periode, waar hoefijzers met een heuvel werden bedekt, laat zien dat men ononderbroken belang blijft hechten aan een plek en dat de deposities zodanig zijn dat zij een directe verbinding met en dezelfde betekenis suggereren als in de voorgaande periode. De traditie in de regio van het uitzetten van figuren als nederzettingssporen beslaat een tijdsperiode van tenminste 1600 jaren.

Hoofdstuk 5: Verschafte hoofdstuk 3 enige achtergrond en een uitbreiding van de discussie, gebaseerd op de in hoofdstuk 2 gepresenteerde data, hoofdstuk 5 levert de achtergrond van fenomenen aan het firmament binnen de culturele astronomie om de regionale interpretatie in hoofdstuk

4 in een breder kader te plaatsen. Antropologische en historische voorbeelden laten zien hoe de bewoners van de wereld steeds cultureel bepaalde vormen van astronomie bedreven.

In dit hoofdstuk wordt ook kort aangegeven hoe het steeds hanteren van een in de 19e eeuw ontstaan paradigma over ‘de evolutie van religie’ bepalend is geweest voor aannames betreffende de vroegere samenleving. Als gevolg daarvan zijn de toch behoorlijk duidelijke teksten over heidense praktijken, die op een meer dan gewone interesse in hemelse zaken wijzen, genegeerd binnen de gevestigde academische orde.

Hoofdstuk 6: Terugkomend op de sites in Noord-Holland, worden nu suggesties gedaan hoe de nederzettingssporen, het dagelijks leven en de economische en materiële cycli kunnen worden geïntegreerd en welke betekenis materialen hebben in de diverse belangensferen, inclusief het afstemmen van tijd door sterrenbeelden. Terwijl hoofdstuk 4 de statische vormen van de sterrenpatronen beschrijft, worden in dit hoofdstuk de bewegingen van de echte constellaties boven de sites bediscussieerd. De oriëntaties van de uitgezette sporen van constellatiepatronen verwijzen naar de sterren aan de hemel nabij de horizon. Beschouwd als het aflezen van de tijd door sterrenbeelden voor zonsopgangen, worden de economische hoogtepunten van het jaar zo eveneens aangeduid. Maar ook naar de zon wordt via ingebouwde oriëntaties verwezen, zoals binnen het constellatiepatroon van het Paard.

De bewegingen aan de hemel en de impliciete aanwijzing van interesse in de zon, worden aldus gebruikt om het seizoen-economische model van rituele deposities zoals beschreven in hoofdstuk 2 verder uit te werken.

De winters- en zomerszonnewende vormen de voornaamste rituele periodes en kondigen respectievelijk het opkomen van de constellaties Paard en Koe aan. De ene wordt beschouwd als het begin van het nieuwe jaar gevolgd door opkomst van Paard in januari. De zomer zonnewende wordt geassocieerd met de jaarlijkse uitbreiding van de veestapel met de kalveren, de opkomst van de Plejaden, en de kop van het sterrenbeeld Koe in juli. De oogstperiode wordt geassocieerd met het verrijzen van de Grote Hond. De slachtperiode in het begin van november wordt aangegeven door het opkomen van Hercules in het oosten, terwijl Koe tegelijkertijd sterft aan de westelijke horizon.

Andere markeringsdimensies worden eveneens besproken. Gebaseerd op de combinaties van archeologisch verkregen gegevens, wordt het principe van inversie gebruikt om verder te komen in interpretaties over betekenis. Verticale, horizontale, gespiegelde en geschaalde inversie kan onderscheiden worden in de combinaties van sporen. Twee voorbeelden van omkering op een zeer letterlijk niveau zijn: de gaten (kuilen) die naar beneden gegraven zijn en die refereren aan gaten boven in het hemeldek (de sterren); de begraven dieren en mensen zijn in houding en oriëntatie, gespiegelde versies van de veel grootschaliger nederzettingsspatronen van sterrenbeelden. De nederzettingsgebieden waarin zich deze patronen voordoen krijgen ook betekenis met betrekking tot gender en richting.

Zowel materialen als bijzondere en gewone giften in de sterrenkuilen worden verbonden met opvattingen over het leven na de dood en verwachtingen ten aanzien van het bovenaardse. Zo wordt gesteld dat de goederen op voorhand begraven worden voor eigen gebruik.

Het is waarschijnlijk dat de uitgezette figuren als iconografische beelden gezien kunnen worden, maar dat de goden zelf (zoals aangegeven door vroege teksten) de planeten, zon en maan zijn. De sterrenbeelden worden gebruikt voor de indeling van de tijd op voorspelbare wijze in

cycli van een jaar. Uitgezet in de nederzetting tijdens de duur van bewoning, zijn zij gebruikt om mensen, dieren en goederen naar de andere wereld te transporteren. Vooral goed herkenbaar is het latere, en getransformeerde begrip van het paard die de dode afvoerde. Met één uitzondering zijn alle menselijke resten gedeponneerd in de kuilen die onderdeel van het grote beeld Paard vormen.

Het einde—de dood—van de nederzetting wordt op grotere schaal gemarkeerd door het gebied met een lage heuvel te bedekken. Dit is een duidelijk patroon voor afzonderlijke boerderijen ten noord-noordoosten van de loop van het Oer-IJ, gedurende tenminste de periode van de 7e eeuw voor Chr tot de 4e eeuw na Chr. Samen met de gewoonte om de bouwlocatie te verschuiven, wordt de integriteit van de huisplaats aldus bewaard. Met de heuvels van Schagen die de letterlijk verwoeste woonplekken bedekken en de grote sterrenbeelden van kuilformaties, lijken de dode nederzettingen tot een ander type landschap te zijn verstoffelijkt, bezaaid met monumenten en voortbestaand naast de levende nederzettingen.

Er was voorgesteld dat levende nederzettingen zijn verdeeld in drie gebieden, gebaseerd op de drie gebieden van de hemel. De afgedekte nederzettingen nemen plaats in op een grotere ruimtelijke schaal en met algemene landschappelijke sporen gerelateerd aan de waarneembare ruimtelijke verdeling van de hemel (de melkweg en gebieden ter weerszijden daarvan). De drie gebieden van het eigenlijke landschap zijn dan het land met de ‘dode’ nederzettingen, als lage monumenten, het getijdengebied en de zee in het westen.

Hoofdstuk 7: Slechts zes voorbeelden van buiten de regio, en binnen het onderzoeksterrein van andere specialisten, worden bekeken op de vraag of en hoe het gebruik van 'sterren(beelden)' zoals die voor de inwoners van Schagen zijn geschetst, ook elders kunnen worden aangetoond. Deze thema's worden slechts kort besproken en dienen hoofdzakelijk om toekomstige onderzoeksaspecten af te bakenen. De gegeven voorbeelden stammen uit de Late Bronstijd tot aan de Middeleeuwen.

Het Witte Paard van Uffington (Oxfordshire) zou de Paard-constellatie kunnen weergeven, en kan bekeken worden in samenhang met de ernaast liggende Dragon Hill als zijnde de constellatie Draak. In de Keltische munt-iconografie worden de twee kanten van de 'munt' geïnterpreteerd als zijnde Dag en Nacht. De ene kant met bijvoorbeeld de afbeelding van paarden en diverse getekende motiefjes, zou verwijzen naar de nachtelijke hemel. Ook Germaanse bracteaten kennen de nachtelijke kant, met afgebeelde mythologische figuren; de blanke andere kant verbeeldt de zonneschijf.

Het eerste gedicht van de poëtische Edda, de Völuspá, wordt gelezen als een vertelling van tijd en de nachtelijk hemel. De drie voornaamste gebieden van Asgard, Midgard en Utgard worden geïdentificeerd met de drie gebieden van de hemel. Drie van de patronen van Schagen kunnen gelezen worden in de tekst als:

- Yggdrasill—de wereldboom, en tegelijkertijd ‘Paard van Odin’, als beeld van sterrenbeeld Paard met een Ruiter in twee nederzettingen, en de associatie van dit beeld met hout.
- Thor—als dode held; het nederzettingspatroon van het sterrenbeeld Hercules heeft een bijl.
- Garm—de Grote Hond.

Op het meest letterlijke niveau kan de Völuspá gelezen worden als een leerboek op het gebied van de bewegingen van de sterrenbeelden (en planeten, zon en maan), letterlijk een tekst over de tijd van telkens één jaar, en tegelijkertijd van het komende jaar indien geciteerd tijdens een lange winter nacht.

Als men de verwijzingen naar een constellatie binnen de nederzettingen volgt, zou Snorri Sturluson's scheppingsmythe over Audhumla, de reuzenkoe uit de proza Edda, een 13e eeuwse verhaal over de constellatiefiguur Koe kunnen zijn, onderhevig aan stijgen en dalen. Enkele andere beroemde koeien uit de folklore worden genoemd, alle met een hemelse context.

De laatste tekst, De Openbaring van Johannes, wordt genoemd als voorbeeld van een letterlijk heidense ruimte waarin de driedeling wordt vervangen door een nieuwe visie op de hemel als het eengeworden hemelse koninkrijk. Maar, is een driedeling niet later te herkennen als hemel, vagevuur en hel?

Notes to the chapters

(CHAPTER I)

- ¹ The three-year grant period was funded by the Netherlands Organisation for Scientific Research (NWO).
- ² Excavations discussed in this work were funded by the Province of Noord-Holland, the Directorate-General of Public Works and Water Management (Rijkswaterstaat), the University of Amsterdam and the municipality of Velsen.
- ³ Roel Brandt was the project director up until 1989, and the author took over thereafter. The project falls within the research program 'West-Nederland', under the general supervision of Tom Bloemers, of the research school Amsterdam Archaeological Centre (AAC), Faculty of the Humanities, University of Amsterdam.
- ⁴ Influencing interpretation at various levels of understanding of the area through the generations of research, detailed study during the Broekpolder excavations (1998–2000) has now defined that the tidal character of the Oer-IJ must have ended within the 1st c. BC (Therkorn et al. forthcoming).
- ⁵ Maria Garthoff-Zwaan (1987) and the author attacked the question in 1986 during the yearly national congress of Dutch archaeologists (Reuvensdagen), within the session on 'rubbish'. Our question was how to recognise rubbish, within the general theme of the day of materials, pre-defined as rubbish. Through Garthoff-Zwaan's study of 14th – 16th c. texts in the vernacular with a wealth of examples of the principles of sympathy attached to materials in, for example, traditions of burying complete pots in pits or carrying the ear bone of a pig for combating toothache. Some categories of finds from Schagen were taken to indicate that it might be worthwhile for archaeologists to chart and compare for the different settlements the distribution of particularly seldom occurring materials to delineate patterning, in conjunction with ideas gained from later texts.
- ⁶ Part of a text from the relatively recent period became totally obsolete, through the analyses presented in this present work: 'rubbish pit' mentioned in Therkorn (1987b). This comes from wanting to draw some conclusions about data that had not yet been fully examined, but probably more importantly working within an archaeological interpretative mentality of unexamined assumptions, in this case on the same pits which are the focus of this work. Stated was: '...the rubbish "sets" infilling pits often adhere to divisions along the lines of these [female: male] labour spheres, although spatially, the pits are intermixed. Defining the meaning of the rubbish pattern would depend on *who* was depositing rubbish. The various formulations must await a later date' (Therkorn 1987b, 110). This is the later date. There are, as far as the interpretation extends here, and for the sites discussed, no features that may be termed 'rubbish pits'.
The same conclusion has also been reached by Woltering (2000, 89) for the 16 ha of excavated remains dating to 1350–100 BC on Texel (Noord-Holland).

- ⁷ The Early Iron Age house of site Q in the Assendelver Polders is the earliest example that is also considered to have had a mound over it. The aspect was rather ignored, and at the time of publication, attributed to ill-understood, natural processes leading to the re-deposited peat layer overlying the structure (Therkorn et al. 1984, 363; layer 4, 359). Unpublished remained the first level, the top of layer 4, the same as that shown in the published section, which had a well defined surface, now regarded as that of the mound. With more known of the Assendelver peat sites, the layered peat could not have been a result of natural processes, except those of compaction of manually re-deposited peat turfs covering the farmhouse, after the super-structure had been dismantled, something which had been recognized. Preservation was such that the wood chips on the last floor level, under layer 4, could be correlated to the action of chopping down the principle posts and the axe marks on these posts somewhat above the last floor level. Later excavations within the Assendelver Polders at peat sites also revealed a dwelling covered with a turf mound (Therkorn et al. 1998).

(CHAPTER 2)

- ⁸ Schagen Muggenburg-I (SM-I), as many sites in the Schagen area, was discovered by the amateur archaeologist Frans Diederik. Much work in the area has and is being carried out under the auspices of the AWN workgroup Schagen through survey and small excavations.

Initially, it was thought there were two separate sites, designated Schagen Muggenburg-I and II, but on excavation found were the northern and southern concentration of low mound material covering two areas of one settlement. A total of 12 weeks were possible for excavating the site which was done under direction of the author with students and volunteers during the summers of 1983–84. Excavations were part of the IPP's Oer-IJ Estuary Project, supervised by Roel Brandt. A short interim report appeared (Therkorn 1984). Subsequently, various facets of the recovered materials were the subject of specialist studies. Internal reports include: Henk van Haaster (macro-remains, 1985); Maja d'Hollosy (wooden objects, 1989). Betty Hoorn van Berkel, Esther Jansma and Jolanda Willemsen identified the wood. Zoological identification was done by the author in 1985, with the help of Rik Maliepaard, only much later resulting in d-base files and numerous graphs thanks to Jacqueline Oversteegen. George Maat studied the human remains in 1986 and his report is included here as Appendix 2. Frans Diederik identified the Roman coins. Cees Troostheide and Jan Peter Pals reported on the contents of pit f248 as to volume of grain and other inclusions (internal memo: cf tab. 8).

As part of larger studies, SM-I analyses of materials were included in Phd. theses by: Lex Runia (1987) – a sample of bones, both human and livestock, for various chemical analyses; Michiel Erdrich (2001) includes Roman pottery and metalwork; Aniek Abbink (1999) thoroughly examined the pottery within various analytical facets ranging from the properties of manufacture to symbolic concerns of deposit.

The site of Schagen Muggenburg-III (SM-III), also discovered by Frans Diederik, was excavated in part by the AWN workgroup-Schagen during the late 1980's. The area then examined was mainly mound material with a vast amount of finds, but also four pits. Under direction of the author, eleven days were spent in 1990 during the national AWN-work camp, with additionally two university students, in excavating the adjacent areas. These proved to include the farmstead plan and the majority of pits. Subsequently, wood identifications were carried out by Jolanda Willemsen, the author identified the bone; Michiel Erdrich identified the Germanic fibula; Frans Diederik and other workgroup members studied the pottery.

- ⁹ During the 1980 and 1981 excavation seasons of the Assendelver Polder Project, geologist Peter Vos recognized and analysed a similar phenomenon in that polder area 36 km to the south of Schagen. In the Assendelver Polders, however, the thin band of humus rich clay covered the remains of prehistoric habitation of the sandy-clay

creek levee sites. Peat accumulation there began probably during the later Roman Iron Age. This is a revised, estimated dating due to the latest established date of mid-3rd century features on the peat expanse to the east of the levee system, recovered during more recent excavations in the Assendelver Polders (Therkorn, et al. 1998). The problem of the disappearing peat accumulation had not yet been recognized for the Schagen area at the time of the 1983–4 excavation. Hallewas' publication in 1984 of paleo-geologic maps including the area showed only sandy deposits for the later prehistoric period. A footnote was squeezed in just before publication following new insights revising the landscape designation of the area as covered by peat (Hallewas 1981 [1984], 266, note 88A). The sandy-deposits underlying the humus rich clay band are considered to be sediments deposited late in the 3rd millennium BC.

The base of the peat accumulation was dated at the 2 km distant Schagen-Lagedijk site: (GrN-9461) 3830 ± 55 bp (internal memo Hallewas 1979;Therkorn 1988). Creeks ran through the peat accumulation at the SM-I site; the lower extent of reed peat found *in situ*, preserved in a creek depression, was dated: (GrN-9992) 3070 ± 35 bp and (GrN-9993) 3180 ± 35 bp. The creeks were evidently closing by about 1400 BC. The peat accumulation at the time of habitation around 300 AD can be estimated as having been between 0.75 – 1.30 m thick from the depth of sub-soil at about 117 cm below NAP, and some subsidence of the underlying sand and clay layers.

Geologists Jan de Jong and Peter Vos are thanked for their advice and discussion of oxidizing peat during their visits to the excavation in 1983 and 1984.

- ¹⁰ In 1984, construction activities for the housing estate were already underway to the north and west of the site. Along the trajectories of the roadways, topsoil and the heavy clay (Dunkirk III; c. 13th c.) layer were removed to the level just under the oxidized peat layer, which in effect turned the construction trenches into lengthy and wide excavation trenches. Only three features were uncovered, all shallow pits with no deposits, and there were no sherd concentrations at the level of oxidized peat.
- ¹¹ The earliest possible dating of the farm complex at Schagen Muggenburg-I is given by the coin from the reign of Postumus (259–268 AD), recovered from ditch f107 bordering part of the western side of the settlement. The coin had been placed at the bottom of the feature, i.e., before the feature became filled during the course of habitation. The site dating is placed within the late 3rd–early 4th c, and for convenience will be referred to as around 300 AD. Applicable ¹⁴C dates are the grain from pit f248: GrN 9986: 1725 ± 35 bp (cal. 316 ± 52 AD); the horse burial (f62): GrN-11462 1790 ± 60 bp (cal. 238 ± 83); bone from f28, GrN-11459 1725 ± 30 bp (cal. 315 ± 50). An early Roman coin (Augustus) was recovered from the mound material covering the above features. Frans Diederik is thanked for identifying both of the coins.
A bone from an ox skeleton in a ditch filled with heavy ('Duinkerker III') clay is in line with the 13th c. for this period of flooding: GrN-9990 770 ± 45 bp (cal. 1248 ± 26).
- ¹² Horses are the usual size (indices Vitt 1952): the stallion of burial f62 was about 132 cm at withers and the indices from Vitt produced the same height range for different bones of the same skeleton. It would also indicate the missing lower leg bones from burial f62 were not those found in the deposit of f254, described in this section. Other horses represented in other pits gave height estimates of: 144–152 cm (leg in f260); 128–136 cm (leg in f27); and 136–144 cm (a metacarpal from f254).
- ¹³ Veterinarian Wim Hermans agreed with this conclusion, having studied the photographs and drawing of the skeleton. He is thanked for his advice.

- ¹⁴ These bones are certainly larger than the generally occurring cattle bones found in settlements of the period in Germania Libera. Bones of similarly 'giant' bovines are recovered sporadically in settlements across north-western Europe, above the Roman border. Teichert (1984) summarizes the occurrence.

In Germania Libera, the native cattle ranged in height at withers from 95 cm to 130 cm, averaging 109 cm. Within Germania Romana, the average height was 127 cm. Teichert mentions two exceptions of sites above the Roman border where by the 2-3rd c. large cattle, only, were (apparently) bred: at Pfaffenhaofen (Kr. Rosenheim) and Wehringen (Kr. Schwabmünchen), ranging in size from 123 - 152 cm, averaging 135.5 cm.

The normal Schagen cattle ranged from 108 to 120 cm at withers, averaging 112 cm (metatarsus: X=18, GL 201-233 mm; SD=9 mm; index Von den Driesch 1976). The bones of SM-I from the very large cattle gave two animals with heights of about 131 cm and 151 cm at withers (based on a radius from f262 at SM-I: GL = 350 mm; at SM-III: a metatarsal from f 46: GL 241 mm; and, a comparison of the size of a phalanx I, articulating with this metatarsal, and its exact same size as another found in a pit at SM-I). The largest examples fall within the range given by Teichert, although the possibility has been suggested the bones may be from aurochs (pers. comm. Dr. W. Prummel), which would make them even more interesting. The bones from very large cattle from the Noord-Holland sites should gain more attention within future research, as well as those of the settlement remains from other northern sites, as occurrence in particular features.

It is doubtful these very large cattle were ever walking around the settlements in Noord-Holland. There are very few bones, and these are marking particular pits, as will be delved into in Chapters 4 and 6, marking the 'Giant Cow' constellation in the sky.

- ¹⁵ By early 1980's, how to count bones was quite a topic as to what they represent within facets of livestock management, hunting strategies or in delineating refuse sites. Binford's (1978) Modified General Utility Index (MGUI) for dealing with the nutritional value represented by bones was done as part of the analyses. There was no difference between the linear f107 and the pits, for example, which is due to the numerous lower leg bones and skull parts in pit features. That is, by this method, slaughter waste and eating waste cannot be determined between the types of features. The lower leg bones were later regarded as having been taken up within another sphere than meat carrying value (Chapter 3) and skull parts became one of the criteria for Spring pits.

Tilley (1981) influenced searching for patterning in bone elements and various ways to approach bone deposits other than for subsistence categorizing.

- ¹⁶ Whatever the method of quantifying the bones at Schagen Muggenburg-I, there is a distinct lack of ribs, one of the greatest carriers of meat. They are recognizable even when recovered as small fragments. The total of bones given in the tables as eating waste includes these types of fragments, which are most often very small, but identifiable as having been from large or medium mammals.

- ¹⁷ Many site descriptions include pit descriptions. Becker (1970) was one of the first to attempt definition of criteria for determining if pits were ritual or for rubbish. Some examples showing the diversity, but sameness of foot-bone and teeth elements in pits for prehistoric to the medieval period, some with human remains, thus graves, are Wegewitz 1955, Krüger 1982, Kühl 1984, Lehmkuhl 1985, Knol 1987, Meany 1981, Cunliffe 1992, Hill 1995. Continental overviews of Northern Europe seem to be mainly summations of what is found, whereby the ritual component of pit filling or the larger scale offering sites of, for example, watery contexts, does not seem to be a point of discussion: See Jankuhn (ed. 1970), Schlette & Kaufmann (eds. 1989), Müller-Wille (1999).

- ¹⁸ Tri-partite structuring generally is analysed through linguistics and texts, after having been discovered through textual sources, and through the major advancements made by Dumézil (1973) in analysis of Indo-European

gods (cf also Strutynski 1973, Mallory 1989). The main focus has been to delineate conceptual structures as social structures, and also extends into such facets such as colour, medicine and rituals.

Mallory's (1989) discussion is clear on past research, stating there is 'ample room for archaeological "testing" of the tripartite model'. He also notes: 'Although the tripartite conceptual system proposed for the ancient Indo-Europeans offers some opportunity for archaeological confirmation, it is a bit surprising to see how little use of archaeology has been made by those interested in comparative mythology' (1989, 132–33).

After a discussion of past research and tri-partition, Lyle (1990) concentrates more on structuring through directions/time/space as cosmos, but as well attempts integration of the also evident system of fours. She also notes (1990, 40) the late introduction (probably in the time of Augustus) of a Roman system of four seasons, replacing that of three seasons.

- ¹⁹ In an editorial note, Monsen places 'winter's day' as the middle of October, Summer's day was the middle of April. Monsen does not himself specify from whence he derives these dates, and whether or not he is projecting back from known festival days of later Iceland.

The calendrics discussion for the pagan calendar has been going on for some time. Generally, there is a consensus that it was a moon calendar that needed correcting every so often, and the method by which this was accomplished takes up most of the discussion (cf Harrison 1973). Mid-summer and Mid-Winter are now commonly known as the summer and winter solstices.

The reference points given by Bede in his summary of the Anglo-Saxon calendar are well known and he places the start of the New Year around the winter solstice, but on the 8th calends of January which he states is 'when we celebrate the birth of the Lord [thus, 25 December]. That very night, which we hold so sacred, they used to call by the heathen word *Modranecht*, that is "mother's night", because (we suspect) of the ceremonies they enacted all that night' (Wallis, trans/ed. 1999, 53).

- ²⁰ The earliest month naming from Germanic regions, including Bede's Anglo-Saxon and the Scandinavian, name a 'Blood' month, considered to be about the month of November (cf Harrison 1973; Wallis [trans/ed.] 1999, 53).

For the region, not only the condition of the animal would be a factor, but also saving on winter fodder would be an important aspect. It is not suggested livestock were slaughtered only when the action was also accompanied by pit digging and filling. It is suggested that there is evidence for at least three occasions when rites also included slaughtering animals – even if only concerned is enough for the days involved.

- ²¹ Wear of single teeth or jaws with tooth rows were not used in these estimates through possible symbolic value suggested by deposit with the burials. Certainly, the singly deposited milk teeth, for example, would have been gathered, and saved for subsequent deposit. Single teeth in features generally should gain more attention. Live-stock animals, just like humans, have milk-teeth that fall out, after becoming loose. How these then wind up in pits is something to ponder, as it has to do with prehistoric action of finding these teeth in a pasture, byre, or enclosure and/or noticing that they are loose.

Single teeth and molars are not easily extracted from jaws of butchered animals. Even after lying in the ground for thousands of year, molars are often loose, but cannot be pulled (by the hand) from the context of a prehistoric jaw in the preservation conditions, for example, of the coastal zone of Holocene Netherlands. Teeth/molars were being gathered from butchered livestock as is witnessed by skulls at this and even earlier sites where some, or all, molars have been forcefully extracted, and jaws or skulls used for deposit, without teeth. Conversely, single teeth/molars, are used for deposit.

Fitting of molars and teeth with upper and lower jaws was done within pit fills at the Schagen and other sites

discussed in this work, but not between pit fills. This might be an interesting exercise, and would support saving, and the carrying over of elements from one (ritual) occurrence to the next.

Maier (1961) notes some teeth extraction sites, where only the jawbones remain.

- ²² Used here are estimates for ageing from Silver (1969) and Higham (1967) and the yearly cycle of mating, gestation period and thus month of parturition for livestock species as suggested by Van Wijngaarden-Bakker (1988). The pit finds which gave estimates are:

- f22: ca. one-third of a bovine skeleton gave a broad estimate of 3.5–4 years at death: December–April.
- f154: lamb bones for May–June.
- f142: the lamb bones collected in the pot base placed at the bottom of the pit gave an estimate of 5–7 months at death; thus, somewhere in the period September–November.
- f212: lamb bones gave an estimate of 2.5–4 months: May–July.
- f221: partial piglets in pit f221 had jaws with teeth eruption data indicating an age at death of 7–10 weeks; thus, in the period May–June, assuming one litter of piglets per year.

- ²³ Quite a lot of what can be termed rubbish was found on the surfaces, and some debris, in the form of bits of unbaked clay and daub, very small sherds and tiny bone splinters, was recovered from pit contexts, but mainly in the top layer. Concluded is that these types of small bits of material were the result of re-deposited surface layering and subsidence of peat fill and surface finds, including mound material when the site was covered.

An attempt was made early on to arrange the pits by sequence through the years. Assumed was that later pits would have a greater number of these very small bits: the longer the use of the habitation surface, the greater the number of finds on the surface, and thus later pits would have more ‘noise’ inclusions as part of re-deposited, pit fill. For the groups along the southern and northern areas, the results were inconclusive. Burnt clay and bits of slag were the most common, for example, but had total weights of only 1604 gm and 370 gm, respectively. As well, activities within the north were different to those in the south whereby the inclusions could not be compared between the northern and southern pits. The order in which the groups were made cannot at this time be given.

- ²⁴ Rik Maliepaard is thanked for help in these and other identifications, and Wietske Prummel for the information on the lack of domesticated ducks.

- ²⁵ Not noticed in the literature is that much attention is given to frog, toad and mice bones other than as indicators for the environment. Again, an inventory of the find situations would give indications of inter-site patterning, or not, and more institutionalised practice in using bones from these animals as deposits, or not. The mice bones at SM-I, all complete elements, occur: as two mice skulls in a Winter pit, f156; as four mice skulls and two metatarsals, with a frog leg bone, in the Winter pit, f223; as one mice skull in a finely made, unused, black burnished complete pot at the bottom of the Spring pit, f212.

The limited excavation (1979, director Sander van der Leeuw) of the 2 km distant Schagen-Lagedijk site (Therkorn 1988) revealed a 3rd/4th-century pit with three pots, three dogs, a crane, an owl and a vole (i.e., mouse-like). The vole could have been stomach contents of the owl, as originally suggested in the zoological report (Seeman 1983), but as the proximity of vole bones to owl’s stomach area was not noted during excavation, this remains a suggestion. Alternatively, with the three pots and three dogs, another three could be suggested as the (near) complete skeleton combination of crane, owl and vole, as ‘wild’.

Mice and toads/frogs could be seen as seasonal harbingers and thus fit in with the general seasonal interpretation of the pit features, or they had possibly more powerful associations. Various bones from small animals with other

materials have been recovered in pouches and boxes, placed with human burials, as far back as the northern Bronze Age (cf Coles & Harding 1979, 308, 520). Small bones could be given more attention in delineating other types of archaeological contexts. Curative and protective properties were noted for the Roman folk belief, e.g., Pliny for various remedies and belief surrounding the efficacy of mice, variously as sliced, boiled, burnt, or as droppings, for various remedies concerning snake bites, hair loss, eyes, ears, gout, broken bones and incontinence (*Nat. His.* XXIX.15, 34, 38, 39; XXX.23, 40, 47). For frogs, and within the aspect of archaeologically irretrievability, is Pliny's mention of burying a frog, in a pot, in the field to protect the millet crop, except that the pot should be dug up again to prevent bitterness of the millet (XVIII.45).

See for mice and the folk, including familiars for witches, as recorded for the medieval and later European setting, e.g., Russell 1972, Rowlands 1973, Kieckhefer 1993.

- ²⁶ Maya d'Hollosy (1989) sought parallels and functions for the wooden objects.
- ²⁷ Remains of flax were found in f118, with stems (identified with the wood of the feature by E. Jansma); identified from a total of 25 samples, from the southern area, were a few seeds of flax from f223/1–3 and f212, and a few grains of barley (*Hordeum vulgare*) in f212 and f221; f221 also had wheat (*Triticum sp.*): Van Haaster 1985.
- ²⁸ Identifications of plants were made by Cees Trostheide and Jan Peter Pals, and insect remains by Tom Hakbijl, who are thanked for their help. See Table 8 for the full identifications and estimates of quantities.
- ²⁹ During the initial stage of analyses, Tineke Spruit had restored all of the pots insofar as possible, whereby it is certain some features contained only sherds.
- ³⁰ This feature was so packed with pots that there was no cushioning peat matrix to protect them from collapsing completely into concentric rings. Some of the pots had been poorly fired and had thus become so degraded that reconstruction as complete pots was impossible; many of the sherds from these literally fell apart. During excavation, it appeared that the pots did have all body parts, when studied *in situ*.
- ³¹ These are also made from the proximal end of a femur (usually from cattle, as this example) and are known as *Oesdoppen*.
- ³² Michiel Erdrich determined the nature of these finds, for which he is thanked; and, cf Erdrich 2001.
- ³³ A deposit of five coins was supposedly recovered from this site. The coins are not taken up due to the very unclear circumstances and dubious nature of the information on the archaeological context. The latest coin was of the later 3rd c. (Postumus), as determined by Frans Diederik. A Germanic fibula, recovered under controlled circumstances from the lower extent of f101 was dated to the early to mid-4th c., an identification made by Michiel Erdrich.
- ³⁴ This does not imply that both genders (and not forgetting tasks carried out by children) were not involved in all activities, but rather that some may have been overseen more by males or females.
- ³⁵ See note 14, above.

(CHAPTER 3)

- ³⁶ Dr. Aigremont was a pseudonym used by Siegmund von Schultze-Gallera.
- ³⁷ Phallicism, and the horse, is not given much attention for northern areas, but: ‘Until recently, Norwegian peasants would preserve a horse’s penis as a specially treasured heirloom. Surprising as it may seem, they were simply paying tribute to the aspect of the horse which has captivated human imagination in all ages...’ (Rowlands 1973, 103). The tradition was recorded as far back as the 14th c. in the Norwegian saga, the *VVölsi*, wherein described is how the object of veneration was passed around and spoken to, first by the woman of the house (Schuyf 1995, 45).
- ³⁸ Aigremont (1909, 55) notes shoes were tied to the bride’s luggage, perhaps a chronological/cultural difference with Verhoeven’s cited tradition of being tied to the departing vehicle.
- ³⁹ Certainly when taking the distribution of Siberian/Mongolian and Native American sites into consideration, use of astragali of the time depth Maier is suggesting should be looked at again. Farther a field, and although it was thought Native North Americans used dice-like, carved astragali only after Spanish contact, more recent dating indicate earlier, pre-contact use (Wesler 1991), which would possibly tie tradition into a more distant Siberian past.
Early use within Europe of astragali is demonstrated by a polished astragalus, c. 8430 BC (a cave site at Remouchamps, Belgium); the most impressive recent find is the golden astragalus from the necropolis at Varna, Bulgaria, dated to the 5th millennium BC (Gilmour 1997, 170–171).
- ⁴⁰ More recently excavated sites, accompanied by better dating, would change the distribution, and would seem to be more in line with the suggestions made below for use of all lower leg bones, an impression gained from areas described in Jankuhn 1967, Müller-Wille 1984, Kühl 1985, McCormick 1985, Ambros 1989, Schlette & Kaufman (eds) 1989.
- ⁴¹ Just the foot and dicing aspect is gone into in regards to this bone, in this section, while the neck vertebra meaning is interconnected with the foot, in section 3.3.2. It is a trope, and Hersey (1988, 36) also remarks on the astragal in the sense of a string of pearls, knucklebones, and vertebra. There are numerous examples, such as: Homer, neck vertebra (*Odyssey* 10.559, 11.64; *Iliad* 14.465) and dice (*Iliad* 23.83); Herodotus (*The Histories*, 3.129.2) in describing Darius twisting his foot, dislocating the ankle joint; Xenophon, in describing parts of the lower leg of horses (*The Art of Horsemanship*, I,15); in the sense of dice, by Plato (*Theaetetus* 154c).
- ⁴² In a note to this passage, the translator remarks: ‘I am very uncertain about the meaning of this passage. Frazer’s note shows that divination by dice usually took the form of interpreting the sequences of numbers obtained by throwing several dice on to a board. This cannot be the meaning here, as *schêma* can hardly denote a number on the face of a die, and in any case *exêgêsin tou schêmatos* must mean “explanation of the shape.” I have accordingly adopted the emendation *astragalôn*, but *epitêdes* seems to have no point. Frazer, reading apparently *epi de panti astragalôi schêma ti k.t. he*, translates: “Each die has a certain figure marked upon it, and the meaning of each figure is explained on the tablet.” (The emended passage becomes: *epi de panti astragalou schêmati gegrammena en pinaki epitêdes exêgêsin echei tou schêmatos*.)
If these were unmodified astragali, the actual shape of the sides is what defines the various value within divination and games, among e.g., the Greeks (cf astragaloi, OCCL), the medieval Dutch (Knol 1987), and (still) in

Mongolian divination, which includes a ‘fortune-telling with anklebone’ variation called *Dorvon berkh* (‘the four difficulties’; author’s collection). Using four sheep astragali, the sides are named: horse, sheep, camel, goat. Horse has the highest value. The names of the sides as livestock could obviously encompass the fertility aspect noted by Szynekiewicz (1990, 83)—see note 51, below—attributed to this bone by Mongolian tribes.

⁴³ see e.g., Harmening 1979 for texts, references and discussion.

⁴⁴ In *Lex Frisionum* (XIV) (e.g., Eckhardt & Eckhardt 1982) the way of drawing lots is described in some detail in determining the party guilty of manslaughter during a riot. Seven could be tested for guilt, after having taken oaths that they were not guilty. Two lots were made from sticks, one marked with a cross, both wrapped in wool, and then laid on the altar. If there was no church in the vicinity, they could be laid on the relics of a saint. If that lot without the cross was drawn, someone was lying, and all of the seven added their own lot, each marked with a personal sign. He whose lot was drawn last, was guilty, and paid the fine. If initially the lot drawn had the cross, none of the seven were guilty, and another seven men could be picked, and the process repeated, but only once.

⁴⁵ Archaeological finds of bits of very small animals also have time depth, but gain attention mainly when human bodies accompany them, such as the belt bags in northern European graves. An Early Bronze Age, Danish, example contained: ‘a piece of amber, shells, a wooden cube, a flint flake, dried roots, bark, a grass-snake tail, a falcon’s claw, bronze tweezers, a knife and razor each in a leather case, a flint knife stitched into a bladder or internal organ, a squirrel’s jaw in a leather case, and other small organic articles’; another bag contained among other things, ‘a piece of wood wrapped in skin’ (Coles & Harding 1979, 308, citing K. Tackenberg: *Die Jungere Bronzezeit in Nordwestdeutschland*. Hildesheim 1971).

⁴⁶ He thought another of his mother’s remedies really went too far—an amulet, to cure augue, of a spider kept in a nut-shell wrapped in silk: ‘this me thought was most absurd & ridiculous, I could see no warrant for it’. However, while perusing the classics Burton came across a similar use of spiders recommended by the 1st c. Dioscurides, and Burton noted: ‘I beganne to haue a better opinion of it. . . .’ Presumably, the author would have been upset if his mother had been accused of witchcraft, having found authorization via an, albeit pagan, classical source.

⁴⁷ As summarized by Loewe (1981), the inscriptions are of three different types: a record of the question that was formulated; the prognostication, or answer that had been reached by specialist interpreters; and, a record of the factual outcome. The questions formulated included ‘the suitability of particular times for making sacrifices. Some concerned the prospects for the harvest, or the likelihood of rain or winds. Other enquiries fastened on the fortunes likely to attend the king or members of the royal house in the immediately ensuing period of ten days; or it might be asked whether projects for a hunting expedition, a military foray, or the establishment of a settlement were likely to meet with a successful outcome’ (Loewe 1981, 44). Also described is that, along with turtle shells, shoulder blades were heated to achieve cracks on the bone, the pattern of which were then interpreted. The questions could be repeated a number of times, and the ritualistic nature of the procedures comprised several stages, including dedication of the bones or shells, purification of evil influences, and the formulation of the ‘charge’, the question. Unknown is why shoulder blades were the chosen bones, a tradition at least by the Chinese Bronze Age, and in use to much later periods. Turtle shells are suggested to represent the cosmos, whereby the dome of the heavens is the shell over the flat square of the earth.

- ⁴⁸ I did not go into these types of practices above. A good overview of the early Christian and missionary texts, from the 5th century onwards from various regions, prohibiting and warning against ‘pagan death-cult’ activities is given by O.G. Oexle (1984). Basically, from the new Christian viewpoint, the ‘devil-inspired’ were having too much fun: dancing, singing, talking, laughing, making offerings, feasting and drinking at the death-watch, or around the grave. Oexle makes a main point, that of pagan ‘Verbundenheit und Vertrautheit’ with the dead, and he places the more modern mentality of alienation much further along, in the mid-17th century. That this distinction has not been made, is also seen to have coloured germanist and folk-lore, specialist interpretation. The spatial integration of the Schagen dead within the work area of settlement space would be an indication for Oexle’s point.
- ⁴⁹ The three were in f148 with one each in f27 and f137.
- ⁵⁰ In an overview of astragali occurrence and context, Gilmour cites many recent studies on this one bone element, only. The more encompassing tradition and discussion of foot symbolics is not referred to, and he suggests the importance of the bone lies in the act of skinning the animal, whereby the astragalus gains a mystical quality, which underlies symbolic importance (Gilmour 1997, 172).
- ⁵¹ A fertility aspect is also something mentioned by Szynekiewicz in an ethnographic study of the importance of the sheep shin bone, the tibia, among Mongolian tribes. This one bone element is imbued with multi-encompassing, structuring principles based on patrilineal descent. The associations and use demonstrate symbolic meaning within curation, healing, descent, and all life stages. It is the right tibia that is taken up within meaning. Clear is that sheep are important within economics and that bone designates patrilineal descent, in opposition to flesh, associated with matrilineal filiation. Why the tibia is imbued with meaning, however, is not apparent: ‘The reason for the choice of the tibia as symbol is less obvious. Imputation of phallic significance seems unwarranted, since there is no such symbolism apparent among the Mongols. However, it is not unreasonable to suggest that the symbolic power of the tibia derives from the bone’s junction [i.e., articulation] with the adjoining ankle bone [this must be the astragalus], and the latter’s customary connotation of fertility’ (Szynekiewicz 1990, 83).
- ⁵² This may be a typical sub-regional Schagen tradition, and/or a chronological difference. Fused calcanei have turned up in pits, as single complete objects more often in the Broekpolder (Heemskerk/Beverwijk) and occasionally at the Velserbroek sites, all earlier than the Schagen sites. These sites are also below the Oer-IJ border. A 19th c. well at the Velserbroek-B6 site had a deposit of a calcaneus as only bone find, and is therefore nicely contemporary with ethnohistorically known ‘feet symbolics’, as are the similarly dated pits containing horse-shoes at the same site.
- ⁵³ The fruits of trees is evident in the trope of ‘acorn’, as body part, as the glans: in at least Danish, Dutch, German and Swedish as well as Romance languages such as Spanish and Italian. ‘Acorn’ refers generally to the fruits of wild trees. Glans (Latin for acorn) is the term in English, but obviously not of the vernacular; ‘nut’ was a word used for the glans penis, noted by the 18th c. (OED), and this is certainly more in line with a vernacular designation, and more similar to ‘acorn’ of the other languages mentioned. Past importance of the body-part is reflected in price-fixing that had occurred at least by 801 for the broader coastal region of the Frisian Empire as is shown by the customary law code, *Lex Frisionum*. For an extensive discussion of past and more recent interpretations of *Lex Frisionum* in relation to other regional law codes, see Siems (1980) and references therein; for the entire text of the 16th c. Harald edition, which keeps unclear in translation that which is unclear in Latin, and the differences with the early 17th c. Lindeborg edition, see Eckhardt & Eckhardt 1982.

⁵⁴ And, even farther a field. The ‘knee’ has an associated bone, the patella, the kneecap. Prummel cites an interesting combination of bones within ritual of Mongolian shepherds: ‘to secure for the family a multiplication of every good’ a New Year’s sacrifice was made by burning sheep astragali, the kneecap, the Achilles tendon and fat (Prummel 2003, 215, citing: I. Kabzinska-Stawarz 1985, Mongolian games of dice. Their symbolic and magic meaning. *Enthnologia Polonia* 11, 237–263).

The seldom occurring animal bones of patella, the knee-cap—looking very ‘seed’-like—and horn-cores, antlers, jaws have been itemized for the Schagen sites (Chapter 2) and are mentioned for the other sites (Chapter 4). A human kneecap has been recovered from the Broekpolder offering site (Therkorn et al., forthcoming).

⁵⁵ Of humans, skull and thighbones are the most regularly occurring as archaeological finds at the sites (cf Chapter 4). These bones are regarded by Onians as a key to the generative theme of texts, and as a holdover thereof within skull-and-crossbones iconography.

⁵⁶ As a trope for ankle bone/dice and vertebra (see note 41, above), Homer was mentioned in reference to the astragalus as where the head breaks off from the spine, and the soul departs to Hades. A passage from further a field, demonstrates the inter-connectness of head and heel: In the Welsh myth, from *The Mabinogion*, Bran the Blessed ‘when wounded in the ankle, ordered his followers to behead him, and carry his head with them until a door was opened towards Cornwall, when they must take it as quickly as possible to London and bury it facing towards France’ (cited by Merrifield 1987, 74). This is a mysterious sequence of events, but a wound in the ankle, the site of the calcaneus/astragalus is what set it off, with consequences for the skull.

⁵⁷ This may be due to Nazi reification of the theme. The theme is not particularly Aryan: a ‘World Tree’ within cosmology is widely found, including Siberia, Africa, Near and Far East, and in the Americas, including the ancient Maya. See for widely spread examples of ‘trees’ Frazer/Fraser (1994), and for recent anthropological interest in tree symbolism, Rival (ed., 1998). For the Europe, see works such as De Vries (1956/57), Davidson (1988, 1993), Flint (1991) and Dowden (2000), and references therein, particularly for early texts, texts on prohibitions, and practices of feast days within Europe; for the Netherlands on later practices: e.g., Van de Graft & De Haan 1978, Schuyf 1995. Such books as that by Schuyf, which brings to attention tree lore and practices surrounding single trees at particular places, or books popularising the tree topic such as *The Sacred Yew* (Chetan & Brueton 1994), following one species as to belief and practices for Europe and beyond, are similar to studies being done before World War II. They remain essentially catalogues of practices. They do again bring attention to the subject, something which through Nazi propaganda reifying a past using a base of medieval texts and folk practices, became decidedly unpopular. Within the Netherlands, the publication ‘*Levensboom*’ [Tree of Life/World Tree] yet continues, as do similarly named monthly publications in Belgium and Germany. Among interdisciplinary approaches, interest was again starting for the long-term (cf Waterbolk 1980) and ethnohistory (cf Van der Waals 1982) by the 1980’s, as well as interpretation of materials binding history with pre-history within the research program in Noord-Holland (cf Garthoff-Zwaan 1987). See for theoretical breadth: Knapp (ed. 1992), particularly Sherratt (1992); Gosden (1994).

⁵⁸ In *Gylfaginning*, Snorri Sturluson (Faulkes, trans/ed. 1987, 13): ‘As Bor’s sons walked along the sea shore, they came across two logs and created people out of them. The first gave breath and life, the second consciousness and movement, the third a face, speech and hearing and sight; they gave them clothes and names. The man was called Ask, the woman Embla, and from them were produced the mankind to whom the dwelling-place under Midgard was given.’ Due to this and other indications, Ask and Embla will be interpreted as humans within the other world (see Appendix Voluspa). In the Voluspa of the Poetic Edda (version *Codex Regius* (trans/ed. Otten

1994)) Ask and Embla are referred to in vs. 17–18. Bor's sons are specified as Odin, Hoenir and Lodur. 'Ask' is generally agreed to be ash, but 'Embla' has not been translated with certainty.

- ⁵⁹ In line with the 'tellurian'—earthly—aspect of cows, and in opposition to afterbirth of foals hung in trees, the placentas from calves, as noted at least in the Veluwe (Gewin 1925), were buried in pits.
- ⁶⁰ The Christmas stocking can include, besides small gifts, nuts and other fruits. These are in line with the seed to earth elements, while nothing of the stocking seems to encompass the phallic element of the foot/foot symbol discussion. It may also be the reason why Aigremont and Verhoeven did not use the example of Christmas stocking or St. Nicholas' shoe within their respective studies, even though many examples were drawn from places where the practice is known. It is an exception, and was ignored possibly as not understandable, through the narrow foot/phallus explanation as natural symbol.
- ⁶¹ Not explored here are the single teeth/molars, of the pit deposits, and (late) games involving single teeth which could give an indication for earlier importance, as with astragali and children's games. Having to do with tooth/tusk is the word '*teerling*', a word for dice in middle-Dutch, where there is also an animal part connection. De Vries' (NEW under *teerling*) comment is interesting as to derivational path of the Old Norse form of the word, "tooth", 'because dice were often made from walrus tusks.' (my trans.) This is directionally interpretive and could be turned around as to progression: from using teeth, and at some point using tusks marked with spots as dice. This would be analogous to the apparent astragalus tradition of prehistoric finds of manipulating unworked bones as 'dice', towards worked cubes with dots as numbers. Or, as in Schagen, occurring together at the sites are unworked astragali and worked cubes with dots, made from metapodia and the wood of tree-roots.

(CHAPTER 4)

- ⁶² At more recent excavations in the Broekpolder 1998–2001 (Therkorn et al. forthcoming), deep, single pits, with contents similar to sites discussed here were considered closely for the aspect of seasonal deposits. In some cases it could be distinguished that single pits had been reopened and then additional deposits made. The idea of a sequence of deposits in the vertical sense, upwards through a year, rather than three pits in horizontal placement as at the later Schagen sites, will not be gone into here but will await complete publication of the sites discussed.
- ⁶³ Iconography on objects—in the form of ill-understood 'decoration'—is known on pottery, which after the Neolithic, occurs mainly in the Iron Age. Of the hundreds of finds of indigenous (i.e., not Roman import) wood and bone from the province, only one object is known with a carved motif. It is a large wooden platter, recovered in the Assendelver Polders, which has a three-armed motif on the underside (Therkorn et al. 1998, photo 17).
- ⁶⁴ The ordering of the sites, as to the interpretation of constellations as explaining the pit placement was first established for the SM-I site, in 1991. Next, the site of UB18 was checked for the same possibility, also from the plan. The model was tested at the site of Velsbroek B6, going on traces found in trial trenches in 1991 to plan where to place larger trenches in 1992 and 1993. At the site of Velsbroek-Hofgeest, partially excavated in 1990–91, large scale iconography was suspected of at least patterns Horse and Cow. The feature points were extrapolated to unexcavated areas. In 1994, these areas were excavated.

- ⁶⁵ The Scandinavian ‘Odin’s Way’ is one of the many designations within different cultures. Within Greek myth, the Milky Way arose when Hera, suckling the infant Heracles, pushed him away from her breast and milk spurted across the heavens; the Arabic Al Nahr, translates as the River; an English designation was Watling Street, also remaining as the name for the earthly Roman road from south-east England to north Wales; the Turkish designation is Pilgrims Way and a Chinese name is the Yellow Road, referring to the scattered stars as straw; ‘Straw Way’ is common for much of Asia and Africa (Room 1988, 114). Other examples are taken up in Chapter 5.
- ⁶⁶ The large hill figure, fifty-five meters head to toe, of the Cerne Giant (County Dorset, England) also holds a club and was assumed to be Iron Age/Romano British in date. However, there it is now regarded as probably of the 17th c., mainly through the lack of texts referring to it before this period (Gerrard 2000).
- ⁶⁷ The meaning of the name ‘Pleiades’ is unknown, very old and perhaps Indo-European (OCCL), but according to Room (1988, 131) associated with *plein*, to sail, ‘because the Pleiades rose in the sky annually in May, when the sailing season began.’ Maia is the eldest of the daughters as the Pleiades; Maia is also ‘an obscure Italian goddess associated with Vulcan....She seems to have been connected with the growth of living things, and the name of the month is probably derived from her name. By confusion with [the Greek Maia,] she was associated with Mercury, the Roman equivalent of Hermes’ (OCCL). This is working on the assumption that myths came before the material connection and names were given thereafter to sky phenomena. Cf Chapter 5 on some other Pleiades designations.
- ⁶⁸ The facet of animal bone as reliquary is a subject to be further researched. It could also apply to very rare finds of certain animals and birds. There are various texts describing ethnohistorical concern with certain animals as harbingers, and this could also imply concern with the symbolics of species and their bones (cf e.g., Grimm 1835, Aigremont 1909 [and, cf Chapter 3], HWDA/Bachtold-Stäubli 1927–1942, Rowlands 1973). The references to animals, and where their bones occur at sites, could be easily examined through a more anthropological/sociological methodology as demonstrated in more recent volumes, such Morphy (ed. 1989) or Willis (ed. 1990). ‘Animals’ and their parts should perhaps be considered along the same lines as applying to humans (and reification) of their bones: medieval examples are given by Huizinga (1986 [1919], 165) of bones from saints. Charles VI for example passed out some of his sainted ancestor’s, St. Louis’, ribs to family and a leg bone to his prelates, who divided up the leg further, during and after a solemn feast.
- ⁶⁹ Initially there was an interpretation that the channel was a length of dune sand on which finds were thrown (e.g., Bosman 1997) It is an absolutely untenable interpretation, and does not take into consideration the stratigraphy, state of the metal finds, the peat accumulation and inversion relative to sandier sediments. Both Jan de Jong and Waldo Zagwijn (State Geological Service) are thanked for their helpful discussions, expertise and insight to the problem during their visits to the excavation in 1993.
- ⁷⁰ The materials of the portion of the site discussed here were identified by: Jacqueline Oversteegen (bone), Silke Lange (wood), Pauline van Rijn (wood). Arjan Bosman (1997) carried out identification and dating of the metalwork.
- ⁷¹ The Roman import deposits were used as a guide, with a late 2nd c. coin as latest date. Excavation of the Broekpolder offering site (Therkorn et al. forthcoming) and greater funding for many more dates has shown, as does for example the Wijnaldum site, in Friesland (Galestin 1999, Vin 1999) how long Roman import remained in use as a material for deposits. See also Bradley (2002) for more widely known discrepancies between archaeological context dating and recovered materials.

- ⁷² Various facets of the materials were the subjects of subsequent reports. Pertinent to the following feature discussion is the work done by Diederik Bente (fieldnames) and Jacqueline Oversteegen (1992). Other reports on materials will be taken up in the final excavation report.
- ⁷³ Diederik Bente did archival research on this point in 1990. His work is part of the excavation records.
- ⁷⁴ Identifications of materials done within the excavation, and used for the discussion here, were done by: Jolanda Willemsen (wood), M. Marinelli (bone; 1991), Jacqueline Oversteegen (bone) and Dirk van Smeerdijk (pollen and macro-remains). The final excavation report will include the other sub-excavation reports and facets of materials and periods.
- ⁷⁵ Well known and widely discussed is Thom's megalithic yard of 82.9 cm (cf Ruggles 1999, 82–83 for a brief discussion). There is also, for example, the Feddersen Wierde foot of 35 cm distinguished for farmstead dimensions by Haarnagel (1979, 244–248).
- ⁷⁶ All of the sites discussed were drawn at a scale of 1:50 (except for various features needing detailed drawings) whereby short distance measuring of features were generally rounded off to the nearest 5 cm (=standard Dutch practice). The margin of error is thus 2.5 cm, or one 'inch' to a real yard = 91.4 cm plus/minus 2.5 cm = 88.9 – 93.9 cm. This range can of course make quite a difference over large distances; however, there are regularly occurring distances and exact points given by still present stakes, implying short distance inexactness in registration does indeed average out.
- ⁷⁷ Measuring by body parts within cosmology is another discussion which could inter-relate with foot symbolics (Chapter 3). Hands are part of the medieval record: Inches are most probably the unit of measure stemming from the body part of thumb knuckle to end of thumb. The use of thumb joint is that starting point of the series of measuring units as body part denoted in the earliest customary law text of the Frisian realm, *Lex Frisionum*, dating to 801/2 (Eckhardt & Eckhardt 1982).

(CHAPTER 5)

- ⁷⁸ This chapter was written in 1992/93 and a few additions have been made in 2003/4, as will be apparent from the cited literature. The purpose of the very brief mention on the past and current trend within cultural astronomy is to bring the subject to the attention of archaeologists in the Netherlands, who for the majority have no knowledge of the topic. For a full and critical discussion of research and problems, see Ruggles (1999) and references cited therein.

Organizations for academics and associated publications include (and all with websites) the *Journal for the History of Astronomy*, published quarterly since 1970; by 1977, it included the yearly *Archaeoastronomy Supplement*; as of 2003, the subject is taken up as part of the journal. The Center for Archaeoastronomy was founded at the University of Maryland in 1978, with a journal *Archaeoastronomy* beginning in 1977 (since 1998 titled *Archaeoastronomy: The Journal of Astronomy in Culture*) and a quarterly newsletter (online), *Archaeoastronomy & Ethnoastronomy News*, which also serves as an information outlet for ISAAC. The European Society for Astronomy in Culture (Société Européenne pour l'Astronomie dans la Culture, SEAC), was founded in 1992 and The International Society for Archaeoastronomy and Astronomy in Culture (ISAAC), was founded in 1996. The International Astronomical Union (IAU) includes the history of astronomy as one of its commissions.

- ⁷⁹ Present and growing light pollution is an increasing hindrance for many in perceiving anything at all, and as the Milky Way is an important feature of the sky for this work, one conclusion is here cited from studies charting light pollution: 'Based on radiance-calibrated high-resolution [US Air Force Defence Meteorological Satellite Program] satellite data and on accurate modelling of light propagation in the atmosphere, [the World Atlas of the zenith artificial night sky brightness at sea level] provides a nearly global picture of how mankind is proceeding to envelop itself in a luminous fog.... Assuming average eye functionality, about one-fifth of the World population, more than two-thirds of the United States population and more than one half of the European Union population have already lost naked eye visibility of the Milky Way' (Cinzano et al. 2001, 689).
- ⁸⁰ One painting within Lascaux, for example, has seven painted dots above an aurochs, and dots in its face, which suggest the star groups of Pleiades and Hyades. The 15,000-year-old image itself is interpreted thereby as representing the constellation now known as Taurus/the Bull: Antequera Congregado (1991), Rappenglück (1998).
- ⁸¹ Examples are given here of some lesser known integrated systems, rather than the vast research fields considering Babylonian and Greek practice, or research including ancient Egyptian cosmology.
- ⁸² Thus, it is not implied nothing was going on of another nature within Europe, just that the 'Stonehenge' fascination has captured the most attention. Other northern European countries are represented, with various approaches (cf eg Reuter 1934, Svenonius 1937). Later examples of the northern Europe area include also a variety of interest: Jong & Wevers (1994) analyses on circles within the Netherlands for orientations. Sun orientations are also used for interpreting deposits at an offering site (Carlie 1998); or, the declination of the sun, as reckoned by indigenous formulas, shown in Icelandic texts by the 12th c. (Roslund 1984, 1989). On various materials, signs and symbols include interpretation as sky phenomena: Hartner's analysis of the Gallehus horns (1969), including constellations as part of the Poetic Edda, or Saugmann (1974) postulating feet and boat carvings as constellations. A discussion of Later Iron Age short swords with lunar symbols by Fitzpatrick (1996) has many references to various facets of the Celtic world. Van Driel-Murray (2002) reviews astrological signs on the soles of sandals within late Roman provincial society. See Ruggles 1999 for many other references on continental research, and critique.
- ⁸³ Popular media continues as well to present past interest in sky phenomenon as part of 'high culture'. The find of the *Himmelscheibe* of Nebra, the bronze and gold disc including clear illustration of moon and stars (as circles, including a group of seven, i.e., the Pleiades), presented as Early Bronze Age, induced a *Der Spiegel* (25.11.2002) cover of 'Der Sternenkult der Ur-Germanen, die Entdeckung einer versunkenen Hochkultur'. Findings which might lead to media pandering along high-culture achievements and aspirations of the ancestors is the general vein along which looking at the stars, and doing something with them within culture is viewed within Europe. Why this must be taken up within such a mode of mysterious conceptualisation is beyond this author's comprehension, but the discussion on stages in the 'evolution of religion' (section 5.3.2) might contextualize the tradition.
- ⁸⁴ citing D.A. Thurton & C.L.N. Ruggles, 1978: Agreeing to disagree: the measurement of duration in a southwestern Ethiopian community. *Current Anthropology* 19, 585-600.
- ⁸⁵ North (1996) combines a degree of philosophy and history of Europe in general in combination with his alignment studies of megaliths. He has suggested transformation with concerns of ritual and sky phenomena from some bright stars as the reason for orientations of early British monuments, to emphasis on the sun for the later, such as Stonehenge.

- ⁸⁶ See e.g., Romm (1992) for the Greeks in relation to the nature of earth and cosmography.
- ⁸⁷ Pannekoek (1961, 99) finds these two statements contradictory although the fixed nature in a dome-like structure seems complimentary.
- ⁸⁸ The translator/editor Lamb (1986 [1927]) places *Epinomis* with other forgeries of Plato in the 3rd c. BC. Similar to Plato's *Timaeus*, astronomy in *Epinomis* is theology.
- ⁸⁹ In his earlier 3rd c. BC work, based on the 4th c. BC treatise by Eudoxus, Aratus (*Phaenomena* 19–44: Mair, trans/ed. 1989) is not exactly clear on the point either, but states that the axis has two poles, one of which is facing us and can be seen and is in between the two bear constellations; thus, the polestar. The two poles are taken to be the North and South Pole (Mair 1989, 198), although how this can be combined with the polestar 'facing us' is rather contradictory.
- ⁹⁰ Linear development is illustrated for example on use of Roman or Greek meaning of *genius* by Plautus as a man's protector or 'good angel'. The 'natal star' idea is considered by Onians (1991, 161) non-Roman: 'This can scarcely belong to native Roman thought', not further specified as to why. It is unclear in his section on head/soul/stars what he does consider the chronological development while mentioning such diverse cultures with the idea, from Celtic areas to Slovenia, and beyond.
- ⁹¹ He also mentions the ignorant rustics began the year on the calends of January. Sacrifices to Mercury were also mentioned by Martin, in the form of stones placed on cairns at crossroads, something still referred to by Buchard, in the 11th c. (Flint 1991, 206).
- ⁹² From Timmers (1978) these include: Malachi's prediction (4,2): 'But for you who fear my name the sun of righteousness shall rise, with healing in its wings...'; Luke's (2,32) Christ as the 'light of revelation'; John (8,12) quoting Jesus: 'I am the light of the world; he who follows me will not walk in darkness, but will have the light of life.' And, John of the Revelation (22,16): 'I Jesus have sent my angel to you with this testimony for the churches. I am the root and the offspring of David, the bright morning star.'
In the last, 'root and the offspring' could be the sun (although Malina & Pilch [2000, 259] identify Jesus with the morning star) in the evening going down, preceding (i.e., being the root) of the evening star and as offspring (as following), the sun as rising after the morning star.
- ⁹³ The 'Gospel of Thomas' was not chosen for inclusion as a book of the Bible; it consists of quotations attributed to Jesus. The 114th and last quote is: 'Simon Peter said to them, "Let Mary leave us, for women are not worthy of life." Jesus said, "I myself shall lead her in order to make her male so that she too may become a living spirit resembling you males. For every woman who will make herself male will enter the kingdom of heaven' (Fox 1991, 149–50). The idea would contradict John's book of the Revelation that everyone could achieve a heavenly status, an attractive proposition for converts.
- ⁹⁴ Barton discusses (1994, 203–207) the cult of 'Sol Invictus' in Rome and elsewhere. The 25th of December in transference to the Christian belief of Christ's birth date from this late pagan reverence for the sun and near solstice date was, and still is, a major affront to some Protestant groups and a reason for not celebrating Christmas.

- ⁹⁵ This remains evident even now in annotations of translator/editor Otten (1994, cf 316 [st. 6, 15] 333 [st. 15]), as in the earlier translation by Bellows (1991 [1936], cf e.g., 17 [st 34] 18 [st 40]).
- ⁹⁶ Hartner in the sixties was considering the origins of constellations (1965) within Babylonian context. In his (1969) analysis of the golden horns from Gallehus, Denmark, with their clear star design motifs, and an interpreted cryptic rune/constellation/dating message, the maker of the horns is considered to have had knowledge of Babylonian astrology.
- ⁹⁷ More recent interpretation reflects this: Green (1991) interprets all manner of signs/symbols on various materials, across Europe, as referencing the sun, within a 'sun cult'. There is no stated reason of why all of the design motifs she discusses should refer to one and the same phenomenon.
- ⁹⁸ However, the interest in folk astronomy is demonstrated in the SEAC volumes, not reflecting interest arising only in the 1990's, but rather a forum for European research, available in English. Cf e.g., the volumes of selected papers presented at SEAC proceedings: Koleva & Koleva (eds) 1996, Schlosser (ed) 1996, Ruggles, et al. (eds) 2001, Blomberg et al. (eds) 2003.
- ⁹⁹ This is not to imply that works of the 20th c. combing myths on a global scale for astronomical references are useful for this approach. Ignored here are works with echoes of Pan-Babylonism, imbued with Joseph Campbell's ideas of the 'Monomyth', holistic and non-separatist, such as that by De Santillana and Von Dechend (1999 [1969]), *Hamlet's Mill: an essay investigating the origins of human knowledge and its transmission through myth*. The authors are set on illustrating that the principle of precession of the equinoxes, for example, was known generally very early on, and that myth over the entire world shows the complexity and sophisticated knowledge of astronomy, as myth is what remains of ancient cosmology based on astronomical sophistication. Myths, globally, are considered remnants of a shared and basic knowledge, passed down by the ruling class. They cannot be understood now. 'There is also wonderfully preserved archaic material of "secondary" primitives, like American Indians and West Africans' (ibid. 7). What a 'secondary primitive' is, is not explained, and the line of the argumentation is certainly unclear on general points. In any case, little if any understanding is offered for the cultures concerned.

(CHAPTER 6)

- ¹⁰⁰ As the earth pivots within precession, the background of the stars also shifts relative to the path along which the sun travels (the 'ecliptic', along which the moon and planets also move), whereby the longitude at which the sun crosses the celestial equator at the equinox also shifts. There are many works explaining this, but it is again not for this work of especial importance. See e.g., North (1996) and especially Ruggles (1999) on explanations of this and other matters of astronomy as relevant for archaeology.
- ¹⁰¹ This may be interesting for an origin and dating discussion of the constellation, and could also be combined with the foot-symbol discussion, gone into in Chapter 3, and where Maier's (1962) study was mentioned demonstrating a concern with 'feet' back to the Palaeolithic period.
- ¹⁰² Which cultures knew this first is part of the study of the history of astronomy, as a science, but also for some, an aspect enfolded in myths: see note 99, above.

- ¹⁰³ There are various software programs available for those interested. The author has used the shareware program SkyGlobe, by Mark A. Haney. Rik Maliepaard is thanked for bringing this program to my attention.
- ¹⁰⁴ Features of tree-falls or root systems were not present at the sites discussed here. In general, there is no indication at all for stands of trees around or in the excavated settlement areas.
- ¹⁰⁵ See note 79, above, and for naked-eye visibility of stars in regards to extinction, magnitude, atmospheric refraction, glare, night sky brightness: e.g., Schaefer (1986, 1991, 1993), Schaefer & Liller (1990), Uggren (1991). Use of no less than an altitude of 5° above the true horizon was done on the advice of Teije de Jong.
- ¹⁰⁶ ‘Heliacal rise’ and ‘cosmic setting’ are terms enfolding exactitude and will not be used here. The terms refer to a yearly event of stars at first rise, in the east, or set in the west, before sunrise. ‘Acronychal rise’ and ‘heliacal setting’ are the terms for the first rise and set of a star or constellation after the sun has set. Establishing exactly when a star rose or set and was visible at the horizon has to do with the exactitude necessary in knowing the extinction angle, briefly mentioned.
- ¹⁰⁷ Various mistakes were made in ‘north’ for various reasons. Interim versions of any of these site plans should be ignored.
- ¹⁰⁸ The globular cluster (M15) suggested as marked in the ground (H1) by the pots inverted over cremations at Schagen could probably only have been seen in exceptionally good conditions in the darkest time and area of the sky. Uggren (1991) notes that there are cases of individuals recorded who can see stars as dim as magnitude 8, while magnitude 6 is about the limit for those with average eyesight, decreasing with age to about magnitude 4.5.
- ¹⁰⁹ ‘October Equus’, on the ides of October, was the major Roman horse sacrifice and connected to the cult of Mars. The right hand horse of the winning pair in the chariot race (having run the best, and the farthest) was sacrificed. It has been compared to the Indic ritual of *asvamedha*, beginning in the spring, whereby a stallion was let loose to wander for a year, and then sacrificed. See for example Onians (1991, 126–7) who remarks on the harvest materiality in connection to October Equus and Mallory (1989, 135–137) for the wider Indo-European context.
- Death in the sky of the constellation Horse is not taken up within analyses seen on October Equus but could be a connection, also as to times of the year, and the element of sacrifice of a horse—after running the distance. It would also add to analyses of the Roman hippodrome, as model of the cosmos (cf e.g., Lyle 1990, 35–51).
- ¹¹⁰ It is an intriguing idea that this rise could have been perceived as coupled to the Summer Solstice. The arc of the rise would be known, probably, from darker nights. As the Pleiades precede the rising of Taurus/the Bull, it is not inconceivable that the event of the rising of the Pleiades was (conceptually) put back in time with another perceived event, the Summer Solstice.
- ¹¹¹ There are directional indicators at the earlier sites for the two patterns of Hercules/The Kneeler and Greater Dog. They are especially associated with Hercules/The Kneeler, and with features filled with slaughter waste at the c. 600 BC Velsbroek Hofgeest site (on the northeast of the pattern Cow, one ‘pointing’ to C7 and another to C6—see fig. 51), a similar association as gone into for SM-I below.

- ¹¹² It is a moot point whether or not a single star would be recognized as the start of the rise of the constellation. However, extending the interpretation that inhabitants were recognizing this constellation, they were then probably recognizing stars/constellations rising previous to it. Altair, a bright star (mag. 0.8) of the constellation Aquila/Eagle, came up at the time of the Winter Solstice and at about the same place as would Pegasus. Anticipating the discussion on the Voluspa in Chapter 7, it can be remarked here that the Eagle (as text), is that which starts off the new cycle in the Voluspa. It will be identified with the the Aguila/Eagle constellation, starting off the new year, as the start of the cycle stated in the Voluspa.
- ¹¹³ Only the immediate area of the dwelling was excavated at Schagen Muggenburg-III. The model of pit groups, pit deposits and seasonal indicators of SM-I seem to be more or less reiterated, as tradition and themes to ritual at this somewhat later site. Figure 36 shows where the very partial constellation figures could have been: of Cow, Greater Dog and Hercules/The Kneeler. Only mentioned here is that whereas the excavated area of Schagen Muggenburg-I included direction of features towards the summer solstice rise-winter solstice set in the northern activity area and as embedded in the Rider figure, this site also shows a similar orientation. Because there was a greater area excavated to the south of the dwelling at SM-III, and a line of features was followed within trial trenches, a similar pattern and direction may be indicated, but then along the southern side of the settlement. Features could have bordered both of the Schagen settlements with this general direction at both ends of settlement area. While that recovered at SM-I was associated with the Horse constellation pattern, at SM-III the association is with a line of features overlapping with the constellation figures Cow, Greater Dog and Hercules/The Kneeler (insofar as they can be assumed present at all). The elongated pits, at one end with a deposit of cattle skull part, horn core cut off, could have been dug towards the rise of the summer solstice sun, and through the cattle skulls, would seem to relate more to constellation Cow, coming up before dawn in July.
- ¹¹⁴ The rise of Sirius was connected to the harvest by Homer in the Iliad (22.25-31). During the festival of *Robigalia* (Ovid *Fasti* IV, April 25: Woodard & Boyle trans/eds 2000) there is a dog sacrifice described that is connected with protecting the harvest against rust. The dog placed on the alter was specifically for averting the effects of the rise of the dog-star at the time the harvest would become parched, thus in the summer (heliacal rise). The April 25th date is more in line with the heliacal setting of Sirius, i.e., in the early evening in the SW. More pertinent perhaps for northern areas could be the ethnohistorically known and widely spread European legends/myths of a Corn Dog/Rye Wolf, as the corn-spirit running over the fields, hiding in the last sheaf during harvest time. He is a widely distributed, but very mysterious figure: see Frazer (Fraser, ed, 1994, 456-9). Frazer did not connect folk belief with the constellation.
- ¹¹⁵ There are various ethnohistorical, northern designations known for constellation Orion mentioned by DeVries (1956/57, s 433, s 532) having to do with fishhooks, 'Mäher', the 'drei Mader' or 'die Sense'; but also as Frigg's spindle, as the three stars of Orion's belt, in Sweden. People of other Scandinavia countries knew the belt alternatively as 'Mary's spindle', by some (not DeVries, s433) suggested as a christianisation of pagan tradition. The connection, following a literal translation of the planet Mercury, as Odin/Wotan/Wodin, would be the mythical figure's wife, Frigg, as his consort, as associated with the planet Venus. Materials with stars are taken up in Chapter 7: see Figure 67 with a bracteate, found in southern Germany, with a woman, holding spinning objects, among signs/symbols including three stars, such as Orians belt.
- ¹¹⁶ DeVries (1956/57, s585-588) regards both the World Tree and posts/pillars as referring to the world axis-polestar. He goes into the first as associated with Yggdrasill and the stallion bound to it. He brings *Hochsitzsäulen* into connection with the polestar, the axis symbolized by that carrying the roof of the house, and with the World Tree.

Here, it must be emphasized they are viewed as two separate things—the post at SM-I is tied into the Hercules/Thor figure, and the majority of tree deposits are in pits associated with the Horse constellation pattern.

- ¹¹⁷ At this site there were no actual wells recovered. Wishing wells (still) exist, and even when they are functioning wells, the placement and deposits in them indicate a multi-dimensioning within meaning and functions.
- ¹¹⁸ Although one could suggest this from the finds/season, it is interesting that mythical and/or legendary horse's hooves pawing up water are legion in Europe: from Pegasus to medieval times (cf fig. 22, Chapter 3) including St. Boniface and his own horse stamping up water in the northern Netherlands.
- ¹¹⁹ 'wilgen knotten' is related by De Vries (NEW) to 'knuckle'; in Old English there is a relation of the word with 'knitting'. Schuyf (1995, 86–89) summarizes a number of practices recorded from the 9th c. onwards for the Netherlands, and other parts of western Europe: in binding materials to trees (particularly stockings), an offering of a woman's braids hung in a tree; tying a stocking to trees for curing fever; charming a hazel branch, and tying three knots in a branch, while reciting a rhyme, also for transferring sickness.
- ¹²⁰ I thank Jacqueline Oversteegen for reminding me of the cyclical dimension of 'antlers', as material and season.
- ¹²¹ There is a wood and water connection in the Eddas through naming of Eikthyrnir, the stag with antlers of oak with water dripping from his antler, the source of all rivers (*Grimnissal* 26; *Gylfaginning* 38: Simek 2000). See Onians (1991, 237–241) on antlers and horns as text, as source of life-substance within other Indo-European contexts.
- ¹²² Horse with tenons in f27—willow, f 22—oak, f148—oak, alder, f79—2 oak. Cow with tenons in f276—willow, f221—purging buckthorn, hazel; Hercules/The Kneeler with tenons in f 115—oak, hazel, f212—4 oak, 3 hazel, f118—oak. Dog with one tenon of yew in f156.
- ¹²³ The perception still remains as a way of looking at people inhabiting areas defined by a border. Horizontal ups and downs are still with us, most often used by those in an 'above' position, in expressions such as 'below the tracks' or 'below the boulevard', both certainly having to do with socio-economics. 'Below the great rivers' (*beneden de grote rivieren*) in the Netherlands has more to do directly with religion (and attendant socio-economics and political history) as the situation of Catholics, mainly living below, and Protestants, of the state religion, mainly living above these rivers.
- ¹²⁴ Covering settlement sites with mounds is characteristic of many sites dating from c. 700 BC to 350 (see note 7, for the earliest; Therkorn et al. 1986, Therkorn & Abbink 1987, Van Gijn 1987, Meffert 1998, Therkorn et al. 1998). However, these mounds covering settlements seem confined to the north of the Oer-IJ channel, in contrast to sites immediately 'below', such as in the Velserbroek and Broekpolder (fig. 1), but which is an area where constellations were also set out.
- 'Mounds', as a longer-term feature concept, are in evidence as the infrequently occurring, traditional, barrows of the region of the Late Neolithic and Bronze Age, as they are for most of Europe. Mounds as the position of Cow-11 were present at Velserbroek-Hofgeest and Uitgeesterbroek Polder 18. Mounds and pits were brought together through layered time of the VbB6 site through the constellation Horse, into the medieval period, as the mound covering horseshoes positioned over the suggested late prehistoric pattern of constellation Horse. The earliest 'true' barrow, thus covering a human, of late Neolithic date had excellent traces of remarking, also

with circles, and through various periods up to the Early Middle Ages, with pits with interesting ‘gifts’ in and around the original mound, raised c. 1900 BC. Combined wood and bone deposits are important (Therkorn & Van Londen 1990; in this short report mention was made of a time span of use into the Iron Age, but a subsequently obtained ¹⁴C date extended the period: GrN-16897 950 ± 25 bp. The dating pertains to a pit, dug into the edge of the barrow, with a deposit of an oak staff or rod, with club-like handle, found together with the front part of a horse’s lower jaw and a vertebra).

(CHAPTER 7)

¹²⁵ The drawing together of the meaning of animal parts and burial from features was the starting point of the interpretation, as set out in Chapter 2 and 4. It is also a progression on the trend witnessed since the 1980’s of the wider scope in addressing meaning within zoological analyses (cf e.g., Grant 1984, J. Oexle 1984) including inter-tribal comparisons, texts and iconography (e.g., Prummel 1992, 2001). The gap is also closing from the other side from general types of folklore studies to greater emphasis on animals within myths and symbolic meaning (e.g., Rockwell 1978, Rowlands 1973, Icke-Schwalbe 1989, Willis (ed) 1990), as well as folklore, animals and stars (Frank & Bengoa 2001, Frank 2001). Only a few famous horses and cows are taken up in this chapter, but certainly others could have been included such as the Trundholm horse or the bronze figures of bovines (cf Thrane 1989), where especially the latter could be researched as to settlement feature context.

¹²⁶ A partial landscape feature may be imbedded within Stonehenge. Within the circle—made of stone but in a tradition of wood, is the hoof-formed stone setting. Since Stukely, the form has been so designated, as a hoof, but the connection to Pegasus has not been made. The Horse of wood, of the Velsbroek-B6 site, and the hoof-shaped dug features of Uitgeesterbroekpolder 18 can be here combined, but for an earlier date. The aspect of eternity and stone at Stonehenge is done in stone-as-wood. The summer solstice rise-winter solstice set is a line that is generally accepted. A similar alignment is consistently associated with the constellation Horse patterns within the Noord-Holland sites.

Taking the total landscape into account for Stonehenge, would also take into account the many (burial) mounds of the region. The interpretation of a landscape of covered settlements, as mounds, such as in Schagen could be applicable to other traditions of raising mounds within particular settings. Natural features of rivers and coast in relation to built monuments and the here proposed tri-partition of landscape/heavens could prove a useful facet within interpretation. ‘Seahenge’ is a case in point for a coastal situation, where the tree—upside down—and circle is clear.

The connection between Horse and Yggdrasil, as the World Tree and at the same time as Odin’s Horse has been mentioned as an aspect of later texts connecting the Horse constellation to the Tree of Life.

¹²⁷ The Grey Mare, as ghostly skeleton, is known from folklore as a death-bearing horse, transporting the dead to the Otherworld—see Brown for British and examples further afield. Brown concludes: ‘The grey mare remembered in myth and legend was for many a means of travel across the frontier of the Otherworld, so that she became an enduring symbol, still linked here with death, funerals and the realm above the earth’ (Brown 1993, 83). As gone into in Chapters 4 & 6, human burials and human bone elements are found within the patterns Horse at the Noord-Holland sites whereby the theme of death is included within this constellation figure.

¹²⁸ Swastikas are found as motif on various types of materials and were widely spread including Middle Eastern and Hindu iconography. Green (1991) carries on the interpretation as sun symbol, an interpretation applied as well

to a variety of other of signs/symbols in her work. In other areas, such as Greece, swastikas are found together, however, on objects with iconography of horses; or, with a tree design, such as on a Romano Celtic altar from the Pyrenees (Green 1991, 46, 48). These types of materials could be a starting point for future research, and some differentiation in use or a possible widespread meaning as a specific phenomenon, such as the planet Mercury here suggested denoted as the sign of the swastika. Other types of motifs should not be raked together, but could be looked at as referencing specific sky features.

¹²⁹ Mention was made of legends and mares, but there are also male horses known for example in German folklore of the *Schimmelreiter*. The *Schimmel* is a dapple grey, and Brown (1993, 82) notes the English word ‘shimmer’ derives from *Schimmel*—and denotes a shimmering light or glow. It is an apt description for stars.

¹³⁰ The literature is vast: cf e.g., Molenaar (1985), Barnes & Ross (eds; 2000), Acker & Larrington (eds; 2002) for recent studies, and references therein, or Simek (2000) which includes many of the older studies.

¹³¹ Use has been made of translations in Dutch by De Vries (1988 [1938]) and Otten (1994), and in English: Bellows (1936, Bellows/Cord 1991), Hollander (1962) and Larrington (1999).

¹³² For the *Voluspa*, differences in stanza sequence, or absence, between the *Codex Regius* and *Hauksbok* manuscripts does not alter the phases of action (risings and settings) as interpreted here.

¹³³ Snorri also had some understanding of Greek textual content, and drew a few parallels with Scandinavian figures and places. This is a fascinating aspect that could receive future attention within correspondences of constellations. It will not be gone into here, but it cannot be discounted within the interpretation of this present work that Snorri had perhaps perceived a similar proclivity of the ‘Greeks’ to provide illustrations of their myths through a moving, constellation context.

A sky context with constellation sequence has been put forward for the *Iliad* by E. Leigh (Wood & Wood 1999), which although the argumentation is hard to follow for the remainder of the identifications, agreed could be, and within a tri-partite division of the sky as put forward here, that: ‘When Homer wrote of the wine-dark seas, he wanted us at look at the heavens, not the oceans’ (Wood & Wood 1999, 8).

¹³⁴ From Thiodolf of Hvinir (*Skald.* 17) ‘Swiftly flew the pale ring-ice [shield] beneath the soles of the rock-guarder [giant]’ (Faulkes 1987, 80).

¹³⁵ The situation of these passages within Snorri’s text is also conjoined to figures which have connections to the only two direct references of figures as stars in Aurvandil’s toe and Thiassi’s eyes.

The night-sky as shield was mentioned in Chapter 5, on which important star-patterns are named, as outlined on the layered shield made for Achilles, described in Homer’s *Iliad*.

¹³⁶ Killed by the world serpent (Hydra), he is lying in the sky, as the constellation. Roaming around, he would be a planet (the most likely candidate being Jupiter, through the medieval text referencing) in the same manner that Mercury is likened to Odin/Wodin, but also as an image within the settlement traces of the Horse constellation with a ‘Rider’. See Chapters 4, 5 & 6.

¹³⁷ Studies on the Older Edda range from a conviction that the Edda ranks among the world’s sacred traditions as a genuine scripture (Titchenell 1985) to Molenaar’s (1985, 5) interpretation that knowledge was limited to the elite.

¹³⁸ Jonsson (n.d.; c. 1994) regards the World Tree as the Milky Way, which then precludes the structure into three of the heavens presented here. I have been in discussion with James Ogier (Roanoke College) on this point. Ogier is using available iconographic sources for his augmentation (see <http://www2.roanoke.edu/Staff/ogier/Eddic-Constellations.htm>). I have appreciated the insights given me into his own work, as well as the suggestions he has made on literature of the subject.

Sołtysiak's (forthcoming) interpretation will be mentioned in section 7.5, as concerned is Thor and an ox.

¹³⁹ As an example of other books in the Poetic Edda stating the matter clearly could be Vafthrudnir's Sayings (*Vafthrudnismál* 12-14; Larrington 1999, 41-42), with constellation Horse mentioned according to the interpretation here during the test of wisdom between Odin and Vafthrudnir. Horse pulls up the day for mankind (the time before dawn), and draws up night for the gods (after sunset). He comes from the east—the eastern horizon:

'Shining-mane, the shining one is called who draws
day to mankind;
the best of horses he is held to be among the
Hreid-Goths,
always that horse's mane gleams.'

'Tell me, Gagnrad, since on the hall-floor
you want to try your luck,
what that horse is called who from the east
draws night
to the beneficent gods.'

'Frost-mane he is called, who draws every night
to the beneficent gods;
foam from his bit he lets fall every morning;
from there dew comes to the valleys.'

¹⁴⁰ These editors/translators keep to the original manuscript, while the De Vries, Bellows and Hollander change the gender, all three assuming it is the dragon sinking, also included in this stanza.

¹⁴¹ De Vries (1988) *velden* (fields); Otten (1994): *maanbergen* (moon-mountains); Hollander (1962): the Dark Fells.

¹⁴² Only one figure in the Poetic Edda has a name which might be connected to a cow: Beyla, in *Lokasenna* 55-56, where she is known as the dirty (Simek 2000, 36) or 'shitty' servant: 'a worse female was never among the Aesir's children, you shitty serving-wench' (Larrington 1999, 94).

However, there is a story (*Hymiskvida*) that does have a bull, used by Thor as bait during a fishing trip. It may well be that this is pictorially in reference to the head of Taurus, as suggested by Sołtysiak (forthcoming). In addition, Sołtysiak extends the possibility for the story of Thor's fishing trip: that the Milky Way is the river in which the ox bait is used (as Taurus lies on the Milky Way). And, the World Serpent taking the bait, refers to the constellation Hydra, thus similar to the interpretation here. In Snorri's version (related in *Gylfaginning* 48), Thor tears off the head of the bull to use as bait. Interestingly, the seasonal is touched upon, as remarked by Sołtysiak, through the outcome of the story, a winter feast given every year.

I am very grateful to Arkadiusz Sołtysiak for allowing me to cite his paper, given at the SEAC conference, Tartu 2002, prior to publication. Two elements were ‘found’ within the Schagen Muggenburg-I remains which could have bearing here. The figure of constellation Hercules/Thor was associated with cattle skulls and axe in his right hand, star-position, pits. The early morning demise of Taurus/Cow, and the rise of Hercules/Thor go together at the slaughter period, early November, thus prior to the end of the year feasts/rituals suggested as starting around the Winter Solstice in anticipation of the rise of Horse, in January.

¹⁴³ See also Simek (1993, 377–8) for a summary of occurrence of other names regarded as referring to Ymir in the Norse sources, as well as the twin theme more widely.

¹⁴⁴ Ymir’s blood filled the ocean when he was slain by the gods. His flesh became the earth, his bones the mountains, teeth became rocks and his eyelashes formed the fortification ‘Midgard’. Along the ocean side of Midgard, the giants were given land along the shore. The gods also made a city ‘Asgard’ in the world described. The entire description can be taken as the division into three of the perceived night sky, the otherworld, rather than our earth.

¹⁴⁵ For Wormer citing H. Zoeteboom 1658, 449 (*De Zaanlants Arcadia*. Gerrit van Geodesberg, Amsterdam) and for St. John’s festivities: C. van der Graft 1953, 14 (*Verbod van Feestgebruiken*, *Völskunde* 54).

¹⁴⁶ Malina and Pilch identify some constellations in their work, others are at odds with the following put forward here. This also includes, for example, their lack of reading a heaven divided into three or in identifying the white horse as a comet rather than the constellation Pegasus (cf e.g., Malina & Pilch 2000, 244–5, 230–1, 259).

¹⁴⁷ This topic is much too intricate to go into depth here. Popular culture and the place of purgatory could be examined for specific traces of a continuance of the other world divided into three (see e.g., Thomas 1971). Gurevich’s (1992, 50–64) analysis of medieval peasant visions is telling in the particular temporal and spatial elements of the landscape of belief, with directions. And, for example, visits to purgatory and the gates of hell and paradise.

¹⁴⁸ Ejnar Hertzprung in 1905 (Room 1988, 35).

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Tables

Table 1a: Schagen Muggenburg-I bone totals of certain domesticated animals and main feature type.

Schagen Muggenburg-I		total in dug features		linear: border on west (f107)		linear : south and central		large pits (f 27 & 185)		pits without burials		bones with burials & cremation		burial = 1 in totals
I														
	cattle <i>Bos taurus</i>	1017	72%	281	91%	59	57%	381	77%	291	59%	5	26%	-
	sheep/goat <i>Ovis/Capra</i>	263	19%	15	5%	19	18%	73	15%	145	30%	11	59%	-
	horse <i>Equus caballus</i>	76	5%	6	2%	18	17%	20	4%	28	6%	3	16%	1
	pig <i>Sus domesticus</i>	52	4%	6	2%	4	4%	17	3%	25	5%	-	-	-
	dog <i>Canis familiaris</i>	10	<1%	-	-	3	3%	3	<1%	2	<1%	-	-	2
		1418	100%	308	22%	103	7%	494	35%	491	35%	19	1%	3
II														
	cattle :													
	single teeth	105	10%	2	2%	4	4%	67	64%	32	30%	-	-	
	skull	238	23%	109	46%	8	3%	75	32%	46	19%	-	-	
	lower leg	257	25%	31	12%	20	8%	98	38%	103	40%	5	2%	
	body & upper leg	387	38%	129	33%	25	6%	138	36%	95	25%	-	-	
	articulated	30	3%	10	33%	2	7%	3	10%	15	50%	-	-	
	feature distribution	1017	100%	281	28%	59	6%	381	37%	291	29%	5	<1%	
	sheep/goat :													
	single teeth	37	14%	1	3%	7	19%	16	43%	11	30%	2	5%	
	skull	52	20%	6	12%	6	12%	23	44%	16	31%	1	1%	
	lower leg	65	25%	3	5%	2	3%	14	22%	40	62%	6	9%	
	body & upper leg	102	39%	5	5%	4	4%	19	19%	72	71%	2	2%	
	articulated	7	3%	-	-	-	-	1	14%	6	86%	-	-	
	feature distribution	263	101%	15	6%	19	7%	73	28%	145	55%	11	4%	
	horse :													
	single teeth	13	17%	-	-	3	23%	6	46%	3	23%	1	8%	
	skull	3	4%	-	-	-	-	1	33%	1	33%	1	33%	
	lower leg	27	36%	1	4%	7	26%	3	11%	15	56%	1	4%	
	body & upper leg	26	34%	4	15%	8	31%	9	35%	5	19%	-	-	
	articulated	7	9%	1	14%	-	-	1	14%	4	57%	-	-	1
	feature distribution	76	100%	6	8%	18	24%	20	26%	28	37%	3	4%	1
	pig :													
	single teeth	8	15%	-	-	-	-	5	62%	3	38%	-	-	
	skull	14	27%	3	21%	1	7%	7	50%	3	21%	-	-	
	lower leg	12	23%	1	8%	1	8%	2	16%	8	67%	-	-	
	body & upper leg	14	27%	2	14%	1	7%	3	21%	8	57%	-	-	
	articulated	4	8%	-	-	1	25%	-	-	3	75%	-	-	
	feature distribution	52	100%	6	12%	4	8%	17	33%	25	48%	-	-	
	dog :													
	single teeth	-	-	-	-	-	-	-	-	-	-	-	-	
	skull	3	30%	-	-	1	-	1	-	1	-	-	-	
	lower leg	2	20%	-	-	1	-	-	-	1	-	-	-	
	body & upper leg	1	10%	-	-	-	-	1	-	-	-	-	-	
	articulated	4	40%	-	-	1	-	1	-	-	-	-	-	2
	feature distribution	10	100%	-	-	3	30%	3	30%	2	20%	-	-	2

I. The certain domesticated species are shown for the totality of dug features. Each species is then shown as a sub-total of the number of bones found within certain types of features whereby they can be compared as to relative occurrence.

II. Each species is shown as to (grouped) body parts and for each category, comparisons can be made: vertically, with the presence of the same elements between species; horizontally, as to feature type and variation in deposition of bone element(s) per species. Categorizing by nutritional 'value' represented: 'slaughtering waste' includes the single teeth, skull (parts) and lower leg elements which are the joint bones, metapodia, and phalanges. 'Eating waste' bones are those from the neck to rump, shoulder blade, pelvis, and upper leg bones.

Articulated elements are counted as 'one'.

Table 1b: Number of faunal remains recovered from Schagen Muggenburg-I, other than the certain domesticates (see tab. 1a). Only one of these bones (from a cat) was found in a linear feature (f107); the remainder of the bones were in pits. See Tables 2-5 for the features and area in which remains were found.

cat	3*	<i>Felis sp.</i> (size of domesticated cat)	toad/frog	2	<i>Bufonidae</i> or <i>Ranidae</i>
fox	1	<i>Vulpes vulpes</i>			
red deer	1	<i>Cervus elaphus</i>			
mouse	9	<i>Mus domesticus</i>			
chicken	3	<i>Gallus sp.</i> (size of bantam)	bittern	1	<i>Botaurus sp.</i>
duck	4	<i>Anas sp.</i>	cormorant	1	<i>Phalacrocorax sp.</i>
mallard	7	<i>Anas platyrhynchos</i>	curlew	1	<i>Numenius sp.</i>
goose	12	<i>Anser sp.</i>	lapwing	2	<i>Vanellus sp.</i>
white-fronted goose	2	<i>Anser albifrons</i>	plover	1	<i>Charadrius sp.</i>

*23 bones together in one feature (f143) counted as 1, part of a cat

Table 2: Schagen Muggenburg-I summary of bone materials from deeper pits (excluding f27 & f185).

Schagen Muggenburg-I	southern area pits				central area pits				northern area pits			
cattle	97	61%	55%	27%	42	78%	76%	37%	152	55%	50%	23%
sheep/goat	39	25%	22%	11%	5	9%	9%	4%	101	36%	33%	15%
horse	13	8%	7%	4%	4	7%	7%	4%	11	4%	4%	2%
pig	9	6%	5%	3%	3	6%	5%	3%	13	5%	4%	2%
dog	1	<1%	<1%	<1%	-	-	-	-	1	<1%	<1%	<1%
	159	100%			54	100%			278	100%		
birds	6		3%	2%	1		2%	<1%	23		7%	3%
cat	-		-	-	-		-	-	2		<1%	<1%
mouse	7		4%	2%	-		-	-	2		<1%	<1%
frog/toad	2		1%	<1%	-		-	-	-		-	-
fox	-		-	-	-		-	-	1		<1%	<1%
red deer	1		<1%	<1%	-		-	-	-		-	-
	175		100%		55		100%		306		100%	
large mammal	50			14%	42			37%	168			25%
medium mammal	15			4%	14			12%	91			14%
unidentifiable	115			32%	3			3%	94			14%
	355			100%	114			100%	659			100%

Table 3: Schagen Muggenburg-I. The bone materials from head and lower legs accompanying, or as, large deposits in examples of deep and shallow pits.

Schagen Muggenburg-I		Single elements (n = 55, * incomplete bone) from horse, cattle, sheep/goat, pig, dog & fox accompanying the larger deposits:						
feature number	deep, shallow	most archaeologically noticeable deposit	single tooth	jaw	metapodia	astragali	phalanges	footbone, other
223	d	10 complete pots	h, p	-	c, s	h, 6 c	3h, c, s	c
154	d	4 complete pots	6 c, 2s	d	c	-	-	2h, 2 c
22	d	1/4 bovine	2h	c*, s*, p	p	f	-	-
262	s	bone bundle large bovine	s	-	3 c	c	2 c, s	-
238	s	younger dog	h, s	-	2s*	c, s	-	-
250	s	male older dog	-	-	-	-	-	-
62	s	male horse	-	-	2s*	-	-	-
322	s	younger man	-	-	-	-	-	-
345	s	cremated human(s)+7 pots	-	h*	-	-	h	-
			15	5	11	11	9	4
			cattle 47%		horse 22%	sheep/goat 22%	pig 5%	dog & fox 4%

Table 4: Schagen Muggenburg-I bones from small and wild fauna in pits, shown as to area and suggested season of deposit. Skulls (all complete) are noted when they occur, and are included in the totals. (See Table 1b for designations in Latin)

SM-I		winter	spring	fall
northern area	f 22	1 fox	f 23	1 duck*
	f 143	3 goose*	f79	1 cat
		1 cat (23 bones)	f141	1 cormorant
	f148	6 mallard (2 skulls)		
		1 duck*		
		6 goose*		
central area		3 chicken (1skull)		
		1 curlew		
	f 156	2 mice skulls		
southern area				
	f223	6 mice (4 skulls)	f212	1 mouse skull
		1 toad/frog	f248	1 bittern
		1 plover		
	f 260	1 red deer		
	f 352	2 white-fronted goose		

Large pit in the north: f27 -- goose* x 2, duck* x 2.

*could not be determined if wild or domesticated

Large pit in the central area: f185 – 1 mallard

Table 6. The pit groups (1-12) were used to model seasonal ritual. The groups are split up according to the designations (winter, spring, fall) for showing similarity of lowest deposit, and absence. The remainder of the pits are shown thereafter. See Figure 5 for feature and grouped positions, and Tables 1-5 & 7, for specified contents of the pits.

		Pits : Schagen Muggenburg-I seasonal patterning																		
		group numbers or area (south , north, central)	feature number	horse leg bone/ jaw / teeth : lowest layer	skull / jaw / teeth : other than horse, lowest layer	unworked (h) and worked hazel wooden object with hole = o	wooden objects : other	unworked wood : other	complete pots	spindle whorls, all complete	roman: <i>terre sigillata</i>	roman pot: other	metal	stone: whet, quern, other	skull / jaw bones	lower leg elements : total non-articulating	single teeth : total	'eating waste'+ unidentifiable large & medium mammal : total	articulating bone elements (>2) and/or exceptional deposit	
I																				
winter		1	352	+	+	o	+	+	-	-	-	-	-	w	-	2	2	47		
		2	120	+	-	-	+	+	-	+	-	-	-	-	-	2	2	2		
		4	223	+	-	-	+	+	+	+	-	-	+	q	4	16	2	16		
		5	143	+	+	-	+	+	+	+	-	-	-	-	-	13	1	15	and, cat: ribs, part. pelvis, leg bones	
		6	156	+	+	-	+	+	-	-	-	-	-	-	5	8	2	10		
		7	148	+	+	-	+	+	+	+	-	+	+	+	4	26	5	66		
		8	22	+	+	-	+	+	-	-	-	+	-	-	3	2	2	2	and, ox: 1/2 rib cage, scapula to lower leg	
		11	31	+	+	-	-	+	-	-	-	-	+	-	2	1	2	6		
		12	28	+	-	-	+	+	-	-	-	-	-	-	-	-	-	5		
	spring		1	212	-	+	ho	+	+	+	-	-	+	-	-	3	9	2	29	
			2	115	-	+	h	+	+	+	-	-	-	-	-	2	1	-	2	
			3	42	-	+	-	-	+	-	-	-	-	-	-	1	4	-	1	
		4	221	-	+	ho	+	+	-	-	-	-	-	q	1	3	-	18	and, parts of two piglets	
		5	141	-	+	o	-	+	-	-	+	+	+	-	-	6	5	26		
		6	154	-	+	o	+	+	+	+	-	-	+	-	1	5	8	35		
		7	79	-	+	h	+	+	-	+	+	-	-	+	1	8	-	13		
		8	23	-	+	-	+	+	-	-	+	+	+	-	8	7	3	62		
		11	51	-	+	h	-	+	-	-	+	-	-	-	4	8	1	25		
		12	178	-	+	(h)	-	+	-	-	-	-	-	-	2	-	1	-		
fall			1	118	-	-	(h)	+	+	-	+	-	-	+	q	-	1	-	1	
			2	121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
		3	21	-	-	-	-	-	+	-	-	-	-	w	-	5	-	1		
		4	222	-	-	-	+	+	-	-	+	+	-	+	1	7	2	19		
		5	142	-	-	-	-	-	-	-	-	-	+	-	-	8	-	*51	*at least 37 from one lamb, in pot base	
		6	155	-	-	-	-	-	-	-	-	+	-	-	-	4	-	3		
		7	78	-	-	-	-	+	-	-	-	-	-	-	1	-	-	1		
		8	24	-	-	-	+	-	-	-	-	-	-	-	-	2	-	5		
		11	18	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1		
		12	179	-	-	-	+	-	-	-	-	-	-	-	*2	1	-	2	*2 = 2 complete ox heads in upper fill	
	II																			
	winter		9	328	-	-	-	-	+	-	-	-	-	-	-	-	-	2	-	
		10	54	-	-	-	-	+	-	-	+	-	-	-	-	-	-	2		
		13	260	+	+	-	-	+	-	-	-	+	-	-	8	2	-	12	and, horse spine and pelvis to hock bone	
		14	297	-	-	-	-	+	-	-	-	-	-	-	-	1	-	-		
spring		9	330	-	+	-	-	-	-	-	-	+	-	-	1	1	2	7		
		10	19	-	+	-	-	-	-	-	-	+	-	-	1	2	3	14		
		13	256	-	-	-	-	+	-	-	-	-	-	-	-	-	-	1		
		14	298	-	+	(h)	-	+	-	-	-	-	-	-	1	4	5	9		
fall		9	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3		
		10	59	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-		
		13	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		14	296	-	-	-	-	-	-	-	-	-	-	q	2	-	-	1		

III																				
spring	s	248	-	+	o	+	+	-	-	-	-	+	-	-	-	1	2	and, burnt sheaves of wheat		
	s	271	-	+	-	-	-	-	-	-	-	-	-	-	-	2	2	8		
	s	276	-	+	(h)	+	+	-	-	-	-	-	-	-	1	-	-	4		
	n	147	-	+	-	+	+	+	-	+	+	-	-	-	5	11	4	30		
	n	310	-	+	-	-	-	-	-	+	-	-	-	-	5	4	3	22 and, 2 complete lower legs foetal calf		
	c	137	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-		
fall	n	268	-	-	-	-	-	-	-	-	+	-	-	*1	2	-	9	*1 = ½ split skull + 2 lower jaws in upper fill from one ox		
IV																				
season	s	255	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	
	n	333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
	c	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		183	-	-	-	-	+	-	-	-	-	-	-	q	-	-	-	-	-	
	c	105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	s	348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		351	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	
		n	27	+	+	h	+	+	+	+	+	+	+	q w +	104	137	92	597	and, horse foreleg: humerus to hoof	
		c	185	+	+	(h)	-	+	+	-	+	+	-	+	7	2	2	11		
		group number or area	feature number	horse leg bone / jaw / teeth : lowest layer	skull / jaw / teeth : other than horse, lowest layer	hazel = h unworked (h)	wooden object with hole = o	worked wood : other	unworked wood : other	complete pots	spindle whorl	roman: terre sigillata	roman: pot other	metalwork	stone	skull / jaw elements	lower leg elements	single teeth	eating waste elements and unidentifiable	Schagen Muggenburg-I (cont.)
	The three-pit groups that were used to model initially the seasonal nature of deposits: December-January, May-June and October-November. The first three columns are the delineating finds. Group 3, having only two pits, is also included and is considered to be the first group of the settlement, indicating a start of habitation in the Spring.																			
	Other complete groups which show some coherency whereby presence of wood, rather than horse bone could form a sliding scale in relation to the groups in section I. Seasonal designations are suggested.																			
	Single pits, up against un-excavated or disturbed areas, which are assumed to have been part of a group. Seasons are suggested.																			
	Single pits and two partial groups--against unexcavated areas--and a possible 3-pit group of which only a part of each pit was excavated whereby no season can be suggested. The two over-sized pits, features 27 and 185 were possibly cut as three overlapping deposits each. The finds criteria for winter and spring are represented, and both had ends with very few finds, which could represent Fall.																			

Table 7a. Deposits of wood in pits, Schagen Muggenburg-I and III. See Table 7c for abbreviations used and designations in Latin.

Schagen Muggenburg-I

group no.	pit feature no. / layer	worked	not worked	tenons	sticks & rods	posts & stakes	holed	other (objects counted as one)	not worked (except for chop marks)
1	352/2	2	14			S	Q		3A 2Q B Pop 7S
	212/3	6	4	2Q 2C			Q A	(= loom part?)	2B Q S
	/4	4		2Q C			Q		
	118/2	1	7					F rake tooth	7S
	/6	10	>18	Q	F 2S	Q	Q	Q beam, Q disc, A plank, Aa spade?	2Q >C Fn 3A 2B 9S
	/8	2						F partial rake head, F beam	
2	120/2	3	24		2S			F rake tooth	8B 6A 2F 8S
	/3	2	44		Q	Pop		(large standing post of Pop)	30B 14S
	115/2+3	2	5	Q C					3Q 1B 1A
3	42/5+6		57						Q 4B 52S
4	223/1	4	15		S F	A Q			15S
	/2		8						8Q
	/3	3	7		Ac			Q beam+Q peg, Fa lid/box (Roman)	B 6S
	221/1	5	14	C	A F			B plank+S peg, A plank	B 2A 11S
	/2+3		2						2S
	/4	14	23	Rh	3S Q	3S A	A	Ac fitting+S pegs, F complete rake, Ac oval box?, Ac ?hook-shaped	Q 22S
	/5	7	5		2S		F Q	3A beams	5S
	222/2	1	>2		Q				>A B
5	143/1		>4						Q F B >A
	/2	1						Q plank	
	141/1	1	>15				Q		12A + roots 3S
6	156/2	2	37	T	P			Ac turned chair/sofa leg (Roman)	4A 2B 2Pop P 28S
	/7	1							
	/8		12						4Q A 7S
	154/3		18						6B 3Q 9S
	/4	3					2Q	Q plank	
7	148/2-4		7						3A 4S
	/5-7		1						S
	/9+10	1				Fa			
	/12	7	30	Q A	Cn P			2Q beam/plank, A beam/plank	5A Q 16B 8S
	79/2		12						12Q
	/3	6	1	2Q	C	Q		2Q beam/plank	C
	78/1		9						2Q 6B S
8	22/3	1	3	Q					A 2S
	23/1	1	3					Q plank	A 2S
	/2		13						3A 10S
	24/1	1						Q oval disc	
9	328/1		1						S
10	54		20						20S
11	31/1		4						4S
	51/2	1	5		C				5S
12	28/4	1	2					pseudo hammer with F head+S shaft	F A
	178		4						C 3B
	179/3	1				Ac			
13	260		2						A S
	256		3						3A
14	297		>9						>9S
	298		2						C S
single	183		3						3B
	147/1	2	5		So/P				F 4S
	248/2	1	8					Q plank	B 7S
	/4	3	2				F	3F beams+2 pegs S F	2Q
	255	1	1					B beam+F peg	B
	276	1	7	S					2C 5S
large	27	12	215	S	2Q 2C 2S Cn		Q	Q block, C plank, Cn comb	2A 10Q 7B 7F 2Aa 4 So/P C 182S
	185		78						2A 3Ac 37B C Q 34S
total	> 899	114	>785	20	31	12	13	38	>785

Table 7b: Wood recovered from Schagen Muggenburg–III. See Table 7c for abbreviations.

Schagen Muggenburg–III

group no.	pit feature no. / layer	worked	not worked	tenon	stick	post	holed	other	not worked (except for chop marks)
2	78/1		1						B
	/3–4	1	6					F 3piece spin-top/fitting	B 2C F 2S
	106/1	2	1					2Q narrow planks/beams	S
	105	1	5					Q beam, part of furnishing?	2Q 3S
3	75/2		1						S
	/3		2						Rubus S
5	56		4						4S
6	58	1	15			Q			B 14S
	72		5						B 4S
	57		4						4S
7	47		2						A S
	69		2						B S
8	70	1	0				A	(=wooden ring)	
9	24		2						A S
10	7/1–3		7						4A 3S
11	9/2		2						A B
single	12		1						A
	15		1						A
	35		2						B S
	38		1						S
	103		2						A Q
total	72	6	66			1	1	4	66

Table 7c. The total of the wood from the two Schagen sites, and the abbreviations used in Tables 7a & 7b.

Total of wood deposits and abbreviations used			SM-I		SM-III	
			worked*	not worked	worked*	not worked
A	<i>Alnus glutosina/incana</i>	alder	12	> 56	1	10
Aa	<i>Albies alba</i>	fir	1	2		
Ac	<i>Acer campestre</i>	field maple	6	3		
B	<i>Betula sp.</i>	birches	2	134		7
C	<i>Corylus avellana</i>	hazel	10	>8		2
Cn	<i>Cornus mas</i>	cornelian cherry	3	-		
F	<i>Fraxinus excelsior</i>	ash	16	12	3	1
Fa	<i>Fagus sylvestra</i>	beech	2	-		
Fn	<i>Frangula alnus</i>	alder buckthorn	-	1		
P	<i>Prunus sp. (& spinosa)</i>	plum/cherry (blackthorn)	2	1		
Pop	<i>Populus sp.</i>	poplars/aspens	1	3		
Q	<i>Quercus sp.</i>	oaks	41	54	4	3
Rh	<i>Rhamnus cathartica</i>	purging buckthorn	1	-		
Rubus	<i>Rubus fruticosus</i>	blackberry	-	-		1
S	<i>Salix sp.</i>	willows	24	> 507		42
So/P	<i>Sorbus sp. or Prunus sp.</i>	mountain ash or plum/cherry	1	4		
T	<i>Taxus baccata</i>	yew	1	-		
17			123	> 785	8	66

*each element of object counted

Table 8. Schagen Muggenburg-I: Results of the macro-remain analyses from pit f248/4, the layer of charred grain, by Jan Peter Pals, Cees Troostheide and Tom Hakbijl.

Feature 248/4

The sample (find 4379) was 135 litres, layer 4 of pit f248: 125 litres were sieved—110 litres over 2mm; 15 litres over 2, 1 & 0.5 mm; 10 litres were done by flotation.

A ¹⁴C date was obtained from the grain: 1725 ± 35 Bp (GrN 9986), calibrated: 244–400 AD.

The general results of sieving were:

24 litres grain, straw, charcoal (<4mm): 6000 gram
charcoal (>4mm): 1400 gram
2 pieces of hazel
40 cm of burnt rope
4 burnt sherds

burned *Botaurus* sp. bone (bittern)
burned ox molar
6 burned, unidentifiable, bone fragments
insect remains: parts of adult *Tenebrio obscurus* ★

In the 125 litres, there were 566 complete and fragmented ears of grain. There was a high percentage of chaff: 1050 grains of *Hordeum* (barley) came from 350 internodia, of which 304 were recovered (86.9%). Of the *Triticum* (emmer wheat), 7110 grains came from 3555 spikelet forks, of which 1,770 (49.8%) were recovered.

results from sieving 11 litres over a mesh of 2, 1 & 0.5 mm :

	charred	weight (grams)		charred	not charred
<i>Triticum dicoccum</i>	c. 14,300	124.2	<i>Polygonum convolvulus</i>	1	
spikelets	c. 3,600		<i>Potentilla anserina</i>	1	
single grains	c. 7,110		<i>Eleocharis palustris</i>	1	+
<i>Triticum</i> spikelet forks	c. 1,770		<i>Polygonum aviculare</i>	1	+
<i>Hordeum vulgare</i>	c. 1050	9.5	<i>Carex cuprina</i>	5	+
<i>Hordeum</i> internodia	304		<i>Stellaria media</i>	1	+
<i>Avena sativa</i>	50	0.5	<i>Calluna</i> twig	1	
<i>Avena fatua</i>	1		<i>Calluna</i> flower		+
<i>Cerealia</i> indet.	17		<i>Potentilla erecta</i>		+
buds cf. <i>Phragmites</i>	266		<i>Atriplex</i> spec.		+
<i>Bidens tripartitus</i>	2		<i>Potamogeton natans</i>		+
<i>Polygonum</i> lap./pers	3		<i>Menyanthes trifoliata</i>		+
<i>Trifolium</i> spec.	1		<i>Batrachium</i> spec.		+
<i>Chenopodium album</i>	1		<i>Carex rostrata</i>		+
<i>Brassica</i> cf.	1		<i>Carex riparia</i>		+
<i>Scirpus maritimus</i>	1		<i>Myrica gale</i>		+
<i>Sonchus asper</i>	1		<i>Prunella vulgaris</i>		+
<i>Sonchus arvensis</i>	1		<i>Rumex maritimus</i>		+
<i>Bromus</i> spec.	1		<i>Rumex</i> spec.		+

From the 11 litre sample, it can be estimated that 125 litres included:

- 2.72 kg of charred grain which would be about 311,900 grains.

- the total of *Triticum dicoccum* would be about 289,620 grains and about 10 kg fresh weight

- modern *Triticum d.* has 28– 40 grains per ear (based on grain grown at Aalten; cf also Körber–Grohne 1988, tab. 96), so the estimated 289,620 grains would have come minimally from about 10,344 ears of wheat.

★ Tom Hakbijl made the identification, and adds this note: Among the insect remains only one insect associated with stored products was found, namely adult remains from *Tenebrio obscurus* (dark mealworm). Although this species is predominantly found in stored cereals, its long developmental cycle, about a year, prevents it from becoming a pest of any significance (cf Heinze 1983).

Table 9: Schagen Muggenburg-III, features and materials

		bone: cattle (c,*c=exceptionally large), sheep/goat (s), horse (h), pig (p) dog (d), birds (Av)										wood		pottery		other		Schagen Muggenburg-III features and materials	
group no. or area (central, east, west)	feature no. / layer	skull, upper & lower jaw	single teeth	metapodia	astragali	phalanges	carpalia & tarsalia	other (unidentifiable in III = u; see other tables for identifiable in pits.)	total per feature (see specified wood Table 7b)	total sherd weight (kg) per feature	total sherd number	native pot found as complete	Roman: TS & other (o)	clay spindle whorl	stone: whet, quern, block, pebble, other	metal	other types of materials and some specification of materials in columns	M ³ (total per feature)	
1	AWN3																		
	79/1 c		5c	c s		c		2c 2s		0.85	2			1					0.18
	/2-3		c				c										one-half small pot		
	AWN2																		
	78/1								8	0.75	3	1		1			?=unidentified canine	0.15	
2	/2		?					c									clay (baking) plate; wooden spin-top/fitting		
	/3-4		c	h	c			c											
	106/1				c				3	<1	14							0.28	
	/2-4		3c p	2s	c	2c s	s	c Av(<i>Bubo bubo</i>)	6	<1	9	3	ts	2	blk pb		bone scrapper ; p=polished boar's tusk; Av=eagle owl	0.45	
	105			2s						0.20	1		ts					>0.85	
3	74		h						3	<1	5								
	75/2					c		2c h p											
	/3 c							2c											
	73 c				c			c		1.05	3						2 worked bone; section clay (baking) plate	0.20	
	93 2c									0.25	4						worked bone (gaming piece)	>1.12	
4	94									0.10	1						mandible with extracted teeth	0.01	
	95			c			c			0.30	9				qu			0.30	
	56 2c		c					c h p	4	0.85	5		ts				pair of wooden dice	0.32	
	77 c							s d		1.50	10							0.58	
	96		h	c				s		0.75	6							0.50	
5	58/1 c		c	c			c	c h	16	2.50	29	6					>c= lower calf leg	0.18	
	/2 2c							>c									pot base re-worked into disc/plate	0.39	
	72								5	0.10	1	1	ts					0.13	
	57								4	0.27	1							0.14	
	68									0.25	1		2o					0.05	
6	47							s	2	1.30	2		o				one-half native pot	0.10	
	69								2	0.25	2							0.45	
	44									0	0	1						>0.08	
	70							2c	1	0.75	2						wooden ring	0.51	
	AWN1																		
7	24 c			c	c				2	0.90	5	1					worked bone, complete jar on side	0.40	
	23									0	0							1.01	

10	16/1	2h	h	d	c	c	s	7.30	c.80				playing disc	0.13
	/2	c h	c 4s h d				2c							
	/3	c s	c s	s			c s							
	7/1	s					s	7	0.25	18	1		complete jar on side	0.21
	/2-3													
	6		c				c	0.25	2	2o				0.12
11	9/1	2c s	5c	c			6c s	2	9.50	★				0.28
	/2		4c h s	s			2c 2s						tail vertebra incised with crosses on both ends	
18	5c 2s d		9c d	c			5c s h						dog jaw without teeth	0.42
5								10.00	★					0.15
12	12		h					0.25	c.20	o				0.35
19								1	1.00	★				0.02
	14	c s		s			h	10.00	★					0.33
11							2s	2.25	★					0.31
	21		s				s	1.00	★					0.03
13a							3c	0.35	-					0.04
	33	c						0.25	2				>c=articulated tibia to metatarsal	0.10
34							2c >c	0.50	1					0.34
13b	15	2c		2c			3c s	1	1.05	-				>0.10
	32						c	0.20	2					0.16
	36	c d	2c				s	0.10	1				dog jaw without teeth	
14	104							0.10	3					
	108						s	0	0					
	109							0	0					
east	38					c	c s	1	<1.00	6				1.40
	40		h					0	0					>1.13
	41							0	0					0.24
	35	c					c	2	<1.00	2			c skull, horn cut off	>1.20
	48						(u)	0	0					1.11
	::											remainder of the pits in east had no finds, varying from <0.01 to 0.64 m³		
west	99	c s		2c s		s	2c s	2.00	c.25	1				0.28
	100	3s				2c	>c	3.50	c.25				>c = lower calf leg	0.22
II														
	46						>★c	0	0				>★c = lower jaws and 3 lower legs	
	71						>d	0	0				dog burial	
III														
centr.	13	c		c			4c (4u)	2.25	c.30				c skull, horn cut off	
	76		3c	c		2c	c (17u)	1.00	c.10	ts		>	>black stone gaming disc	
	97	c 2s					3c human (4u)	3.40	c.40				human = left thigh bone	
east	31		c					0	0					
	37							0.10	2					
	39	c					(7u)	0.10	1				c skull horn cut off	
west	103	10c			c		8c (9u)	2	2.00	c.30	1		bronze Germanic fibula, bone implement	
	101	2c						6.00	c.100					
	102	s		c s	3c		3c 2s (13u)	5.50	c.100	1				
	107/111						s	1.80	c.20					

★ mound sherds not distinguishable from feature deposit

Table 10. The pit groups of Schagen Muggenburg-III showing the seasonal model based on SM-I (see Table 6).

season		group number or area	feature number	horse leg bone / jaw / teeth: lowest layer	skull / jaw / teeth : other than horse, lowest layer	hazel, (h) = unworked wooden object with hole = o	worked wood : other	unworked wood : other	complete pots	spindle whorl	roman: <i>terre sigillata</i>	roman: coarse ware	metalwork	stone	skull / jaw bones	lower leg elements	single teeth: total	'eating waste' elements	articulating bone elements and/or exceptional deposits	Pits: Schagen Muggenburg-III
I	winter	1	(3)																AWN	
		2	78	+	+	(h)	+	+	+	+	-	-	-	-	-	2	2	7		
		3	74	+	-	-	-	+	-	-	-	-	-	-	-	-	1	-		
		5	95	+	-	-	-	-	-	-	-	-	-	q	-	-	-	3		
		6	96	+	-	-	-	+	-	-	-	-	-	-	-	1	1	3		
		9	(1)																AWN	
		10	16	+	+	-	-	-	-	-	-	-	-	-	4	3	6	14		
		11	9	+	+	-	-	+	-	-	-	-	-	-	3	10	4	16		
		12	19	+	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
	spring	1	79	-	+	-	-	-	-	+	-	-	-	-	1	4	6	16		
		2	106	-	+	-	+	+	+	+	+	-	-	+	-	7	4	8		
		3	75	-	+	-	-	+	-	-	-	-	-	-	1	-	-	7		
		5	56	-	+	-	+	+	-	-	+	-	-	-	2	-	-	2		
		6	58	-	+	-	+	+	+	-	-	-	-	-	3	1	1	1	and, calf: complete lower leg	
		9	24	-	+	-	-	+	+	-	-	-	-	-	1	2	-	5		
		10	7	-	+	-	-	+	+	-	-	+	-	-	1	1	2	1		
		11	18	-	+	-	-	-	-	-	-	-	-	-	8	4	9	7		
		12	14	-	+	-	-	-	-	-	-	-	-	-	2	1	-	9		
	fall	1	(2)																AWN	
		2	105	-	-	-	+	+	-	-	+	-	-	-	-	2	-	-		
		5	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		6	57	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-		
		7	72	-	-	-	-	+	+	-	+	-	-	-	-	-	-	2		
		9	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		10	6	-	-	-	-	-	-	-	-	+	-	-	-	-	-	1		
		11	5	-	-	-	-	-	-	-	-	+	-	-	-	-	-	1		
		12	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4		
II			93	-	+	-	-	-	-	-	-	-	-	-	1	-	-	-		
		4	73	-	+	-	-	-	-	-	-	-	-	-	1	1	-	1		
			94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			47	-	-	-	-	+	-	-	-	+	-	-	-	-	-	1		
		7	68	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-		
			69	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-		
			44	-	-	-	-	-	+	-	-	-	-	-	-	-	-	1		
		8	70	-	-	o	-	-	-	-	-	-	-	-	-	-	-	2		
			46	-	*	-	-	-	-	-	-	-	-	-	*	*	-	-	* giant ox: jaws and 3 complete lower legs	
			21	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3		
		13	33	-	+	-	-	-	-	-	-	-	-	-	1	-	-	3		
		a	34	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2		
			15	-	+	-	-	+	-	-	-	-	-	-	2	2	-	10		
		13	36	-	+	-	-	-	-	-	-	-	-	-	1	-	2	3		
		b	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
			104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		14	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
III		E	35	-	+	-	-	+	-	-	-	-	-	-	1	-	-	4		
			40	+	+	-	-	-	-	-	-	-	-	-	-	-	1	-		
			38	-	-	-	-	+	-	-	-	-	-	-	-	1	-	2		
			41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2		
		W	99	-	+	-	-	+	+	-	-	-	-	-	2	4	-	3		
			100	-	+	-	-	+	+	-	-	-	-	-	3	2	-	-	and, calf: complete lower leg	
<p>I. The groups consistent with the seasonal model as defined for Schagen-Muggenburg I.</p> <p>II. Other groups which do not show the same criteria. Again a sliding scale may be suggested, and the ordering given may be the season.</p> <p>III. Single and partially excavated pits, to the East and West, up against unexcavated areas, with finds.</p>																				

Table 11. Velserbroek-B6 (VbB6): Tenons (see figs. 38, 39 & 40) in positions of pattern Horse.

Tenons	oak	ash	hazel	willow	alder	juniper	birch	beech	holly	maple	elderberry	buckthorn	elm	
position	Quercus sp.	Fraxinus excel.	Corylus av.	Salix sp.	Alnus sp.	Juniperus com.	Betula sp.	Fagus syl.	Ilex aqu.	Acer cam.	Sambucus sp.	Rhamnus cath.	Ulmus sp.	
H7	3	2	1											6
H9	1			1	3		1	1						7
H10	5	3	4	1	1									14
H11	15	9	2	3		1			1	1	1			33
H12	5		1	1								1		8
H15b		1												1
side of channel	6		1	1		2							1	11
total	35	15	9	7	4	3	1	1	1	1	1	1	1	80

Table 12. Velserbroek-Hofgeest (VbHof): Positions with wood in pattern Cow (fig. 51).

	oaks	ash	hazel	willows	alders	juniper	poplars/aspens	hawthorns	plum/cherry	
position	Quercus sp.	Fraxinus excel.	Corylus av.	Salix sp.	Alnus glut/inc.	Juniperus com.	Populus sp.	Crataegus	Prunus sp.	
C3		1			8	1				10
C4	1		5							6
C6	2			1	2					5
(f852) C7					6					6
C10				1						1
C12			5	8	11	6				30
C13	7	6	12	30	9	8	2	1	1	76
(f4303) C14				1						1
(f4280) C15	8		31	26	6	3	5			79
(f4300) C15					1					1
total	18	7	53	67	43	18	7	1	1	215

Table 13. Magnitudes of the stars suggested to have been taken up in the settlement constellations (see tab. 14).

		magnitude			magnitude
Horse	Pegasus (Peg)		Cow	Taurus (Tau)	
H1	M15	6.2	C1	ε Tau	3.6
H2	Enif	2.5	C2	δ 3 Tau	4.2
H3	Biham	3.7	C3	δ 1 Tau	3.9
H4	31 Peg	4.9	C4	γ Tau	3.9
H5	Homan	3.6	C5	re-marked C2?	
H6	ξ Peg	4.3	C6	71 Tau	4.6
H7	Markeb	2.6	C7	θ 1 & 2 Tau	4.0, 3.6
H8	Algenib	2.9	C8	S 93975	4.8
H9	Alpheratz	2.1	C9	Aldebaran	0.9
H10	δ Andromeda	3.5	C10	*	
H11	Scheat	2.6	C11	ι Tau or 97 Tau	4.7 or 5.1
H12	ι Peg	4.0	C12	*	
H13	14, 15 Peg; μ 1 Cygnus	5.0, 5.6, 4.7	C13	*	
H14	Matar	3.1	C14	*	
H15	ο Andromeda	3.6	C15	λ Tau	4.0

Rider	(suggested constellation)		Dog	Canis Major (Can Maj)	
R1	ψ 1-3 Aquarius,	4.5, 4.6, 5.2	D1	Sirius	- 1.5
	χ Aquarius	5.1	D2	γ Can Maj	4.1
R2	λ Pisces	4.6	D3	μ Can Maj	5.2
R3	77 Peg	5.4	D4	θ Can Maj	4.3
R4	τ & υ Peg	4.6, 4.6	D5	Mirzam	2
R5	78 Peg	5.0	D6	S 151602	5.3
			D7	π or 15 Can Maj	4.6, 4.7
			D8	ο 2 Can Maj	3.1
			D9	Wezen	1.9
			D10	Aludra	2.7
			D11	σ Can Maj or Adhara	3.7 or 1.5

Kneeler	Hercules (Her)	
K1	Kornepheros	2.8
K2	ξ Crab	4.7
K3	ζ Her	3
K4	η Her	3.6
K5	σ Her	4.3
K6	τ, φ, υ Her	3.9, 4.3, 4.6
K7	ε Her	3.9
K8	π Her	3.4
K9	M92	6.4
K10	ι Her	3.8

source for designations and magnitudes: 'SkyGlobe' Mark A. Haney.

Table 14. The designations of the star positions for the four constellation patterns, and the sites at which they occur with the corresponding name or number of the star. See Table 13 for magnitudes.

ground					sky					ground					sky				
sites				Horse	Pegasus					sites				Cow	Taurus/The Bull				
SM-I	VbB6	Ub18	VbHof							SM-I	SM-III	Ub18	VbHof						
•	n	•	?	H1		M15				•	n	•	•	C1		ε Tau			
•	•	•	•	H2		Enif				•	•	•	•	C2		δ 3 Tau			
•	-	•	•	H3		Biham				•	•	•	•	C3		δ 1 Tau			
•	-	-	n	H4		31 Peg				n	n	•	•	C4		γ Tau			
•	•	•	n	H5		Homan				•	•	-	-	C5		re-marked C2?			
•	•	•	n	H6		ξ Peg				•	•	•	•	C6		71 Tau			
•	•	•	•	H7		Markeb				n	•	•	•	C7		θ 1 & 2 Tau			
•	•	n	•	H8		Algenib				•	n	•	•	C8		S 93975			
•	•	•	•	H9		Alpheratz				•	•	•	•	C9		Aldebaran			
n	•	•	•	H10		δ Andro				•	n	•	•	C10		*			
n	•	•	•	H11		Scheat				n	n	•	•	C11		ι Tau or 97 Tau			
•	•	•	-	H12		ι Peg				n	n	?	•	C12		*			
•	•	•	•	H13		14, 15 Peg; μ 1Cyg				•	n	?	•	C13		*			
•	?	•	•	H14		Matar				n	n	?	•	C14		*			
•	•	-	•	H15		o Andro				n	n	n	•	C15		λ Tau			

ground				sky				ground				sky				ground				sky			
SM-I		VbHof		Rider	not a recognized modern constellation			SM-I		SM-III		Dog	Canis Major/ Greater Dog			SM-I		SM-III		Kneeler	Hercules		
•	•	•	•	R1	ψ 1 – 3 Aquarius			•	•	•	•	D1	Sirius			•	n	•	•	K1	Kornepheros		
•	•	•	•	R2	χ Aquarius			•	n	•	•	D2	γ Can Maj			n	•	•	•	K2	ξ Crab		
•	•	•	•	R3	λ Pisces			•	n	•	•	D3	μ Can Maj			n	•	•	•	K3	ζ Her		
•	•	•	•	R4	77 Pegasus			•	n	•	•	D4	θ Can Maj			•	•	•	•	K4	η Her		
•	•	•	•	R5	τ, ε Peg			•	•	•	•	D5	Mirzam			•	•	•	•	K5	σ Her		
•	•	•	•		78 Peg			•	•	•	•	D6	*			•	•	•	•	K6	τ, φ, υ Her		
								n	•	•	•	D7	π or 15 Can Maj			n	n	•	•	K7	ε Her		
								•	n	•	•	D8	o 2 Can Maj			•	n	•	•	K8	π Her		
								•	n	•	•	D9	Wezen			•	•	•	•	K9	M92		
								•	n	•	•	D10	Aludra			•	•	•	•	K10	ι Her		
								•	n	•	•	D11	σ Can Maj or Adhara										

Schagen Muggenburg-I SM-I
Schagen Muggenburg-III SM-III
Velsbroek B-6 VbB6
Uitgeesterbroek Polder 18 Ub18
Velsbroek Hofgeest VbHof

- marked with feature(s); H7 Ub18 = circle centre
- n position not excavated or 'disturbed' by later features
- position excavated, marking absent
- ? possibly marked
- * stars magnitude 6.3-7 probably not visible to the naked eye; the features may have served for a sightline

M15 and M92 are both globular clusters, magnitude 6.2 and 6.4, respectively

Appendix 1: Feature details of Schagen Muggenburg-I & III and a selection of materials from SM-I

SCHAGEN MUGGENBURG - I
SCHAGEN MUGGENBURG - III
PITS

0 1 M

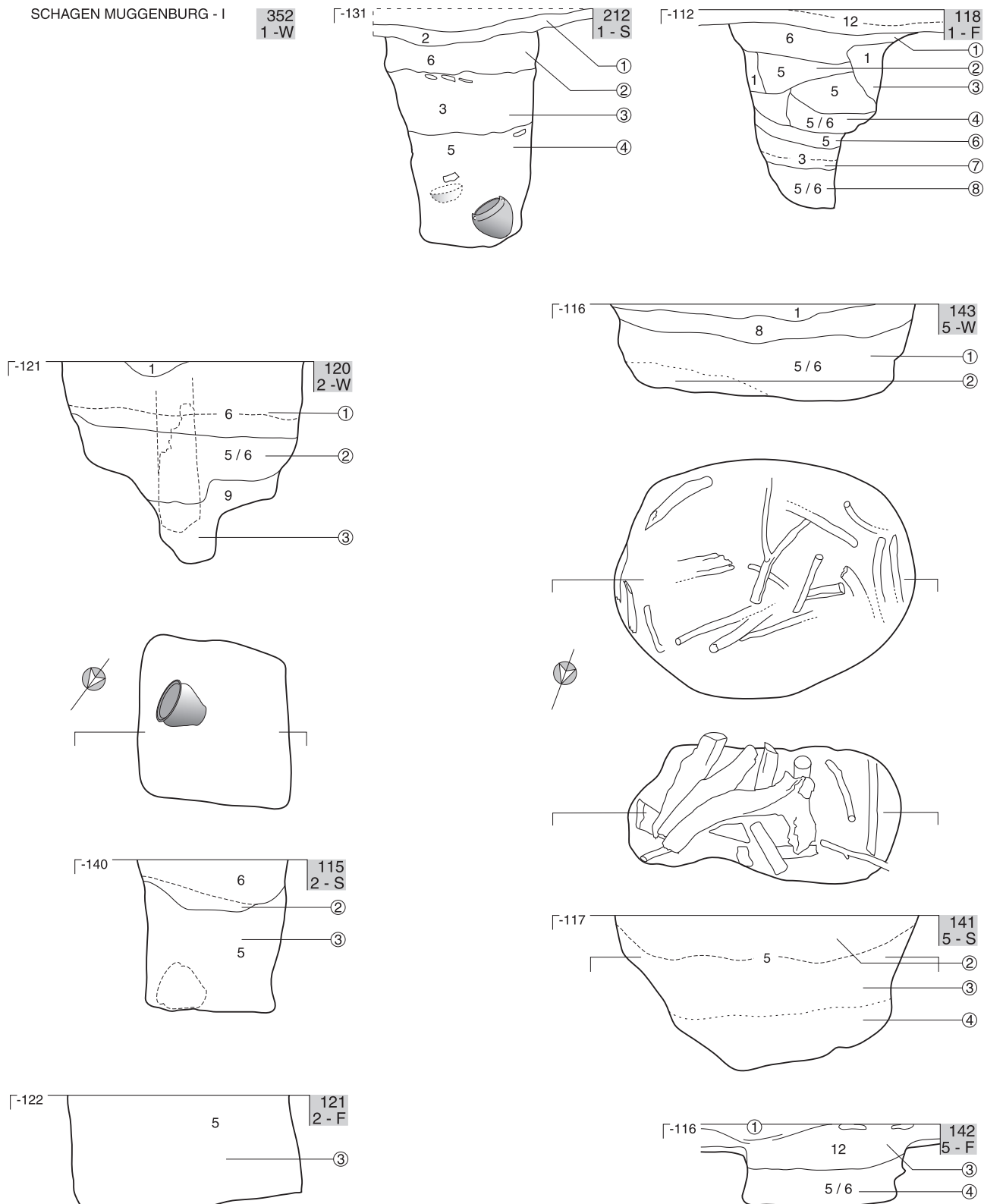
154
8 -W

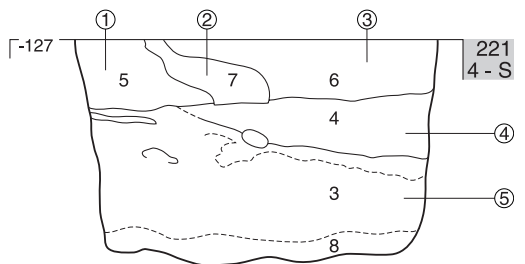
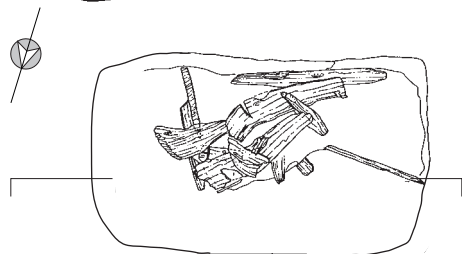
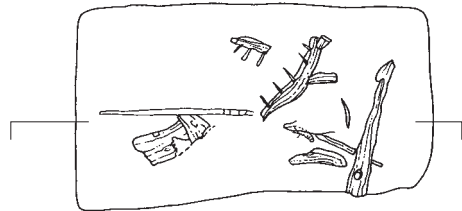
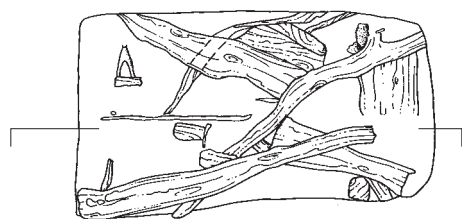
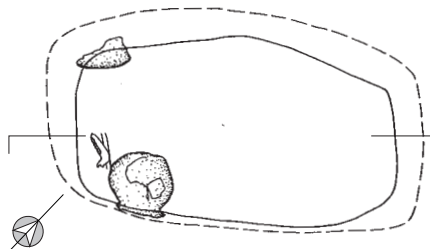
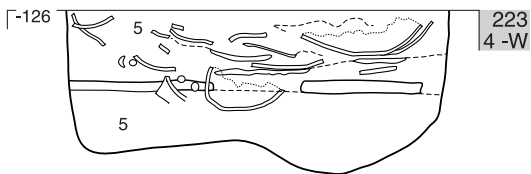
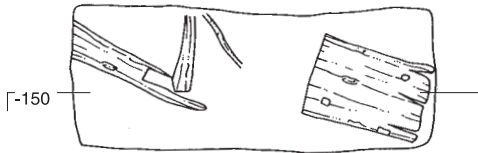
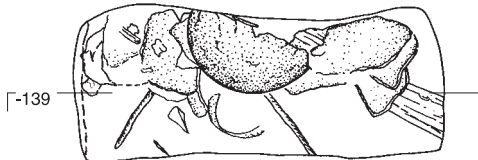
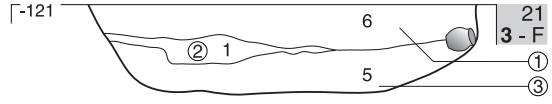
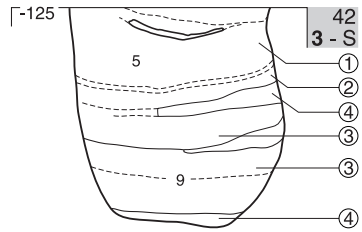
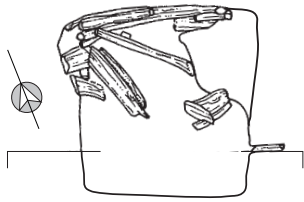
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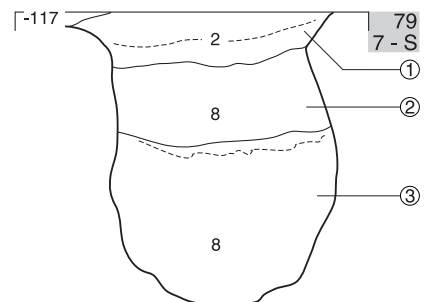
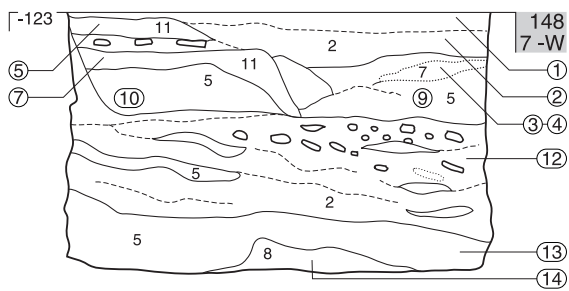
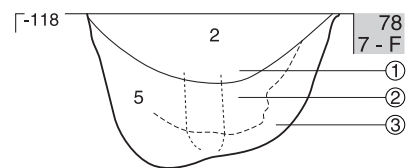
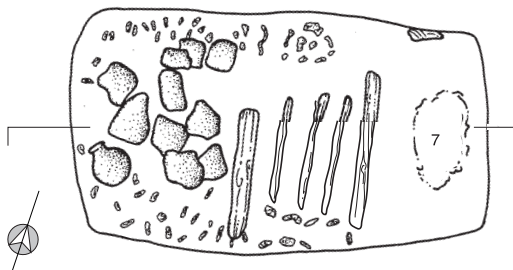
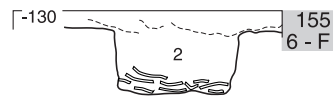
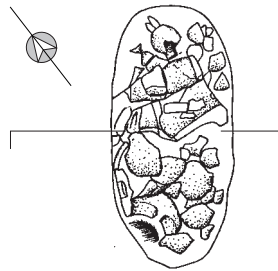
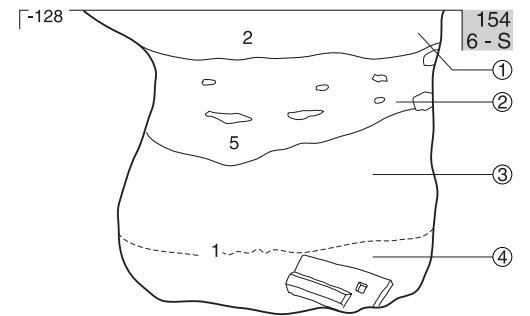
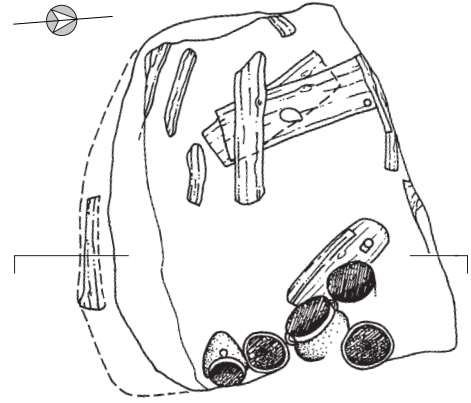
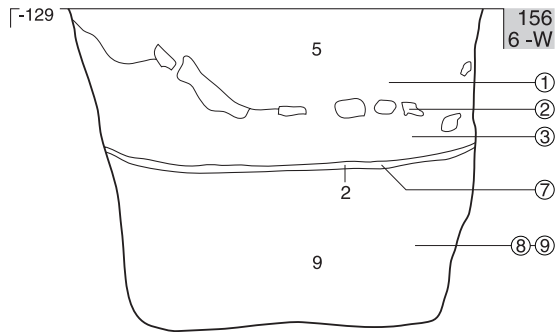
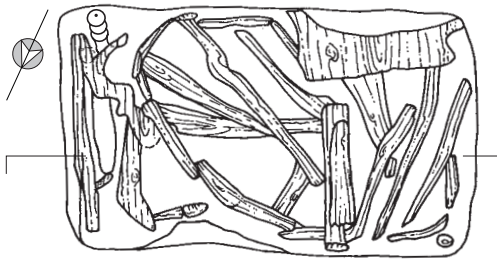
1 : 25

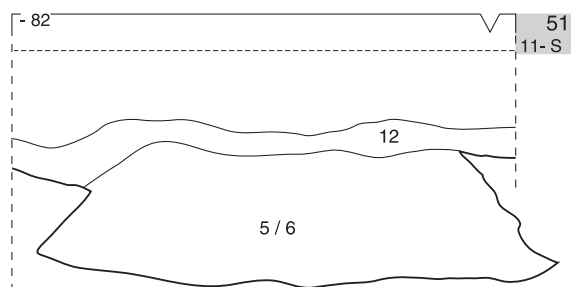
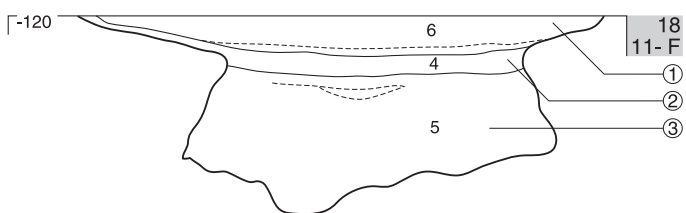
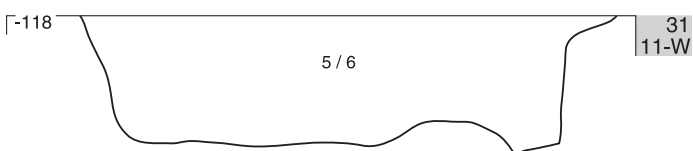
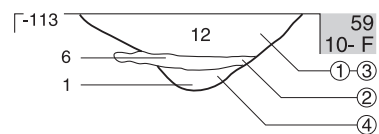
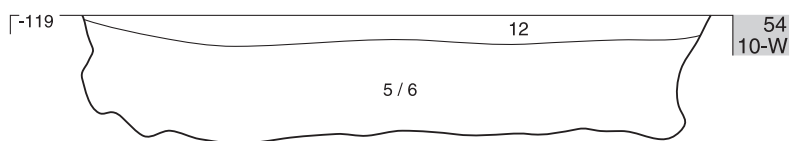
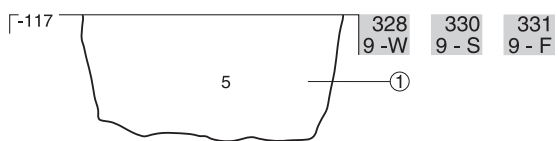
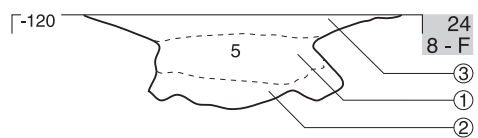
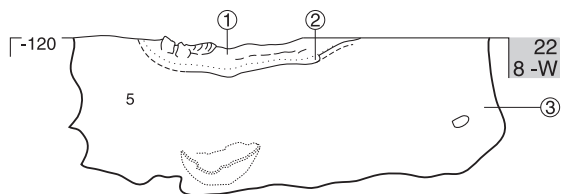
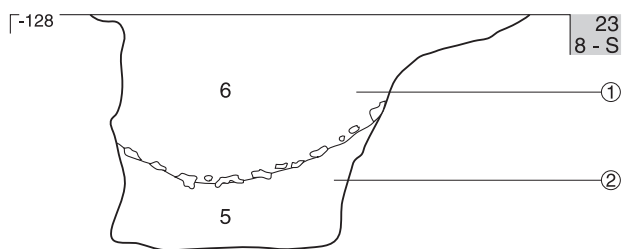
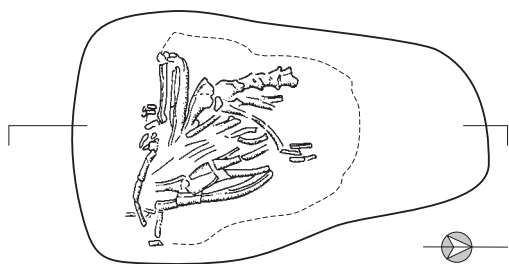
feature no.
group no. - season
layer number
modern surface
scale: all features 1: 25,
except feature 27 (1: 50)

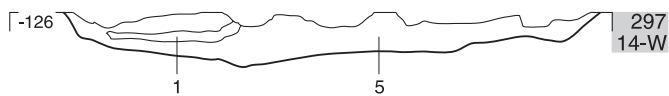
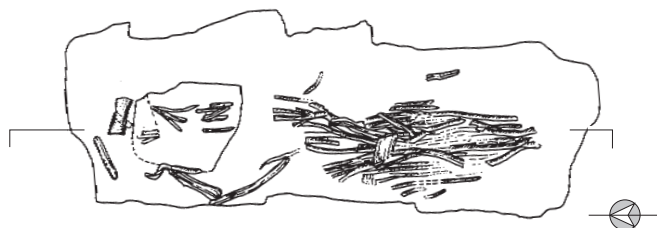
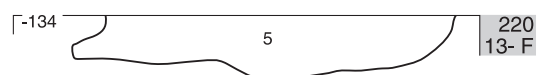
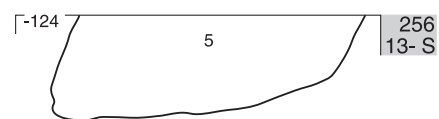
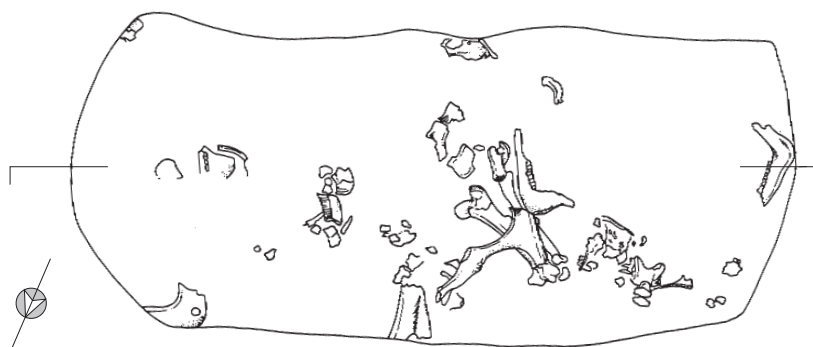
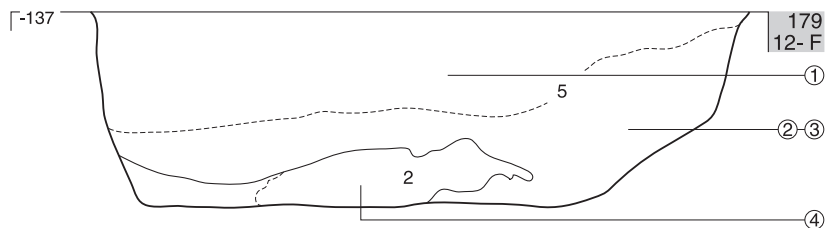
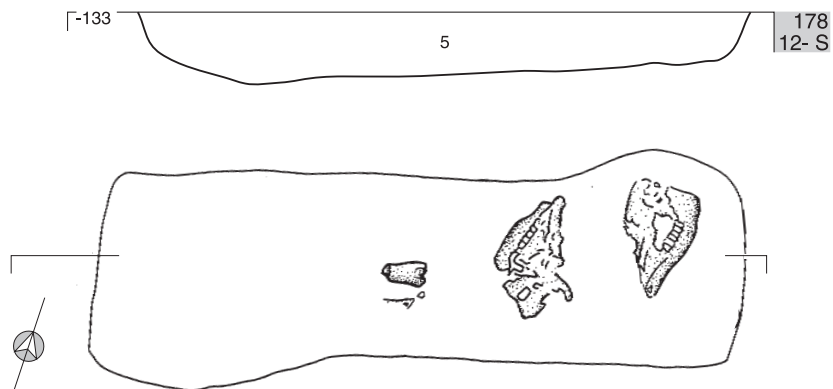
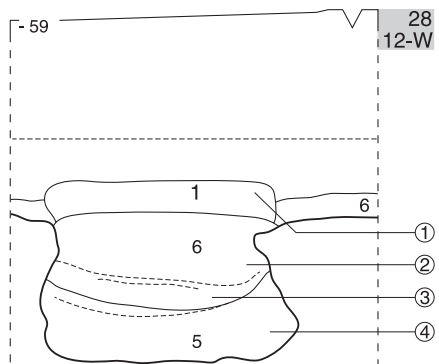
1 homogenous clay
2 clay - humic
3 dung + peat + organic material
4 peaty clay
5 peat
6 oxidized peat
7 redeposited hearth material
8 mixed layer with finds
9 mix clay peat
10 burnt grain
11 burnt daub
12 subsidence
13 sand

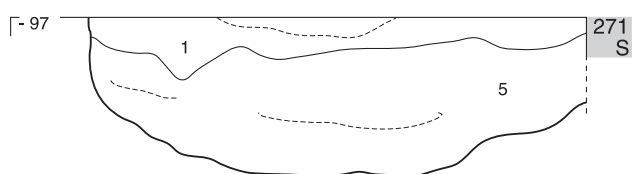
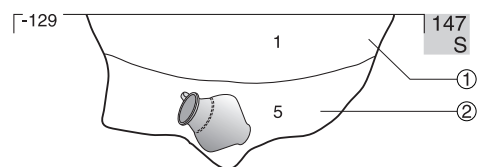
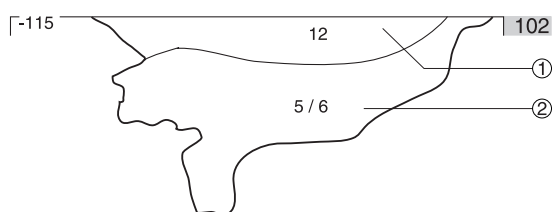
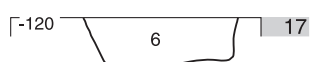
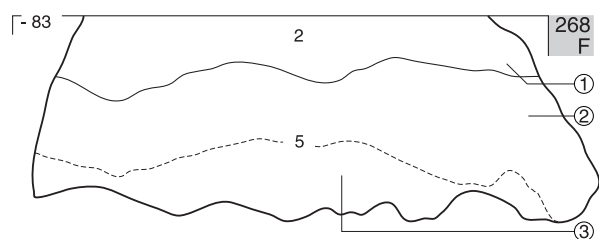
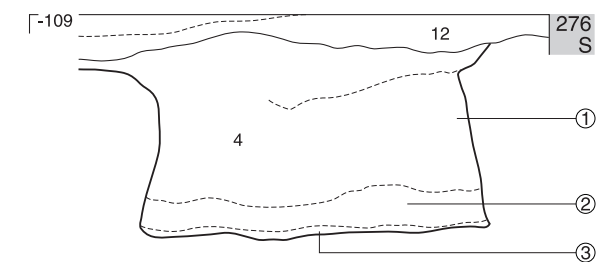
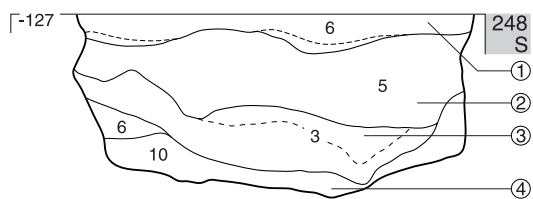
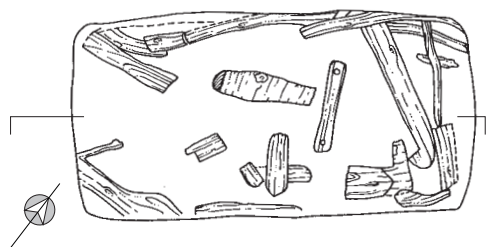


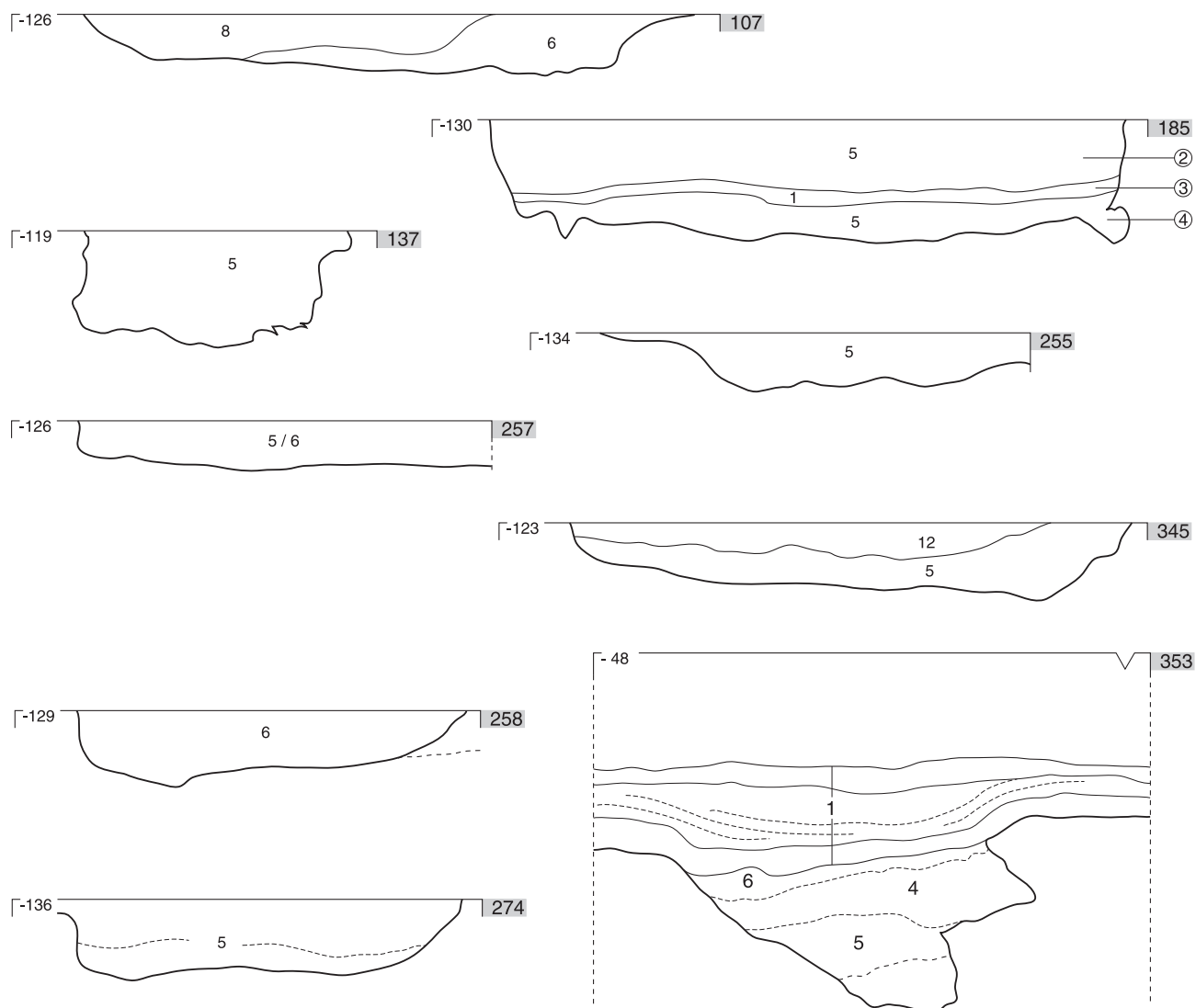


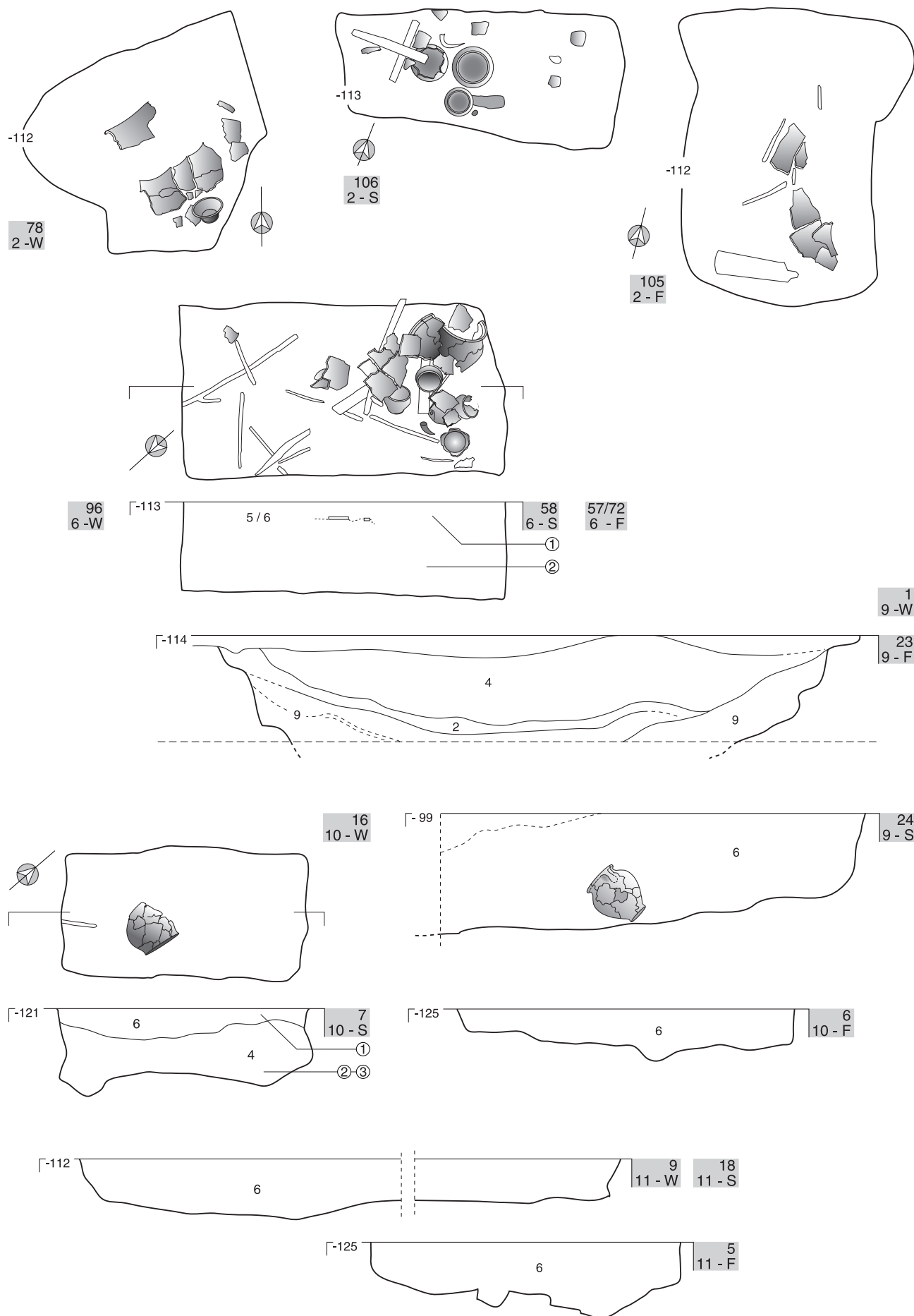


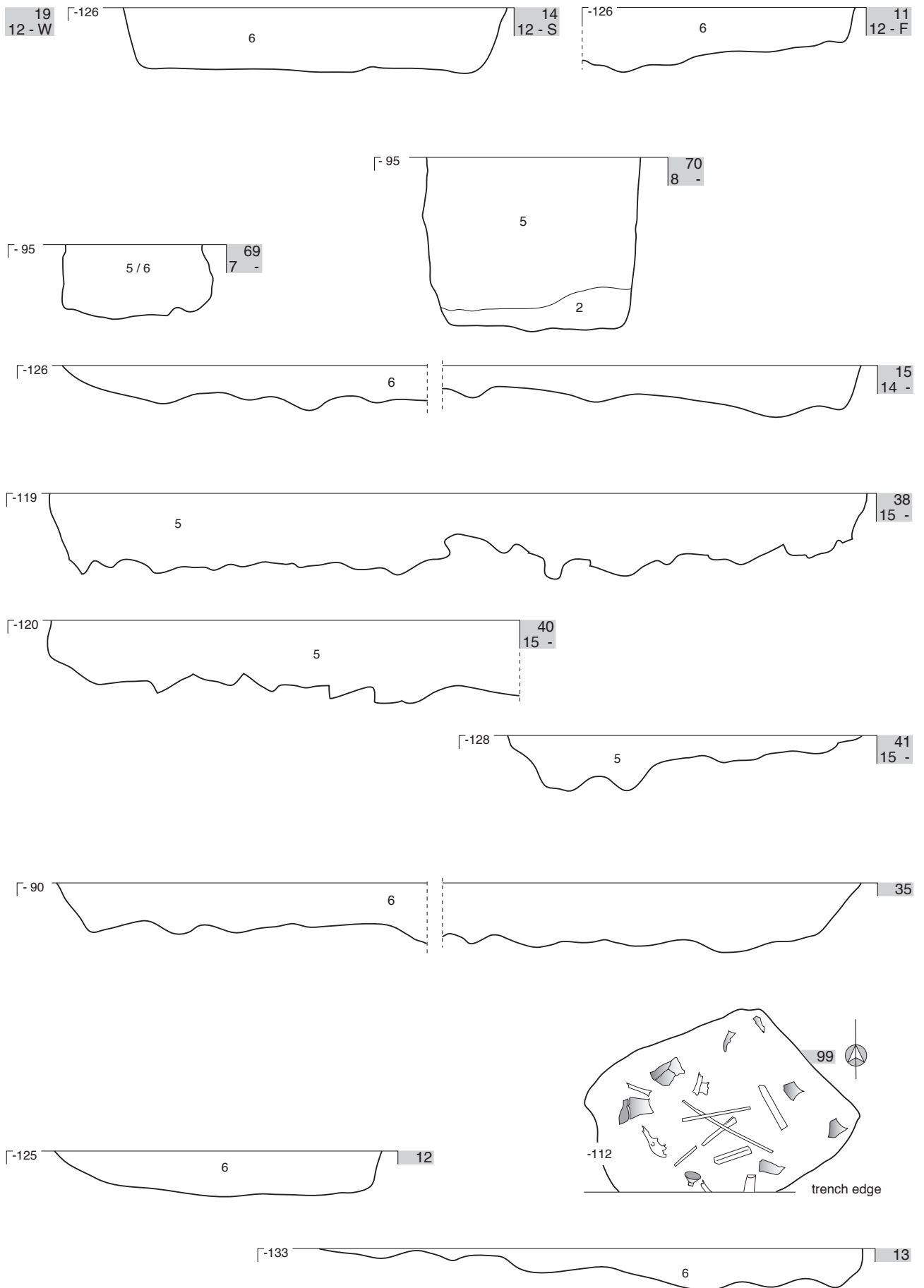


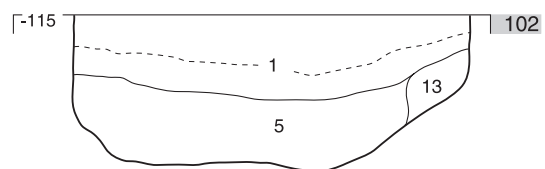
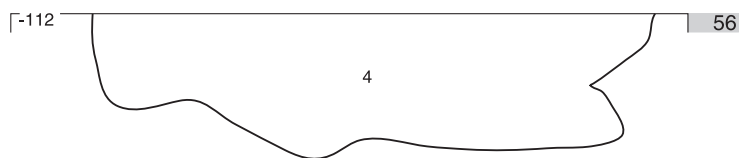
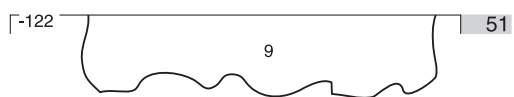
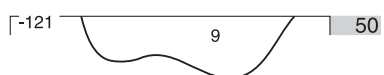
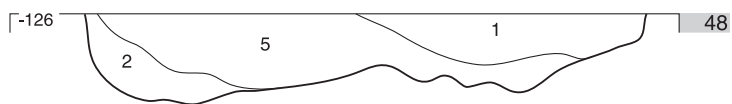
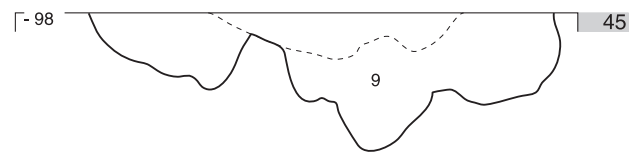
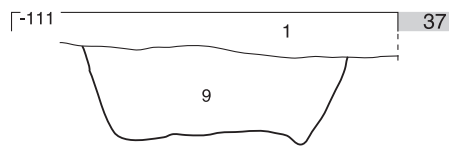












SCHAGEN MUGGENBURG - I
OBJECTS

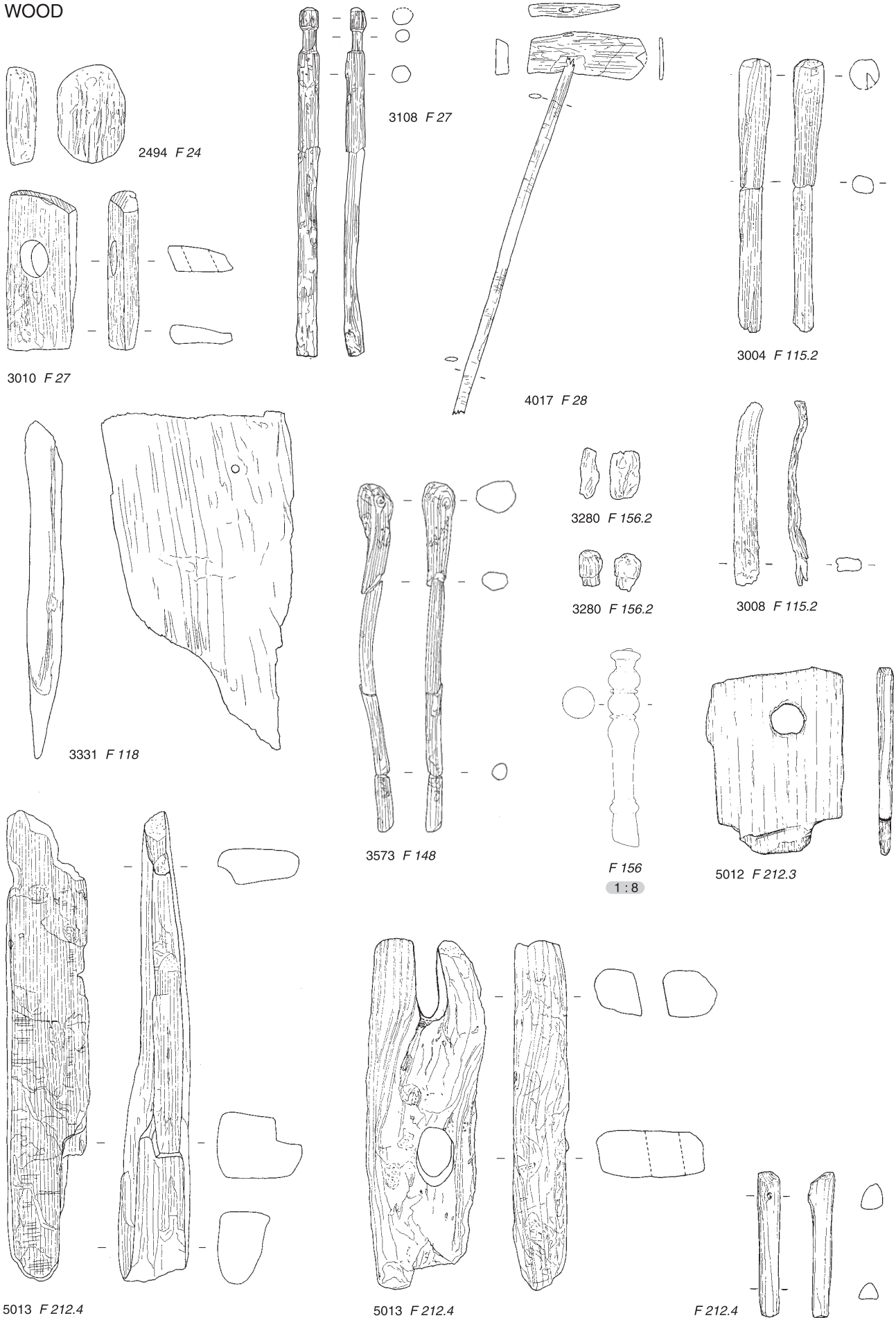
1 : 4 scale: all objects 1 : 4
unless otherwise
indicated.

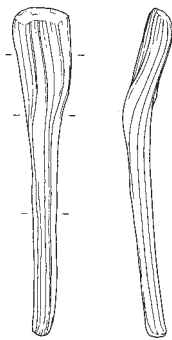
WOOD
BONE
CLAY
STONE
GLASS
AMBER
METAL

Finds materials recovered from dug features, hearth areas and layers are shown in the following pages. On Figure 5, the numbers of the dug features are shown. Materials deriving from layers (not shown on plan) are briefly designated below:

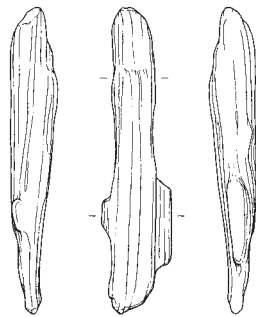
L 2 & L 2.2: upper and lower extent of mound material, northern area
L 33: mound material, northern area
L 34: concentration in mound material, northern area
L 46: concentration charcoal and sherds in mound material, northern area
L 123: lens in mound material, northern area
F 30: surface layer in area of outside hearths, cluster 7, northern area
F 35: hearth dump in southern area
F 44: hearth dump within cluster 7, northern area
F 159: concentration of finds in mound material, northern area
F 193: ploughed mound material, southern area
F 198: mound material, southern area
F 208: top of laid clay floor surface in house (use surface); F 208.1: in clay
F 241: mound material, southern area
F 242: mound material, southern area
F 259: mound material, southern area
F 304: mound material, southern area
F 305: mound material, southern area
F 306: mound material, southern area
F 308: outside hearth material, within cluster 4, southern area
F 320: mound material, southern area

WOOD

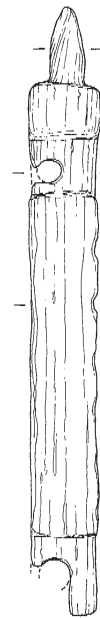




5013 F 212.4



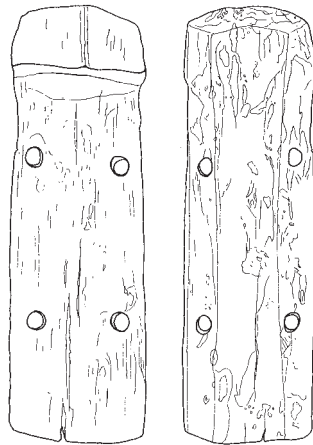
5013 F 212.4



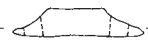
5013 F 212.4



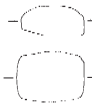
1:8



4688 F 221



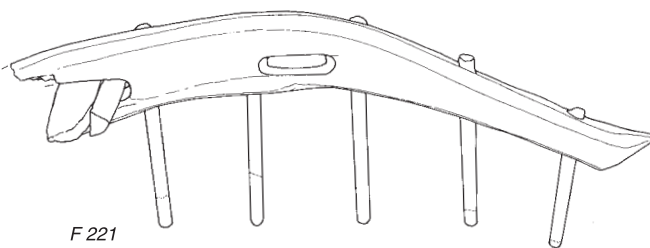
5013 F 212.4



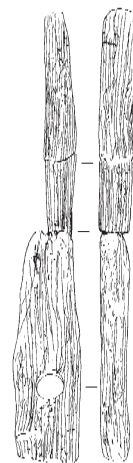
1:8



4827 F 221



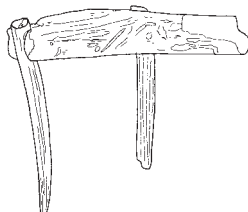
F 221



4683 F 221



1:8



4809 F 221.4



1:8



4473 F 222.2



4485 F 223.1

1:8

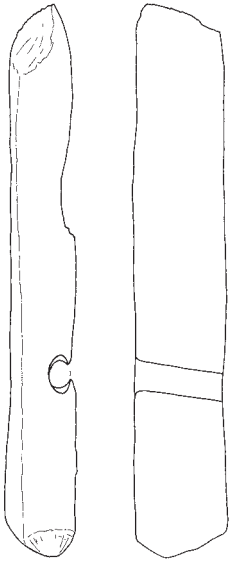


F 223

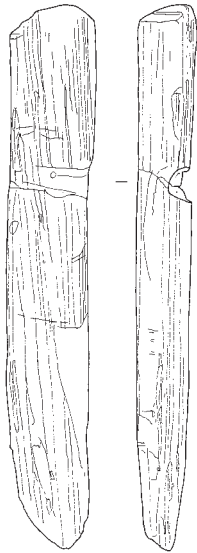


4827 F 221





4543 F 223.1



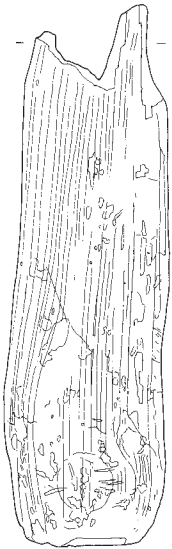
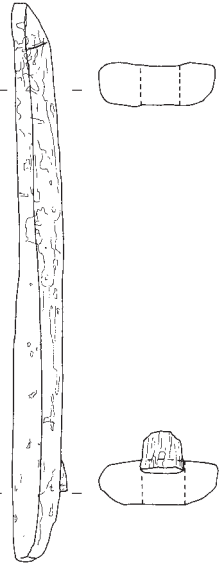
4543 F 223.1



4439 F 225



4814 F 248

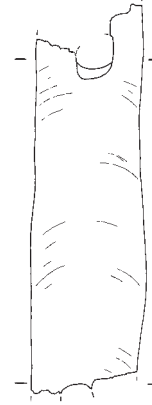


5103 F 352

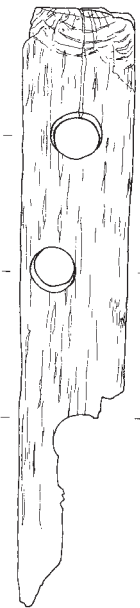


5103 F 352

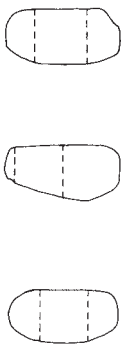
1:8



4820 F 248.4



5102 F 352



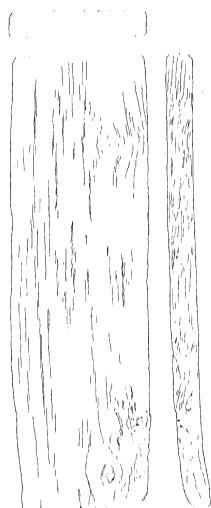
3318 F 154

1:8

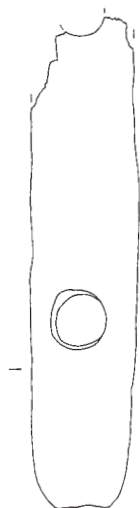


3325 F 154

1:8



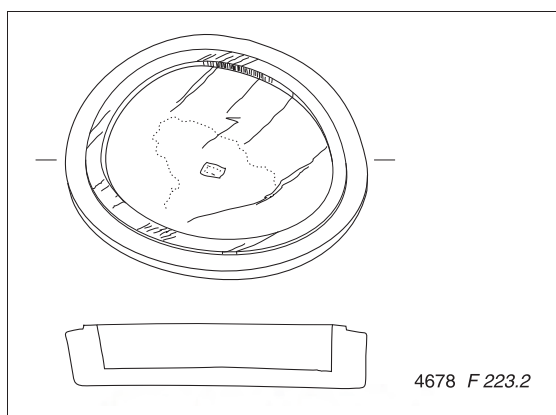
3328 F 154 1:8



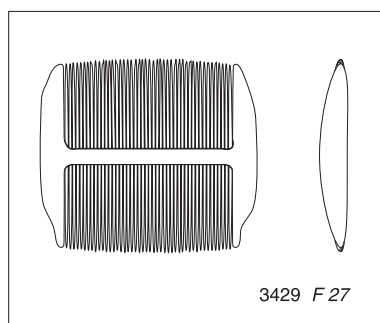
4810 F 248.3



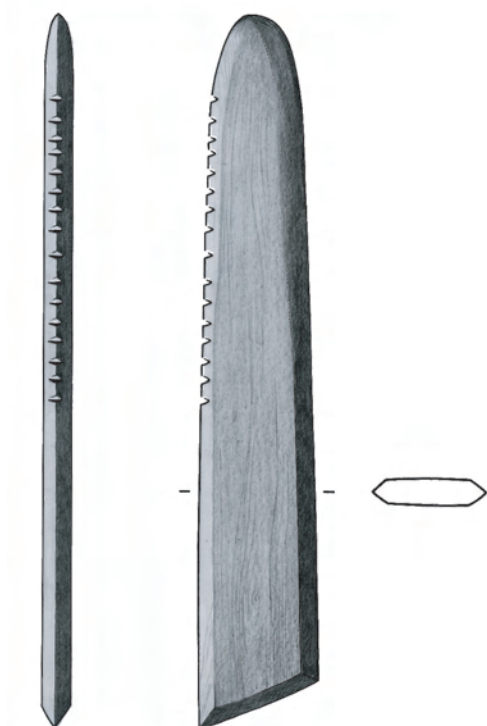
F 145 1:8



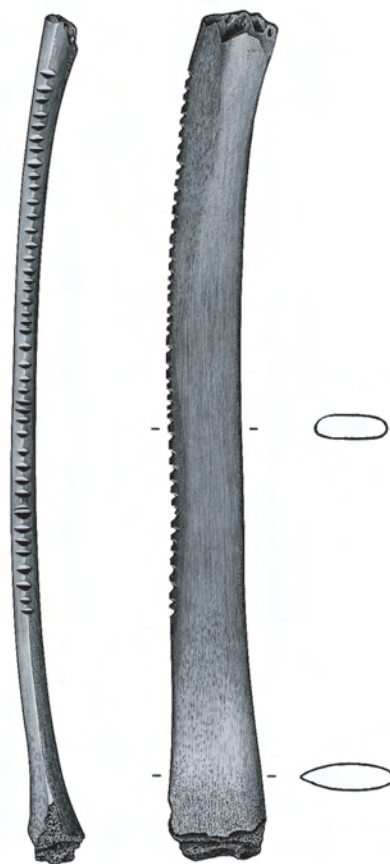
4678 F 223.2



3429 F 27



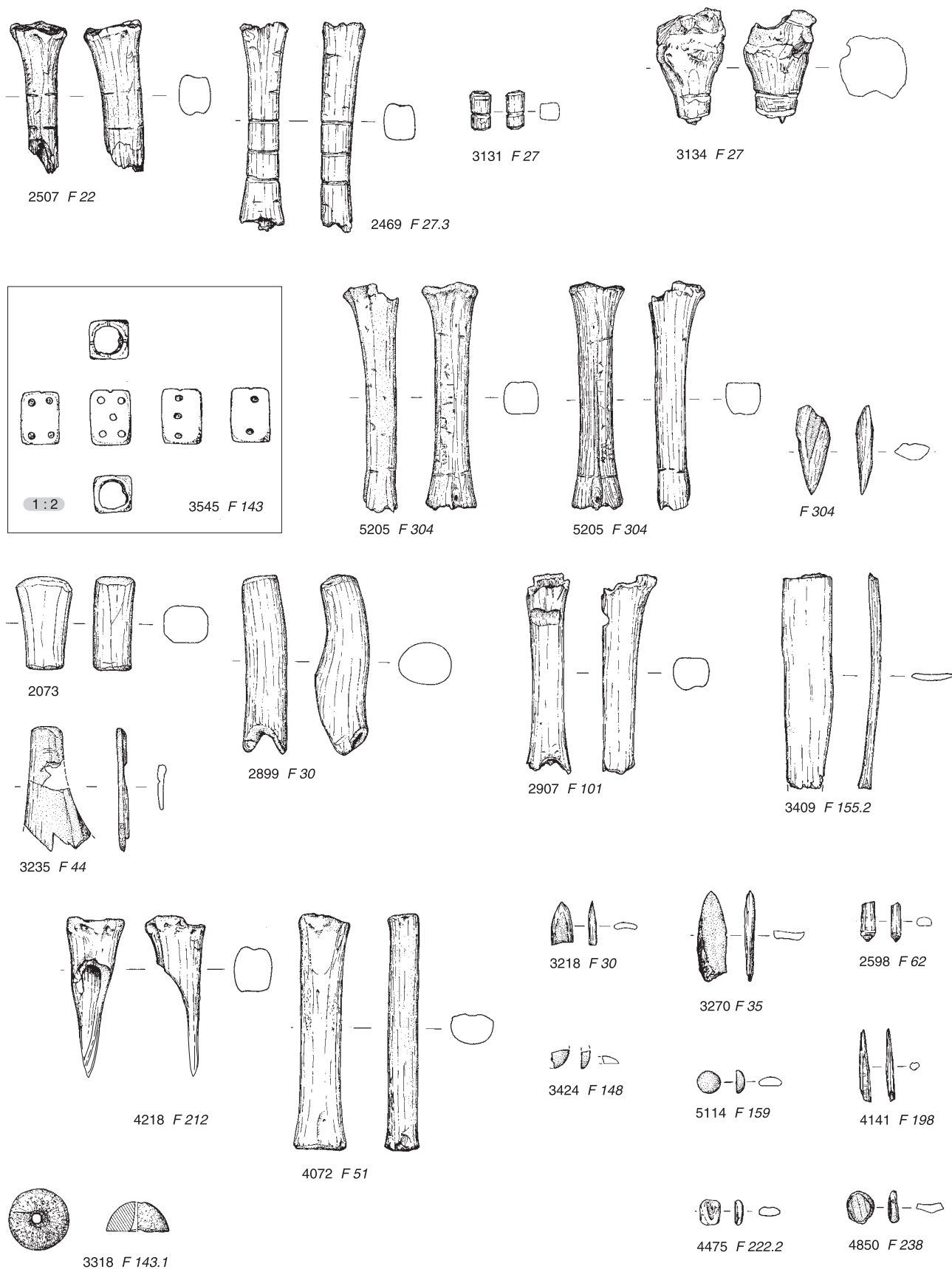
modern potscraper - wood



2335 F 31 - bone

1:2

BONE



CLAY OBJECTS



2098 L 2.2



2205 L 2.2



2274 L 2.2



2300 L 2.2



2483 L34



2742 L 2



2955 L 2



2969 L 123



2979 F 120.3



2983 L 123



3137 L 46



3249 F 118.1



3541 F 79.3



3740 F 198 / F 193



4077 F 193



4119 F 193



4121 F 198



4130 F 193



4131 F 213



4272 F198



4338 F 198



4344 F 198



4662 F 198



4693 F 198



4864 F 308



4926 F 320.1



5112 F 208.1



5123 F 193



5220 F 240



5222 F 305.1



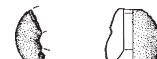
5224 F 223.1



2142



4136



4845



5210



2123 L 2.2



2919 F 27



3197 L 33



3203 F 154.1



3371 F 143.1



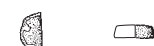
3493 F 148.13



3497 F 143



3552 F 148.13



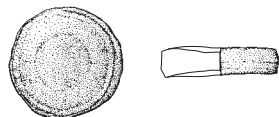
4118 F 198



4122 F 198



4133 F 198



4135 F 148.10



4334 F 241



4337 F 198



4722 L 2.2



4722 L 2.2



4722 L 2.2



4722 L 2.2



4722 L 2.2



4889 F 198



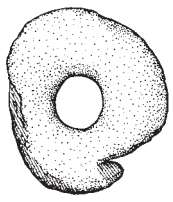
4997



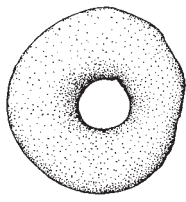
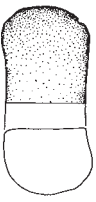
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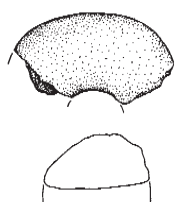
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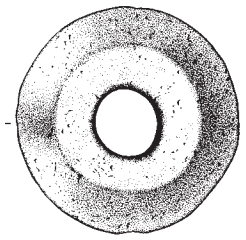
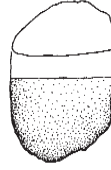
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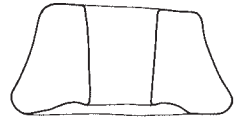
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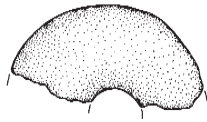
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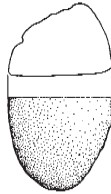
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2794 L2



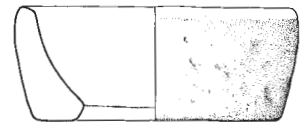
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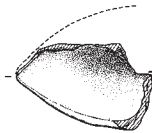
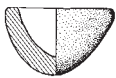
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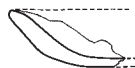
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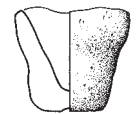
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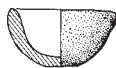
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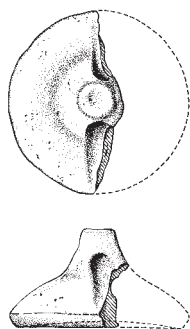
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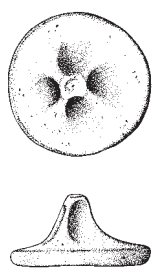
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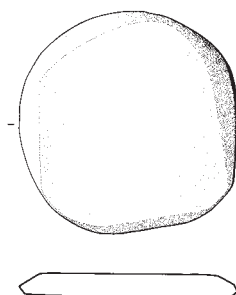
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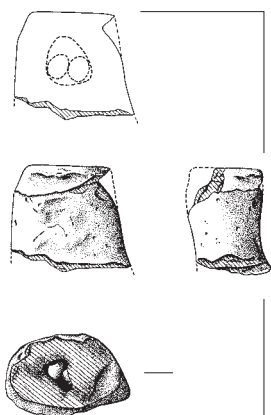
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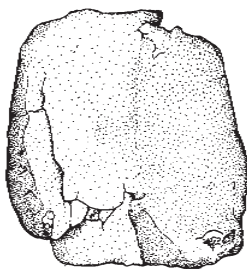
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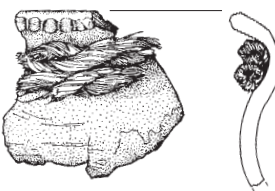
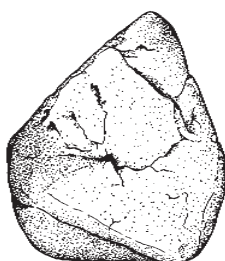
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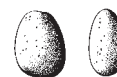
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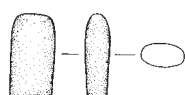


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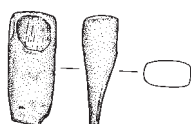


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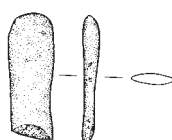
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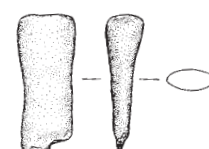
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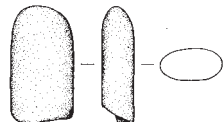
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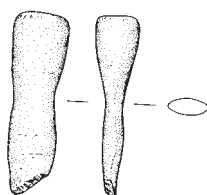
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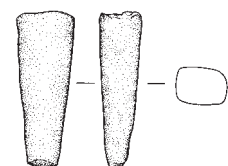


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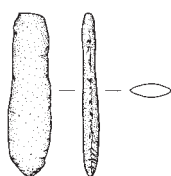


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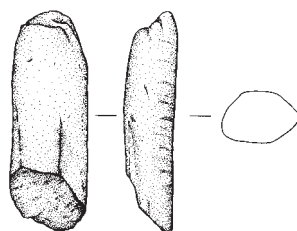
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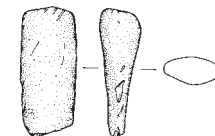
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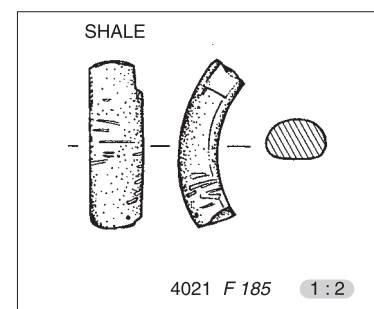


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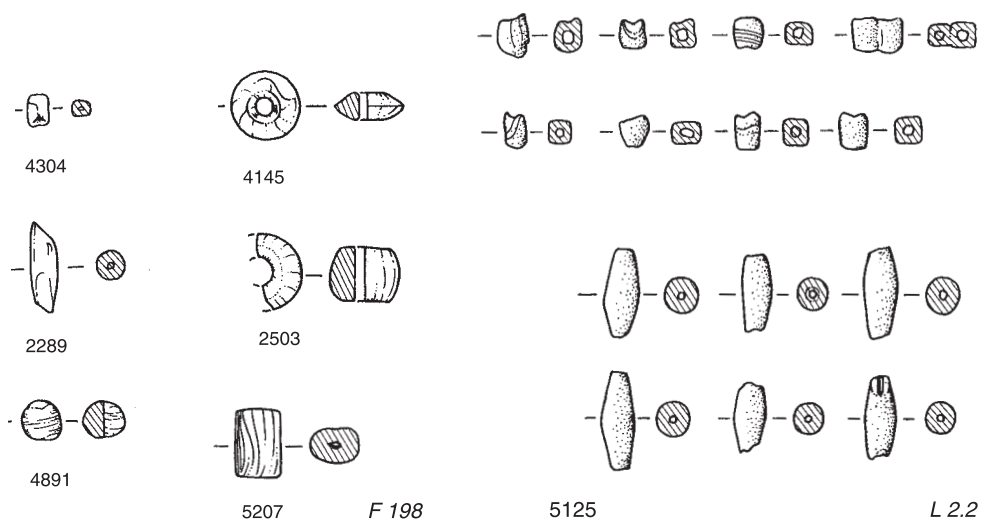
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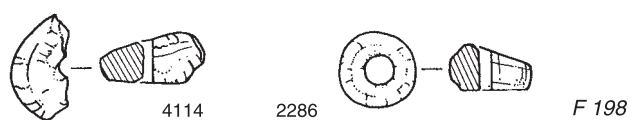
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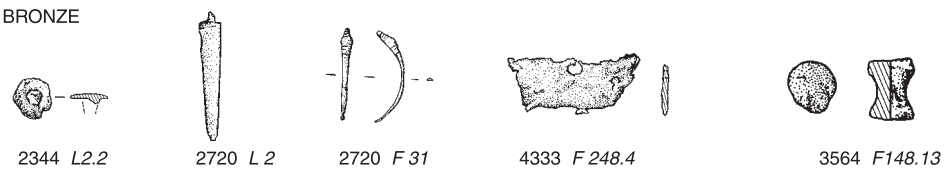


AMBER



METAL

BRONZE



LEAD



Appendix 2: Human Remains from Schagen Muggenburg-I

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UNIVERSITY OF LEIDEN, 21-02-1986)

Human remains, dating to around 300 AD, were recovered from the northern part of the excavated area at Schagen Muggenburg-I. There were three burials near to each other (f150, f321, f322), another (f77) next to an outside hearth, seven clusters of cremated remains covered by inverted pots (f314, f325, f340-42, f344, f345) deposited in one pit, and a single non-cremated element recovered from another pit (f27). Figure 5 shows the positioning within the settlement. Figures 8 and 59 are details of the features, which were at a level of 1.14–1.30 below NAP. The human remains were recovered and sent to the Laboratory of Anatomy, University of Leiden, for physical anthropological analysis.

MATERIAL

During the excavation, it appeared from the anatomical context of the broken bones that the four inhumated individuals still remained *in situ* (fig. 8). Although the skeletons were severely fractured, they were almost complete (cf Chapter 2). The single bone, from the large pit f27, of a right os coxae lacked the os pubis and fossa iliaca. All bones were reconstructed as far as relevant for the analysis. The histo-architecture of the bone tissue appeared to be rather well preserved. The quantity and quality of the cremations was very poor. The burnt bone material was heavily calcinated. Only 7.6% of the total weight was charred. There were only human remains covered by the urns.

METHODS

Sex and age determination was done according to the methods as stipulated by the Workshop of European Anthropologists (1980). Non-metrical sex and age features were scored using the standards given by Acsádi and Nemeskéri (1970). Morphometric sex and age determination was impossible, as too many points of measurement were missing. The ages at death are biological ages, derived from universal skeletal changes due to ageing. They do not have to coincide exactly with calendar years. The criteria for sex determination are based on European material. Pelvic features, as they are functionally closely related to gender, were preferred to cranial features.

In the case of one individual (f150), a microscopic age determination was carried out by measuring the rate of bone remodelling in the femur shaft. For that purpose, a $\pm 140 \mu\text{m}$ thin transverse section was prepared from the central part (fig. App.2). Analysis was done according to Uytterschaut (1985), a method especially computed for the Dutch population.

The stature, the living standing height, of the individuals was estimated by measuring the skeleton length *in situ*. The distance for the lowest point of the tuber calcanei to the highest point on the vault of the skull offers the best approximation to the stature (Maat 1984, 2003). If this was not possible, the stature was calculated from long bones according to Trotter and Gleser (1958). Paleopathologic dental changes and molar attrition were scored with the use of standards given by Brothwell (1981).

According to a morphometric selection method of human cremations for sex and age determination (Maat 1985, 1997), the burnt bone material was passed through two sieves, both having round holes with true diameters of 10 and 3 mm, respectively.

Results

I Feature 27: an incomplete right os coxae

1) Sex indicators:

Pelvic features	Score
Sulcus preauric.	0
Inc. ischiad. major	+ 2
Arc composé	+ 1
Corpus os ischii	+ 2

Degree of sexualization = + 1.2 → masculine

2) Age indicator: epiphyseal fusion of the tuber ischiadicum.

Conclusion: male of 21 years of age or older.

II Feature 77: near complete infant

Age indicators:

- not fused pars lateralis and squama occipitalis.
- not fused arcus and corpus vertebrae.
- not fused pars lateralis and basalis occipitalis.
- not fused os ileum, pubis and ischii.
- diaphyseal length of humerus: 62 mm
- diaphyseal length of femur: 74 mm
- +Related Crown-Rump-Length = 342 mm

Conclusion: perinatal infant with a gestational age of 9 months.

III Feature 150: extended individual with the right hand on the right hip, and the face turned to the right side.

1) Sex indicators:

Pelvic features	Score
Inc. ischiad. major	- 2
Arc composé	-1
Corpus os ischii	-1

Degree of sexualization: - 1.4 → feminine

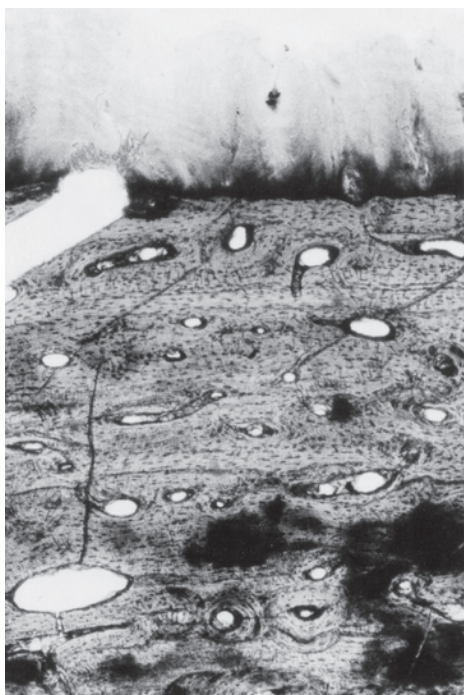


Figure App. 2 Transverse section taken from the mid-shaft portion of the femur from f150 (80 μ m).

2) Age indicators:

- fusing proximal epiphysis of the left femur.
- attrition of molars according to Brothwell (1981): 2 \rightarrow 2+.
- internal bone remodelling in the central part of the femur shaft (fig. App. 2) : the percentage of osteons and osteon-fragments was 19% \rightarrow skeletal age of 17.5 ± 6.51 years.

Result: skeletal age of 17-24 years.

3) Stature: skeleton length in situ: 149.2 cm

Conclusion: female of 17-24 years of age, having a stature of 149.2 cm.

IV Feature 321: extended individual with the left hand on the right half of the pelvis, and the face turned to the right side.

1) Sex indicators:

Pelvic features	Score
Sulcus preauric.	+ 2
Inc. ischiad. major	+ 2
Angulus pubis	+ 1
Arc composé	- 2
Os coxae	+ 1
Foramen obt.	+ 1
Corpus os ischii	+ 1
Crista iliaca	+ 2
Fossa iliaca	+ 1
Pelvis major	+ 1

Degree of sexualization = + 1.2 \rightarrow masculine.

2) Age indicators:

- facies symphysealis: phase III
- spongiosa of the proximal femur epiphysis: phase V.
- suture obliteration of the tabula interna: phase II.

Result: skeletal age following the tables of Sjøvold (1975): 53.0 ± 3 years. Confidence: 80 – 85%.

3) Stature:

- skeleton length in situ: 160-165 cm.
- Calculated stature from the right intact femur having a maximum length of 43.6 cm: 165.3 ± 3.94 cm.

4) Dental status:

A complete dentition, including four third molars, was present. There had been no ante- nor post-mortem tooth loss. Occlusion was good. Between the central incisors a diastema was present. There was a slight degree of periodontal changes and alveolar bone resorption. The degree of calculus formation was medium. The two right third molars had interproximal carious lesions. In addition, the right mandibular molar had an abscess at its apex.

Attrition:

score		3-	4		4	3		
molar		M ³	M ²	M ¹		M ¹	M ² M ³	
	R							L
molar		M ₃	M ₂	M ₁		M ₁	M ₂ M ₃	
score			3+	5		4	3+ 2+	

Conclusion: male of 50-56 years of age, having a stature of about 165 cm. In addition to an abscess, the man had minor dental pathological changes.

V Feature 322: flexed individual, interred on its left side.

1) Sex indicators:

Cranial features	Score
Tubera parietalia	+ 2
Proc. mastoideus	+ 1
Os zygomat.	+ 2
Crista supramast.	+ 1
Margo orbit.	- 1
Gonial eversion	+ 1
Margo mandib.	+ 1

Degree of sexualization = + 1.2 → masculine.

2) Age indicators:

- all second-molars erupted.
- fused proximal epiphysis of the clavicle.
- suture obliteration of the tabula interna: phase I.
- attrition of molars according to Brothwell (1981): 2 → 2+.

Result: skeletal age of 23–25 years.

3) Dental status:

A complete dentition, having a congenital absence of third-molars. There had been neither ante- nor postmortem tooth loss. Occlusion was good. There was a slight degree of alveolar bone resorption and of calculus formation.

Attrition:

score		2	2+		2	2	
molar		M ³	M ²	M ¹		M ¹	M ² M ³
	R						L
molar		M ₃	M ₂	M ₁		M ₁	M ₂ M ₃
score			2	2+		2+	2

Conclusion: male of 23–25 years of age, having an excellent dental condition.

VI Features 314, 325, 340, 341, 342, 344 and 345: seven clusters of cremated remains covered by inverted urns in one pit.

The qualifications of the fragments of burnt bone material with respect to quantity and quality are stated in Table 1. It should be mentioned here that identification of a cremated adult is considered only to be profitable in case the portion of fragments larger than 10 mm weighs over 200 grams, and the rate of intactness exceeds 0.45 (Maat 1985, 1997). From Table 1 it appeared that the weight of the cremations under study was actually too small for identification, per single cluster of remains under each of the urns. The anatomical composition of the cremations are stated in Table 2. In general, it shows that both cranial and post-cranial fragments were present. Minute determination of the fragments produced no evidence of remains of more than one individual per urn. On the other hand, it could not be determined if the total of the remains under all of the pots came from one and the same individual. In the case of one cluster, under one urn (f314), an acceptable sex determination was possible as being female (see below). Age indicators are stated in Table 3. It could be established that five inverted urns covered cremated remains from an adult, while the seventh urn covered unidentifiable remains as to age or gender.

Sex features	Score
Margo orbit.	- 2
Gonial eversion	- 1

Degree of sexualization = - 1.3 → feminine.

DISCUSSION

In addition to the dispersed fragment of a pelvis of an adult male, the northern part of the excavation at this native settlement of about 300 AD produced the interred human remains of:

- an inhumated perinatal child,
- an inhumated 17-24 year old female
- an inhumated 50-56 year old male
- an inhumated 23-25 year old male
- a cremated adult female, and within the same pit feature, a further five clusters identifiable as adult remains, and another cluster unidentifiable as to age or sex.

The assemblage represents a minimum total of six individuals, ranging from 0 to at least 56 years. The demographic composition fits in nicely with the idea of a civil settlement. The stature of the older man of about 165 cm is rather small if compared to the calculated stature from long bones following Breitingner (1937) and Trotter and Gleser (1958) of contemporary adult men from Regensburg and Augsburg, being 167-170 cm (Wurm 1985). The stature of the young female of 149.2 cm is very small. Even if compared to that of the man, it is extremely small, as gender difference in stature is estimated to be 10 cm. In general, socio-economic conditions, such as nutrition and hygiene, are taken as responsible for average small statures (Maat 1984, Wurm 1985).

The degree of molar attrition in the case of the 50-56 year old man was very low for his age. In accordance with pre-medieval western standards (Brothwell 1981), his dental attrition suggested an age of about 35 years. But his skeletal age was undeniably shown to be some 20 years older. Explanation could include a privileged position with a less coarse diet.

Apart from a few minor carious lesions, no pathological changes were found during examination of the reconstructed bones.

Table 1. Qualification of the cremated remains under each of the inverted urns within the pit feature from Schagen Muggenburg-I, according to a selection method from Maat (1985, 1997).

Feature number of cluster/urn	Total weight (grams)	Weight of portion of fragments larger than 10 mm	Rate of intactness = $\frac{\text{weight portion} > 10 \text{ mm}}{\text{weight portion} > 3 \text{ mm}}$
314	115.2	68.2	.597
325	34.0	11.3	.337
340	34.0	21.4	.637
341	5.3	2.9	.547
342	9.7	7.3	.753
344	47.2	28.8	.621
345	52.0	38.1	.741

Table 2. Anatomical composition of the portion larger than 3 mm of the cremations from Schagen Muggenburg-I, according to part of the body (grams).

Feature number of cluster/urn	Neuro- cranium	Viscero- cranium	Truncus	Membra	Residue
314	16.3	4.9	-	44.4	-
325	1.7	1.1	-	8.3	-
340	-	-	-	21.4	-
341	1.5	-	-	1.3	-
342	7.3	-	-	-	-
344	-	-	-	28.8	-
345	-	-	-	37.5	-

Table 3. Age indicators of the cremated remains from Schagen Muggenburg-I

Feature number of cluster/urn	Indicator	Age
314	Pneumatization of proc. mast. Apex of radix dentis	adult
325	Cranial suture, pars II-2 Apex of molar radix dentis	adult
340	---	---
341	Cranial suture, pars I-2	adult
342	Pneumatization of proc. mast. Cranial suture, pars III-3	adult
344	Corona of maxillary molar Dimensions of diaphyses	adult
345	Dimensions of diaphyses	adult

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Appendix 3: An interpretation of the Voluspa.

An outcome of the research in Noord-Holland demonstrates that at least two constellations, with classical and still used referents were known to indigenous people by about 600 BC. At the Schagen sites of a later date (c 300 – 350 AD) another two were recovered. These four are now called—Horse/Pegasus, Hercules/The Kneeler, Greater Dog/Canis Major and Taurus/The Bull. Within a Germanic context and through the materials deposited within the separate features marking them, there is reason to think they are of the general types of figures found in later Icelandic/Norwegian texts. The points of departure are the Horse=Yggdrasil, Hercules=Thor, Greater Dog=Garm, the greatest of all dogs, and Adhumla, the giant Cow. The last is known from Snorri Sturluson's account (*Glyf*: 5-7; Faulkes 1987, 11) as discussed in section 7.5. Because of these classically known constellations, the Voluspa was regarded to see if the progression of verses could be commensurate with the movement of the figures and a description of the night-sky as a total, seasonal structure. Figure 68 shows the outcome of areas and constellation equivalents suggested. Figure 69 is important for showing the progression in more general terms as four time slices during the longest nights, whereby the main structure is illustrated. The happy world of the gods' disappears which is the area having the Horse/Yggdrasil constellation.

- 1 Attention I ask from all the sacred people,
greater and lesser, the offspring of Heimdall;
Father of the Slain, you wished that I should declare
the ancient histories of men and gods, those which I
remember from the first.
- 2 I, born of giants, remember very early
those who nurtured me then;
I remember nine worlds, I remember nine giant women,
the mighty Measuring Tree down below the earth.
- 3 Young were the years when Ymir made his settlement,
there was no sand nor sea nor cool waves;
earth was nowhere nor the sky above,
chaos yawned, grass was there nowhere.

These verses set the stage, and st. 5 and 6 specifically mention one of the functions of this text: counting years. The 'Measuring Tree', the World Tree/Yggdrasil (st. 2) might be considered as having been used in this reckoning. The tree or pole is considered to extend from the polestar, and tilts through the year. As the hand of a clock, direction points to the place of the tree, and the aspect of the year, or within one long night's telling (cf fig. 69) the prediction of the year.

The doom of the gods' is as one facet of meaning through the night-sky being wholly taken over by that part becoming visible to the other side, the underworld. The tri-partition of the night sky is the key to this interpretation, and also derives from the settlement research. As some researchers have suspected (see discussion on Martin, 7.4), a part of meaning is the seasonal, and the text is here interpreted as the progression of sky landscape with figures, through the year.

There are various translations available. The translation given here of the complete Voluspa is by Larrington (1999). There are many points of connection and explanation one could re-make, citing various text editors/translators on cross-referencing and derivation of names as figures. This has not been done, except for a few comments, as well as a few points on Snorri's Prose Edda, and brief notes on other parts of the Poetic Edda. The interpretation put forward below is one of the place of action, and the progress made within the night-sky. The text is considered literally and specifically about the otherworldly, with gods, giants and dwarfs. It is not about this earth or world, but is inverted as to day and night, in line with the interpretation put forward in Chapter 6.

- 4 First the sons of Bur brought up the earth,
the glorious ones who shaped the world between;
the sun shone from the south on the hall of stones,
then the soil was grown over with green plants.
- 5 From the south, Sun, companion of the moon,
threw her right hand round the edge of the heaven;
Sun did not know where her hall might be,
the stars did not know where their place might be,
the moon did not know what power he had.
- 6 Then all the Powers went to the thrones of fate,
the sacrosanct gods, and considered this:
to night and her children they gave names,
morning they named and midday,
afternoon and evening, to reckon up the years.
- 7 The Æsir met on Idavoll Plain,
they built altars and high temples;
they set up their forges, smithed precious things,
shaped tongs and made tools.
- 8 They played chequers in the meadow, they were
merry,
they did not lack for gold at all,
until three giant girls came,
mighty and powerful, out of Giantland.
- 9 Then all the Powers went to the thrones of fate,
th the sacrosanct gods, and considered this:
who should form the lord of the dwarfs
out of Brimir's blood and from Blain's limbs?

In st. 7, the Æsir met on the plain, taken as being Asgard, the part of the night-sky above the Milky Way (Midgard/earth). Planets, moon and sun, move along a pathway along the back of constellation Horse/Pegasus. In st. 8, the three fates are usually taken as meant (see below st. 20). St. 9 introduces the following nine verses, the important matter of creating dwarfs (humans) from blood and bones.

- 10 Then Motsognir became the greatest of all the dwarfs, and Durin another; Many manlike figures they made, dwarfs from the earth, as Durin recounted.
- 11 New-moon and Dark-of-moon, North and South, East and West, Master-thief, Delayer, Bivør, Bavor, Bombur, and Nori, An and Anat, Great-grandfather and Mead-wolf.
- 12 Liquor and Staff-elf, Wind-elf and Thrain, Known and Thorin, Thrór, Colour and Wise, Corpse and New-advice: now I have rightly—Regin and Counsel-sharp—reckoned up the dwarfs.
- 13 Fili and Kili, Foundling and Nali, Haft and Vili, Hanar and Sviur, Frar and Hornborer, Freg and Sea-pool, Loamfield, Iari, Oakenshield.
- 14 Time it is to tally up the dwarfs in Dvalin's lineage, the people of Lofar, those who sought out from the stony halls the dwelling of Loamfield on Iorovellir.
- 15 They were Draupnir and Dolgthrasir, Greyhair, Mound-river, Lee-plain, Glow, Skirvir, Virvir, Skafid, and Great-grandfather.
- 16 Elf and Yngvi, Oakenshield, Fialar and Frosty, Finn and Betrayer; they'll be remembered while mankind endures, the long tally of ancestors of Lofar.
- 17 Until three gods, strong and loving, came from that company to the world; they found on land Ash and Embla, capable of little, lacking in fate.
- 18 Breath they had not, spirit they had not, character nor vital spark nor fresh complexions; breath gave Odin, spirit gave Hænir, vital spark gave Lodur, and fresh complexions.

Verses 10–16 tell of the lineage of the dwarfs, whereby many of the names are unclear, and remain untranslated.

Made in the image of men, translations differ as to the last line of st. 10: here they are from the earth, otherwise in the earth (Bellows), under the earth (Hollander), or of earth (Otten).

Using the earth as the designation of Milky Way/Midgard would place these small-scale humans/dwarfs there. The dwarfs, as shown by their names are not particularly spectacular, the good and bad, the mundane, the craftsmen, and named after natural phenomena. Not high in stature they have no high status: the metaphor of the little people, and perhaps all those dim stars along the path of the Milky Way.

17: Larrington (1999, 264) assumes verses are missing before vs 17, as does Bellows. Some have argued this catalogue of names was added, but they are found in the extant manuscripts. Snorri relates two logs washed up to shore, out of which two people were created, Ask and Embla, and 'from them were produced the mankind to whom the dwelling-place under Midgard was given' (*Gylf*: Faulkes 1987, 13). This has induced interpreters to separate Ask and Embla off from the dwarfs. In the same passage Snorri says Midgard is the fortification around the earth on the inner side, and also cites a passage from an older work: 'And from [the giant Ymir's] eyelashes the joyous gods made Midgard for men's sons.' Placing Midgard as the Milky Way also then places Ask and Embla on the Milky Way. There is no need of verses missing, nor an added catalogue of dwarfs. And, the dwarfs are also on the Milky Way (from the earth—st. 10). They are counted (reckoned—st. 12) and are a long tally (st. 16). And they are

ancestors, already arrived. Here suggested is that if the dwarfs listed already have their star homes on the Midgard/Milky Way, Ask and Embla would be two new arrivals. They are then given a new state by the gods (or one god, as the three names are sometimes considered to refer to Odin, only) on the eyelash solidity of this Midgard place.

Dwarfs are stated as made in human likeness, but small in stature—status which puts them into the same relationship as the Noord-Holland inhabitants relative to the images they were creating on the ground, dwarfing themselves in scale relative to the constellation images. Suspected is therefore that dwarfs are possibly the soul/small star, otherworldly existence of humans, inhabiting the sky land/sands of Midgard.

The 'greatest' dwarf, Motsognir (st. 10), might a great star on the Milky Way. The star Procyon does not gain a place within the remaining verses, and is therefore possibly Motsognir (fig. 68). Taking the Voluspa only, there is no indication the place of action is different between st. 16 and 17. Wandering, as planets, the gods coming from Asgard, to the shore of Midgard (on the underworld, beach side), would cross the Milky Way/Midgard in the area around Ophiuchus/Serpent Holder. Getting a spark and a fresh complexion (st. 18), Ask and Embla would become small stars in this area.

- 19 I know that an ash-tree stands called Yggdrasil,
a high tree, soaked with shining loam;
from there come the dews which fall in the valley,
ever green, it stands over the well of fate.
- 20 From there come three girls, knowing a great deal,
from the lake which stands under the tree;
Fated one is called, Becoming another—
they carved on wooden slips—Must-be the third;
they set down laws, they chose lives,
for the sons of men the fates of men.
- 21 She remembers the first war in the world,
when they buttressed Gullveig with spears
and in One-eye's hall they burned her;
three times they burned her, three times she was reborn,
over and over, yet she lives still.
- 22 Bright One they called her, wherever she came to houses,
the seer with pleasing prophecies, she charmed them
with spells;
she made magic wherever she could, with magic she
played with minds,
she was always the favourite of wicked women.
- 23 Then all the Powers went to the thrones of fate,
the sacrosanct gods, and considered this:
whether the Æsir should yield the tribute
or whether all the gods should partake in the sacrifices.
- 24 Odin shot a spear, hurled it over the host;
that was still the first war in the world;
the defensive wall was broken of the Æsir's stronghold;
the Vanir, indomitable, were trampling the plain.
- 25 Then all the Powers went to the thrones of fate,
the sacrosanct gods, and considered this:
who had mixed the air with wickedness,
or given Od's girl to the giant race.
- 26 Thor alone struck a blow there, swollen with rage,
he seldom sits still when he hears such things said;
the oaths broke apart, the words and the promises,
all the solemn pledges which had passed between
them.
- 27 She knows that Heimdall's hearing is hidden
under the radiant, sacred tree;
she sees, pouring down, the muddy torrent
from the wager of Father of the Slain; do
you understand yet, or what more?

At the end of these nine stanzas (st. 27), the phrase is introduced asking for decoded information. Perhaps something as follows is applicable, as some identifications are made:

19: Perhaps the ash-tree is where one should pipe up to remark the contradiction: an ash is not an evergreen. Other much discussed candidates are juniper and yew, as being meant due to references on earthly practices across Europe in Classical and Medieval texts, and legends surrounding still standing trees. Trees honoured on earth of these species are however the nearest earthly equivalent, symbolic of the 'Tree'. An immortal tree in the sky might just as well be an ash.

Yggdrasil is the ash, but as a proper name it also says: Odin's Horse (Ygg is one of Odin's names, and drasil is horse: Davidson 1993, 68). The heavenly Odin's Horse-Tree is, by nature of it being of stars in the sky, immortal, thus always green. Yggdrasil is identified here through the Horse constellation found at the four Noord-Holland sites, and the incorporated wood, whereby it is also a tree-horse. In combination to the roots of the tree, stretching under the earth/Midgard, it is reconstructed (figs. 59, 60) as extending from the pole star, up to the gods' world.

20: 'Under the tree' are two constellations, Cepheus and Cassiopeia. They would be in position to be the well, and the three Norms as the fates, sitting next to the well, and known from other texts (cf also Bauschatz 1975). Mimir is sometimes associated with the same well as that of the Norms, at the foot of Yggdrasil (e.g., Davidson 1964, 234). A well would be in the earth, as the positioning of Cepheus is in the Milky Way, and under the tree.

21: Gollveig is translated by Bellows as Gold-might, clearly connected with immortality here. Generally agreed is that One-eye is Odin. His hall, as a constellation designation, would be the square of Pegasus.

22-23: At times, two separate beings have been taken as being meant in these verses. Both Otten and Larrington, among others, consider them one and the same. 'Bright One (Heid) is usually thought as the hypostasis of Freyia, like Gullveig in the previous verse, since Freyia is known to be skilled in *seid* ...' (Larrington 1999, 265). Given the names and the immortality, even after burning-up 'off and again', the moon is implied, as she is in later stanzas, seeing far and wide. These two verses also rectify the inverted situation of st. 5, and the gender of sun and moon. In st. 23 she is being described from our world perspective.

26: Thor is one of the reference points provided by the settlement remains of Schagen, in the form of the constellation of Hercules, as his image. But, this will be found, when he slays the serpent (st.56). Here he could be a wandering planet, Jove/Jupiter, following other texts, but he was also identified with Hercules (Davidson 1964, 84; 1993, 47). As both wandering diety, as planet, and as constellation (as image), the texts could be explained.

27: Larrington notes Heimdall's 'hearing' is his ear, forfeited as had Odin one of his eyes, for wisdom. Both are in a well guarded by Mimir. If the well is the same as that identified as constellation Cepheus, the wagers (Odin's eye, and ear) could be stars here, and the muddy torrent possibly another metaphor for the Milky Way. The ear is also associated with his horn, suggested as the constellation Little Bear, below.

At the end of this verse is the first time one is asked if one understands, and could add more meaning, than just this story told. This phase is here suggested to be the testing element on the above mentioned positioning of the constellations and structure of the night sky. In st. 28, below, testing is directly mentioned. The description of Asgard, past exploits, and basic divisions are set as place. That part of the heaven with the Horse constellation is partially in view, and will become fully in view with the next nine verses. Now the future will be told, and risings on the east will become more evident.

- 28 Alone she sat outside, when the old man came,
the Terrible One of the Æsir and he looked in her eyes:
'Why do you question me? Why do you test me?
I know everything, Odin, where you hid your eye
in the famous well of Mimir.'
Mimir drinks mead every morning
from Father of the Slain's wager—do you understand
yet, or what more?
- 29 Father of Hosts chose for her rings and necklaces,
he got wise speech and a rod of divination;
she saw widely, widely into all the worlds.
- 30 She saw valkyries coming from far and wide,
ready to ride to the Gothic nation;
Skuld held one shield, Skogul another,
Gunn, Hild, Gondul, and spear-Skogul;
now the ladies of the General, the valkyries are counted up,
ready to ride the earth.
- 31 I saw Baldr, for the bloody god,
Odin's child, his fate concealed;
there stood grown—higher than the plain,
slender and very fair—the mistletoe.
- 32 From that plant which seemed so lovely
came a dangerous, harmful dart, Hod began to shoot;
Baldr's brother was born very quickly;
Odin's son began fighting at one night old.
- 33 Nor did he ever wash his hands nor comb his hair,
until he brought Baldr's adversary to the funeral pyre;
and in Fen-halls Frigg wept
for the woe of Valhall—do you understand yet, or what
more?
- 34 Then oppressive bonds were twisted,
rather severe fetters, made of Vali's entrails.
- 35 She saw a captive lying under the grove of hot springs,
that evil-loving form, Loki she recognized;
there sits Sigyn, not at all happy
about her husband—do you understand yet, or what
more?
- 36 From the east falls, from poison valleys,
a river of knives and swords, Cutting it is called.

28-29: The Seeress, identified with the moon/Freyja above (st 22 & 23), is now in conversation with Odin. The stage has now been set for the rest of the Voluspa, when the seeress tells the way of the worlds after receiving gifts/offerings. She, the moon, from the perspective of the sky will tell of the nine worlds, mentioned in st. 2, as here suggested the various parts of the sky, the accompanying constellations, groupings and progression.

30: The Valkyries could be here the Pleiades, or their shields are the stars. And, they are ready to 'ride over the earth', an indication for the rise. They remain of course stationary over the Milky Way as Midgard, thus in this way riding as well over the mythical earth. Another story in the Poetic Edda has Odin sleeping with seven sisters (Harbard's Song 18, Larrington 1999, 72). The path of the planets is along the Pleiades. This is followed by a verse where Thor relates he has created two stars in heaven (= Asgard) from a giant's eyes.

At about the same time the Pleiades rise, it is the summer solstice—the stars cannot be seen however, but the progression would be known if this story were for telling on one long night. 31-33: At about the same time Baldr—the bloody offering—is going to be shot by Hod. 'Mistletoe' does not grow in Iceland or Norway, which has led to various interpretations towards something other than the plant species itself: as a sword, rod or stick (Davidson 1964, 187). What Baldr is has been long discussed. As a name he known from various sources; for example, including 'bright day' and as a deity of the sky, but mere surmise according to Davidson (1964, 183). Going on with one text progression, however, and connecting Baldr to the sun/light, an important occurrence could put the sun at its greatest height as the summer solstice. Shooting would be connected with the constellation Sagittarius/The Archer, going down in the southwest. Very little of this constellation is visible in Iceland, and what there is of it could be seen as a shaft. Of course nothing would be visible around this time of the year because of the sun. It does not become dark enough to see any stars at all. Within the interpretation of inversion put forward in Chapter 6, the stars of the myths are almost in constant 'darkness' in this period of the year because of Icelandic/Norse latitude and time of year, for earthlings the time of constant light. At one level then, Hod's blindness mentioned by Snorri can also be explained—Hod cannot really see to shoot, he is blinded by light. Or, in terms of inversion, there is constant darkness.

It is the gods' longest night. As a prediction, as one long night's story, the constellation would be in place, but added is the predicted movement, place and progression of the sun (see also st. 62).

In st. 32, 'one night old' is clearly a metaphor for a rise, as the brother of Baldr, possibly the rebirth of the sun itself, starting the path back towards the gods' longest day that within inversion would be the Winter Solstice.

Frigg is mentioned, and as the consort of Odin, and Tacitus' Mercury as planet designation, she may be the planet Venus.

34-35: Loki is an important figure, a demonic trickster figure, who also changes his form. Bound by a grove, thus on the earth, he is then located on Milky Way. The constellation

'Perseus' might be a candidate, very indirectly obtained, with further indications drawn from that book of the Edda, *Lokasenna*, where Loki after exchanging insults with the gods and goddesses, is caught in his guise as a salmon in a waterfall. Bound with the bowels of his son, Skadi fastened a snake above Loki which dripped poison in his face. This snake element can be found in the constellation Perseus. He is traditionally holding Medusa's head, represented by that star Algol, with the snake element as her hair; 'Its English nickname of the Demon Star' is a fair rendering of the original Arabic...? (Room 1988, 52). Why 'the English' would have a nickname similar to the Arabic is not stated. Loki is a complex figure, who can change his form, is the father of Hel and is described by some as a demonic being (e.g. De Vries 1956/57, s506); Another figure, his wife, sits near to him, and a prominent star Capella, also on the Milky Way, sits nearby to Algol.

36: The river Slith/Cutting is in a position to be the constellation Eridanus, rising in the east. In English it is usually known as 'The River', as it was by the Greeks and Arabs (Room 1988, 85).

37 To the north there stood on Dark-of-moon Plains,
a hall of gold, of the lineage of Sindri;
and another stood on Never-cooled Plain,
the beer-hall of the giant who is called Brimir.

38 A hall she saw standing far from the sun,
on Corpse-strand; its doors look north;
drops of poison fall in through the roof-vents,
the hall is woven of serpents' spines.

39 There she saw wading in turbid streams
men who swore false oaths and murderers,
and those who seduced the close confidantes of other
men;
there Nidhogg sucks the bodies of the dead—
a wolf tears the corpses of men—do you understand yet,
or what more?

37: In the north, as hall as possibly the constellation Gemini/Twins as it in the NE; Sindri is a dwarf (de Vries & Otten) and as being partially on the Milky Way, Gemini would fitting with the earth and dwarf connection discussed above.

More to the north is the constellation Greater Bear, a constellation Hall possibly done up in word-play (Old Norse beer is *bjorr* and bear is *bjorn*). Snorri mentions Brimir's Hall, as it was known by the Æsir, was also King Priam's Hall, in Troy (*Skald*. Faulkes 1987, 65). We then also known where Troy is (*contra* Schliemann), and the big wooden Horse has already been identified. Other Greater Bear identifications can be made: Snorri relates (*Gylf*. Faulkes 1987, 32) that all the fallen warriors inhabiting Valhall would always be fed by a boar called Sæhrimnir: every day he is cooked and each evening he is whole, to be eaten again. This could be the Greater Bear, which is always present. Cooked during the day and each evening present. A kenning for hog is slaughter-bear (*Skald*. Faulkes 1987, 164). Snorri also relates that an ever-present boar, made by a dwarf, was given to Freyr. The boar is described: 'it never got so dark from night or in worlds of darkness that it was not bright enough wherever it went, there was so much light shed from its bristles' (*Skald*. Faulkes 1987, 97). 38: Again, a hall/constellation connection: 'far from the sun' would be to the west, still extending the interpretation from time keeping before dawn. Nastrond/Corpse Beach would be the edge of the Milky Way on the side of the underworld/sea. Here is the constellation Ophiuchus, in English usually known as The Serpent Holder and in Greek, The Snake Holder.

39: The place of action is still Nastrond/Corpse Beach of the previous stanza. The Dragon (Nithogg) is generally considered to be that laying beneath Yggdrasil, gnawing at a root. This would be a reference to the constellation Dragon/Draco, under the tree/Horse, and also near to the Milky Way.

40 In the east sat an old woman in Iron-wood
and nurtured there offspring of Fenrir;
a certain one of them in monstrous form
will be the snatcher of the moon.

41 The corpses of doomed men fall,
the gods' dwellings are reddened with crimson blood;
sunshine becomes black the next summer,
all weather is vicious—do you understand yet, or what
more?

42 He sat on the mound and plucked his harp,
the herdsman of the giantess, cheerful Eggther;
a rooster crowed in Gallows-wood,
that bright-red cockerel who is called Fialar.

43 Golden-comb crowned for the Æsir,
he wakens the warriors at the Father of Hosts';
and another crows down below the earth,
a sooty-red cock in the halls of Hel.

44 Garm bays loudly before Gnipa-cave,
the rope will break and the ravener run free,
much wisdom she knows, I see further ahead
to the terrible doom of the fighting gods.

45 Brother will fight brother and be his slayer,
brother and sister will violate the bond of kinship;
hard it is in the world, there is much adultery,
axe-age, sword-age, shields are cleft asunder,
wind-age, wolf-age, before the world plunges headlong;
no man will spare another.

The last line refers to a wolf. In the west there is Lupus as part of the constellation Centaurus, on the Milky Way; it is however never visible for the latitudes of Iceland or Norway.

40: In the east, a bright star must be implied. Aldebaran is up and may be that referred to as the giantess in Ironwood, or even Bellatrix ('female warrior' Room 1988, 64) in Orion. Larrington's translation of 'nurturing' is different to Bellow's 'fore' (as in before) and Otten's is '*opneden*'—to bring up. Within the double meaning, bringing up can also be taken in the literal sense of raising the next mentioned figure of Fenrir. The next constellation to rise is Orion.

For such an easily seen and striking grouping of stars, Orion as myth has very little classical content. His stories seem to have been invented to account for the position and apparent motion of the stars in his own and neighbouring constellations'; he was, as constellation known as 'The Giant' in Greek and Arabic and Three Ploughmen in some parts of Germany (Room 1988, 124). As noted in Chapter 6, his belt was also known as Frigg's Spindle. The reason The Giant/Orion is here associated with the wolf Fenrir is the positioning, timing and visibility, and indirect correspondences fitting with the threatening aspect of the mythical figure as described in this poem of the Edda, as elsewhere. Importantly, two other sources give indications: In *Lokasenna* 41 (Larrington trans.), Freyr says: 'A wolf I see lying before a river mouth, until the gods are torn asunder.' This river referencing could relate to the constellation The River from stanza 36, which begins at the foot of Orion, the star Rigel. Snorri relates (*Gylf*. Faulkes 1987, 28–29) Fenrir is bound at his legs. The ephemeral bind is shown by how the bond was made: by dwarfs using the sound of the cat's footfall and the woman's beard, the mountain's roots and the bear's sinews and the fish's breath and bird's spittle. The story goes that Fenrir could not break the bind. And he has not.

Snorri relates further how Fenrir 'howls horribly and saliva runs from its mouth. This forms the river called Hope. There it will lie until Ragnarok.' Ragnarok will be suggested below to be the end of the year, also the time when the constellation Fenrir/Orion goes under in the west.

The wolf Fenrir has his jaws propped open, according to Snorri, with a sword. Orion as constellation is known to be holding a sword. Referencing is not found in the central theme, but in the details, and when the details come from Snorri, one should have been forewarned, as he does have, but largely ignored, direct references to Greek mythology in these same works.

41: Present before dawn, Fenrir effects a reddening (red sky at dawn...) along the horizon east to south, of the aspect of the sky of the gods home.

Again within inversion, the reference to the gods' summer is Iceland's winter, and fraught with storms.

42: From the eastern aspect, near/on the Milky Way of st. 40, this verse is to the opposite, to the west, and constellation Lyre/Lyra, Eggther and his harp. Fialar is somewhat above, and would be constellation Cygnus/The Swan. The Greeks knew it as well simply as Ornis, Bird.

43: There is no bird constellation by Odin's Hall/square of Pegasus, but Gollinkambi/Golden-comb could be in the tree, as a golden star. To the opposite side of the sky, but not yet visible, is the hall of Hel. It is below the earth/Milky Way; and in this verse also below in the sense of our earth, below the horizon. In opposition metaphorically to the happy place of the gods' hall, the square of Horse, this evil place is logically in opposition spatially. There is also gender opposition of male : female :: good : bad. The constellations below the Milky Way will be accounted for in the following stanzas excepting Virgo.

46 The sons of Mim are at play and fate catches fire
at the ancient Giallar-horn;
Heimdall blows loudly, his horn is in the air.
Odin speaks with Mim's head.

47 Yggdrasil shudders, the tree standing upright,
the ancient tree groans and the giant is loose;
all are terrified on the roads to hell,
before Surt's kin swallows it up.

49 Garm bays loudly before Gnipa-cave,
the rope will break and the ravener run free,
much wisdom she knows, I see further ahead
to the terrible doom of the victorious gods.

Hel is the female personification of the underworld and daughter of the giant Loki. Virgo is her Hall through indirect classical associations. The constellation is not visible at this time, but as the daughter of Loki the constellation does follow another form of Loki, and his ship of the dead (st. 51). Although Virgo is often connected to the goddess of the harvest, Demeter, Room (1988, 163) notes, there are also tales linking the constellation Virgo with Persephone, in the underworld for eight or six months of the year. The bird constellation Corvus/The Raven is next to Virgo, as now drawn, and could be that referred to as in/near Hel's hall.

44: This is the first time Garm is mentioned. Garm is designated as the 'best of dogs' (Grimmismal st. 44).

The constellation Greater Dog/Canis Major comes up in the southwest, facing off against Orion/Wolf still on his Eridanus River fetter. Garm is at the edge of the Milky Way. This is one of the best indications for the bordering function as then perceived of tri-partition of the night sky. Larrington has translated 'Gnipahellir' as a cave, but De Vries sees the meaning as an opening between steep cliffs. For the position of Greater Dog, on the Milky Way, both translations are apt. Constellation Garm guards the entrance to the underworld, the other sphere of the heavens, where Hel has been placed, to the other side of the Milky Way/Midgard. The Greater Dog constellation was in any case known to the inhabitants of Schagen Mug: I & III, as a large figure set out guarding the settlement in the form of pits and burials of very large dogs (Chap. 4 & 6). Sirius has come up in the southeast.

Otten's translation is that the 'Wolf's fetters have burst' instead of 'will burst'. Either way, Fenrir the Wolf/Orion, being higher in the sky at the time before dawn is no longer tied to the eastern horizon. Sirius will have risen in September.

The figures of the next verses are all present now along the east-northeast horizon.

50 Hrym drives from the east, he has his shield before
him,
the great serpent writhes in giant rage;
the serpent churns the waves, the eagle shrieks in
anticipation,
pale-beaked he tears the corpse, Naglfar breaks loose.

51 A ship journeys from the east, Muspell's people are
coming
over the waves, and Loki steers.
There are the monstrous brood with all the raveners,
The brother of Byleist is in company with them.

48 What of the Æsir? What of the elves?
All Giantland groans. The Æsir are in council.
The dwarfs howl before their rocky doors,
the princes of the mountain wall—do you understand
yet, or what more?

52 Surt comes from the south with the harm of branches,
the sun of the slaughter-gods glances from his sword;
the rocky cliffs crack open and the troll-women are
abroad,
men tread the road to hell and the sky splits apart.

53 Then the second grief of Frigg comes about
when Odin advances to fight against the wolf,
and the bright slayer of Beli against Surt;
then the beloved of Frigg must fall.

54 Then the great son of War-father,
Vidar, advances against the Beast of Slaughter;
with his hand he stabs his sword to the heart
of Loki's kinsman: then his father is avenged.

46 – 47: This is where things start going wrong; and, having now positioned the ‘world of the gods: underworld’, it becomes obvious why this is. The world inhabited by the gods is that half of the night sky with constellation Horse, that half becoming increasingly more dominant since March before sunrise. By July, the sky is balanced, the border of the Milky Way about east-west: the gods’ world to the south, the underworld to the north. With the rise of the Sirius, as the brightest star in the sky, in September, the dog days begin. In more southerly climates, this point is normally understood as the hot and sultry period on real earth. Here it is the point when literally all hell breaks loose, or the flood gates open as the underworld also has the ship of the dead.

Heimdall’s Horn could be the Little Dipper the constellation including the pole star, always high. (In Spain, the constellation is a horn: Hall 1989, 181). The Giant is generally taken to be Loki, who bound is now shaking himself free. Identified as possibly being a star in, or as the constellation Perseus, this indirectly achieved positioning is supported. It is also overhead at the time before dawn. *Lokasenna* supplies the information that he is causing an earthquake by shaking himself loose. Positioned on Earth/Midgard/Milky Way, it shakes and also shakes the World Tree/Horse rooted in it.

49: Garm is still howling as Greater Dog

50: Hrym is a giant, coming from the east, and the bright star Regulus has come up in the northeast, at the front of constellation Leo/Lion. At the same time, the world serpent’s head has come up in the form of the head of Hydra/Watersnake, on the east. The eagle shrieking could be Aquila/The Eagle, which has gone down in the west somewhat before. Naglfar, breaks loose, which would be the ship of the dead Leo/Lion breaking, sailing, away from the horizon.

51: Bellows considers that Hrym is at the helm of the ship of the dead (and as Regulus, this is apt). The ship (as known from other texts) is made from the fingernails of dead men, another star metaphor. Loki is at the stern, steering, which could be the star Denobola, a giant star, the tail of constellation Leo. The brother of Byleist is also Loki, and all are travelling from the east to the west, the same as the path of the roving wolf Fenrir/Orion. Ships are to be seen on gravestones (fig. 70), and the relative positioning is given of the above textual, as interpreted by the Horse constellation, the Midgard/Milky Way band, and the ocean/underworld.

52: Surt is a fire-demon (DeVries, note of vs 45). Nothing clear is happening in the southern sky, except it is the place the Milky Way goes into the horizon. The meteorological is given by the comparison to sun, possibly within inversion, as a reference to the moon.

The troll-women are unclear. But, the sky is indeed cloven in two, divided by the Milky Way, equally into the regions of the underworld and that of the gods, although the head of Pegasus, and part of the crown of the tree are now disappearing.

53: Odin loses against the wolf, Fenrir/Orion. The ‘bright slayer’ refers to Freyr, seeking out Surt.

54: ‘Then ...advances’ would be another rise: the giant star Acturus advances. Generally agreed is that Vidar kills the Wolf (Loki’s kinsman) in this verse.

Vidar is ‘the silent god, famed chiefly for his great shield, and his strength’ (Bellows 1936, 21). Perhaps the great star Acturus is his shield. Of the constellation Boötes, Arcturus has various translations: herdsman, ox-driver or cowherd (Room 1988, 65–66). The more prosaic activities given by the latter designations for this October month would be bringing cattle down from summer pastures; and, in the sky driving the constellation ‘Taurus’ towards the slaughter month of November. However, the name ‘Boötes’ through the Greek word ‘Boetes’ and the Roman names for the constellation as ‘Vociferator’ or ‘Clamator’ have also been interpreted as having to do with clamorous (Room 1988, 65–66). It is again Snorri who supplies the information taken seriously: he is the silent god (*Skalds*: Faulkes 1987, 76, 82). This might again be another indication of Snorri’s word-play, as inversion of a Greek/Latin theme: from clamorous to silent. The Arabic name for the star Arcturus translates as ‘the lofty lance-bearer’.

Here Vidar uses a sword against Fenrir the Wolf/Orion which as constellation has reached its highest in the south, and is across from Vidar/Acturus. Fenrir/Orion will start sinking—dying—towards the west in the coming months.

- 55 In the air gapes the Earth-girdler,
the terrible jaws of the serpent yawn above;
Odin's son must meet the serpent;
(the kin of Vidar is the death of the wolf).
- 56 Then the glorious son of Earth,
Odin's son, advances to fight against the serpent,
in his wrath the defender of earth strikes,
all men must leave their homesteads;
nine steps Fiorgyn's child takes,
with difficulty, from the serpent of whom scorn is never
spoken.
- 57 The sun turns black, earth sinks into the sea,
the bright stars vanish from the sky;
steam rises up in the conflagration,
a high flame plays against heaven itself.
- 58 Garm bays loudly before Gnipa-cave,
the rope will break and the ravener run free,
much wisdom she knows, I see further ahead
to the terrible doom of the victory-gods.
- 59 She sees, coming up a second time,
Earth from the ocean, eternally green;
the waterfall plunges, an eagle soars over it,
hunting fish on the mountain.
- 60 The Æsir meet on Idavoll
and they converse about the mighty Earth-girdler,
and they remember there the great events
and the ancient runes of the Mighty One.
- 61 There afterwards will be found in the grass
the wonderful golden chequers,
those which they possessed in the ancient times.
- 62 Without sowing the fields will grow,
all ills will be healed, Baldr will come back;
Hod and Baldr, the gods of slaughter, will live happily
together
in the sage's palaces—do you understand yet, or what
more?
- 63 Then Hœnir will choose wooden slips for prophecy,
and the sons of two brothers will inhabit, widely,
the windy world—do you understand yet, or what more?
- 64 A hall she sees standing, fairer than the sun,
thatched with gold, at Gimle;
there the noble lords will live
and spend their days in pleasure.
- 65 Then the powerful, mighty one, he who rules over
everything,
will come from above, to the judgement-place of the
gods.
- 66 There comes the dark dragon flying,
the shining serpent, up from Dark-of-moon Hills;
Nidhogg flies over the plain, in his wings
he carries corpses; now she must sink down.
- 55: The earth-girdler is Iormungand, the world serpent that has by now (early November) reached its highest position in the southern sky. He will be met by Thor and is, as literally stated, gaping in the air, as Hydra/Water Snake.
- 56: The rise is clear, as Odin's son advances, generally agreed to be Thor. The constellation Hercules has risen fully in the northeast. This constellation is one of the referencing points provided by the settlement of Schagen Muggenburg-1, the figure holding a hammer in his right pit-hand. Thor/Hercules in this version is positioned across from the World Serpent/Hydra—about nine of his steps, taking the distance between his stellar feet (c 16°) as a step, where he has fallen back after fighting the serpent. Both De Vries and Bellows interpret that Thor has been slain.
- Bellows, Larrington and De Vries use men and people who leave their homes/homesteads. Otten's translation has the 'heroes' leaving their birthplace. If the sense were that of heroes, those having gained a place in Asgard, the interpretation would be that the aspect of the sky of Heaven/Asgard has now completely disappeared, as the Underworld/Utgard takes over the entire night sky. The heroes are in that sense leaving. Alternatively, Midgard, the earth peopled, as the Milky Way, is close to the horizon, and is perhaps not visible.
- 57: That described could be both the situation on our earth, describing a December situation, and/or the situation at 'dawn': the sun (=moon) and stars vanish, also in December. The earth/Midgard/Milky Way sky earth is along the western horizon—sinking literally into an Icelandic/Norwegian horizon of ocean. However, the sun only rises about 2° at its highest and disappears within about four hours. The 'high flame' could be describing this light. At this level of interpretation, the end of the world is here the end of the night, and the end of the year.
- 58: The constellation Garm/Greater Dog and Fenrir/Orion, the wolf, have gone down in the southwest and ESE.
- 59: Verses 59–65 give an encapsulated version of the next five or six months. Milky Way/Midgard, the earth, rises again (along the north to EES). It is eternally green, again the immortal aspect of the sky feature. The first constellation to come up in the east is Eagle/Aquila, and it is situated on Midgard/earth. It catches fish in the form of the nearby constellation Delphinus/Dolphin, also in the east, and fish-like (see fig. 69).
- 60: With the coming months of the new year, at dawn, the constellation Horse/World Tree wheels into view. If gods are planets, they can now move along this aspect of the sky. The landscape of Asgard is again present
- 61: The golden playing pieces refer to the immortality of stars.

62: The fields can 'grow' without sowing, as the plain is also immortal and increasingly coming into view.

Baldr and Hod are together. If this is early January, the sun, suggested to be Baldr, is coming up at the position of the few stars visible of The Archer/Sagittarius, which was identified with Hod. In the one sense of the verse, they are together. Baldr was shot down by Hod (st. 32), suggested as the event of the Summer Solstice, the shortest of the gods' days, and although one cannot see stars during this time, the progression would be known, and where constellations and sun came up along the horizon.

When stars were visible again, as nights again begin—around the end of August—the rising of Baldr/sun takes place at the positions within the Utgard/Underworld aspect.

He comes up at the position of the Ship of the Dead/Leo in early September and in the region of Hel's Hall/Virgo, in October. He rises at the position of Midgard/Milky Way, after the start of the new year. Now, in this verse, Baldr/sun/son of Odin rises—is pulled into position, is preceded by the landscape of Asgard, before dawn. That is, heroes and gods are together again.

63: Divination is again mentioned. Who the two sons would be has not yet been understood.

64: The square of Pegasus is now completely in view as the hall of Gimle, which is generally taken as Valhall (Odin's Hall) due to Snorri's indications (Gylf; Faulkes 1987, 9, 20, 56). Again the golden aspect of immortality is mentioned for the shingles as stars.

Considering the square of Pegasus as Valhall, what Snorri relates becomes clear. Again, inversion is used. The square itself, and what makes it so definable and easily recognized in the sky is that it contains only a few, very dim stars. As suggested within interpreting through inversion, our night is the day; thus, during our night there is no one at home, the square is empty, the occupants are out and about doing what heroes do, as Snorri relates (Gylf; Faulkes 1987, 34), after perplexing the reader on the unreal, 'But to tell the truth [Valhall] is not more crowded when it is occupied than when it is being entered':

'Each day after they have got dressed they put on war-gear and go out into the courtyard and fight each other and they fall upon the other. This is their sport. And when dinner-

time approaches they ride back to Valhall and sit down to drink...'. We cannot not see them inbibing, after crowding into the square, as their dinner-time is our dawning, their activities in Odin's Hall as Odin's Horse, is blacked out by light.

65: He who rules over everything would be Odin, and the judgement place would be in Asgard, perhaps that part of the path of planets, along the back of constellation Horse.

66: The translations of the last stanza can be taken as a direct reference to stars, as at one and the same time the dragon is dark, but shining; or, as translated by Bellows, as 'bright', and sparkling/glittering by De Vries and Otten. Described is the Dragon/Draco constellation as Nidhogg. Situated within the Underworld, near to the edge of Midgard/Milky Way, it carries corpses. The constellation Dragon/Nidhogg could be directly overhead. It is in any case always visible, and always gnawing at the roots of the World Tree/Odin's Horse, here under the earth of Midgard. The Seeress, taken as the moon, now sinks away—goes under and/or becomes invisible through the light of dawn.

All is right with the world, certainly for some men, the fallen heroes. The lesser in stature—dwarfs—still, and forever, caught between heaven and hel in their small Midgard stars. The gods' world is that spanning the sky from overhead to the eastern horizon of the sky; the Milky Way/Earth is running north-south; the Fenriswolf, World Snake, Ship of the Dead and Hall of Hel have drowned in the west through dying into the horizon leading to a few months of mythical respite until they reappear in the east.

In real life, most of the major stars visible in Iceland (c. 1000 AD) have been accounted for. Bundled into The World Tree are Water Carrier (although Mim's head might be here), Southern Fish, Ram, and Whale. Lengthening the World Serpent has been done in surrounding the ocean of the earth/Midgard/Milky Way by including some stars of Libra and Scorpion. Heidrun, the goat, is placed by Snorri (Gylf. 39) in the top of the tree and can be identified with Capricorn/The Goat (fig. 68).