

**The Drums
of the
Southern TRB**

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This thesis has been composed by me, and is my own research. The work has not been submitted for any other degree.

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Abstract

This dissertation examines the clay drums found in the Neolithic contexts of the southern *Trichterrandbecher* culture (TRB).

Chapter 1 introduces the subject and provides basic definitions

Chapter 2 reviews the archaeological literature of the southern TRB, including typological, stratigraphic and dating concerns, followed by a survey of the settlement, economic and burial evidence.

Chapter 3 reviews the classifications of the drums and proposes a revised version, based on the vessel form, the decoration and the archaeological context.

In Chapter 4 we review the comparative analysis of the decoration and vessel form with a view to understanding their origins.

Chapter 5 summarises the anthropological and archaeological literature on the subject of shamanism, and shamanistic practices, reviewing the concept of altered states of consciousness and providing definitions of the terms “trance”, “ecstasy”, “shamanism” and “possession”. Then we discuss the neurological evidence of shamanism and brain structure, and explain the technical terminology. The chapter then proceeds to examine the methods of inducing changes in consciousness, specifically the use of auditory driving and imagery cultivation, finishing with a look at the evidence of European shamanisms.

Chapter 6 examines the validity of applying a shamanistic approach using the comparison with entoptic imagery.

Chapter 7 summarises the investigation, and after sifting the evidence draws conclusions on the interpretation of the Neolithic drums, the plausibility of shamanistic approaches and the nature of music in human culture.

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CHAPTER 1
**Towards an Understanding
of
Music and Culture**

Music creates order out of chaos; for rhythm imposes unanimity
upon the divergent; melody imposes continuity upon the disjointed,
And harmony imposes compatibility upon the incongruous.
Yehudi Menuhin 1972

the developing capacity to measure space and time which
is one of the fundamental roots of human culture, and religion is that
complex of cognitive and ritual forms which integrate this into
consciousness, and validate ('sacralize') the common perception.
Nicolas Wyatt 2001

INTRODUCTION

An engaging opening quotation may set the scene for an academic work with a similar gusto as the popular autobiography. The above quotations emphasize the organizing nature of music, and the nature of this organizing principle is to lay a cultural model on temporal perception.

From an autobiographical viewpoint, today I have been listening to the works of Monsieur de Sainte Colombe le Fils' *Pièces de Viole*, which I describe as Bach's Cello suites with more grit. While *Grit* was the inspirational album by the late Martyn Bennett, a piece of music-archaeology in itself, reinterpreting and remixing old recordings from the School of Scottish Studies, Edinburgh.

PRELIMINARY COMMENTS

This dissertation was originally intended to be a survey of European prehistoric musical instruments with roots in my interest in Neolithic archaeology and my musical background, playing various different types of instrument; stringed, wind and percussion. However, initial research inevitably suggested that a subject with such wide parameters would lead to a fairly superficial treatment of the instruments. Indeed each of the instrument types from bone whistles (Megaw 1960, 6; 1968, 335; Rimmer 1981, 233ff.), idiophones and horns (Lund 1981, 246 ff.: Holmes and Coles 1981, 280 ff.),

conch shell trumpets (Montagu 1981, 273ff.: Skeates 1991, 17ff.) and even Palaeolithic lithophones (Dams 1984 ff.: 1985, 31 ff.) deserves their own examination on a localized scale, let alone a European wide or global survey. As Megaw (1981, 231) observed, it is a “sign of the wealth of palaeo-organological material waiting not only for identification but practical and replicative study that no single monograph is currently available which adequately surveys the total and actual extant scope of the archaeology of musical instruments.” The case to be presented examines the clay drums of the southern *Trichterbecherkultur* (TRB), literally the Funnel-necked Beaker culture (Midgley 1992, 31), with reference to the new understanding of the cultural background. The last in-depth analysis of the drums was undertaken by Behrens (1980), and before that Mildenerger (1953), Fischer (1951) and Seewald (1934). Since then many more drums have been unearthed. Additionally a far more encompassing synthesis of the southern TRB (Müller 2001), combined with new radiocarbon dates and spatial analysis, has meant that our understanding of this cultural area has now begun to make some sense. For the first time the analysis of the drums also takes place in English, which will hopefully allow the subject to be viewed by a far larger audience. For instance Whittle’s (1996) *Europe in the Neolithic* contains no mention of drums. The drums will be examined with the purpose of evaluating the commonly held link between the drum and the shaman, and, more generally, of examining some aspects of the relationship of music and human culture.

Area of Study: Cultural, Geographical and Chronological

We shall examine the late Neolithic specifically of the southern TRB (Fig. 1.1). This should be emphasized since in Scandinavia the TRB is the Early Neolithic. However, in our area of study the TRB exists as the result of a long sequence of development passing through the archaeological assemblages which have been distinguished by the archaeologists with the cultural names Linear Bandkeramik (LBK), Stich-Bandkeramik (SBK), Rössen, Gatersleben and Baalberge. Thus in terms of the chronological phases of the Neolithic we are most certainly within a late phase, although it is contemporary with the Early Neolithic of Scandinavia.

The southern TRB sites are characterized by large and small settlements, the larger central settlements are often described as fortified being surrounded by palisades and ditches. Additional earthworks are clearly of a different nature, being similar to the

Danubian Rondells and are interpreted as having a ritual function. Within the settlements there are open communal area surrounded by houses and there is evidence of specific areas used in flint manufacture, and grain storage. Some sites have evidence of copper working.

The burial record of the southern TRB is distinguished by the presence of no single defining characteristic. There are Megalithic tombs, *Mauerkammern* (the classic walled chambers consisting of a low rectangular dry stone foundation with timber super structure, and numerous versions of this design) and single burials. The Megaliths and *Mauerkammern* may contain collective burials of three to four inhumations or up to several hundred individuals. Occasionally sites that would appear to be of this collective style of construction may only contain one burial.

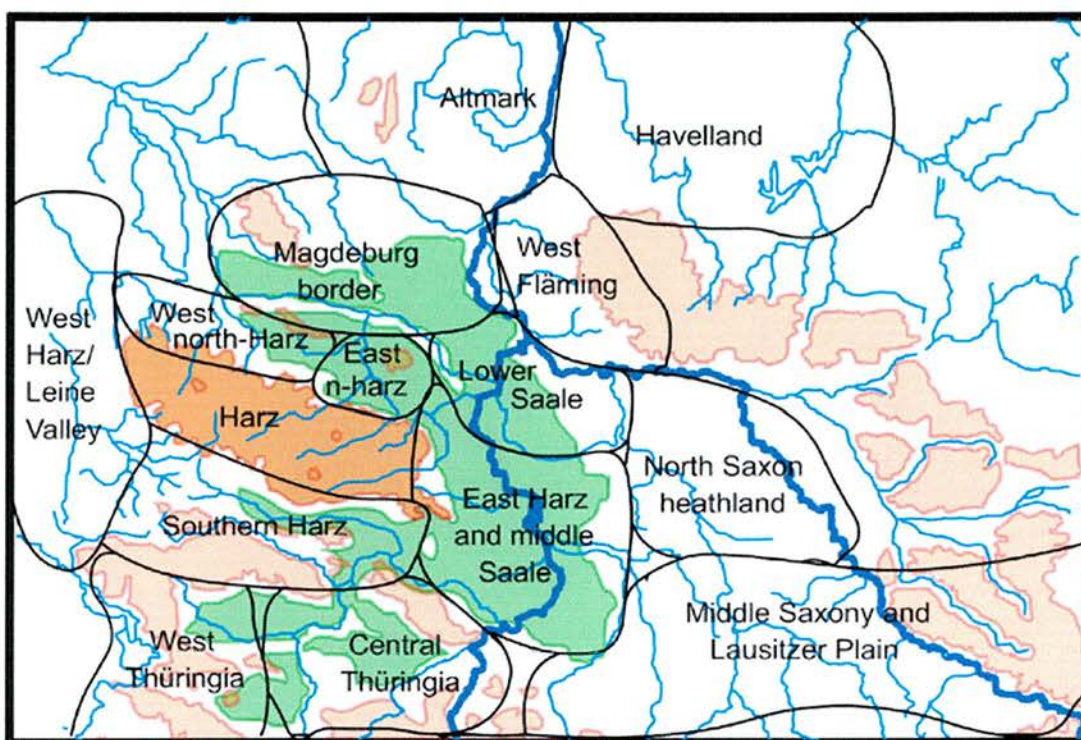


Fig 1.1. Local geographical regions discussed in the text.

Contrasting with these grave types is the form known as flat graves, which are earth-cut graves containing one or sometimes two inhumations. These may occur in groups, sometimes of such a number as to be equated with the *Mauerkammern* in that they both would seem to be representative of a complete community. This suggests that within the southern TRB the localized social groups chose different ways to dispose of the dead. Additionally, within the realm of single burials and flat grave

cemeteries there is a sign of hierarchy in the amount of time required for construction. The final burial forms are those that are associated with settlements, some of which have grave goods and some of which are laid on layers of settlement sherds.

The Drum: Defining the Instrument

Drums are classified as membranophones, which may be defined as musical instruments that produce a sound through the vibration of a membrane stretched over the body of the instrument (Jenkins 1983, 83; Rault 2000, 223). The primary function of the drum is to provide rhythm for music, dance and ceremonies (Jenkins 1983, 83).

The drums of the southern TRB have no bases and are essentially hollow cylinders of clay (see catalogue figs 8.4, 8.10, 8.12, 8.24). Only one example of a clay vessel which has been interpreted as a drum, by Behrens (1963, 24ff.), has a base. However, this is a hypothetical reconstruction based on the similarity of the instrument with storage vessels and no base of the vessel was found; this is the instrument from Egelu, (catalogue number 56, catalogue fig 8.11). Although we are examining these hollow vessels, this is not to say that vessels with bases could not be used as drums.

We shall not discuss here the countless definitions of rhythm. Sachs notes that even the Greeks who coined the term gave it “not only inconsistent, but outright contradictory meanings” (Sachs 1953, 12). However, we may state that the

“Greek term *rhythmos* leads back to a verb for ‘flowing’—*rheo*, *rhein*, an early relative of the German *Rhein* or *Rhine* and even of the English word ‘river’. Thus Fowler could tersely state: ‘Rhythm is flow.’...[it is] a fluency due to some active, organizing principle, to ever renewed impulses whose very orderliness at once gives life and ease to the flow.” (Sachs 1953, 13).

On the Concept of Classification

Classification shall be discussed at greater length in chapter 3, and a few comments here will suffice for the present. Jenkins (1983, 83) states there are a

“great many possible ways of classifying the drums of the world: shape, material, function, number of membranes, method of fastening the skins, method of tuning, method of setting the membranes in motion, regional types, whether played singly or in ensembles – all are useful categories in one context or another.”

Kjellström (1991, 133) examines the Saame drums with reference to images and their positions on the drum. Classification is also an important part of archaeology, organizing artefacts based on their visible differences, and this is one of the purposes of this dissertation. Here it shall be undertaken with reference to not just the visible form but also decoration and context.

THE PLAN

The Background Discussion

CHAPTERS 2-4

Chapters 2-4 of this dissertation are concerned with presenting as clear a synthesis as possible of the southern TRB. Chapter 2 provides a history of research and summarizes the most recent general analysis providing a lucid view of ceramic typology, and settlement, economic and burial evidence. Chapter 3 similarly reviews the research, specifically relating to the clay drums, and presents a new classification scheme, which nonetheless stands “on the shoulders of giants”. It also examines parallel distribution patterns in other areas of material culture. Chapter 4 reviews the comparative literature on the decoration of the drums and also the discussion for the origin of the vessel shape itself. This material is presented with tables and maps to offer as clear a model of the archaeology as possible.

Shamanistic Approaches

CHAPTERS 5 AND 6

The largest section of this dissertation is the chapter presenting the shamanistic model. In summary we shall review the anthropological evidence for universals within the field, and present a summary of the key components of the shamanistic world view. We then examine the Western scientific explanation for these universals, and provide concise definitions for the commonly disputed terminology, e.g. altered state of consciousness (ASC), trance, ecstasy, shamanism, possession and finally shamanistic state of consciousness (SSC). This done, we examine the technical differences within these states of mind, and examine the neural model and how it relates to the brain. From here we progress to the neural location of the self and summarize the evidence for the lateralization of language and music functions. We then present a view of how this

neural processing is experienced in culture before presenting the shamanistic model, and the methods of induction and the beneficial effects. We finish chapter 5 with a search for evidence of European shamanistic practices. Having presented the evidence of the shamanistic model, in chapter 6, we discuss the applicability of the neuropsychological model for archaeological interpretation.

Conclusions

CHAPTER 7

The concluding chapter summarizes the case and ponders the plausibility of European shamanism in the southern TRB. Furthermore, we discuss evolutionary ideas for the value of music and its use as a tool in the manipulation of society, individuals and culture.

Catalogue

APPENDIX 1

The catalogue presents a short description of each drum along with a summary of the contextual information; each citation also includes an illustration of the drum, where possible.

Digital Catalogue

CD-ROM

In addition to the paper catalogue, a CD-Rom, created in Macromedia's Flash program, accompanies this dissertation. This is a fully interactive interface which includes Müller's (2001) typology and cultural classification scheme and also the distribution maps for the late southern TRB. Furthermore, it incorporates a rollover image of each drum where possible, it presents the classification of the drums and it is possible to view the drum sites by context. Finally the CD-Rom presents the parallel distribution patterns presented at the end of chapter 3. Many PCs today include a Flash Player, which is included on the CD, alternatively opening the file with Internet Explorer 5 or above will work.

EVOLUTIONARY VIEW ON MUSIC AND LANGUAGE

As the submission of this dissertation finally approached it became apparent that there has been a recent upsurge of interest in the role of music in the evolution of consciousness, an overview in Dunbar's (2004) *The Human Story* and a more in-depth analysis in Mithen's (2005) *The Singing Neanderthals*. Both authors have examined the relationship between music and language, and as such deserve a brief examination here, since although we shall not examine this topic in depth, some of their observations are pertinent for our later analysis.

Previously, Dunbar proposed a link between grooming and the evolution of language which runs as follows. Physical grooming limits the size of the social group since there are only so many individuals one may groom; however, language permits grooming at a distance thus allowing the survival of a larger social group (Dunbar 1995 cited in Dunbar 2005, 114). In monkeys grooming causes the release of endorphins, the bodies natural opiates, and monkeys which are given artificial opiates lose interest in grooming, until they are given opiate blockers which cause them to seek out grooming again (*idem*, 126). In humans the evidence is indirect, that is through observation concerning the reduction of pain due to the amount of laughter, which also releases endorphins (*idem*, 131). The connection with music is the well-known emotional effect it has upon us. The main responses to music are primarily within the right hemisphere and specifically in the more ancient limbic system. Given the left-hemispheric dominance of language Dunbar, (*idem*, 132) suggests separate evolutionary histories for language and music. He proposes that group singing causes the release of endorphins, and he provides circumstantial evidence through the use of endorphin blockers when observing the emotional responses to music (*idem*, 133). Thus the feel-good response to grooming is mimicked in the natural response to music, even without words. Here Dunbar cites religious music where the intensity of the experience induces "trance", or traditional music where it is extremely difficult to sit still (*idem*, 134-5). The electro-myograph records muscle "action potentials", and demonstrates increased electrical activity in the leg muscles when listening to music (Storr 1992, 25). Dunbar questions whether dancing, singing and rhythmic clapping were a supplement to physical grooming.

Levman (1992, 147) discusses the theoretical stances of those interested in the origin of music and language. There are three positions:

- separate development;
- the development of music from language, and;
- the development, of language from music, or, of both from a common proto-faculty.

Mithen, who opts for a common origin, discusses these models; to these he brings the ideas of Stephen Brown, who proposes a “musilanguage”, and Alison Wray’s “holistic protolanguage”. Both notions are reminiscent of Rousseau’s first language as song (Mithen 2005, 26)(see also the holistic utterances of vervet monkeys: Bickerton cited in Levman 1992, 157). Mithen (2005, 27, 252) chooses to call this proto-language “HmMMMM” (Holistic, Multi-modal, manipulative and musical): (see Lehrer on the nature of “HmMMMM” and communal bonding).

Levman (1992, 154) cites Lieberman, who observes that the human ear is capable of decoding between 15 and 20 phonemes every second, by the tracking of formal patterns, which may be understood as combinations of part tones within the dominant frequency bands. These combinations are decoded as distinct vowel sounds. While this does not imply that meaning is necessarily related to specific pitch, Lieberman interprets it as evidence which points to a period in our evolution when this was the case. We would never have evolved the decoding ability if this had not been the case. Pitch, which may be described as “melody in time” is the greatest differential principle in music (Sloboda 1985, 32: Levman 2002, 154); it is also the essence of the phoneme which is the contrastive segmental unit of speech.

Returning to Dunbar’s thesis we might pose the question whether in later evolutionary time periods social crisis might well result in a return to practices which again release endorphins and bring calm to an otherwise stressful existence. Before we consider such an idea we shall first examine the archaeological record and establish a model of the cultural dynamics of the late Neolithic in central Germany. Then we will examine the ceramic drums and provide a classification scheme which takes heed not just of their physical appearance but also of their context. Only when we have achieved this shall we approach the evidence which may allow us to make a link between music and consciousness.

A final, somewhat whimsical digression, before we enter the archaeology, may be of interest. That is the ability of the non-musical to imitate. A few years ago I heard of a band, I use the term advisedly, who perform under the name of “The Thai Elephant Orchestra”. It seems that yes, they are elephants, and yes, they play percussion, both improvised material and learned, a Thai nursery rhyme “Chang Chang Chang” (Soldier 2002, 58), but apparently also Beethoven’s pastoral symphony (www.Mulatta.org 2005). They do however not begin playing spontaneously but at the instigation of their caretaker or when another elephant is already playing. This does not really have any bearing on the development of music in human evolution but does beg the question, what is the definition of music? Soldier (2002, 58) suggests this is imitation rather than the learning of music (cf. Dunbar 2005, 154-59; Donald 1991, 168).

CHAPTER 2

An Interpretation of the Late Neolithic of the Southern TRB

Since music is the only language with the contradictory attributes of being at once intelligible and untranslatable, the musical creator is a being comparable to the gods, and music itself the supreme mystery of the science of man.

Claude Lévi-Strauss

History does not come neatly packaged into distinct periods, but by imposing such a structure upon it, we can sometimes gain clarity without doing too much violence to the facts.

Chomsky 1992

For the archaeologist cultures represent societies, as their distinctive characters are due entirely to social traditions

Childe 1951

A BRIEF HISTORY OF RESEARCH

The archaeologist is faced with several problems when attempting to pin down a definition of the term “culture”. The words “culture”, “agriculture”, “cult” and “cultivate” all stem from the Latin root “*colo*”, meaning “to live” and also “to worship”. Therefore the term may be understood to mean a group of people who dwell together and share a similar view of existence. But as Childe (1951, 30) observed the “word ‘culture’ has an inconvenient variety of significations.” For the archaeologist, at least, Childe defined the term culture as “an assemblage of associated traits that recur repeatedly. These traits are mostly material objects” (*idem*, 30). From an anthropological point of view he deemed culture to be “everything that men derive from nurture, from human society, rather than from nature or the sub-human environment” (*idem*, 31). However, he added that the “environment to which a society actually adjusts itself is not the material environment that natural science can reconstruct and observe as an external object, but the society’s collective representation of that environment – that is, part of its culture” (Childe 1949, 23). Later he distinguished three divisions within culture, namely economy, sociology and ideology (Childe 1956, 129-131), but did not elaborate on the connections between these divisions.

Comparable partitions of culture were discussed as archaeological theory progressed (cf. Clarke 1978, 103-4), while similarly the anthropological notion of culture

was understood to consist of the related subsystems of economy, polity and legal systems, which integrated the individual within society (Cohen 1994, 118). Yet as anthropology has become more interpretative, the tendency has changed to a notion of aggregation, and Cohen (*idem*, 119) states “aggregation implies *difference* among people rather than similarity”. In light of this it is worth citing the ideas of Alfred Gell, who observes that anthropologists locate or contextualize “behaviour not so much in ‘culture’ (which is an abstraction) as in the dynamics of social interaction, which may be conditioned by ‘culture’ but which is better seen as a real process, or dialectic, unfolding in time” (Gell 1998, 10).

So “material culture” to the archaeologist is the surviving remains of human action and thus cultural tradition and social interaction; we should not expect a rigid format to the archaeological record, but a fluid mosaic of changing patterns, reflecting the changing nature of social relations. “Material culture in the archaeological record consists of a set of conjunctions and repetitions with meaning shifting between different levels and contexts”, so we may view material culture as actively created by and participating in the social world and indeed being knowledgeably employed by individuals (Shanks and Tilley 1987, 117; Whittle 1996, 5; Hodder 1982, 119ff.). Similarly Gell proposes that artefacts, and their decoration are “produced not as a function of the existence of specific ‘art’ institutions, but as a by-product of the mediation of social life and the existence of institutions of a more general-purpose kind” (Gell 1998, 8). Thus “art objects, to figure in an ‘anthropological’ theory of art, have to be considered as ‘persons’ ” (Gell 1998, 9), which put simply is like the Maussian view of objects as extensions of a person.

Consequently, how are we as archaeologists to know whether the criteria we use to define an archaeological culture (cf. Hays 1993, 81ff.), that is a body of material culture, are those which prehistoric people would have chosen to identify themselves by? Obviously to some extent certain characteristics appear useful to archaeologists in helping to define a body of evidence within a study. But that is just the point: it is a model, which enables us to classify and interpret, not a static body of evidence with a beginning and an end. Cultural labels are aids to interpreting the huge chaos of prehistory, and we should not lose sight of the fact that they are labels. They should not be confused with the material they are used to represent and as we shall demonstrate below, the cultural area of the present study is an excellent example of the way that

assigning the static term “culture” to archaeological evidence can prevent us seeing the bigger picture and understanding the surviving evidence, not least because one research project may ignore data, which is deemed to not be within the bounds of the study based on the cultural terminology currently in vogue (see the two subsequent short sections “The Salzmünde Evidence” and “The Walternienburg and Bernburg Evidence”, which illustrate this point).

The evidence to be considered here is limited to the distribution of the southern TRB or *Trichterbecherkultur* (Funnel-necked Beaker culture), within the basin of the confluence of the Saale and the middle Elbe. This “culture” represents the first farmers of the northern European plain, although the area of the middle Elbe and Saale confluence is strictly outside the plain. Furthermore, this study is not concerned with the TRB as a whole, but will examine the southern TRB during the period of the late Early- and the subsequent early Late Neolithic. In traditional cultural terms this can be identified as the population groups represented by pottery defined by archaeologists as Salzmünde, Walternienburg and Bernburg ceramics. This covers approximately the period from 3500-2700 BC cal.

The reason for these limitations is due to the subject matter of this study, which are Neolithic clay drums. These artefacts of the TRB, which are interpreted as drums, are largely confined to the “culture” groups named above. As Midgley (1992, 183) stated, the present development of pottery types, and thus the “cultures” themselves, have been beset by numerous problems. Indeed it is only with some long-awaited publications in the last ten years that the picture has become clearer.

One important point that should be made at the outset concerns what we are looking at in terms of associations of material remains. Research in this area has been dogged by descriptions such as groups, phases, and styles; or in some cases as a “pure Bernburg culture” (Behrens 1981, 11). And so it should be noted that this study views all the cultural groups referred to as subdivisions of the Southern TRB, and they shall henceforth be referred to as “styles” or groups interchangeably. Whittle (1996, 116) suggests that personal and local allegiances were more important than regional identity, but that we may regard pottery styles as similar to a regional style of dress.

Gell discusses style from an anthropological stance, but his ideas are pertinent to the understanding of the archaeological record, where equally “the ‘units’ of style are not (usually) individual artists, or schools of artists, or movements, but ‘cultures’ or

‘societies’” where “the units of style are conventional ethnographic isolates” (Gell 1998, 155). Thus the “common stylistic attributes shared by artefacts are associated, via a basic scheme transfer, with shared ‘cultural values’ in a community” (Gell 1998, 156). He states that, he believes, the intuitive link “between the concept of style (as a configuration of stylistic attributes) and the concept of culture (as a configuration of intersubjective understandings) is well founded”. But how are we able to make this link between the cultural parameters and the formal attributes of the art. We need to link the artistic form with the structures of culture (Gell 1998, 160), meaning we need to identify the manner in which the relationships between the art motifs may resemble the structural relationships within the society.

In his discussion of art Gell identifies that which he calls the psychological-technology of enchantment: this is the manner in which patterns applied to artefacts cause people to have a psychological attachment to the object. “This psychological technology encourages and sustains the motivations necessitated by social life. The world is filled with decorated objects because decoration is often essential to the psychological functionality they possess, notably their practical, or social functionality... decoration is intrinsically functional, or else its presence would be inexplicable” (1998, 74). For Gell, decoration pulls people into a social relationship with objects, which already have distinct meanings for the society; this decoration becomes associated with this meaning. For us this may be seen as one way in which material objects are able to affect the belief system of a community. If ritual is intended to perpetuate the social and cosmic order then the organization of decoration on ritual objects must to some degree be a representation of the cultural view of cosmic order (see discussion on ritual overleaf). To understand past societies we need to interpret this patterning.

We may take this to mean once we have established an understanding of the patterning of the cultural evidence from settlement, burial and artefact forms and distributions which reflect social relations, we may subsequently attempt to recognize patterns in these relations which may be reflected in the style of drum form and decoration.

The idea of style is pertinent to our research on drums in light of the important part that decoration plays on these instruments. The TRB drums have distinct decorative motifs, largely restricted to these instruments, although having some interesting parallels which we shall examine later, suggesting a close relationship between

the drums, their use and the individual or group to whom they belonged and the contexts in which they were used and deposited.

One “of the basic implications of the word ‘style’” is “that style attributes enable individual artworks to be subsumed into the class of artworks which share these particular attributes” (Gell 1998, 162). Thus a drum of the southern TRB is able to have a particular meaning and symbolism for those people of the southern TRB because it relates to their collective idea of a drum with its distinct decoration. Thus we may distinguish these instruments from say the Polish or Czech examples, which have a different vessel forms and do not share the specifically southern German decoration. At the same time it seems apparent that the ceramic groups which at the time of their inception were deemed “cultures” do not have the coherence or individuality to sustain this nomenclature, and that their reclassification as a “ceramic style” is more appropriate at least to our understanding of their prehistory.

One final matter before we embark is to define the use employed here of the term “ritual”. The term ritual stems from the Latin *ritus*, meaning a ceremony (Smith 1914, 532), while the Latin itself may be understood to relate to the Sanskrit *ritu* which, in addition to referring to the terms rite and ritual, implies “perpetuation of the cosmic order”. Similarly the Sanskrit *rita* means the cosmic order or the moral law of the universe (N. Wyatt pers. comm.). With this in mind, here we understand the word ritual to mean a series of practices, which in the context of society are believed to affect and maintain the cosmic order. In this instance we are examining an artefact type which produces rhythm and which, may be described as creating “order out of chaos” (Menuhin cited in Storr 1992, 33).

The Salzmünde Evidence

The eponymous site of Salzmünde-Schiepzig was excavated in 1921 and in the first analysis of the ceramics, Niklasson combined the finds with the material we now know as the Baalberge group; this conglomeration he named the “Nordic” culture. In 1938, Grimm combined part of this “Nordic culture” and the group of vessels, associated with graves, known as the Opperschöner jugs. This combination of material was named the Salzmünde culture. In 1947, Becker placed the Salzmünde style (Fischer 1951, 103) chronologically between the Baalberge and Walternienburg styles. Then in 1953 Mildener highlighted evidence for a relationship with the late Lengyel and Baden

cultures, while Fischer (1951; 1956) established the basis for our understanding of the Salzmünde burial rites. In an overview, Preuss (1966) suggested an internal division of the Salzmünde style, accepting the finds of the Hutberg at Wallendorf as belonging to the Salzmünde style. Preuss (cited Müller 2001, 96) further noted the absence of any clear stratigraphic relationship between Salzmünde and Walternienburg-Bernburg ceramics.

Lüth (1988 cited in Müller 2001, 97) revived this question with his analysis of the Salzmünde and Walternienburg-Bernburg assemblages, primarily by comparing ceramic types. He identified two contemporary groups, Salzmünde and Walternienburg, the Salzmünde being divisible into three stages. He also assigned numerous Thuringian *Mauerkammern* (wall chamber graves) to the Salzmünde group. The Bernburg group he interpreted as a direct development of the Salzmünde style, while the Walternienburg group was viewed as the precursor of the Elbe-Havel ceramics.

Beran (1993) concentrated on the finds from the sites of Wallendorf Hutberg and Salzmünde-Schiepzig. He assigned the Wallendorf assemblages the status of an independent group, the Hutberg group, placed chronologically between Baalberge and Salzmünde. Beran (1993, 70) divided the Salzmünde group into two phases, the older Zauschwitz phase and a later Mücheln phase, but strangely did not classify the traditional Salzmünde piles of sherds, within burials, as diagnostic of the Salzmünde group, and also assigned vessels to groups based not on style, but on distribution (Beran 1993, 64).

The Walternienburg and Bernburg Evidence

Götze gave the first description of the Bernburg ceramics, in 1892 while the burials at Walternienburg were excavated in 1906, again by Götze, and became the type-site for that cultural group. In 1924 Kupka published a comparative analysis of the Walternienburg and Bernburg evidence, which he named the central German *Ganggrabkeramik*. This was followed one year later by Niklasson's work, which is more widely known. After this the history of research into these two cultural groups evolved in parallel (Tab. 2.1).

Kupka	I	II	III	IV
Niklasson	WI-II	B I	B II	BIII

Tab. 2.1 Comparison of Niklasson's and Kupka's Classification schemes

Niklasson's five-stage arrangement, running consecutively through the angular Walternienburg I to the rounded Bernburg III, was based on the typology of the handled cups. This scheme was criticized for its rigidity but Niklasson himself had considered it quite flexible (Bakker 1979, 28). Fischer (1951) modified this system, dissolving the temporal sequence, since Walternienburg I and II were found together, also with Bernburg I, while Bernburg II and III were also repeatedly found together. Despite this Fischer still stuck with the term the "Walternienburg-Bernburg culture". He differentiated between the broken Walternienburg style and the rounder Bernburg style, which to a large extent temporally overlap each other.

In a further work, "*Die Gräber der Steinzeit im Mittl Elbe Saale Gebiet*", Fischer (1956) dedicated a chapter to the Walternienburg and Bernburg groups. Here he related the Walternienburg group to the Northwest German Tiefstich pottery group, and the megalith and stone chamber graves in the Elbe and Saale basin were allocated to the Walternienburg group. As noted, Niklasson's ceramic typology, based on the handled cup, split the Walternienburg vessels into types I and II; the tripartite vessels assigned to Walternienburg 1 and the bipartite cups to the younger Walternienburg II. Finds of both Walternienburg I and II, in sealed contexts from Walternienburg, suggested that they were contemporary (Behrens 1973), although in the Havel area both forms were found separately (Kirsch 1981).

Behrens (1981, 11) argued for the self-sufficiency of both groups, and Häusler (1981, 75ff.) examined the burial forms and concluded that the stretched burials of the Walternienburg group followed a post-Mesolithic hunter-fisher tradition. The Bernburg burials, characterized by crouched burials lying on the side, followed the standard burial rite in the area since the LBK. Beier's (1984) reanalysis of the graves and funeral rites of the Walternienburg and Bernburg groups again viewed them together, with passing mention of Hausler's research.

More recently, Beier (Schwertiger 1994: Voigt 1994) reviewed the simple earth graves of the Walternienburg, and went further than merely accepting the earlier suggestions of treating the Walternienburg and Bernburg groups as separate entities. Beier's reanalysis of the Walternienburg group essentially created a new cultural group in central Germany. Beier reclassified the Walternienburg group, defining it as the material found in the flat grave cemeteries e.g. Tangermünde. The ceramics traditionally known as Walternienburg I and II, and the contexts in which they were found, the

Grosssteingräbern and the *Mauerkammern*, he assigned to his newly defined late Tiefstich pottery group (table 2.2). Essentially the old Walternienburg group was split into two groups. The first, retaining the name Walternienburg, a post-Mesolithic group of hunters and fishers largely distributed to the east of the Elbe towards the Havel, the second, the late Tiefstich consisting of the old Walternienburg sites to the west of the Elbe and in the lower Saale basin.

Old Tiefstich Pottery	Düsedau	MN Ia
	Haldensleben	MN Ib
Late Tiefstich Pottery	Barleben (Walternienburg I)	MN II
	Schortewitz (Walternienburg II)	MN III/IV

Table 2.2. Beier's reclassification of the Walternienburg Material

These changes recall Fischer, who in 1956 (Bakker 1979, 27) proposed that the Walternienburg-Bernburg group was a regional sub-group of the Altmärk Tiefstich (see also Kirsch 1994, 83ff.). Despite the recognition that the end of the Haldensleben phase of the Altmärk Tiefstich, as far north as the Elbe and Havel confluence, is marked by the appearance of the Walternienburg group, Preuss was not convinced (Midgley 1992, 178) of continuity. Indeed this model is discussed below with reference to dating evidence that Walternienburg I, Beier's Late Tiefstich Barleben phase is in fact contemporary with the Haldensleben phase.

Beier (1984, 8-9) further argued for cultural self-sufficiency of Bernburg and Walternienburg groups, based on the burial customs and from the Bernburg assemblages from the excavations on the Schalkenburg at Quenstedt, and also Langen Burg in the Dölauer Heide.

During the 1980s a Bernburg variation was recognized in Thuringia, characterized by strong Wartberg and Salzmünde influence (Walter 1986 and Walter, Bücke and Schulze 1987; all in Torres-Blanco 1994). At the same time D.W. Müller (1987 cited in Müller 2001, 289) recorded new aspects of the subsistence economy of the Bernburg group by identifying evidence of salt processing at the settlement on Langen Berg, in the Dölauer Heide.

Recently research has suggested that the Bernburg group developed from the Salzmünde group (Beier 1984, 50; D.W. Müller 1994; Lüth 1988 cited in Müller 2001, 130) but at the time there was still insufficient evidence for an independent Salzmünde

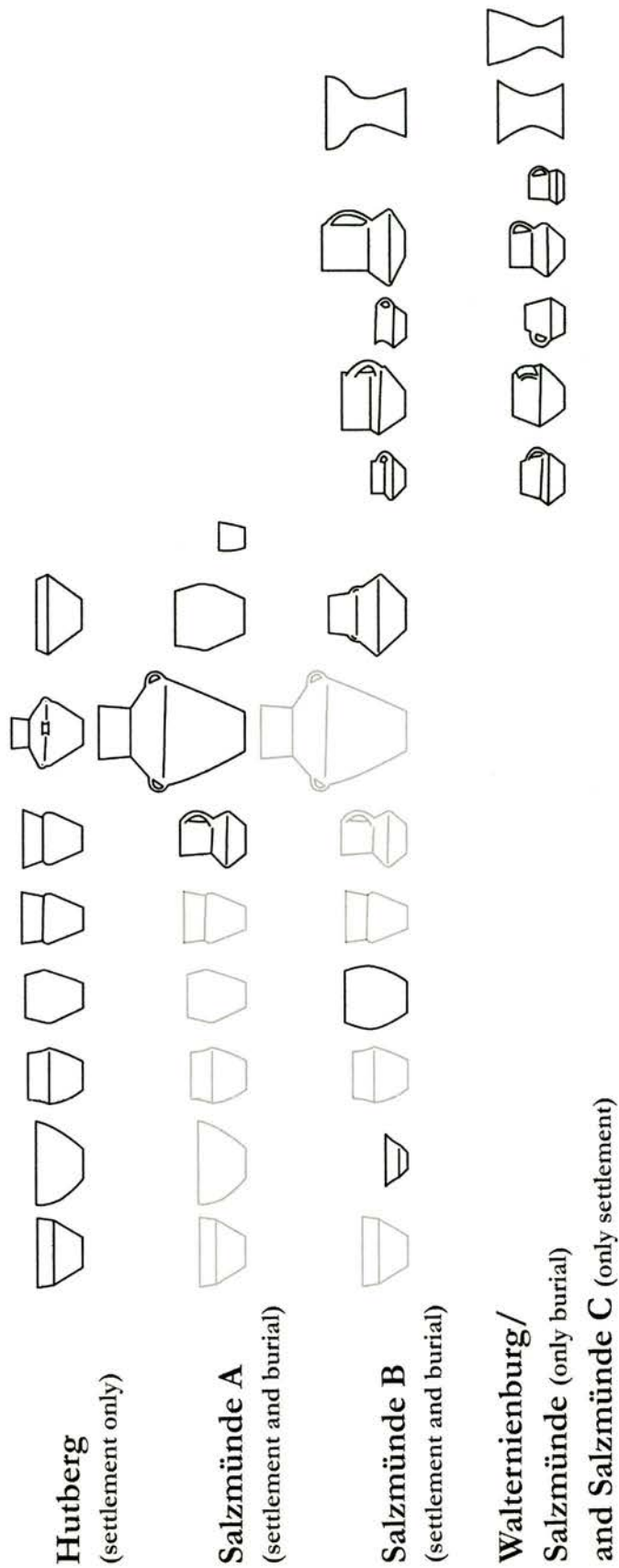
presence in Thuringia, where the early Bernburg is first recorded. Beran (1993, 64) argues against this stance, notably by removing the Oldisleben and Seeburg jugs from the Salzmünde assemblages, as discussed above, and also viewing the Walternienburg group as early Bernburg, thus reinstating Niklasson's model, although not his exact typological sequence.

Recently Müller (1994) developed a tripartite temporal division of the Bernburg group based on the *Mauerkammern* assemblages. The earliest group is distributed in Thuringia with a few outlying examples north of the Harz Mountains, corresponding to the distinct Thuringian group discussed by Beier (1984, 25). The early pottery has a double conical profile, resembling W II vessels (no doubt the source of Niklasson's relation between the two), and is found especially in Thuringia, where it appears marked by strong Salzmünde elements, and this interpretation is supported by Thuringian settlement material. In the north, agreement for this is found at Heiligenthal, Börnecke and Ditfurt 2, in the east and north Harz foothills, while evidence appears as far afield as Odagsen in Lower Saxony.

A more rounded ceramic form with a comparatively identical distribution pattern characterizes the middle and late groups; there is a concentration over the eastern and northern Harz foothills stretching to the Saale estuary. Here the Thuringian component is inadequately represented, but many Thuringian sites produced little or no ceramic dating material in this later phase. The later Bernburg material is often found associated with the Globular Amphora culture but it has already come to an end by the Corded Ware period, shown clearly by the corded ware burials on top of Bernburg settlements. Radiocarbon dates corroborate Müller's model, and are discussed below.

THE MOST RECENT RESEARCH

As the previous discussion has shown, the models presented over the years to explain the archaeological evidence, known as the southern TRB, have frequently changed since their inception. One of the reasons for this has been the quality of the evidence and the early date of many excavations. A second important reason has been the scope of earlier research, which, intent on producing detailed studies of assemblages deemed to be individual cultures, failed to view the broader body of evidence. Recent analysis of Müller (2001), developing earlier studies (Lüth 1988 cited in J. Müller 2001: D. W. Müller 1994), and combining it with a large number of radiocarbon dates has



Pale grey vessels are those continuing earlier forms: Typology after Müller 2001; Illustration by Wyatt 2004

Fig 2.1. Müller's (2001) Typology Arranged and drawn by Wyatt 2005

produced a vastly different interpretation of the evidence, which deserves to be discussed in detail.

- The areas of Müller's (2001) thesis that concern us here, examine the Salzmünde material, in the traditional sense, and includes material from Hutberg sites and also, following Lüth's (1988, cited in Müller 2001) observations, the Salzmünde evidence from the Thuringian *Mauerkammern*. Following the discussion of this evidence, it is logical to further include the traditional Walternienburg and Bernburg assemblages. Müller began by posing the questions he sought to ask:
- Can the Salzmünde assemblages be defined as individual groups,
- can the archaeological relationships be verified, and
- is there an internal chronology which can be dated?

Typologies, Stratigraphy and Dating

SALZMÜNDE STYLE

Burial and Settlement Evidence

A combination of the approaches of Lüth (1988 cited in Müller 2001) and Müller (1994) was adapted, providing 11 pottery and 9 decorative types. Of note is that this codification of vessel form and decoration encompasses the entire range of ceramics from the Hutberg style through to the Bernburg style. A first seriation analysis was then undertaken using sealed contexts, of single graves and pits and then a second, which repeated the first, this time including the pottery assemblages from the *Mauerkammern*. The analysis produced four groups which, although distinct, formed a continuum (fig. 2.1).

The first group, corresponding to the traditional Hutberg ceramics, possessing very little decoration, is represented by funnel cups, four-handled amphorae and wide-mouth bowls with a curved-in edge. This group is only known from settlement contexts and is understood to be linked with the traditionally named Baalberge grave assemblages. The second group, named Salzmünde A, distinctive for its ladder-pattern decoration, contains the classic Opperschöner jugs, tripartite amphorae, straight-sided cups and large bulbous storage vessel. Group three, Salzmünde B, with zigzag patterns, hanging triangles and perforated edges, is characterized again by jugs, tripartite amphorae, tri- and

bipartite cups with a cylindrical upper part and goblet drums. The final group, Salzmünde C and Salzmünde/Walternienburg, with groups of lines, groups of lugs and circles and crosses, again contains Opperschöner jugs with a longer neck, bi- and tripartite cups this time with conical necks and hour-glass shaped drums (Müller 2001, 96-115).

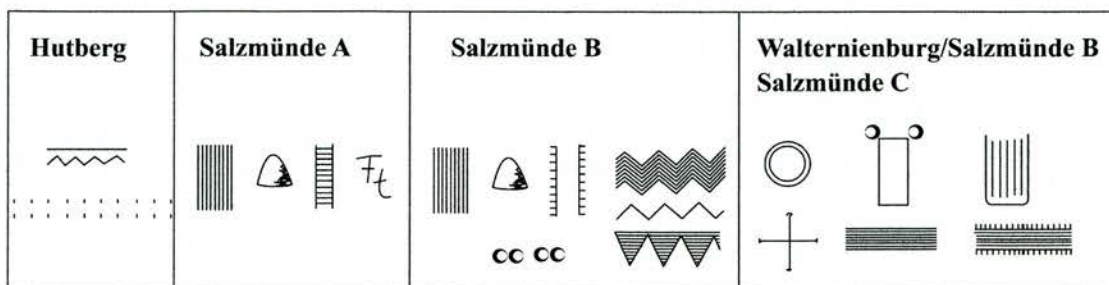


Fig. 2.2. Ceramic Decoration after Müller (2001), illustration Wyatt (2005)

The essence of this analysis, which above all stresses the continuous nature of ceramic development from the early to the late Neolithic, is that the terms Baalberge, Salzmünde, Walternienburg and Bernburg can be given only as a means for classifying ceramic styles, not individual cultures.

In addition to disposing of the academic tradition of assigning a cultural group to each ceramic style, the view that these groups followed a neat linear chronology is also called into question. Five important points illustrate this:

- At the site of Pegau-Carsdorf, a Baalberge A burial overlies a Salzmünde A/B settlement pit, (Müller 2001, 116)
- At Dölauer Heide stone-packing grave number 9 which contained an Opperschöner jug of Salzmünde A/B overlay the Hutberg settlement material (*idem*, 115)
- At Langeneichstädt (also known as Obereichstädt) the Salzmünde B deposit is overlain by Bernburg material (*idem*, 115).
- One further relationship is found from Peissen-Am Mühlberg pit 73, placing Haldensleben sherds with Salzmünde B material (*idem*, 115).
- All previous references to stratigraphic relationships between Salzmünde and Walternienburg are no longer valid, since they were based, not on archaeological finds, but on typology (*idem*, 115).

Radiocarbon Dating

Despite difficulties with radiocarbon dates and the calibration curve (see Müller 2001, 119ff.), the validity of Müller's typology is supported by carbon dating (individual dates are given in Appendix 2), calibrated by OXCAL:

- Hutberg 3700-3520 BC Cal,
- Salzmünde A 3514-3340 BC Cal,
- Salzmünde B 3310-2900 BC Cal,
- Salzmünde C 2885-2570 BC Cal,

And one further range calibrated by the calibration program Weninger 1993:

- Salzmünde/Walternienburg 3280-3050 BC Cal (Müller 2001, 122).

There is an obvious discrepancy concerning the dates for the final Salzmünde typological style, comprised of Salzmünde/Walternienburg and Salzmünde C. The radiocarbon dates from the Thuringian *Mauerkammern* (3300-3000 BC cal) and those from the middle Saale settlement pits (2850-2650 BC cal) do not correspond. A further seriation of the later assemblages was undertaken to clarify the long life-span of individual inventories and some distinguishing features of Salzmünde C, primarily horizontal and vertical rows of lines, horizontal rows of zigzag strokes, fingernail impressions and applied decoration were noted. Of further importance, considering specific distinctions in other groups of vessels associated with either burial or settlement, is that no Salzmünde C assemblages are known from burials (Müller 2001, 122 and 253).

Following this, based on the knowledge that the ceramic types form a continuum, Müller gives working dates for each group as:

- Hutberg 3800-3500 BC cal,
- Salzmünde A 3500-3350 BC cal,
- Salzmünde B 3350-2900 BC cal,
- Salzmünde/Walternienburg 3300-3100 BC cal,
- Salzmünde C 2900-2700 BC cal.

WALTERNIENBURG AND BERNBURG STYLES

Burial Evidence

MAUERKAMMERN AND FLAT CEMETERIES

It is evident that any understanding of the Salzmünde style relies on the interpretation of the Walternienburg and Bernburg assemblages, since all of these styles have some temporal overlap. Müller (1994) attempted to clarify the relationship between the later two styles with an examination of the ceramic forms within the *Mauerkammern*. These walled chambers, which contain collective burials, are recognized by a low rectangular dry-stone construction with timber superstructure. Müller (2001) developed this model, including in the diagnostic criteria both the vessel form and the decoration, further clarifying Müller's (1994) analysis, and in following the treatment of the Salzmünde assemblages, emphasized the continuous nature of the development.

Following the procedure for the analysis of the Salzmünde assemblages, Müller (2001, 133) undertook separate seriations for the vessel forms and the decoration, and a third seriation combining both aspects of the previous two. These identified three recognizable groups within the *Mauerkammern* assemblages, 1A, 1B and 2, but the lack of stratigraphy places reliance on the typology and radiocarbon dating. Angular forms and Salzmünde forms, primarily the Opperschöner jugs, are found in the earliest horizon; more rounded types in the latest horizon, the intermediate horizon includes both elements. The gradual transition of forms sees a simplification of vessel form, which develops in parallel with the increasing complexity of the decoration (fig. 2.3)(Müller 2001, 140).

The presence of Opperschöner jugs, one- and two-handled cups, drums without eye-loops, simple funnel bowls and double conical amphorae, define group 1. Decoration includes cut crosses, circles and half moon shapes and groups of lines, lugs and simple zigzag bands. The subdivision of group 1 is characterized by the distribution of drums with stamped crosses and circles and Opperschöner jugs, group 1A, in Thuringia and the distribution of tri- and bipartite cups outside Thuringia, group 1B.

Group 2 is characterized by bulgy and wide-mouthed cups, bipartite funnel bowls and drums exhibiting an upper curve, although straight-sided examples are known. The decorative motifs of this later group are very diverse, consisting of numerous

variations of zigzag, triangular and rectangular and chessboard patterns, either in outline or infilled. Furthermore linear patterns, rows of dots, herring-bone and tree-branch designs are supplemented by numerous applied decoration (Müller 2001, 133-4).

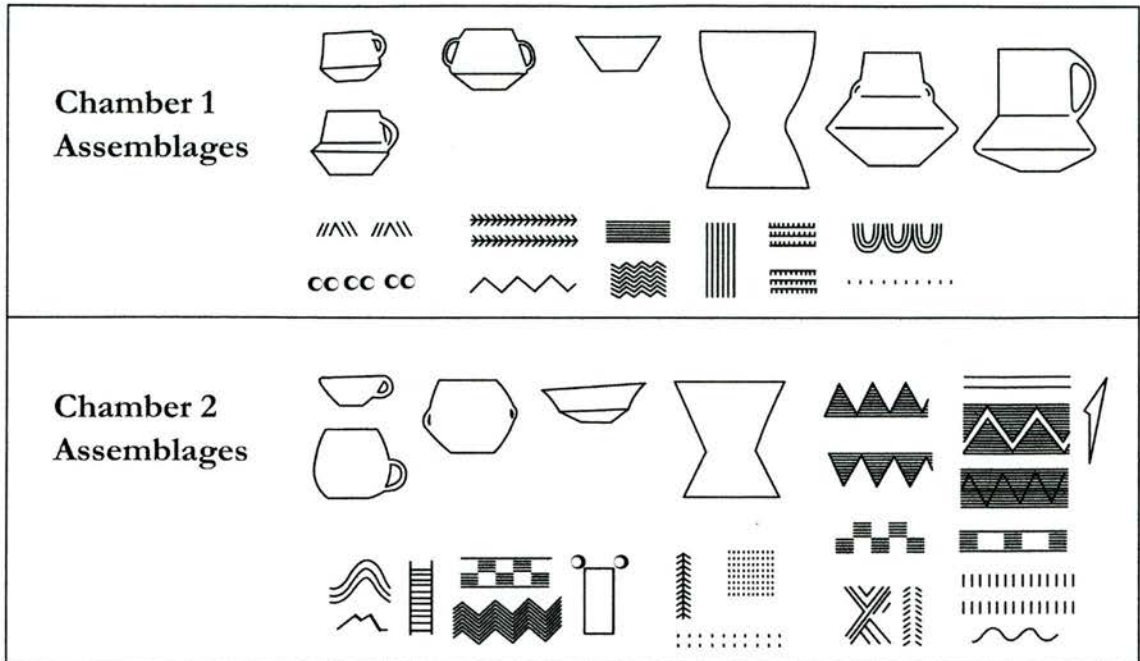


Fig 2.3 Ceramic assemblages and decoration from wooden and dry-stone *Mauerkammern*

Group 1 assemblages are found in association with ceramics of the Haldensleben phase of the Altmärk Tiefstich group at Odagsen, Holzussra and Ditzfurt, and with ceramics of the Wartberg group again at Odagsen and at Gotha. At Wandersleben group 2 ceramics were found with Globular Amphora pottery, and at Bennungen with ceramics of the Elbe-Havel group (Müller 2001, 140).

Besides the assemblages from the *Mauerkammern*, the traditionally-named Walternienburg and Bernburg ceramics are found in rectangular earth cut graves known as flat graves. Again a problem exists in the age and therefore reliability of some of the

Associated Vessels	Charcteristic Cup Type		
	Tripartite (E) Fl 1A	Bipartite (F) Fl 1B	Bulgey (K)Fl 2
Decorated loop Drum	•		
Tripartite Amphora	•	•	
Barrel Pot		•	•

Tab. 2.3 Cups associations in Flat graves.

excavations, yet despite this a comparative study produced similar results to that of the *Mauerkammern*. The first group containing angular vessels, flat grave 1 (Fl 1), is divisible

into Fl 1a, primarily tripartite in form, and Fl 1b, primarily bipartite in form. The second group, flat grave 2 (Fl 2), exhibits a distinct globular style, a distinction also paralleled by the distinct decorative patterns. The distinctions between the different cup forms are emphasized by the different contextual associations (Müller 2001, 143), presented here in tabular form.

Despite typological considerations, which place the Fl 1 assemblages contemporaneously with the *Mauerkammern* 1B, and Fl 2 parallel with *Mauerkammern* 2, this non-collective burial form is distinguished from the *Mauerkammern* by distinctive vessel forms and decorative motifs. The vessel forms include round-bodied bowls, flat-bodied bipartite cups, flat-bodied conical cups, tripartite amphorae, round-bodied bowls with s-form edge, bulgy cups and corded ware amphorae. The decoration is marked by a small number of additional motifs, including short diagonal lines crossed by two

Traditional name	<i>Mauerkammern</i> Group		Flat-Grave Group	Date BC cal
Walternienburg 1	1A jug	1B tripartite cup	Fl 1a tripartite cup	3350-3050
Walternienburg 2	1A jug and bipartite cup	1B bipartite cup	Fl 1b bipartite cup	
Bernburg	2 Globular vessels		Fl 2 Globular vessels	3050-2700

Tab. 2.4 Synchronization of Müller's *Mauerkammern* and Flat-grave phases.

opposing diagonal lines, complete areas of diagonal chess-board patterns, chequered areas of horizontal curved/angular stroke rows, vertical line of groups of curved/angular stroke rows, horizontal lines of curved/angular stroke rows and hanging triangles of curved/angular stroke rows (Müller 2001, 105-7).

One further point of note is the distribution of the graves. The flat-grave cemeteries occur to the north-east and east of the *Mauerkammern* distribution and the size of the cemeteries is comparable with the numbers of burials within the *Mauerkammern* (Müller 2001, fig. 53) this may mean that both the individual *Mauerkammern* and the individual cemeteries are representative of the burial sites of specific communities. The assemblages suggest a chronological synchronization and geographical differentiation. Incidentally, individual single burials occur across the entire area.

RAMPENKISTEN, GROSSSTEINGRÄBERN AND GALERIEGRÄBERN

Three further burial forms are associated with the Walternienburg and the Bernburg ceramics: firstly the *Rampenkisten*, the form of which will be discussed below.

Beier (1984, 31) recorded 13 examples but cautioned that due to the early date of some of the excavations clear interpretation is not possible. Some examples from Lissdorf and Obereichstädt contained no dateable material, but where they did, they correspond with the primary phase of the *Mauerkammern*; indeed the graves of Polleben 1, Schkopau, Brachstedt and Schortewitz represent a blend of *Mauerkammern* and *Rampenkeisten* architectural style. Brachstedt contained a handled cup of Salzmünde type and although Schkopau contained Bernburg vessels, it also contained cups and a drum of Salzmünde type (Müller 2001, 147)(see Beier 1984, Taf. 23.1).

The next burial type is the *Grosssteingräber*, of which 14 examples contain Walternienburg and Bernburg ceramics in the area of the middle Elbe and Saale, but are often disturbed by secondary burials. A few of these examples are associated solely with Walternienburg and Bernburg pottery. However, many of the northern constructions with bi- and tripartite forms are also associated with Tiefstich ceramics, while in the southern examples the bipartite and globular forms are also found with Salzmünde or Globular Amphora ceramics. Thus the northern examples would appear to be slightly older than their southern counterparts. A final burial form, the *Galeriegräber*, with examples at Osterode, Seinstedt and Watenstedt 1, again contain both Walternienburg and Bernburg vessels of bipartite and globular form.

<i>Mauerkammern</i>		Flat Graves	Other Grave Forms			Date BC cal
1A	1B	Fl 1a	<i>Rampenkeisten</i>	Northern <i>Grosssteingräbern</i>	<i>Galeriegräbern</i>	3350-3050
1A	1B	Fl 1b				
2		Fl 2		Southern <i>Grosssteingräbern</i>		3050- 2700

Tab. 2.5. Synchronization of all grave forms

Settlement Evidence

Using the same method as above Müller (2001) examined the settlement evidence from closed finds; this approach produced a similar pattern to the grave assemblages. Thus two settlement groups are recognizable, both of which may be subdivided, 1A and 1B, both exhibiting simple decoration but distinguished by tripartite and bipartite vessel forms, respectively. Group 2 with globular vessel forms can be subdivided based on earlier simple motifs, 2A, and later complex motifs, 2B. In contrast

with the *Mauerkammern* evidence these distinguishing features appear to be temporal, exhibiting no geographical differences (Müller 2001, 149).

Müller's Stage	Traditional Stages	Ceramic Form and Decoration	C 14 Dates
Settlement 1A	Walternienburg I	Tripartite vessel and simple motifs	3400-3050 BC cal
Settlement 1B	Walternienburg II	Bipartite vessel and simple motifs	
Settlement 2A	Bernburg I-III	Simple vessel and small complex motifs	3050-2800 BC cal
Settlement 2B		Simple vessel and complex motifs	

Tab. 2.6 Settlement phases based on Müller's typology, supported by radiocarbon dates

The later settlement group is found at Derenburg-Steinkuhlenberg, where analysis of pit assemblages exhibited globular vessels with both simple and complex decoration, given the names STEIN 1 and 2. The earlier of the two phases was contemporary with the Salzmünde style, as demonstrated from ceramic elements in the Bernburg assemblages and radiocarbon dates from animal bones of 2930 BC cal (Kn-4903: 4291±42 bp)(Müller 2001, 154-6). Stein 2 (Kn-4904: 4048±27 bp), with a calibrated age of 2640-20 BC cal at 40.5 % accuracy, is associated with Schönfeld and Bell beaker ceramics. Seriation analysis of assemblages at Dölauer Heide provides three groups, Dölau 1-3, although they lack clear chronological distinction. Furthermore, spatial mapping of the groups revealed a distinct distribution suggesting different functional uses within the site (Müller 2001, 158).

Synopsis of Walternienburg and Bernburg Assemblages

Analysis of the *Mauerkammern*, flat graves and settlement pit assemblages demonstrated the existence of two pottery styles, corresponding almost exactly with the traditional Walternienburg and Bernburg groups. The sequence of development, which formed a continuum, was supported by radiocarbon dates.

The Walternienburg style is characterized by Opperschöner jugs, curved drums and by tripartite and bipartite amphorae and cups. The transitional phase contains conical bowls, funnel bowls and storage vessels with a distinct upper section. In contrast hourglass drums, one-piece cups, collared flask and bi-conical storage vessels characterize the Bernburg style (see fig. 2.4). Müller (2001, 164) distinguishes between the tripartite and bipartite forms of Walternienburg as phases 1 and 2, and this mirrors the model of Niklasson (1925 in Fischer 1951), stressing the gradual development of the continuum.

Chronological development	<i>Holz- and Mauerkammern</i>		Flat- and single grave	Settlement	Dölauer Heide	Derenburg-Steinkuhlenberg	Trad- Cult Group
Late ca. 2700 BC cal	2		Fl 2	2b	Dölau 3	Stein 2	Bernburg
				2a	Dölau 2	Stein 1	
					Dölau 1		
Early ca. 3300 BC cal	1a	1b	Fl 1b	1b			Walternienburg bipartite
			Fl 1a	1a			Walternienburg tripartite

Tab. 2.7 Combination of Burial and Settlement Stages of Müller

Only one example of a stratigraphic relationship is known between the two styles, this occurs at Drosa 1, where Walternienburg 2 ceramics overlay those of the Bernburg style (Müller 2001, 172). An additional difference between the Walternienburg and Bernburg assemblages is the use of fire in the *Mauerkammern*, which is four times more common where Bernburg assemblages are present (Müller 2001, 164).

Despite the lack of stratigraphic evidence some interesting associations support the case for contact with other ceramic groups. From Holzussra and Ditzfurt 2, assemblages contain both Walternienburg and Altmärk Tiefstich ceramics, while many of the Thüringian *Mauerkammern* contain Walternienburg and Salzmünde ceramics. The site of Bennungen contained Bernburg and Elb-Havel ceramics. Wandersleben contained both Bernburg and Globular Amphora pottery, a combination which was also found in settlement pits at Dölauer Heide and Quenstedt Schalkenburg. Finally, at Schraplau a Bernburg cup was associated with a Corded Ware Amphora, an occurrence supported by radio carbon dating (Müller 2001, 173-4).

Radiocarbon Dating

There are many problems concerning the absolute dating of the assemblages from *Mauerkammern*, flat cemeteries and settlements; these include old samples, outlying dates and two relatively flat areas in the calibration curves (Müller 2001, 119-126 and

143-147). Despite the difficulties of the radiocarbon dates, those with one standard deviation that is less than 100 years, support the typological model presented above and also the little stratigraphic evidence that exists.

Mauerkammern and flat cemetery assemblages can be divided into two groups based on decoration and vessel form, and these same developments are paralleled within settlement assemblages. However, absolute dating suggests that both settlements 1 and 2 began earlier than their parallel burial assemblages *Mauerkammern* 1 and 2 (Müller 2001, 164). Despite this anomaly, approximate working dates can be given:

- *Mauerkammern* 1 3350-3050 BC cal,
- *Mauerkammern* 2 3050-2700 BC cal,
- Settlement 1 3400-3050 BC cal,
- and Settlement 2 between 3050-2800 BC cal.

As noted the Walternienburg and Bernburg dates unfortunately correspond to two flat areas of the calibration curve. However, it can be noted that the assemblages which only contain Walternienburg tripartite amphorae or cups e.g. Ditzfurt, Nordhausen and Niederbösa, all occur within the early section of the flat area of the calibration curve, 3300-3100 BC cal. The assemblage containing both tri- and bipartite amphorae and cups e.g. Biendorf-Trappenberg, Schönstedt, Zachow and Buchow-Karpzow, have produced dates from the lower part of the curve, 3200-2900 BC cal (Müller 2001, 165-166 and 170).

	TRB MES II			TRB MES III		TRB MES IV			TRB MES V		
Core Distribution	3700	3600	3500	3400	3300	3200	3100	3000	2900	2800	BC cal
E.Harz, Saale,	Baalberge graves A and B										
Middle Saale	Hutberg settlement			Salz A		Salz B			Salz C		
Thüringia						Salz/Walt					
S.Harz											
N.Harz/Elbe						Walt 1 burial		Walt 2 burial			
						Walt settlement			Bernburg settlement		
Saale, N.Harz									Bernburg burial		
Altmärk, lower Saale	Magdeburg,			Düsedau		Haldensleben					

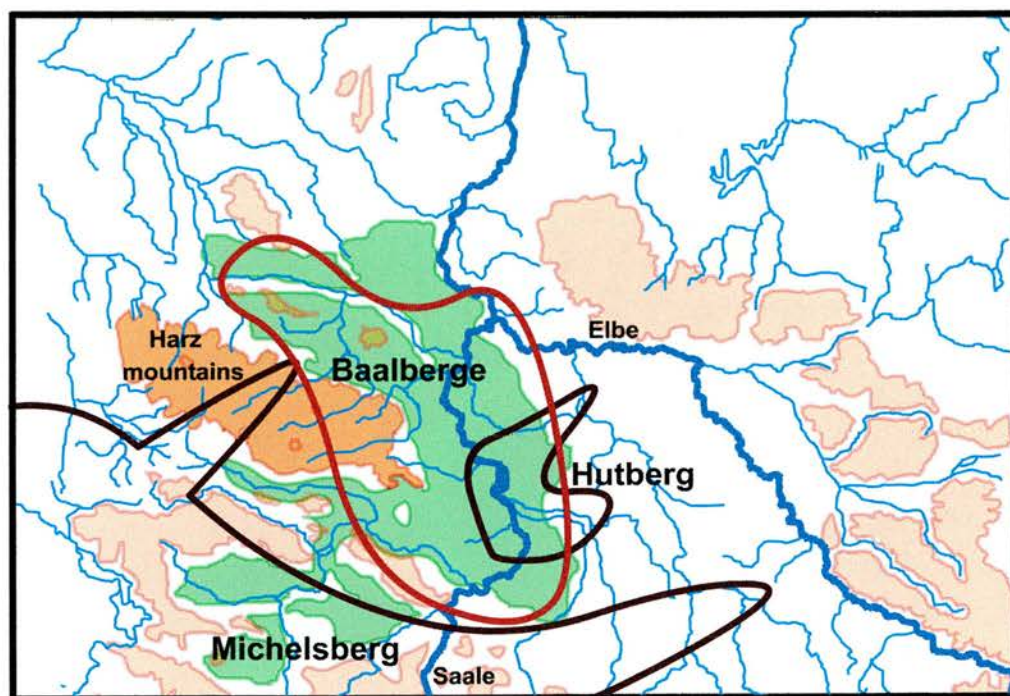
Tab. 2.8 Chronological table based on radiocarbon dates and Müller's typology

Walternienburg 1, 3300-3100 BC cal, is contemporary with Salzmünde B and also the Haldensleben style of the Altmärk Tiefstich, while Walternienburg 2, 3100-2900 BC cal, is contemporary with early Bernburg, 3100-2700 BC cal. This model, for the

Mauerkammern, flat graves and settlements, is supported by stratigraphy, contact finds and radiocarbon dating.

Geographical and Chronological Distribution

The above model relegates the traditional groups of TRB to the position of local pottery styles and burial customs, within the gradually changing continuum that is the Southern TRB. This breaks with earlier models which discussed varying levels of “cultural group”, and which culminated in Behrens’ call for a “pure Bernburg Culture” (1981, 11). Müller adopts a new terminology, proposed by Lüning (Müller 2001, 249), which divides the TRB into five phases, within a cultural continuum TRB MES I-V; the different groups within these phases are merely representative of stylistic differences. This model fits neatly into the schemes used in different areas. Furthermore Müller divides the Early Neolithic, 4100-3500 BC cal, into three stages which he calls early, middle and late. He similarly divides the Late Neolithic, 3500-2700 BC cal, into three stages termed old, middle and recent.

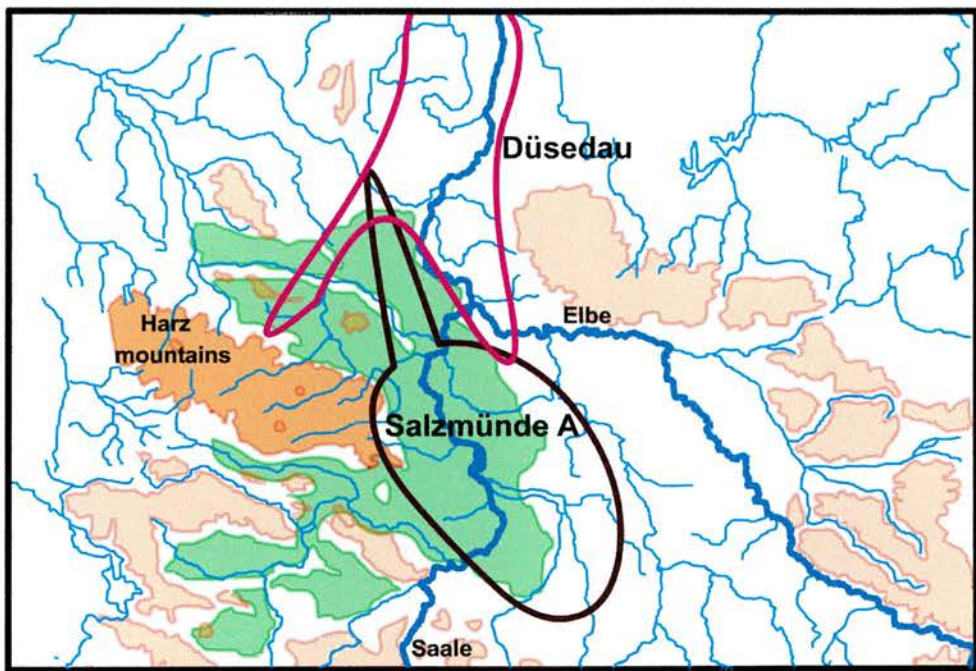


Map 2.1: TRB MES II: Settlement and burial areas

The Hutberg assemblages, from sealed contexts, TRB MES II, are distributed in the east Harz foothills, the middle Saale area and the lower White Elster. This localized settlement ceramic style developed between 3800 and 3500 BC cal, and was

contemporary with the Baalberge A and B burial, ceramics, which occur on the black earth in the area of the north Harz and Saale (Map 1).

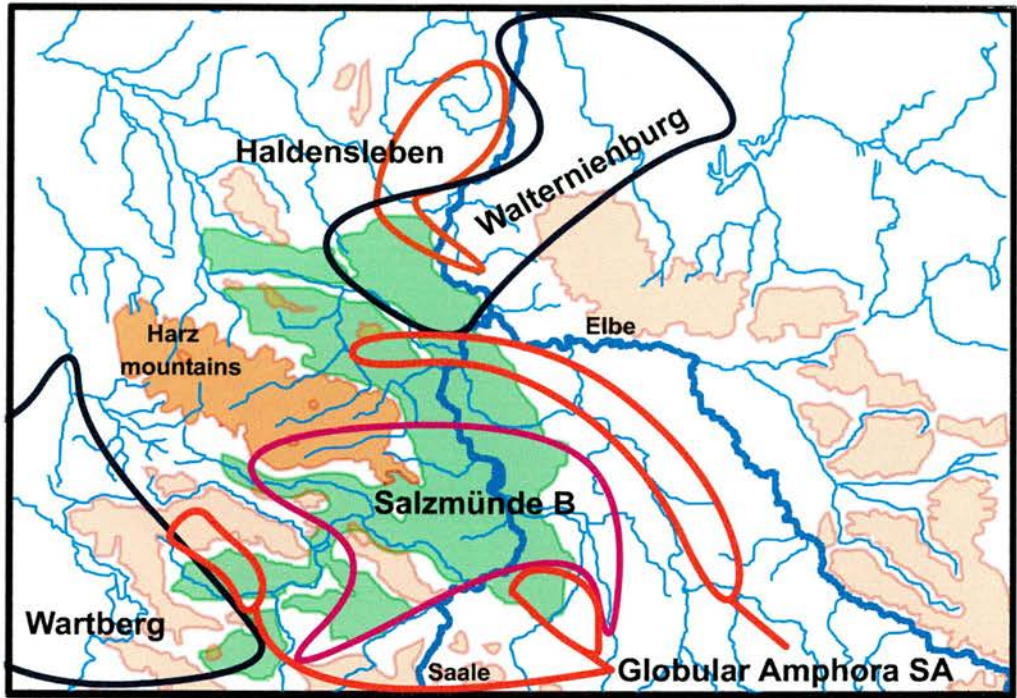
The first phase of the chronological scheme we are concerned with is TRB MES III. This phase of the chronology is marked by the Salzmünde A pottery style, which is found more sparsely in the middle Saale area and east Harz foothills, between 3500 and 3350 BC cal. These assemblages are found in both settlements and burials, and similarly coexist with the Baalberge A and B burials; they are also contemporary with the Düsedau style of the Altmärk Tiefstich group (Map 2.2). These distributions are shown in outline; finger-like protrusions represent one or two outlying sites. Of particular note is the fact that these different ceramic styles, following the tradition of the Baalberge burials, are linked directly with soil type.



Map 2.2: TRB MES III: Settlement and burial areas

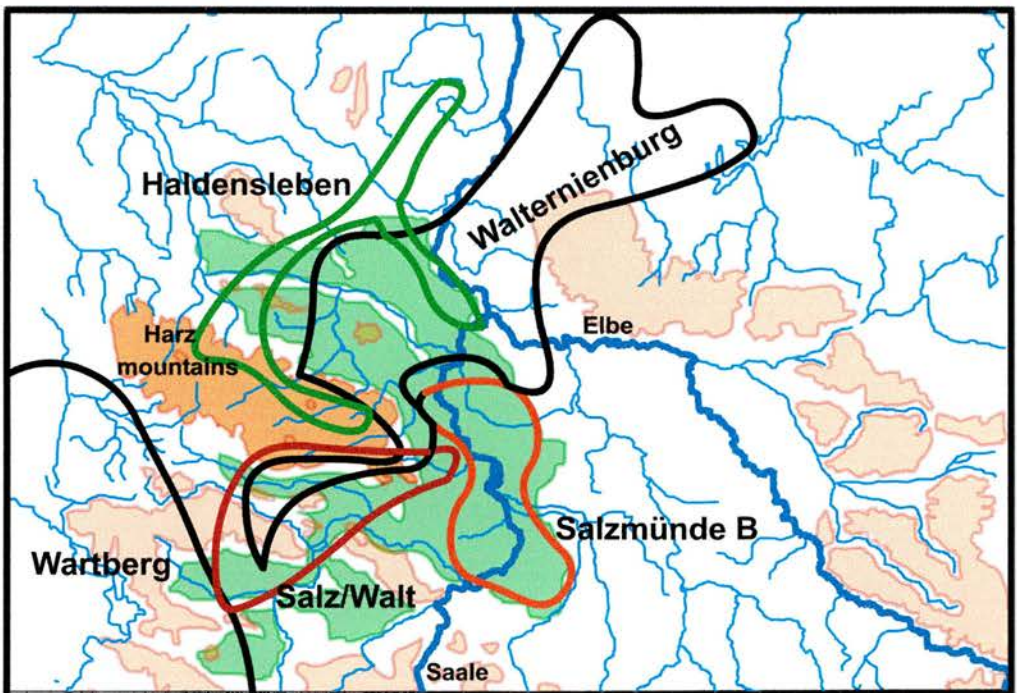
Both the Salzmünde A settlements and burials are located on terrace edges connecting with the black earth, in the middle Saale. In contrast the Düsedau ceramics are found in the middle Elbe and the Altmärk on alluvial edge zones, outside the black earth areas (Müller 2001, 251).

In the following chronological phase, TRB MES IV, the Salzmünde B style, 3350-2900 BC cal, develops directly from Salzmünde A, expanding into Thüringia and the lower Saale, within the black earth areas. Simultaneously the Haldensleben style develops from the Düsedau Tiefstich pottery style. The distribution of a new ceramic



Map 2.3: TRB MES IV: Settlement

style, Walternienburg 1, which begins approximately at 3300 BC cal, is on the northern limits of the earlier Baalberge settlements in the Magdeburg border and radiocarbon dates support the model of them existing concurrently.

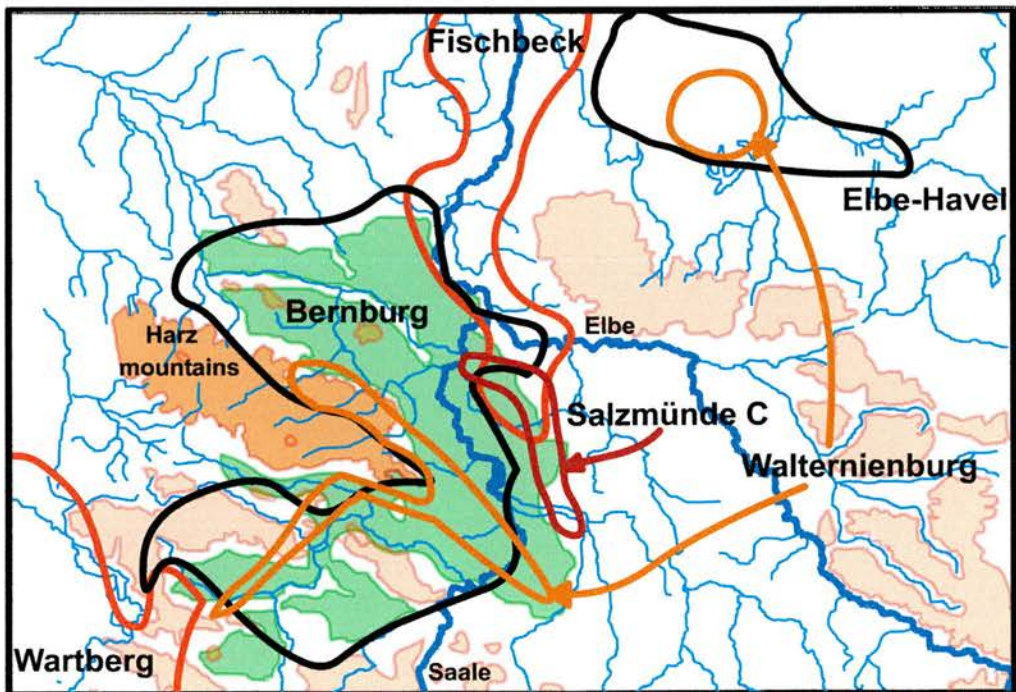


Map 2.4: TRB MES IV: Burials

The Walternienburg 1 style is related to the Haldensleben pottery style through more than just ceramic technique and both settlement groups are found on the peripheral alluvial zones in the north of the middle Elbe-Saale area, although Walternienburg settlements are also known in the Havelland. Despite a clear mixing of distributions of these two settlement groups, the burial distributions remain quite distinct (Müller 2001, 252).

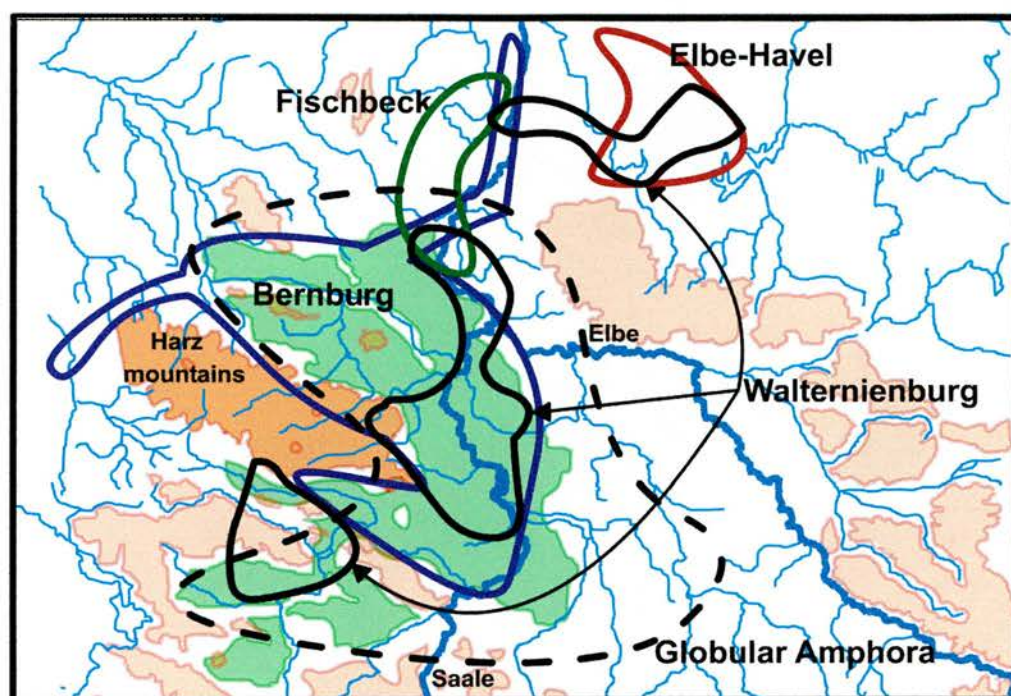
Despite the fact that Walternienburg 1 settlements are restricted to the north of the Harz, some examples of burial occur in the southern Harz foothills and northern Thuringia. This may be an influence on the Salzmünde/Walternienburg style burials, 3300-3100 BC cal, which occur in the western part of the Salzmünde B settlement area, particularly in Thuringia, while the Salzmünde B graves are restricted to the eastern half of the settlement distribution (Map 2.3 and 2.4). It is in the Thuringian area that the first *Mauerkammern* are established, containing assemblages which differ from the traditional Salzmünde finds (Müller 2001, 127-8). The flat grave custom is followed elsewhere.

In the TRB MES V, 31-2700 BC cal, the Salzmünde B style gradually ends, leaving the more restricted distribution of Salzmünde C, 2900-2700 BC cal, which is confined to the eastern bank of the middle and lower Saale area, and is known only from settlement evidence (Map.5). Walternienburg II, 3100-2900 BC cal, is remarkable for



Map 2.5: TRB MES V: Settlements

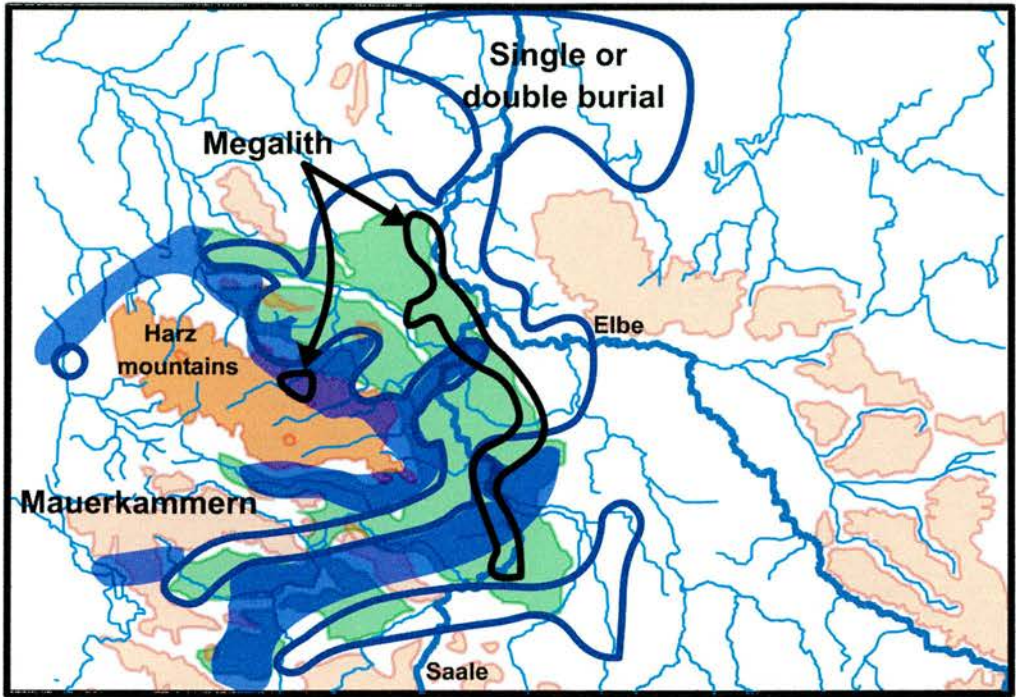
for consisting of two distinct distributions, one in central Havelland and the second spanning both sides of the eastern Harz mountains, with some outlying sites in Thuringia and along the Saale. The distribution of the Bernburg pottery style, 3100-2700 BC cal exists at first in tandem with the Walternienburg II style, stretching from the Magdeburg Border to Thuringia, and from the eastern bank of the Saale to some outlying earthworks in the western Harz. However, where settlements are recognized across the southern Harz and west and central Thuringia, there is currently little burial evidence from these areas. In contrast Bernburg settlements only reach the Magdeburg border in the north while burials are found further afield in the Altmärk (Map 2.6).



Map 2.6: TRB MES V: Burials

Between approximately 2900-2600 BC cal a new ceramic style, Fischbeck pottery, is found in the Altmärk and the area round Magdeburg. This appears to be the successor of the Altmärk Tiefstich pottery style both in terms of ceramic style and also spatially, in the sense of settlement continuity (Müller 2001, 305).

In summary the Salzmünde A assemblages are essentially the development of the Hutberg settlement ceramics style, and both are contemporary with Baalberge burials. Where rich burials, both in terms of grave goods but more importantly construction, have been recognized within the Baalberge and Salzmünde A/B tradition, this has



Map 2.7: Distribution of *Mauerkammern* and single and double burials, outlined

occurred with a direct relationship to the areas of soil type, namely the black earth. The Salzmünde B assemblages contain a substantial proportion of diagnostic criteria of both Walternienburg and Bernburg groups; essentially they reflect neither the chronological nor geographical features of an independent archaeological group. Müller's Salzmünde/Walternienburg style appears as an area where a greater degree of contact between the two styles took place, coexisting with the inception of *Mauerkammern* collective burials. Also of note is the consecutive nature of the Baalberge and Walternienburg styles, supporting the removal of the Salzmünde group as a temporal link between the two. We may view the Salzmünde assemblages as the reflection of a population distribution within the southern TRB, which historically has access to greater resources. In a comparison of the distribution of decorative styles, the Walternienburg and Hutberg groups are mutually exclusive, while the Bernburg style, which geographically overlaps both areas, also combines decorative forms (Müller 2001, 183). A final point might be that reducing these groups to ceramic style within a larger cultural grouping makes more sense of the overlapping nature of settlement and burial distributions. While living outside a local area, affiliations to ancestral traditions were recognized within burial patterns. Furthermore, map 2.7 illustrates that there is very little overlap of burial traditions in TRB IV and V.

Settlement Evidence

HOUSE TYPES

Compared with other regions, the Middle Elbe Saale area has suffered from a lack of research at the expense of typological studies. Thus there are no completely excavated early or late Neolithic settlements. Where plans of structures are available these are largely from old and to some extent unreliable excavations. Despite this some patterns are recognizable, but can only be viewed as a general view of the late Neolithic.

Two groups of house types are recognizable, the smaller of the two measuring between 8 x 3.5-6 m and the larger group ranging from 12.5-25 x 5-6.8m. This distinction between these two house forms is independent of the chronology of the pottery styles (Müller 2001, 276). The smaller buildings are one- or two-roomed while the larger may have multiple rooms, with some evidence for the housing of cattle. This polarity of large and small buildings is similarly recognized in the Altmärk group, although the building at Haldensleben-Probsthorn has been interpreted as evidence of a special functional group. Large buildings are known from the Hutberg settlement phase and from the Walternienburg group at Alt-Töplitz, while smaller examples are known from the Bernburg group, the most renowned being at Halle-Heide. This dichotomy continues into the End Neolithic, exemplified by Schönfeld and the single grave cultures (Müller 2001, 277).

Numerous building methods are recognized using wall slots (Gerwisch), postholes (Salzmünde-Schiepzig II) and a combination of both types (Wallendorf-Hutberg). In addition small pit-like houses are known with one side of small postholes (Remstädt). Houses at Brandenburg-Neuendorf and Pevestorf 19 exhibited central posts to support the roof, but this was not necessarily the norm. Some buildings also show evidence for internal division into two at Wallendorf Hutberg house XVII and into multiple areas at Wittenwater and Pevestorf 19, while the entrances are generally on the narrow side of the building, e.g. Salzmünde Diebzig III.

At Diebzig house III and Salzmünde house II, the hearth pits are positioned in the centre of the structure, surrounded by a post formation, but this is uncharacteristic since elsewhere the hearths are in corners or at the edge of buildings (Müller 2001, 278). Evidence of waste pits also exists filled with broken artefacts, although a surprising number occur within the house but may be material abandoned with the house; Benesch

(1941, 7; Müller 2001, 278) classified pits with no finds as supply pits. Pit burials in settlements exist and shall be dealt with in the following section on burial practices.

Artefacts from some settlements support a model of activity zones within a house; thus in an example of a small house from Halle-Heide Bernburg sherds and complete vessels were positioned along one side of the house, with sandstone slabs and whetstones in the centre (Müller 2001, 279). Additional finds within this structure included spindle whorls, a bone awl and axe fragment, numerous flint tools and 10-15 vessels.

SETTLEMENT PATTERNS

The earthworks of TRB MES II and III are lined up at 25 km intervals on the middle and lower Saale, suggesting a relationship with the elaborate graves at Salzmünde-Schiepzig, Halle-Heide and Peissen. It may be that the copper artefacts at Halle-Heide, Wallendorf-Hutberg and Peissen represent a similar relationship. The relationship between these earthworks and the TRB MES IV remains to be proven, and no Walternienburg or Bernburg finds are known from Salzmünde-Schiepzig or Wallendorf Hutberg. Where Bernburg pits are known at Peissen there is no connection with the ditch fill (Müller 2001, 287).

Halle-Heide Langer Burg

The Bernburg settlement at Halle-Heide Langer Burg is divided into two. The northern area, on a spur of land, is protected on the north, east and west by palisades, while in the south the earlier Hutberg ditch system is reused. Unfortunately the southern area has not been thoroughly excavated, but stray finds suggest Bernburg activity also took place here (Müller 2001, 288). Thus the current evidence supports the theory of reoccupation and fortification of the northern area but also unfortified settlement in the south, while pit concentrations in the perimeter of the settlement have been interpreted as defining an open central area. Due to severe erosion only the remains of one house plan survives under a later burial mound, but by relating the assemblage of the house to the remaining pit assemblages Behrens and Schröter (1980, 34) propose 5-10 houses. In light of this the spatial groups of drum sherds associated with flint assemblages could be

related to individual households. Furthermore, analyses of the pits allow the recognition of three spatial areas within the site as a whole.

Flint tools are distributed across the entire settlement; in addition semi-finished products and waste material are restricted to three areas. Blades and flakes dominate in the south-east, flakes and debitage in the north and debitage in the south-west (Tab. 2.9), yet no cores are known from the site. One of these areas is situated within the only surviving house plan, suggesting in-house processing. This pattern could be interpreted as evidence for semi-finished products being imported, and finished in three areas of the site, and then distributed to the rest of the site from here. Furthermore Müller (2001, 288) suggests this may correlate with three individual flint-knapping traditions. In support of this proposal distinct spatial differentiation of the pottery decoration parallels the distribution of flint. Square patterns and zigzags are found in the north, zigzags, and horizontal lines, fir-tree patterns and lugs in the south-east; finally in the southwest the same motifs are known as in the south-east but with the addition of border decoration. Examination of the presence of flint and specific pottery decoration within the same pit suggests the fir-tree motif is particularly associated with flint distribution. Additionally while flint and ceramics are commonly found together in the south-west, in the south-east there is a distinct separation between the two. The south-east is also the only area of the site where there appears to be evidence of salt production. Müller proposes three internal distribution centres for flint manufacture representing the living areas of three extended families, which produce their own distinctly decorated pottery (Müller 2001, 290).

	Flint			Pottery Decoration					
	Blade	Flakes	Debitage	Square	Zigzag	Hor. line	Tree	Lugs	Border
N	●			●	●				
S-E	●	●	●		●	●	●	●	
S-W			●		●	●	●	●	●

Tab. 2.9 Spatial differentiation of flint working and pottery decoration at Halle-Heide Langer Burg

Quenstedt-Schalkenburg

At Quenstedt-Schalkenburg excavation revealed a fortified settlement of Bernburg date, with a causewayed ditch and palisade and a large number of pits (Müller 2001, 291). In the manner of the Langer Burg, Quenstedt appears to have a central open area and the pits, concentrated in the east, west and south, again allow for the

recognition of distinct distributions. The north-eastern area revealed concentrations of charred grain, Emmer (*Triticum dicoccum*), while the western area and indeed the rest of the settlement were almost entirely free of charred grain; although it is acknowledged that this may be the result of the sampling strategy. Similar mapping of animal bones reveals a distribution concentration in areas with only isolated grain, although small numbers of bones are found across the entire site. This dichotomy is emphasized by the concentration of handled cups in the north-east area. Axes and flakes are found across the entire site, filter vessels and spindle whorls in the south-east and south-west and collared flasks in the centre (Tab. 2.10). At Langer Burg knives and drums also appeared as distinct distributions associated by Müller with individual households but this is not the case at Quenstedt (Müller 2001, 292-4). There are no rich graves in the vicinity of Quenstedt-Schalkenburg.

	N-E	W	S-W	S-E	Centre	Periphery
Charred Grain	•					
Handled cups	•					
Animal bones		•				
Filtervessel/spindle whorl			•	•		
Axe and flakes	•	•	•	•		
Collared Flask					•	
Flint cores						•

Tab. 2.10 Spatial distribution of artefacts at Quenstedt-Schalkenburg

Derenburg-Steinkuhlenburg

The fortified site of Derenburg-Steinkuhlenburg had a rectangular ditch system with a complex palisade entrance (Müller 201, 294). More recent excavations revealed hundreds of pits, and also pit-free areas with post-holes. This has been interpreted as the open area of a street. Two areas of the site contain concentrations of flint, namely blades, flakes and debitage, and even a few cores. In contrast other areas of the site contain flint axes and knives or else no traces of flint at all. Bone tools occur throughout the entire site. Animal bones are likewise found throughout the excavated area although there is a dominance of cattle bones in the northern area and pig bones in the south (Müller 2001, 295; fig. 160). Although these distinct distributions only represent 20 % of the area, Müller interprets this as a division of labour.

Overall Settlement Patterns

As yet no complete settlement excavation has taken place, but it is possible to see some patterns in the settlement record regarding the relationship between the fortified and unfortified sites.

The flint remains on fortified sites are represented by tools with a low proportion of cores and debitage, suggesting a lack of primary production (Müller 2001, 299). The site of Bottmersdorf-Kiesgrube is recognized as a flint source (Müller 2001, 302) with a proposed model of local flint acquisition and regional consumption, where the fortified settlements are at the end of the line (Wechler 1993 cited in Müller 2001, 299).

The earthworks contain ceramics of different styles from Elb-Havel and Proto-Rivnac at Grossobringen Sportplatz, proto-Rivnac and Globular Amphora ceramics at Derenburg-Steinkuhlenburg and at Quenstedt-Schalkenburg and Schönfeld, and Globular Amphora at Halle-Heide Langen Berg. Another characteristic of the earthworks is the presence of a ceramic style not found elsewhere, that is the *Fusschemel* or perforated footstool (Behrens and Schröter 1980, 131). Some of these earthworks clearly show a different character, Grossobringen-Sportplatz and Peissen are examples of a non-fortified character, more circular in plan and similar to the Rondells of earlier periods, and interpreted as having a ritual function (Müller 2001, 301). Further evidence of ritual activity is argued for at Alsleben-LPG and again in the settlement at Weissenfels-Eselweg (Müller 2001, 302-3).

While settlement evidence largely suggests the presence of domesticated horses, to be expected for a farming population, analysis of the bones at Neuburg-Löddigsee suggests non-domesticated examples (Müller 2001, 300). This Bernburg site is far to the north of the classic distribution area and is interpreted as a temporary hunting station positioned on the lake edge, based on taphonomical and palynological evidence (Kloss cited in Müller 2001, 301-2). The lack of field weeds and grain should be discussed in parallel with the lack of the Bernburg cup-type, which was distinctly associated with grain at Quenstedt-Schalkenburg (see above).

Despite incomplete evidence and lack of full-scale excavation a pattern is visible of regional fortified settlements, with functionally distinct areas around an open area surrounded by unfortified settlements, and a clear demarcation of simultaneous ceramic styles.

Settlement Continuity

When examining evidence for continuity in the settlement record an important point to take into account is growth in population density. Firstly of note is the lack of precursors for both Düsedau and Michelsburg settlement sites, which may be interpreted as the immigration of new groups (Müller 2001, 306).

While three Salzmünde sites are found on earlier Hutberg sites, a continuity of 15% of Hutberg sites, this is distorted by the lack of fine chronological work on Salzmünde settlement material. One third of Salzmünde A sites support direct development to Salzmünde B, but due to the intensification of the settlement density this only represents 13 % of known Salzmünde B settlement sites (Müller 2001, 305). Furthermore around 10% of Salzmünde B settlements have revealed Walternienburg 2 and Bernburg ceramics (Müller 2001, fig. 165). In geographical terms this is interesting in the sense that outside Salzmünde distribution, Bernburg ceramics are known over “pre-Bernburg” pottery, 10% of Bernburg ceramics are also represented at 20% of Hutberg and Baalberge settlements, further supporting the intensification of settlement.

This pattern of no single standard development between settlements is continued with the Walternienburg settlements. Both Walternienburg and Haldensleben settlement material is found on Düsedau settlements and one half of Walternienburg 1 settlements contain Tiefstich ceramics. As discussed above there was a marked intensification of settlement in the Salzmünde style area but in contrast the distribution areas of Walternienburg and Haldensleben seem to show a reduction of settlements. A large proportion of the remaining Düsedau settlements show continuity with the Fischbeck group, a continuity that appears to be paralleled in the ceramics themselves (*idem*, 305).

In the TRB MES V, the low continuity of settlement is affected by the large intensification; there is almost a quadrupling of settlement sites in this period, although account should be taken of the fact that TRB MES V is longer in duration than earlier phases of the Late Neolithic.

Interpretation

Settlements of the early and late Neolithic are in the areas of black earth situated close to water. Settlement expansion begins with the Hutberg style, ca 3800 BC cal, reaching its zenith around 3000 BC cal with the Bernburg style, although during this

expansion there are some regional drops in population density. The Hutberg phase sees the recurrence of settled earthworks, in some cases only partially, while in the subsequent late Neolithic the earthworks and settlements were smaller. The latest phase of this development recognizes fortified settlements, ritual centres, unfortified settlements and temporary hunting stations. The non-arboreal pollen evidence supports the model of settlement intensification.

Subsistence Economy

Open country and mixed oak woodland shaped the prevailing landscape and the cultivated plants consisted of wheat, emmer, einkorn, barley, rye and lentils (Behrens and Schröter 1980, 99). There is also evidence for the cultivation of flax; and even apple pips have been found. The taphonomic investigations show the presence of domesticated sheep, goat, cattle, pig and dog. Cattle seem to have had a multifunctional role, as dairy and draft animals (Kruk 1980 cited in Midgley 1992, 378: cf. Pollex 1999). At the Schalkenburg 50% of the cattle remains were from animals over five years of age. There was also a high proportion of castrated animals, showing pathological change to the hips; a sign they were used for pulling heavy loads (Müller 1985 cited in Midgley 1992, 378). A popular hunted animal was the red deer, indicated by numerous bone remains but other than that there is very little evidence of hunting, and the bone tools found were mainly manufactured from the skeletal remains of domesticates.

BURIAL PATTERNS

Baalberge: TRB MES II-III

Although we are essentially concerned with TRB MES IV-V, a brief discussion of the Baalberge burial record is necessary in preparation for the later evidence. The first overview of the burials was given by Fischer (1956), this was developed by Müller (2001) as a support for the model presented above.

There appears to be a clear hierarchy of grave types from settlement burials, simple earth graves outside settlements, some with possible timber frames, stone-packing graves with or without a mound, *Plattenkisten* (stone cists) with or without mounds and in one case at Weideroda Zauschwitz, of a trapezoidal ditch. The burial types show a distinct spatial distribution, thus *Plattenkisten*, *Steinkisten* and settlement burials are found in the lower and middle Saale, the stone packing graves stretching slightly further afield.

This distribution is related to soil type, namely the distribution of black earth. In contrast earth graves are found throughout the Baalberge distribution area and trapezoidal burials also outside the area of the so-called stone protection graves (Müller 2001, 313).

As far as grave goods are concerned, ceramic additions are found in the non-settlement burials and only occasional non-ceramic grave goods are found in those graves with ceramics (Müller 2001, 317). The graves with non-ceramic artefacts include arrowheads and occasionally copper jewellery. Settlement burials are only found with sherds. Arrowheads and undistinguished pottery forms are connected with male burials while ceramic vessels with distinct form are associated with female burials. Children's burials represent a relatively high proportion of the known burials and are associated with numerous grave goods including copper. Seven burials, which are evidently richer than others, are close to Hutberg phase earthworks (Müller 2001, 319).

In the burials outside settlements there is more standardization of orientation than those within settlements, the most common position being east-west with the face to the north (see Fischer 1956, 51; Müller 2001, 317). Double burials are not common but they are occasionally found. Furthermore, collective burials are known at least as early as 3800 BC cal in the middle Elbe and Saale area, and so later examples are not the result of outside influence. Megaliths are known from around 3500 BC cal and *Mauerkammern* from 3350 BC cal. The partial burials discussed in earlier studies are not supported by anthropological findings.

Salzmünde, Walternienburg and Bernburg: TRB MES III-V

Lüth (1988 cited in Müller 2001, 321ff.) reopened the discussion of Fischer's (1956, 17) grave classification of the Salzmünde, Walternienburg and Bernburg ceramic groups, combining the building materials with the accessibility, (i.e. closed cist or open chamber). The resulting classification includes *Blockkammern* with axial entrance, *Megalithgräbern* (block chambers with side entrance), *Plattenkammern*, *Mauerkammern*, *Holz-kammern*, *Felskammern*, *Blockkisten*, *Plattenkisten*, *Plattenmauerkammern*, *Mauerkisten*, *Holz-kisten* and *Erdkisten*.

Although the burial types show distinct spatial distribution they are also associated with all pottery styles of the late Neolithic. This contradicts the traditional interpretation, for example linking the local Megalithic graves the *Grosssteingräbern*,

literally large stone graves, with the Altmärk Tiefstich pottery style. Indeed the oldest pottery associated with the *Grosssteingräber* at Bebertal, grave 8, is from the Walternienburg ceramic style. While at other sites, Bernburg ceramics are the oldest pottery style present e.g. Ebendorf and Seinstedt (Fischer 1956, 87-88). Similarly Walternienburg ceramics are found in numerous *Mauerkammern* (Fischer 1956, 92 ff.), as is also the case with Salzmünde ceramics (Müller 1994, 141ff.). This last point is related to Müller's (2001) discussion of the Salzmünde/Walternienburg style in the west of the Salzmünde B distribution. In contrast the chambers at Holzsusra and Ditzfurt 2 contained pottery, with distinct Tiefstich style decoration (Müller 1994, 140). Furthermore many *Mauerkammern* are known solely with Bernburg ceramic associations or solely with Globular Amphora pottery, while at Grona and Wandersleben the grave type is associated with both Bernburg and Globular Amphora pottery styles (Müller 2001, 320). Earth-pit graves are principally representations of Walternienburg and Salzmünde burial rites although examples associated with Bernburg ceramics do exist.

The parallel growth of the *Mauerkammern* and the *Grosssteingräbern* customs are regional developments of the Baalberge collective grave tradition, while the non-collective burial practices of the Baalberge style, including settlement burials, simply continue in the Salzmünde and Walternienburg burials of the TRB MES IV and V. However, other influences are also important in this collective burial tradition, demonstrated through Fisher's comparison of the Hessian and Thüringian collective graves. Differences are clear between construction methods but similarities are evident in the grave goods, namely the animal tooth jewellery, and Fischer proposes a late Neolithic "style zone" stretching from the Hessian valley to the Saale, (Fischer 1968, 17; Beier 1984, 17). The flat graves and *Steinschutzgräber*, of the non-collective tradition, are found throughout the late Neolithic, except for southwestern Thüringia. This continuation is further reflected in the continuing use of some Baalberge-period cemeteries, including Salzmünde-Schiepzig and Barleben-Schweinmasterei (Müller 2001, 321). It therefore follows that the grave hierarchy also continues, changed only by the addition of further grave forms.

The graves in the new *Mauerkammern* style are on average larger than the continuing tradition of cist graves, but size is not the only criterion which defines what a collective grave is, or indeed the place in the hierarchy since while the larger cist graves

have been shown to have covering mounds this is only the case for the smaller of the *Mauerkammern* (Müller 2001, 322).

GRAVE CONSTRUCTION AND GRAVE GOODS

The different characteristics of the grave-goods from the *Mauerkammern*, Megaliths and single graves make a straightforward comparison difficult however, some striking patterns are evident when examining the individual vessel types which are found in the different contexts. The vessel types best suited to this are the cups and the so-called Opperschöner jugs. However it may be more appropriate from a taxonomic point of view, based on basic shape and also on their contextual similarity, to rename the jugs, known in the German literature as *Kannen*, as Opperschöner or high neck cups. The Opperschöner cups range in height from 10cm to 20 cm although occasionally cups as large as 40 cm have been unearthed. The ordinary cups have a similar range from 5-25 cm.

There appears to be no clear size-difference between Opperschöner cups found in settlements and single graves but those from the collective graves are larger, a difference which has no relationship to the chronology (Müller 2001, 323).

An examination of the cups similarly shows no variation associated with the chronology or the typology, suggesting again that vessel size is related to the find-context. Thus the cups are distinctly small when associated with the stone cists, the megaliths and the *Mauerkammern*. The cups from the settlements and single graves are both small and large while only large cups are found in the stone packing graves (Müller 2001, 324).

GRAVE TYPE	CUP SIZE	
	Small	Large
Stone cist	●	
<i>Mauerkammern</i>	●	
Megalith	●	
Flat Grave	●	●
Settlement	●	●
Stone packing Grave		●

Tab. 2.11 Cup size and context in TRB MES IV-V

The cups deposited in the collective graves represent only the smaller cup size range found in the settlement, while certain single graves are associated with specifically large cup types from the settlement range.

The distribution of other vessel types similarly reflects contextual differences. Settlement excavation have revealed a high proportion of storage vessels in relation to other vessel types, while there is a low proportion of amphorae and cups found in

settlements in contrast to those found in graves. In addition *Mauerkammern* contain a high proportion of drums and flat graves a high proportion of amphorae (Müller 2001, 324), Fischer (1951, 98) noted this juxtaposition in reference to the vessel types but appears not to have linked it with grave type.

The distribution of amphorae was first discussed by Fischer (1956, 101), being largely restricted to the middle Elbe, a point elaborated by Müller (2001, 143), further isolating the distribution of the Walternienburg style tripartite amphorae to the mouth of the Saale. The tripartite cup is also restricted to the mouth of the Saale and the Elbe, while the rounded cup, traditionally Bernburg, Müller's type K (2001, 143), is found in both *Mauerkammern* and flat graves but is restricted to the north Harz. The lack of clearly recognized forms in Thuringia is the result of the fragmentary nature of the finds.

These distinct contextual and geographical distributions are emphasized by similar distinctions between specific decorative motifs. The angular stroke motifs, influenced by the Elbe Havel style, are found almost exclusively at Tangermünde, while certain complex motifs from secondary *Mauerkammern* assemblages are very rare in the flat graves assemblages. Overall the flat grave vessels possess the highest range and most complex forms of decorative motifs, followed by the settlement vessels. The *Mauerkammern* have the smallest range of motifs, despite possessing some of the more complex ornaments (Müller 2001, 325). In addition they share more of these motifs in common, with the settlement vessels, than they do with the flat grave vessel decoration.

One further artefact distinction can be made despite the dearth of evidence. In TRB MES IV there is no visible difference between axes from settlements and burials yet in TRB MES V the grave axes are larger than those in the settlements.

In summary:

- A differentiation is visible between collective and single graves based on the size of the Opperschöner and tripartite cups vessel addition;
- In TRB MES IV-V this differentiation is clearer, single graves possessing larger vessels and more varied decoration compared with the collective graves possessing smaller vessels, simpler decoration and specifically the inclusion of drums;
- A chronological difference is seen in the axes, which in the early late Neolithic have a homogenous form, but by the later late Neolithic there is a larger axe

form manufactured specifically for burials.

Comparisons of the contexts of similar vessel type, axes and vessel decoration have shown some clear patterns but the different characteristics of the types of grave goods make it more appropriate to examine the different burial forms individually.

HOLZ- AND MAUERKAMMERN

Aspenstedt-Grosser Berg, a large *Mauerkammern* measuring 2.5 x 3.3 m, was excavated in 1955 and showed several distinct areas of burning. Indeed some of the bones were in vessels, interpreted as ossuaries. A distinct group of vessels was discovered in the northwest corner, a second group lying oriented to the wall and a third group in the east outside the chamber, associated with an area of charcoal. Cups and undecorated vessels were restricted to the inside of the chamber while straight sided and barrel vessels and complex decoration were restricted to the outside of the chamber.

The trapezoidal chamber of Dedeleben Rendelberg, measuring 6.6 x 3.5 m, was cut into the sandstone to a depth of 60 cm. A layer of collapsed stone covered a deposit of ash and the remains of fire. The only possible distinction made between the disarticulated bodies concerned the top examples, which were charred, and the lower examples, which were properly cremated. In the floor of the chamber there were five identifiable cists.

From cists 1 and 2 Bernburg cups were found while cist 3 contained a bowl and cists 4 and 5 contained cups and funnel bowls (Müller 2001, 331). Furthermore the ceramics in cist 2 exhibited zigzag bands and a net pattern, the decoration in cist 3 consisted of zigzag bands, triangles and

	Cist 2	Cist 3	Cist 5
Net pattern	●		
Zigzag	●	●	
Fishbone		●	
Triangles		●	●
Empty Zigzag			●
Linear bands			●

Tab. 2.12 Distribution of pottery decoration in Dedeleben- Rendelberg *Mauerkammer*.

fishbone patterns, cist 5 pottery displayed empty zigzag bands, triangles and linear bands (Tab. 2.9). This is very similar to the distinct distribution pattern seen in the decoration of settlement ceramics, at Halle-Heide Langer Burg. It is unclear if the distinction, recognized in the ceramic decoration, is representative of chronological change or associated with distinct groups in the community. For example cist 5

contained the bones of one adult male, three women and three juvenile individuals, an association which may be interpreted as a family group.

Derenburg-Lowenberg, again on the Rendelberg plateau, is a *Mauerkammern*, measuring 9.7 x 3.8 m, which was burned down. The preservation of the bone is poor but some observations are still possible. Two groups of bones are recognizable, principally long-bones, while elsewhere bones are widely spread throughout the chamber; after the fashion of the Aspenstedt chamber where bones were found in vessels. At Odagsen, currently the most thoroughly recorded excavation, the distribution of bones was interpreted as a post-depositional process, yet at Derenburg there are no traces of animal teeth on the bones.

In a similar manner to Dedeleben the pottery at Derenburg shows distinct distribution, thus zigzag bands are evenly found through the structure yet grooved decoration is restricted to quadrants V and VII. Empty zigzag decoration and other complex patterns are restricted to quadrant IV, lugs to quadrants V and VIII, and the fir-branch motif, is found only in quadrants IV and V. Furthermore, quadrant IV contains a higher proportion of decorated pottery than the other quadrants while it is also the only quadrant where the barrel-like vessels outnumber the cups.

Other concentrations show fragments of a quern-stone and dog-bones in quadrant IV flint artefacts in III and IV and an antler needle in quadrant II. Quadrant IV had a substantial dominance of male remains in contrast to the female remains dominating elsewhere. Unfortunately no stratigraphy was recorded during the excavation (Müller 2001, 335-6).

Decoration	Quadrant			
	IV	V	VII	VIII
Lugs		●		●
Groove		●	●	
Zigzag	●	●	●	●
Fir Branch	●	●		
Empty zigzag	●			

Tab. 2.13 Distribution of decorative motifs in Derenburg

Schönstedt *Bohlenkammergräber*, essentially a *Mauerkammern* constructed in wood and measuring 9 x 4 m, contained at least 64 crouched interments surrounding a central passage, the majority of which were oriented east-west. An area of central post pits is interpreted as evidence of the roof supports and there was no sign of fire purification.

Schönstedt is a rare example of a burial chamber in which osteoarchaeological work was carried out in early excavations or where the preservation of the bodies made such identifications possible. Thus in this chamber grave it was possible to make associations between grave-goods and the individual burials (Tab. 2.14). Thus male burials were accompanied by arrow heads, older men by bone arrow heads, young men by axes, cups and antler toggles, infants by copper, and women and children by animal lower jaws and teeth jewellery.

	Infants	Children	Women	Men	Older men
Bone arrowheads					●
Arrowheads				●	
Axes				●	
Cups				●	
Antler toggle				●	
Jaws		●	●		
Teeth jewellery		●	●		
Copper	●				

Tab. 2.14 Grave good associations from Schönstedt *Bohlenkammergraber*

Summary of the *Mauerkammern*

The *Mauerkammern* reviewed above demonstrate the problem of making generalizations when interpreting these non-megalithic collective burials. The few examples discussed each show different construction techniques and different treatment of the dead from crouched inhumation or cremation or placement in an ossuary and disarticulation. Additionally, some chambers contain very few artefacts while others contain many, yet there are recognizable differences in their functional use, those associated with individuals, or particular decorated vessels linked to specific cists or at least areas of the chamber. This recalls the distinct distributions of motifs within the settlement pits of Halle-Heide Langer Burg (Tab. 2.9), which demonstrated spatial relationships between decorative motifs and different flint-working traditions. In addition the chamber of Aspenstedt gave an example of grave-goods with virtually no decoration, within the chamber, but complex decoration on vessels associated with the ritual practices at the entrance or forecourt. In addition numerous collective graves are associated with pits, interpreted as having ritual uses (Müller 2001, 338), and where examples of burning of the sites exist excavations point to deliberate ignition of the fires.

In the case of drums associated with collective graves, 24 are known, almost all being found in the entrance area and thus not being offering gifts in the standard manner e.g. Odagsen grave 1, Ditzfurt, and Grosseibstadt grave 1 (Müller 2001, 338). Alternative placements of drums occur either where they have been included in the spreads of sherds, as at Böhlen, or in a specially constructed area, as at Heiligenthal-Sommerberg.

A few further generalizations may be made regarding the construction of the *Mauerkammern*. Where trapezoidal constructions are known they are restricted to the second phase of the *Mauerkammern*, that is the traditionally named Bernburg phase; being furthermore limited to the North Harz. Similarly chambers of this second phase commonly have passageways, a feature which occurs throughout their distribution (Müller 2001, 340). Chambers in which the base is dug into the ground are first known in group 1A but are also common in group 2. While chambers of the second phase, traditionally named Bernburg, commonly have a larger number of ceramic additions, this is not related either to the chamber size, or to the number of individuals within the chamber. Yet the Chamber graves from the North Harz are generally richer in grave goods than those in Thüringia (Koch cited in Müller 2001, 342). One feature of the collective burials is that rarely is the position of the individual marked by gifts, Schönstedt being a rare example where individual associations are visible. Anthropological finds from Calden have not been superseded elsewhere and indicate that all deposition of bones took place as part of the primary burial and that any disarticulation was the result of moving of bones due to lack of space (Grupe and Herrman in cited 2001, 344).

CEMETERIES OF INDIVIDUAL GRAVES AND SETTLEMENT BURIALS

Although the cemeteries of TRB MES IV are restricted to the central Elbe (Müller 2001, 345), maybe one reason for the restriction of the tripartite amphorae to this area (Fischer 1956, 101), the cemeteries from TRB MES III and V are known from the wider area of the middle Elbe and Saale. For analysis purposes cemeteries are recognized as groupings of five or more burials, and to reiterate a point discussed above the distribution of cemeteries, taking into account the number of burials, provides a comparable distribution pattern to that of the number of burials within the *Mauerkammern* distribution. This similarity can be interpreted as supporting the assumption that the burial record reflects a relatively complete representation of the local

communities (Müller 2001, 345). Following the characteristics of the *Mauerkammern* the burials in cemeteries reflect diverse practices, although some general patterns can be recognized, for example within the cemeteries in the area of the mouth of the Saale, where the burials often surround a central single or double burial. However, there are difficulties in defining whether differences are social or chronological. The best procedure to clarify these patterns within the cemeteries is to provide an overview of some of the better preserved examples and the better recorded excavations.

The cemetery of Brachwitz, to the north of the Saale, was excavated in 1927 by Grimm and revealed a total of 16 graves of diverse construction, there may have been flat-graves at this site, but they were not recognized as such due to the inadequate excavation method. Following the pattern of the hierarchy of construction methods discussed for TRB MES II and III, the same pattern can be recognized here, where a relationship is seen between the more complicated constructions and the quantity and quality of the grave goods. This pattern is also marked in the spatial distribution of the graves. Of the 16 graves, three were *Blockkisten*, constructed from slabs and blocks of stone in the south east of the cemetery, all of which contained grave-goods, while of the 9 *Plattenkisten* in the western and south-western area, only 5 contained grave goods. The remaining graves were *Mauerkisten*, in the north and north-eastern area, and only one contained grave-goods. From a typological point of view the earliest ceramic vessel belongs to Salzmünde A and the latest to Salzmünde B, thus placing the cemetery at the transition of TRB MES III to IV (Müller 2001, 345-6).

The excavation of the eponymous cemetery of Walternienburg on a sand bank close to the Elbe, has extremely poor documentation, having been investigated between 1906-7. The excavation yielded 21 graves in total, all flat grave except one stone packing grave, yet only one third of the ceramic finds and one quarter of the axes came from sealed contexts. Furthermore no grave orientation is known from the Walternienburg cemetery (Fischer 1956, 85). The ceramic material spans the typological groups Fl 1A, tripartite vessel, and Fl 1B, bipartite vessel, approximately covering the years 3300-2900 BC. However, despite the lack of a complete plan and the lack of contextual information for the finds from the second year of work, some important information can be gleaned.

The graves contain a range of vessels from zero to five; the number of decorative motifs also suggest differences. Two areas of ceramic differentiation can be recognized,

the richest graves, those with the tripartite amphora in one area and the vessels with numerous zigzag bands in a second area. This spatial pattern is contrasted with the graves containing lithics. The three graves with axes and those with a high concentration of flint are restricted to the northwest of the cemetery. A clear distinction was made between burials rich in ceramics and those rich in lithics. However, grave 2/6, which contains a large amount of flint and also a large amount of ceramic sherds, possesses the lowest proportion of decoration in the entire cemetery. In addition grave 13, one of the flint-rich graves, contains spindle whorls. There is a boundary between ceramic-rich graves, the richest marked by the tripartite amphorae, and the graves dominated by flint, the richest of which is marked by the axes of Wiedaer slate. Of further importance is Götze's observation that the flint material exhibits no trace of use (Müller 2001, 349-352). Thus presumably manufactured specifically for burial deposition.

The cemetery of Tangermünde, similarly on a sand terrace of the Elbe, was excavated in the late 1940s revealing 36 surviving flat-graves and in one example the traces of a wooden grave construction were visible around the head of grave 2 (Fischer 1956, 94). Most of the burials lay on their back with the head in the southeast or south-southeast and with the exception of grave M, which contained both a crouched and a supine burial, appeared to be placed in lines. Based on the ceramic additions the burials are interpreted as belonging to the Walternienburg style, although there is stylistic influence from the Elbe-Havel group and also the Bernburg and Salzmünde pottery styles (Beier 1984, 83-84).

In the northwest area of the cemetery the burials are facing the northwest and are linked to the addition of axes while in the southwest area the bodies face the southwest. The remains of sheep are restricted to the southern part of the cemetery while the bones of deer are restricted to the north. Graves with animal teeth are restricted to the south-east half of the cemetery, and are predominant in children's graves and bone tools are primarily found with the burials containing flint artefacts. The burials with flint tools are distinct from those with richly decorated pottery (Müller 2001, 358)

Fischer (1956, 64) recorded two styles of settlement burial but noted that other examples had been discovered which did not fit this pattern. The Salzmünde form is buried in a functional area, maybe a pit, of the settlement on sherd-packing, the fill of the burial context is not distinct from other settlement contexts. An early example of

sherd-packing in a settlement burial, comes from the Baalberge style burial at Obermöllern (Fischer 1956, 58). The Weissenfels type consists of deep pits, and the burial is associated with selected animal bones. The horizontal stratigraphy of the pit suggests reuse associated with fire. Both these burial types are lacking in the traditional grave goods forms. To this Müller adds the Wildschütz type, characterized by the important destruction of material; to this type finds were added. Furthermore, to some degree these settlement burials may be placed in a loose chronological framework. The Weissenfels-Eselweg type takes precedent in TRB MES II, with the Salzmünde type dominant in TRB MES III-IV and Müller's Wildschütz type dominant, but not restricted, to TRB MES V (Müller 2001, 381). Midgley (2005, 54ff.) discusses the Mesolithic and Danubian burial traditions and proposes that settlement burials may have reflected "a claim on resources that was not directed at neighbouring communities but at nature itself" (*idem*, 71).

In addition to the human burials Müller (2001, 383) cites 14 cattle burials from TRB MES IV-V, although an example at the TRB MES III cemetery Stemmen-Sandgrube is possibly associated with a find in the Hutberg style. These range from single burial to triple burials of cattle both with and without the addition of human burials, generally women or children.

Summary of the Non-collective Burials

The essential problem with interpretation of the non-collective burials is the presence of independent differentiation patterns at different cemeteries, although within each individual site specific rules are followed. At Brachwitz grave-goods are linked to the man-hours involved in grave construction. In the later cemeteries of flat graves there is a distinction between ceramic and flint grave-goods, which is reflected at Tangermünde by the orientation of the burials. A further significant feature is richly equipped children's graves. In summary:

- Three quarters of flat-graves are earth pits, while the remaining graves are either cists or stone-packing graves, occasionally with a mound;
- Differences in burial position consist of crouched inhumations, supine and partial burials; furthermore orientation and the line of sight of the individual

- clearly have some importance, and in some cases there was a relationship between orientation, grave-goods and gender;
- Patterns may be recognized in the distribution of flint tools and the decoration intensity on ceramics. There is a clear relationship at some sites between the distributions of these grave-goods;
 - All graves with stone construction, whether it be in cist form or as stone-packing, were covered by a mound. The complex grave forms are largely restricted, as mentioned above, with the areas of rich black earth in the eastern Harz. Except for these grave types there appears no relationship between construction expenditure and the grave goods for the Walternienburg and Bernburg style graves;
 - Where conditions allowed a good osteoarchaeological analysis of the bones the right-hand crouched burials with few or no ceramic grave-goods were male. This is possibly supported by the fact that no left-sided crouched burials, by default not male, contained axes (Müller 2001, 360-65);
 - Furthermore it is clear from the chronological changes in ceramic typology that there is a parallel change in non-ceramic grave-goods. Thus tripartite vessels of Fl 1a are associated primarily with flint debitage, the bipartite forms of Fl 1b are associated with numerous other non-ceramic grave-goods but the rounded vessel form of Fl 2 are associated with flint blades and axes (Müller 2001, 362);
 - The burial customs of the MES TRB IV and V develop the Early Neolithic traditions. Flat graves are common throughout the area, with a changing pattern of grave-goods. Those single or double burials with elaborate constructions are restricted to the black earth areas of the lower and middle Saale and the eastern and north-eastern Harz foothills;
 - Both ceramic and flint grave-goods were manufactured for the purpose of burial, an observation supported by the distinctiveness of pottery forms and decoration found in the burials and by the evidence of undamaged flint tools;
 - Finally a distinction is clear between the areas of burial for single graves where the grave construction and the grave-goods commemorated the individual, and the practice of collective burial where the individual is not emphasized and repeated ritual practice occurs at the entrance of the chamber. While the areas of

single grave and collective graves are distinct from each other there is still a wide range of different activities and practices carried out by the different communities at both *Mauerkammern* and flat cemeteries.

Conclusions

In the period characterized by Baalberge ceramics, more elaborate grave forms are distributed in relation to the black earth soil type. So we find the richer *Plattenkisten*, *Steinkisten* and settlement burials found in the lower and middle Saale (Müller 2001, 313).

During the period 3800-3500 BC cal. there is evidence of further complex social development and an additional elaboration of this burial pattern associated with the distribution of the Hutberg ceramic style, which is found in settlements, in the east and middle Harz area (see Map 2.1). There are currently seven known burials, which are evidently richer than others, and these are situated close to Hutberg phase earthworks (Müller 2001, 319).

Müller suggests that during 38-3500 BC cal. an increase in ceramic decoration is the expression of a need to distinguish social position, and create a symbolic distinction from outsiders. This trend is paralleled in the rise of more complex settlement systems marked by central fortified settlements associated with the particularly elaborate burials mentioned above (Müller 2001, 398). This expansion of the settlement area may be recognized as internal colonization, which begins with the Hutberg style around 3800 BC cal. and it is associated with renewed appearance of earth works. It reaches a high point with the Bernburg style around 3000 BC cal. continuing to 2700 BC cal., where the expansion ranges from a doubling to a quadrupling of the settlement system. The picture generated by the proportion of non-arboreal pollen in pollen profiles supports this model. The combination of elaborate burial practices and a rise in ceramic decoration leads Müller (2001, 445) to identify this patterning as the formation of an elite from 3800 BC cal. The elite are distinguished by the inclusion in graves of arrows and jewellery, and these occurrences are contemporary with the settlement expansion and local processing of imported Alpine copper, which leads to internal differentiation of society.

However, an economic crisis may be seen from 3500 BC, related to problems in accessing Alpine copper and also the intrusion of the Altmark pottery group (Müller 2001, 439). The exponential elaboration of decorative forms may be seen as a reflection

of group boundaries and a need to further establish a symbolic distinction from outsiders. This need for expression is also found on engraved axes, menhirs and burial chambers, although establishing dating for these occurrences is difficult. For example, at Obereichstädt, which has a radiocarbon range of 2890-2660 BC cal, the tendency would be to accept the earlier date due to the ceramic finds. The roof of this tomb included a reused, decorated menhir, which supports the case that at least some rock decoration occurred prior to, or at least contemporary with the Salzmünde style. Additional changes are proposed by Pollex (1999, 542) associated with the earliest cattle burials, which begin at this time in the Salzmünde and Altmark Tiefstich pottery contexts, and may be linked to changing religious beliefs around 3500 BC cal. (Pollex 1999, 528).

From 3350 BC cal. exploitation of local copper resources facilitates continued settlement expansion, which is paralleled by population decrease in the Altmark, reflected in the presence of Walternienburg and Haldensleben style burials in the south, which may simultaneously be evidence of exogamous marriage relations (Müller 2001, 446). Although the exploitation of local copper may be seen as an end to Müller's economic crisis, the result is a fragmentation of the Baalberge/Hutberg unity, which leads to the development of smaller social groupings, reflected in the appearance of distinct local pottery styles. We may speculate that the early tripartite pottery forms are a fragmentary reflection of a fragmenting society. Additionally, some communities find a need to express their collective nature in burial forms while other communities prefer displays of wealth related to richly equipped and constructed individual burials.

From 3350 BC cal. the archaeological evidence supports an interpretation of an end of the struggle for metal resources, linked to the commencement of the local production of copper, economic growth, further settlement expansion. This economic growth is again linked to displays of rich burial goods and coincides with the appearance of the drum in the southern TRB. It is clear from the relationships of the metal finds that they are related to the finds of drums, a subject we will discuss in more detail in the next chapter. Creighton (2000, 40ff.) discusses ritual and production observing that in non-literate societies complex procedures are often ritualized, in order that they may be more easily committed to memory.

As we have observed, Müller identifies an economic crisis around 3500 BC cal., linked with lack of access to copper resources. Elaboration of decorative forms, and an

association of copper artefacts with drums mark the renewed expansion and economic growth from 3350 BC cal.

This concludes the discussion of the cultural background of the southern TRB. It is clear that within a large general cultural population, small individual communities followed distinct local burial practices; this further supports the model of Müller (2001), which stresses the fact that ceramic differences were subtle variations in style at a local level. Within these populations, settlement evidence suggests that family groups may have distinguished themselves through the use of distinct ceramic decoration and tool industries. Some of these distinctions reflect economic differences and access to resources. With these patterns in mind we shall now examine the clay drums found within the contexts of the southern TRB.

CHAPTER 3
An Interpretation
of the Late Neolithic
Clay Drums

Rhythmus est metrum fluens, metrum rhythmus clausus
Charisius ca. 400 AD

...in the world of plants, and of living beings in general,
there are no such things as fingers; there are only relationships.

Gregory Bateson

ON THE CLASSIFICATION OF MUSICAL INSTRUMENTS

The classification of the clay drums of the TRB, in the area surrounding the middle Elbe and Saale Rivers, has been one of the difficulties facing any archaeological study of these vessels. The classification of the drums has reflected the researcher's interpretation of the cultural model, prevalent at the time; as Fischer (1951, 101) observed, "evidently the subjective sense of form plays a large role in the drum typology". Furthermore, he raised the question whether particular drums could be assigned to cultural groups with any certainty and he sought an objective set of criteria for analysing the drums. Although Fischer acknowledged the subjective nature of classification, it will be argued below that while the form of the drum and, subsequently, the method of skin attachment are important aspects of any classification scheme, the decorative elements are of at least equal import, as is the context in which the instruments have been found. This dissertation adopts the stance that the southern TRB was not divided into distinct cultural groups but into populations distinguished by their ceramic styles, which were reflections of local traditions of settlement and burial, and which to some degree were in turn a reflection of soil types and other ecological factors.

Kartomi (1990, 4ff.) provides a summary of the techniques for the classification of musical instruments, proposing that the distinguishing features of a classificatory scheme are based largely on the cultural assumptions of the classifier. Thus it is worth reiterating Fischer's (1951, 99) acknowledgement, ahead of his time, that the different drum typologies suffer from the subjective view of the researcher. This chapter seeks to

review the archaeological research undertaken in the 20th century, attempting to make sense of the ceramic evidence that is interpreted as drums. It also draws on the idea of contextualism, accepting that while material culture reflects social, political and ecological relationships, it also plays an active element in social interaction (Hodder 1982, 119 ff.; Shanks and Tilley 1987, 116). Thus material culture can be used to reflect distinctions between social groups and also to emphasize similarities, even between family groups. This model is relevant in view of the patterns noted by Muller (2001, 290) at the Langer Burg: where distinct distributions of decorated ceramics could be recognized within the settlement. In addition, a point worth noting, Huntington and Metcalf (1979, 122) observed that some societies promoted the outward appearance of egalitarianism within the burial practices, which was not a true reflection of everyday life. Another interesting observation is that in the middle Elbe and Saale area some populations evidently practised collective burial while other populations emphasized the status of specific individuals, and this may have a bearing on the current discussion.

The researchers undertaking this work have been archaeologists and the research has, of necessity, been linked to the attempts to classify and understand the ceramic and burial forms in the middle Elbe and Saale areas and to fit them to the current models for understanding the Neolithic archaeological evidence as a whole. As a result the vessels, characteristically interpreted as clay drums, have been found linked to different ceramic styles and in some cases distinct burial forms, but appear to follow no strict rigidity. They have also been approached as a means of identifying cultural influences between different styles of ceramic groups. The exact phrasing of this discussion has indeed been an important part of the work; as the previous chapter demonstrated, the history of the interpretation of the southern TRB in the area of the middle Elbe and Saale rivers has been polarized. On the one hand are those researchers who chose to define each difference as evidence of a distinct cultural group and on the other hand those who classify the different ceramics merely as local styles within the larger cultural tradition.

Deciding upon which characteristics are to be used in the classification is of great importance, so Seewald (1934, 61) and Fischer (1951, 98ff.) in using the vessel form and method of skin attachment as the basis of their schemes, complied with Kartomi's (1990, 4) notion, that morphological criteria are used by westerners due to the western emphasis on acoustics and morphology. Kartomi (1990, 4) provides an example where reed pipes are divided into separate categories depending on the material from which

they are made. This might lead us to question whether the clay drums and the wooden examples, upon which they are believed to have been modelled, would have been viewed as equivalents. Unfortunately wooden examples, which might allow the comparison of form and decoration, have yet to be recovered.

In another example from Kartomi (1990, 4) instruments are placed in a group, in the indigenous classificatory scheme, when specifically used for ceremonial function. In this way a wind instrument might be grouped with a percussion instrument. From an archaeological point of view we are obviously unable to enquire as to the original classificatory terms but while lacking the terminology, archaeologists have the information provided by the context in which the instrument was found. Thus it may be appropriate to emphasize the different contexts of the drums we are examining and thus in some way to identify criteria which may have marked drum types as distinct, based on their cultural use. For example, is there a recognizable difference between the drums found in burials, either single or collective, and those found in settlements, or between context and decoration? And since in the context of this study, the time span of the drum use is several hundred years, we may ask, is it possible to recognize changes in the role of the instrument as a reflection of changes in social organization. With these ideas in mind it is worth noting Kartomi's (1990, 10) suggestion that

“classifications serve the purpose of enabling members of a culture to recognize fundamental musical, social, and other relations between the instruments contained in the scheme or, if so inclined, to formulate new myths or theories about them.”

That distinct evolving classification schemes existed in the distant past is supported by our knowledge of the eightfold *pa yin* classificatory scheme, which divided instruments based on the material from which they were made. This Chinese system began as an oral tradition and is believed to originate in the 23rd century BC, but can be shown to have coexisted with a fourfold system (Kartomi 1990, 11). This is just one example supporting the ancient nature of classification of musical instruments. Kartomi (1990, 12) further observes that in cultures such as those of Tibet, India, China and Europe where many centuries of written documentation exist, four important characteristics come into play. Firstly there is generally more than one scheme in place within a culture and the most symbolic is often the most representative of the culture; the important nature of the dynamic symbolic properties of material culture has already been addressed in the archaeological literature (Hodder 1982 119; Shanks and Tilley 1987, 116; Trigger 1989, 350; Tilley 1999, 133ff.). Secondly the classification scheme is

related to social, cosmological and historical spheres of thought. Thirdly, prestigious instruments fit together more closely within the scheme and finally, while single character divisions exist they are positioned parallel with holistic paradigmatic divisions. Mildenburger (1953, 36), viewing the drum as a cult object, argues that due to its prestigious nature the drum would not have been subject to visible change of shape undergone by more ordinary ceramic forms.

A problem, on this occasion, for the defining and writing down of a scheme for the classification of the drums in the southern TRB is that a written scheme is by its very form static and will have difficulty in adapting to the dynamic use of the instruments over an estimated period of 700 years (Müller 2001). In any archaeological classification of these Neolithic drums there will exist the juxtaposition of the classificatory scheme based, on the one hand, on visible form, method of skin attachment and decoration and on the other hands the link with context, which may suggest distinctions not recognizable in the primary criteria for classification.

A further factor affecting the classification of the drums of the TRB is the decoration used on the drums, in relation to the decoration of other ceramic vessels or burial structures. In the second *Mauerkammern* phase, TRB MES V, several of the distinct “symbolic signs” appear on the contemporary barrel shaped pots, and there is also the occurrence, in the middle Saale and in the East Harz foothills, of carved decoration in burial chambers and on Menhirs. The chamber at Schkopau, containing a Bernburg style ceramic assemblage with a Salzmünde style drum, and the Nietleben *Rampenkiist*, both contained decorated slabs. However, other decorated stones appear to be of a later date; Göhlitzsch (Beier 1984, 136) and Schafstadt, grave 70, (Müller 1988, 193) are associated with Corded Ware pottery. Incidentally these two features correspond with the later pattern of a large numbers of drum fragments found in settlement pits, as opposed to the TRB MES IV tradition where a larger number of instruments are found in burials. This also coincides with the decline in the use of these same decorative elements on the drums themselves. Kjellström (1988, 133) proposed a classificatory scheme for the Saame drum with reference to the decoration and while his pattern may not be easily followed in reference to the Neolithic drums, it is of note that decoration was an important factor in the work of Niklasson (cited in Fischer 1951), Grimm (1938) and Schrickel (1956). Fischer discussed the decoration, but applied this

discussion only as a clarification for his scheme based on vessel shape. And to some degree this is the method employed here.

Kartomi (1990, 5ff.) stresses that classifications are not rigid constructs, similar to Niklasson's view of his own scheme (Niklasson cited in Bakker 1979, 28), and that one or more parameters may affect in a non-linear fashion rather than any logical division. Here we might note the drums from the sites of Börnecke, Ditzfurt 2 and Rössen, all of which have stringing anomalies and do not fit the standard drum types exactly. The difficult task then may be in recognition of the non-linear or apparently illogical criteria. A western scheme may follow the form of a family tree type figure while Indian, Chinese and Javanese schemes are often represented in a circular form, as a mandala.

As a result of the importance of symbolic decorative elements within local classification scheme of musical instruments, highlighted by Kartomi, this work will seek to combine the principles of the decorative schemes of Niklasson (1925 cited in Fischer 1956), Grimm (1938) and Schrickel (1956) with the structural schemes of Seewald (1934) and Fischer (1951). The additional criteria of the context in which the instruments were found will also be taken into account, in an attempt to understand the relationship between the criteria summarized above and the individual contexts. This approach therefore adopts the paradigmatic classification method proposed by Kartomi in contrast to the traditionally used logical division method.

ON THE CLASSIFICATION OF NEOLITHIC CLAY DRUMS

The Drum

Behrens (1980, 145) summed up the importance of the drum as an artefact of the human species, noting that there is no other musical instrument in the whole world that has as general a distribution as the drum, occurring in almost every society on earth. No other musical instrument is as influential in people's lives, used in important activities both sacred and profane, as "magical cures" in the hand of the north Asian shaman, or as the symbol of the royal dignity of an African chief, the accompanying instrument to the puberty rite or as a rhythmic instrument in dances. Similarly, no other instrument has produced such a variety of shapes and forms (Behrens 1980, 145). More specifically the clay drums of Saxony and Thuringia are one of the most distinctive features of the Neolithic in this area (Fischer 1951, 98).

The current work aims to review the literature of the previous century, discussing the clay drums, and then to evaluate the statements made by authors. The drums are found further afield in the Havelland, in Poland, Bohemia and Moravia and, associated with the Altmärk Tiefstich pottery style, in Hanover. Furthermore, it has been argued that the Cucuteni-Tripolye culture of Romania and the Ukraine (Seewald 1934, 68), and also the Tisza-Polgar culture and the subsequent copper age cultures of Hungary (Behrens 1981, 156), all contained vessels, which may be classified as drums. Returning to the main geographical area of this study, they are found in the subsequent Globular Amphora and Schönfeld cultural groups (Fischer 1951, 98). Due to the decoration of the examples from the TRB MES, namely those of the Salzmünde, Walternienburg and Bernburg ceramic styles, they form a distinctly interrelated Central German phenomenon; and this is the focus of this dissertation.

The artefacts in question are goblet, or hourglass shape clay vessels without a base, essentially hollow clay cylinders with neither top nor bottom, paralleled in the shape of contemporary drums such as the Djembe of Senegal, or the North African Darabukka. Krause was the first to propose that these clay artefacts were drums in 1892 (Seewald 1934, 60; Fischer 1951, 98; Mildenerger 1953, 30), an interpretation based on ethnographic comparisons; and no convincing alternative interpretation has since been proposed. Indeed, in support of the interpretation, Behrens (1980, 144) noted that there is no musical instrument that has as wide a global distribution as that of the drum.

Neolithic Drums: Contextual Diversity

Fischer (1951) presented the classic study of the drums, thus providing the benchmark for future research and presenting numerous problems for the understanding of the contemporary typologies of the different ceramic styles. To some extent the problems were related to the archaeological custom of attempting to completely compartmentalize the “cultural” groups. However, current research (D.W. Müller 1994; J. Müller 2001; discussed above) has presented a clearer understanding of the cultural background, allowing many of Fischer’s observations to fit more concisely, with the proposed model. Müller (2001) proposed a view of the cultural development of the southern TRB as a continuum, distinguished by local ceramic styles, which mutually influence each other. Thus before we review Fischer’s analysis of the drums it would be wise to emphasize that the model, at the time he was writing, placed the archaeological

evidence from central Germany into distinct cultural groups, which ran concurrently; thus the recognized sequence consisted of Baalberge, Salzmünde, Walternienburg and Bernburg. Additionally, many important observations were unrelated to cultural group affiliation, thus drums were observed to have been discovered with male burials, such as the Latdorf Spitzes-Hoch example and also with female burials, as was the case at Biendorf, accompanied by the burial of a cow and calf, and also at Schkopau, where a Salzmünde style drum was associated with a Bernburg style assemblage. Mildenerger (1953, 41 n. 66) cites these examples to support the argument that during the Neolithic women in Europe could assume the role of the magician as is seen in various ethnological studies, e.g. Siberia. The role of women in what has traditionally been viewed as a male dominated social role will be discussed below.

At Hornsömmern the drum was placed over the remains of a child. At Edesheim and Fredrichsaue the drums associated with the graves were the only ceramic grave goods, while elsewhere they were associated with numerous other vessel types (Fischer 1951, 98). Fischer (1951, 98) also observed that one third of drums known were discovered in one piece, yet a further distinction is that excavation has demonstrated that in some cases they had been deliberately broken. In the rare case of Heiligenthal-Sommerberg, these fragments were deposited in a specially constructed alcove or as Fischer described it a *Liliputkiste* (Seewald 1934, 64; Fischer 1951, 98; 1956, 101). Indeed in burial mound 5, in the Harth Forest, a site presently referred to as Böhlen-Zeschwitz, the fragments of the drum were reconstructed from the fragments of an area paved with sherds. An area paved with sherds is a distinctive feature of Salzmünde burials (Fischer 1956, 59), yet one example discovered in a flat grave from Watenstedt (Beier 1984, 154), contained a drum fragment and other sherds of the Bernburg style and has been classed as a Bernburg assemblage by Müller (2001, 172). This example may represent the continuity that Müller (2001) proposes.

Although the sherd pavement is recognized as a characteristic of the Salzmünde burial assemblages, it has been interpreted as having a different purpose from the grave goods. The sherd pavements consist of the fragments of settlement vessels, while grave goods consist of vessels found specifically in a burial context. Fischer (1956, 59) interpreted the pavements as part of the grave structure. Here we might recognize a link between Salzmünde sherd paving, consisting of settlement vessels, in graves and burials themselves in settlements.

Fischer (1951, 98) observed that the drum sometimes appears to represent the place of the Walternienburg amphora, as exemplified at the sites of Biendorf, Börnecke, Heiligenthal and Quenstedt. The discrepancy with Fischer's statement is that in a later publication (Fischer 1956, 101) he observed that the distribution of these amphorae was restricted to the middle Elbe; as noted in chapter 2 Müller (2001, 143) further refined this to the mouth of the Saale. Thus only the site of Biendorf is strictly in the area, near the mouth of the Saale, and so this statement by Fischer, is obviously flawed. A final observation concerning this criterion is a contextual point, which links a high proportion of drums with Mauerkammern and a high proportion of amphora with flat graves (Müller 2001, 324, see the distribution of Mauerkammern and single graves above, Map 2.7). What then, we may ask, is the importance of the drums found in the flat grave as opposed to collective graves or settlements and what is the significance of the import given to symbols from the Mauerkammern? Should this be read as a link between the symbols and death, or not, since in the Salzmünde settlement we find drums with less motifs but we also find burials?

The Standardization of Site Names

For an archaeologist not familiar with the German drum names, difficulties can occur, relating to the names of the sites; by this we mean one article referring to a site by one name and a different article using a different name for the same site. Additionally, publications occur erroneously referring to an illustration from an older article with the wrong illustration number.

Beran (1993, 143-4) and Koch (1992) use what is presumably the new, commonly accepted, name for the previously named "Harth" drum; thus the drum from the site of Böhlen-Zeschwitz from the Harth forest is the currently accepted name. In addition the Pohlsberg drum is named the "Latdorf, kr Bernburg, Pohlsberg", in some publications but merely Pohlsberg in others.

Beran (1993, map 10) refers to Salzmünde drum number 16, and names it as Spickendorf, Opperschöner Mark. The listing of an illustration for this drum is given as "Fischer 1951, Abb. 1, 13", yet this is the illustration of the Harth drum. The correct illustration should be Abb. 1,1, the drum which Fischer names Niemberg, and which during the discussion by Seewald (1934, 92), is described as being found in a grave on the Opperschöner Mark, between Spickendorf and Niemberg. This description is

presumably the origin of the confusion since depending on the author three different names have been provided. Elsewhere Childe produced an illustration of the Niemberg drum but the caption read Latdorf (1973, 240).

A second drum from Zauschwitz is listed (Beran 1993, 144), while the only new Walternienburg drum discussed is from the site of Erfurt-Gispersleben, cited by Beran (1993, 144) but not further championed by Koch (1994). In Beran's list of non-diagnostic sherds of Salzmünde or Walternienburg drums the only new inclusions are the Mucheln and Salzmünde-Schiepzig examples (Beran abb. 47.5 and 20.5).

Müller's (2001, 136) Abb. 45 refers to "Nor 1" in reference to a site at Nordhausen; clearly showing the site contained two drums. However, Müller's list of flat graves (2001, list 6, 504) shows, also clearly, that NOR1 refers to Nordhausen find place 1, corresponding to Beier's catalogue number 146. This is the root of the problem, since catalogue number 146 (Beier 1984, 141-142) did not contain drums. Beier's (1984, 142) catalogue citation 147 does however, refer to the burial in a stone cist from Nordhausen, Friedrich Ebert Strasse, known as find place 2, which is the burial site which contained the two drums in question. Elsewhere Müller (2001, 131) makes it clear that Nordhausen, Friedrich Ebert Strasse, is find place 2 but refers to it as NOR2, and not the NOR1 noted above. The same table, Abb.45 (Müller 2001, 136), also refers to the site abbreviation OLD, which when we turn to list 1 (Müller 2001, 486) is clearly a reference to Oldisleben mound 14, (Beier cat no. 143). Referring to Beier (1984, 140) it is apparent that mound 14 is synonymous with Mania's (1966, 81) mound B9, yet while both Mania and Beier list a drum fragment among the finds, Müller's (2001, 136) Abb. 45 does not include this find among the observed categories of ceramic.

The final oversight in this seriation table, Abb. 45 (Müller 2001, 136), is another drum association, the site referred to as NIEB is shown with no drum find, NIEB being the abbreviation used for the *Mauerkammer* at Niederbösa (Müller 2001, 505, list 7). Although elsewhere (Müller 1994, 139) Niederbösa is noted as a site with an associated drum find. It is apparent then that when dealing with such a large quantity of data errors are bound to occur, due no doubt, to some degree, to the presence of numerous sites with similar names and also to the habit of changing the name of the site from the original publication.

Two drums contained in the catalogue here are those first cited by Beran (1993, tabs. 20:5 and 47:5) the first, Mucheln, originates from a settlement pit, the second, more

difficult to define, appears to be the same site that Beran shows on maps 8 and 10. The later map is of drum sites, but the previous map shows single burials with sherd pavement; unfortunately Beran while listing the site on Tab 20:5 as Salzmünde-Schiepzig, find-place I, on map 8 merely refers to Schiepzig. Here we assume a burial context.

The final example of confusion comes from the publications of Müller (1988, 1994), which referred to the site of Langeneichstädt containing the fragments of at least two drums. Müller (1994, 145) clearly referring to the same site calls it “Obereichstädt, a.k.a. Langeneichstädt” and here we may assume that Langeneichstädt also known as Obereichstädt is the site numbered by Müller (2001, list 1) as 972.

DRUM CLASSIFICATION AND THE RELATIONSHIP WITH CERAMIC STYLE

Primary Paradigms

As far as material-cultural affiliation of the drums was understood, Niklasson (1925 cited in Fischer 1951, 98) emphasized the decoration rather than the shape of the drum as a method for defining cultural associations. Seewald (1934) published a survey of musical instruments, which examined the drums of central Germany, Bohemia, Moravia and also those of the Cucuteni-Tripolye culture of Romania and the Ukraine. Seewald (1934, 65), used ethnological terminology, emphasizing the form of the drum-body, proposing two styles of drum, a symmetrical, straight “hour-glass form” with central waist, and a “beaker form” with lower waist, which is further distinguished by the shape of the upper part into “cauldron shaped” or “funnel-shaped”. Seewald observed the decoration reflected the ornamentation of the associated assemblages. Thus Seewald observed differences in vessel form and the method for attachment of the skin, and these he related to the contemporary understanding of the local cultural styles.

Grimm rejected Seewald’s classification defining only two shapes, the “hour-glass” form, and the contrasting “beaker” form with cauldron shaped upper part. In his analysis the ‘older’ “hour-glass” form was primarily related to Grimm’s own newly defined Salzmünde “cultural group”, while the beaker form was linked to the Walternienburg-Bernburg style, yet he observed himself that this separation was not always clear (Grimm 1938, 6ff and 108). Despite the interpretation of Grimm (1938), in a later work Seewald (Fischer 1951, n.19) proposed that the cultural affiliation of the drum could be related to the combination of drum shape, decoration and the positioning

of pegs or eyelets, and this is the basis for Fischer's own classification of the drums. It is of note that although Kupka's classification scheme for the Walternienburg and Bernburg ceramics, discussed above, related the different drums types with different cultural groups, he pre-empted Müller (2001) in stressing that these were merely ceramic styles within his "Nordic Culture", a nominal group which may be equated with the modern term of the southern TRB (Fischer 1951, 99), since it was originally the term for the ceramics of Baalberge and Salzmünde style.

Despite the opposing views of Grimm and Seewald, Fischer stresses a lack of clear temporal sequence and therefore the difficulty of rigid cultural assignment; noting rather there is only a predominance of one or other type (Fischer 1951, 99). As a result Fischer supports Mildenerger (1953, 31) who argues a similar case based on the beaker-drum with cauldron-shaped upper part and eye-loops, in traditional terminology, characteristic of the Walternienburg style, which occurs in the context of the Salzmünde burial at the Böhlen mound. This is no doubt related to the problem of understanding the Salzmünde style as the precursor to the Walternienburg style, rather than its contemporary, as radiocarbon dating allows for.

Fischer's Working Model

As observed above Fischer was aware of the problem of subjectivity in the classification of the drums (1951, 99) and it was this, which led him to attempt to objectify the classification of the drums, in order to ascertain whether there is a relationship between the drums and the different ceramic styles. He therefore uses the criteria of Seewald, namely the number and placement of the handles and also pegs and eye-loops; the method of attaching the drum skin. The characteristic shapes and decoration are also considered but only as support for the discussion of the shape. The result of Fischer's scheme is presented here (1951, 99-100):

- Salzmünde form: 3-5 large downward pointing pegs on the middle of the upper part or close to the waist:
- Walternienburg form: a wreath of 6-9 (occasionally 4) horizontally bored through eyelets, on the upper half of the upper half.
- Bernburg form: a wreath of 10-17 lugs close to the upper rim, also a ribbon handle or an eyelet at the upper part (27 lugs after Behrens 1979/80, 146)
- Tiefstich form: a wreath of pegs (4-9) on the middle of the upper part.

Fischer's scheme proposed that the Salzmünde drums could have a curved beaker shaped upper part, although the drums from Böhlen and Merseberg are the only Salzmünde examples with distinct curvature to the upper section, or the more common straight hourglass form; the height of the waist could also vary. The decoration is situated below the pegs and thus occurs close to the waist, on the upper half, and on the foot. The decoration consists of areas of lines, simple zigzag lines and frequently special signs, mentioned above. The decoration can also be found on the inside of the foot (Fischer 1951, 100).

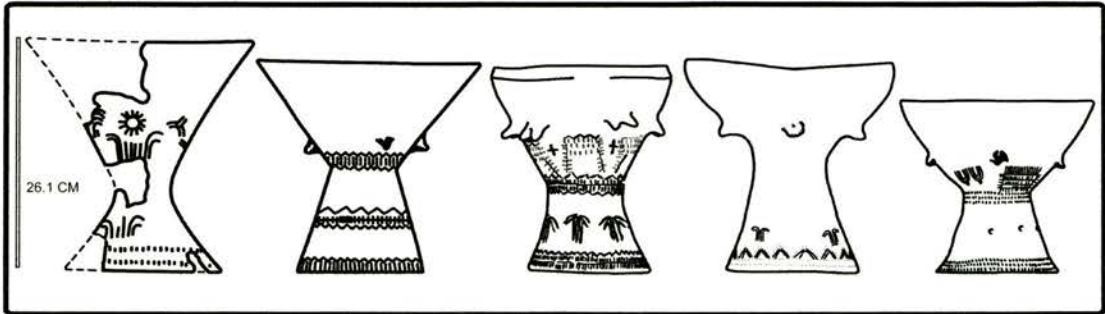


Fig. 3.1. Fischer's class of Salzmünde drum: Obermöllern, Niemberg, Leuna-Rössen, Böhlen and Schkopau

The Walternienburg style drum has a curved upper body which ranges from wide eggcup shape, most commonly found e.g. Börnecke and Grosseibstadt; a very slightly curving funnel shaped upper part exemplified by Biendorf or Menz; or the rare straight-sided beaker form as at Calbe. The eyelets of the Walternienburg drums occur commonly on other ceramics of the Walternienburg style.

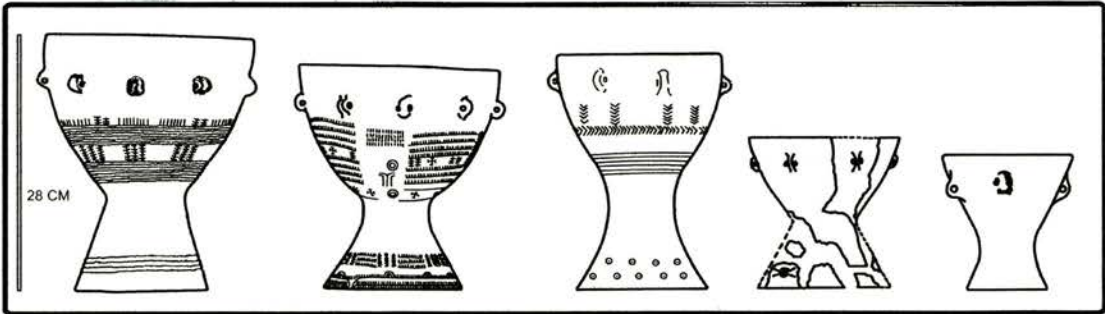


Fig. 3.2. Fischer's class of Walternienburg drum: Nordhausen, Hornsömmern, Ebendorf, Biendorf and Calbe 2

The Walternienburg decoration consists of groups of lines and comb lines and also zigzag bands; a predominance of the symbols, similar to those of the Salzmünde style, and the internal foot decoration are more easily explained as a result of new research which has placed the Walternienburg style as largely contemporary with the

Salzmünde B style, both within Müller's TRB IV (see the discussion of Müller 2001 above).

Indeed the traditionally defined Walternienburg drums of Fischer's scheme, which exhibit the classic Salzmünde symbols, are found in western and eastern-central Thuringia, which is within the limits of the Salzmünde B settlement distribution; this will be discussed further below.

The Bernburg drum also has a variety of shapes ranging from the straight-sided funnel shaped upper body, e.g. Ditfurt 2 or Quedlinburg 1, the gently curving form, as found at Nietleben or Latdorf Spitzes-Hoch and finally the strongly curved examples such as Heiligenthal Sehringsberg. Following the pattern of the Walternienburg examples, the use of lugs for the attachment of the skin mirrors the lugs on other Bernburg vessels. The Bernburg drums commonly have chequered patterns; empty zigzag bands, triangular patterns with dots and horizontal line infilling and the pine-branch pattern (Fischer 1951, 101).

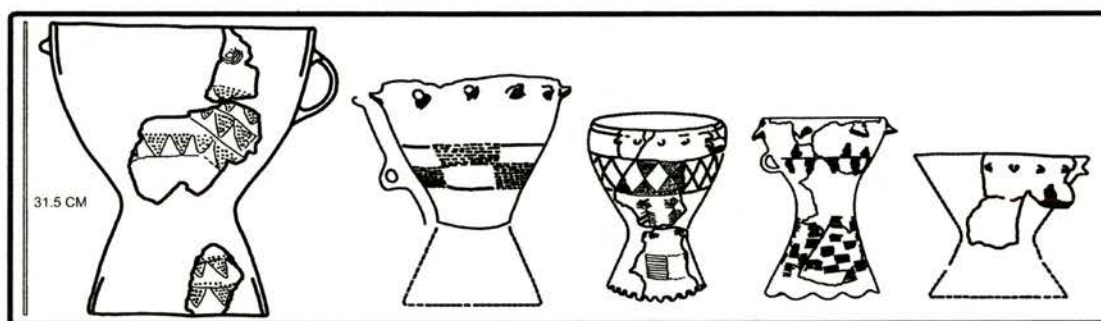


Fig. 3.3. Fischer's class of Bernburg drum:
Heiligenthal Sehringsberg 1, Calbe 1, Nietleben, Spitzes-Hoch and Quedlinburg 1

The position of the decoration of all the drum style is defined by the placement of the lugs and eye-loops: essentially the Salzmünde drums with low-down lugs have a smaller area available for decoration while the Walternienburg and Bernburg drums with pegs and eyelets close to the rim have a larger accessible area for ornamentation.

Fischer's scheme has been in use for half a century, largely because it recognized the distinct features of shape, skin attachment and decoration, and related these criteria to the contemporary understanding of the southern TRB.

The Drum According to Koch

Koch follows Fischer's classification, giving the distinct forms less culturally rigid names, type 1, type 2 and type 3. In total Koch (1992, 115) cites 228 German examples

but only 23 clay drums recovered from outside Germany, in Bohemia, Moravia, Kujavia and Denmark.

	Drum Number	Find Places
Type 1 (Salzmünde)	28+0	21+0
Type 2 (Walternienburg)	20 + 2	16+2
Type 3 (Bernburg)	131 + 10	29 + 6
Tiefstich Pottery Culture	2 + 10	2 + 5

Table 3.1. Drum Numbers after Koch (1992, 115)

Koch's premise is that Fischer's classificatory scheme of the drums may be defined by the ratio of the heights of the upper and lower parts. This is presented as a parallel classification to Fischer's scheme, in that Koch's criteria support the recognition of three types of drum, which correspond to the Salzmünde, Walternienburg and Bernburg styles. The Quenstedt-Lohberg drum, 4.5 cm in height, and the largest Derenburg example, 46 cm in height, are omitted from the scheme (Koch 1992, 116).

The following table includes the data of the drums from the four most important types (measurements in cm):

	Mouth Diameter	Lacing Diameter	Base Diameter	Height	Height Ratio Upper : lower
Type 1	13.5 -- 24.8	4.5 -- 9.0	9.4 -- 22.0	14.0 -- 7.0	1:1
Type 2	14.5 -- 28.0	5.0 -- 8.0	9.0 -- 17.0	15.0 -- 28.0	1.3 :1
Type 3	11.0 -- 29.5	4.7 -- 12.8	9.0 -- 21.5	12.1 -- 34.0	1.7: 1
Schönfeld	13.5 -- 26.5	8.0 -- 10.2	12.0 -- 17.6	33.0 -- 36.5	2.8: 1

Table 3.2. Drum Measurements after Koch (1992, 115)

Koch broaches the topic of the Gerwisch drum, a clay vessel consisting of a slightly tapering clay cylinder with a series of conical holes drilled through just inside either end. This vessel was interpreted as a drum by Lies (1954, 34-39), but Behrens (1979/80, 148) states that the argument is not fully convincing. In his discussion Lies created his own objection, namely that if wooden pegs were used they would not provide as good a grip in the holes as those of wooden pegs in a wooden drum, therefore he proposes that clay pegs would be necessary to "equalize this disadvantage" (Lies 1954, 38). However, carrying out experimental techniques to skin replica drums for this dissertation, a replica of the Gerwisch drum was made, the skin being soaked and attached using soaked willow staves. The soaking of the pegs allowed them to become pliable enough to be driven into the holes, and also allowed them to expand slightly on the inside of the drum and thus working in the manner of a barbed arrow; this produced a good sound, with crisp harmonics (Appendix 4). Linking the numerous ethnographic

parallels (Lies 1954, 37) for this style of drum with the quality of the sound produced, by this method of skinning, the argument that the Gerwisch vessel is a drum is thoroughly supported.

Müller's Drums

Finally we are able to review the most recent analysis of the clay drums, that of Müller (2001). The table below presents the classification scheme presented by Müller (*idem*, 103).

Drums Classification after Müller (2001, 103)		
B – Loop drum e.g. Hornsömmern	TR1	Hourglass form with a height equal, or higher, than the diameter of the mouth. e.g. Heiligenthal-Sommerberg
	TR2	Hourglass form, height is substantially higher than mouth diameter e.g. Rössen
J-Vertical loop handle e.g. Spitzerhoch	TR3	Goblet-shaped drum with the height of the foot greater than height of upper section. e.g. Köttichau
	TR5	Drum with curved upper and lower parts e.g. Edesheim

Table 3.3. Müller's (2001, 103) drum classification scheme

Before we examine Müller's classification scheme, it should first be noted that two errors are present in his monograph, in reference to the illustration tables. Firstly, table 6 (2001, 562) has been produced with the captions for drums 3 and 4 reversed, thus Edesheim and Kottichau-Siebenhügel should be illustrated as shown in fig. 3.4, below. The second case occurs in table 12, where an illustration is presented with the caption "Heiligenthal", yet in table 6, we are presented with another illustration, in this instance with the caption "Heiligenthal-Sommerberg": these illustrations are of the same drum but appear to be taken from two different publications, where one of the images has been printed in reverse.

J. Müller's, table 6.1 illustration is Fischer's example from fig.2 (1951, 101), with the addition of an illustration of the internal decoration. However, Müller's fig 12.4 Heiligenthal-Sommerberg, is a reproduction of D.W. Müller (1994, 108 fig 23). The confusion no doubt originates from the fact that a second site at Heiligenthal-Schringsburg did contain drum sherds. This example is a traditionally defined Bernburg drum bearing no resemblance to either of Müller's (2001) illustrations, but is found in Fischer (1951, 101) fig 2.17 and Müller (1994, 146 and fig 59.10). Here they are illustrated in figs 3.3 and 3.4.

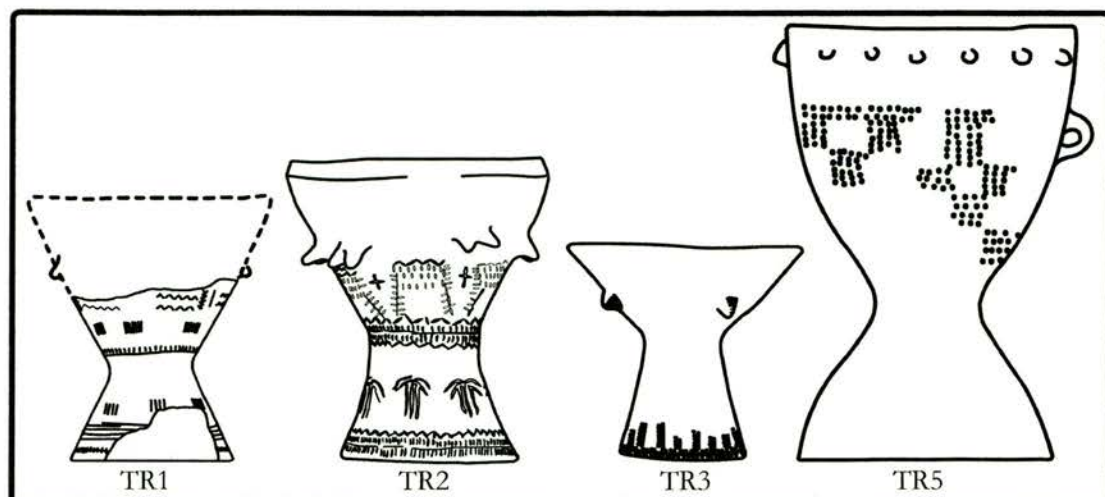


Fig. 3.4. TR1 - Heiligenthal-Sommerburg 14 cm. TR2 - Rössen 22.3.
TR3 - Kottichau 16.7 cm. TR5 - Edesheim 34 cm.

Müller presents us with two drum groups B and J, which are each divided into two subgroups, TR 1-2 and TR 3 and 5, respectively. TR is Müller's classification code for "trommel" and is not related to the standard abbreviation TRB. A problem occurs immediately with Müller's TR1 type of drum defined as an "hourglass form with a height equal, or higher, than the diameter of the mouth" (Müller, 2001; 103); the example given for this drum type is the drum from the Mauerkammern at Heiligenthal-Sommerberg. This example of a drum type is hugely problematic, since the fragment provides neither the full height of the instrument nor the diameter of the mouth.

By classifying the TR 2 type drum as a subgroup of the group B, loop drum, and giving the Rössen example as a TR 2 drum, Müller lumps the Salzmünde style drum into the Walternienburg form, thus ignoring the distinct difference of method of skin attachment. Moreover the Rössen drum, rather having either distinct pegs or eye-loops, has a mixture of single and double-pronged pegs that occur on no other drum, which makes it unique and unreliable as a primary example of a drum type. For anyone not familiar with the subject, this would gloss over the distinct differences between the traditionally-named groups. Furthermore, Müller's division of group J, with vertical loop handle, presents the TR3 form of drum, for which Köttichau is provided as an example. Yet the Köttichau drum has no loop handle, the characteristic of the traditionally named Bernburg drum, and one of Müller's own criterion for the definition of drum group J. The TR5 drum of Müller's incurs problems all of its own: the example given, from Edesheim, fits the definition, but considering that the majority of drums are fragmentary,

with a large number of the bases or tops missing, it is somewhat awkward to define a drum type based on aspects commonly absent.

In essence, Müller's scheme gives pre-eminence to the shape of the drum, in the subdivision of his two overall groups, B and J, but this splits the Salzmünde drums into two different sub-groups, TR2 and TR3, which are not divisions of the same group. Furthermore this scheme places no importance on the decoration.

However, by classifying the Salzmünde and Walternienburg drums together, this does fit with Müller's overall model, which provides the first clear understanding of the evidence from the middle Elbe and Saale in TRB IV-V, and this model is consistent for the ceramic evidence, burial type and radiocarbon dates. It is only the classification of the drums, which is questioned here.

We have already discussed the fact that generally the Salzmünde ceramics are not sufficiently distinct from the Walternienburg style; indeed both ceramic assemblages include the Opperschöne jug and the tripartite amphora. The only difference in form between the tripartite cups of the two groups, is that the Salzmünde cup has a cylindrical upper part, while the Walternienburg cup has a conical upper part. The approach of Müller's work, in presenting the TRB MES as a continuum, is fully accepted here, as his approach develops not only the logical seriations of the ceramic types, but also the decorative forms which are then combined with the radiocarbon dates. However, geographical distinctions do exist, namely the preference in the east Harz and Middle Saale, for an emphasis on single burials sometimes richly equipped, and a comparable distribution of the traditionally named Salzmünde style drum predominantly on settlements. Opposing this, in western and east-central Thuringia the emphasis is on collective burial, and these reflect a corresponding distribution of the traditionally named Walternienburg drum, within burials.

To add a little more uncertainty, when analysing the Salzmünde ceramics Müller works with a subgroup, e.g. TR 1-3 (Müller 2001, 112), but when examining the *Mauerkammern* assemblages he refers only to the overall groups B and J (Müller 2001, 134 and 167). Additional logical inconsistencies occur in the treatment of individual classifications, so that in table 74, Müller (2001, 177) lists the Böhlen-Zeschwitz drum as B but in table 29 (*idem*, 112) it is cited as TR3, which falls into Müller's category J.

Additionally, the Börnecke drum has a mouth diameter wider than the height and a base, which is smaller than the upper part. Although Börnecke is an anomaly, since it

has a combination of loops and pegs (Krone 1935, 402), it has no vertical loop handle. And it seems to be unable to fit in with Müller's criteria. The Obereichstädt drums also fall foul of this classification scheme. The Obereichstädt drum with lugs is as wide as it is high, fitting into TR1, but the second drum with loops is wider than the height; thus like the Börnecke drum fitting into neither overall group; both drums have a central waist.

Müller (2001, 103) defined four drum groups: two defined by the ratio of height to mouth diameter, one defined by the ratio of the heights of both base and the upper part, and the final group defined by a curved base and upper part. This essentially creates problems because some drums may be covered by more than one set of criteria, while many drums are so fragmentary that it is not possible to measure the height, the mouth diameter, the curvature of the base or even a combination of any of these factors.

A Combination of the Two

With reference to both Koch's (1992, 116) and Müller's (2001, 103) approaches, the ratios of vessel measurements presented here include the base to upper part ratio offered by both Koch and Müller, where the division between the base and upper is accepted as being that point in the vessel wall with the smallest diameter, and the height to diameter of mouth ratio presented by Müller. Additionally, the results provided in the tables immediately below are given solely for individual, complete drums, and not an average for each type. Complete drums are defined here as those instruments which survive enough to allow recognition of the vessel shape and dimensions. Finally, this analysis will be related to Fischer's scheme, which presented a common front for so long, namely shape and method of attachment, and also context and decoration. Where possible J. Müller's (2001, 126-7 and 171-2) ceramic style names have been given, elsewhere stages have been extrapolated, from J. Müller's (2001) tables and observations from D.W. Müller (1994; 1999). The drum from Wallendorf, corresponds to J. Müller's (2001, 112) find spot Hut 44, and while his lists of ceramic styles cited above do not contain this site name, J. Müller (2001, 117 and 597) provides us with a radiocarbon date of 2880-2620 BC, placing the Salzmünde style drum in his Salz C stage, which is contemporary with Bernburg assemblages. Obereichstädt, previously named Langeneichstädt, is listed by J. Müller (2001) but is not included in the lists corresponding to ceramic style stages. However, D.W. Müller (1994, 150) observes that

the distinctly Salzmünde style of the assemblage, despite Bernburg overtones, and in a later publication provides (1999, 200) a radiocarbon date of 2910-2610 BC cal, placing the assemblage into J. Müller's (2001) Salz C stage.

The data for complete TRB MES IV drums from Salzmünde assemblages suggest that the drums with a base to upper part ratio of 1:1.1 and below are found in graves, while those examples where the height of the upper part is greater than the base are found in settlements. The progenitors, we may propose, possessed two culturally distinct drum types, one for the living and one for the dead. Although, we should be wary of the inclusion here of the Obereichstädt drums, and although they fit with the Salzmünde drum proportions, Müller (2001) classifies them as Salz C, essentially in TRB V, but as he stresses that we are dealing with a continuum. However, Salzmünde C style pottery is only found as a group of settlement assemblages, maybe one last bastion of the Salzmünde drum tradition, while the Obereichstädt drums are from a burial assemblage.

Complete Drums of TRB MES IV: Traditionally linked with Salzmünde Assemblages									
Drum site	Fischer's Type			Context			Ratios		Müller's Stage
	S	W	B	Sett	Grave	?	Base:Top	Height:Mouth	
Obermöllern	•			•			1: 2	1:0.97	Salz
Zauschwitz	•			•			1:1.54	1:1.21	Salz B
Vippachedelhausen	•			•			1:1.4	1:0.94	Walt I
Leuna-Rössen	•			•		•	1:1.25	1:0.83	Salz B
Stork-Pettstadt	•	•		•			1:1.25	1:0.94	Salz B
Weinburg	•			•			1:1.25	1:1.1	Salz B
Wallendorf	•			•			1:1.25	1:0.89	Salz C
Schkopau	•				•		1:1.1	1:1.1	Bernburg
Obereichstädt 2			•		•		1:1.1	1:1.07	Salz C
Obereichstädt 1		•			•		1:1.1	1:1.38	Salz C
Sargstedt	•				•		1:1.1	1:0.72	-----
Nienburg	•				•		1:1	1:1	Salz B
Böhlen-Harth	•				•		1:1	1:0.97	Salz B
Zorb-Gerstewitz	•				•		1:1	1:0.81	Salz B
Must-Köttichau	•				•		1:0.89	1:1.08	Salz B

Table 3.4. Complete TRB MES IV (Salzmünde) drums, showing traditional classification, context and ratios of base:top and height:mouth diameter

The drums of TRB MES IV, from Walternienburg assemblages, do not have the same contextual diversity as those from the Salzmünde inventories, the majority being found in association with graves; yet there may be some patterns visible in the data. There appears to be a group, which has a subtle curve to the upper part with a distinctly low ratio of base to upper part; Biendorf, Hassel and Menz exemplify this group. All of

these examples are distributed north of the modern middle Saale to lower Saale boundary, and thus outside the Salzmünde B distribution.

Complete Drums of TRB MES IV: Traditionally linked with Walternienburg Assemblages									
Drum site	Fischer's Type			Context			Ratios		Müller's Stage
	S	W	B	Sett	Grave	?	Base:Top	Height:Mouth	
Calbe 2		●		●?	●?		1:2	1:0.97	Walt I
Hornsömmern		●			●		1:2	1:0.86	Walt II
Nordhausen 1		●			●		1:1.77	1:0.78	Walt I and II
Odagsen-loop		●			●		1:1.77	1:0.89	Walt II
Börnecke		●			●		1:1.77	1:1.083	Walt
Grosseibstadt		●			●		1:1.77	1:0.86	Walt
Nordhausen 2		●			●		1:1.57	1:0.89	Walt I and II
Calden 2					●		1:1.57	1:0.67	-----
Ebendorf		●			●		1:1.57	1:0.66	Walt II
Biendorf		●			●		1:1.25	1:0.97	Walt I
Hassel		●				●	1:1.25	1:0.94	-----
Menz		●		●?			1:1.125	1:1.18	-----
Odagsen-non					●		1:0.89	1:1.25	Walt II

Table 3.5. Complete TRB MES IV (Walternienburg) drums, showing traditional classification, context and ratios of base:top and height:mouth diameter.

The second group consists of those drums where the ratio of the base to upper part ranges between 1:1.57 and 1:1.77. This group has the distinct curvature to the upper part commonly associated with the Walternienburg style drum, but does not possess the distinct symbolic decoration found on the Salzmünde drums. The final distinction consists of those drums where the height of the upper part is twice that of the height of the foot. These drums possess a curved upper part but most importantly also possess the distinct symbolic decoration common on the Salzmünde drums.

Incomplete Drums of TRB MES IV: Traditionally linked to Walternienburg Assemblages									
Drum site	Fischer's Type			Context			Ratios		Müller's Stage
	S	W	B	Sett	Grave	?	Base:Top	Height:Mouth	
Feldengel		●			●		1:2	1:0.69	Salz/Walt
Holzussra		●			●		1:2	1:0.86	Walt I

Table 3.6. Incomplete TRB MES IV (Salz/Walt) drums, showing traditional classification, context and ratios of base:top and height:mouth diameter.

Unfortunately only one example of this drum type is complete, but if we here include two examples, which have sufficient fragments to allow reconstruction of form, those of Feldengel and Holzussra, we find that they fit with the example proposed above; they have a base to upper part ratio of 1:2. Müller (2001) does not place the Feldengel assemblage within the ceramic style stages but reading from Abb. 45 (*idem*;

136) it is apparent that it belongs in the group of Salz/Walt assemblages, based on Müller's distinguishing criteria of vessel shape and decoration.

Complete Drums of TRB MES V: Traditionally linked with Bernburg Assemblages									
Drum site	Fischer's Type			Context			Ratios		Müller's Stage
	S	W	B	Sett	Grave	?	Foot:top	Height:Mouth	
L-pit 86		•		•			1:1.8	1:0.96	Bernburg
L-pit 95			•	•			1:1.8	1:0.93	Bernburg
Derenburg			•	•			1:2.6	1:0.83	Bernburg
QS-pit 155			•	•			1:1.4	1:0.86	Bernburg
Klein-Quen			•	•			1:1.8	1:0.85	Bernburg
Fredrichsaue			•		•		1:2.6	1:0.75	Bernburg
Nietleben			•		•		1:2	1:0.74	Bernburg
Latdorf-Sp			•		•		1:1	1:0.67	Bernburg
Edesheim			•		•		1:1.8	1:0.67	Bernburg
Pevestorf			•		•		1:2.6	1:0.6	Bernburg

Table 3.7. Complete TRB MES V (Bernburg) drums, showing traditional classification, context and ratios of base:top and height:mouth diameter.

The data presented in the table above, for the drums of the TRB MES V, suggest that a change has occurred, in contrast to the examples from the TRB MES IV. These drums, which have parallels with the Salzmünde assemblages, in that they are found in both settlements and graves, show no distinct pattern in the ratio of base to top.

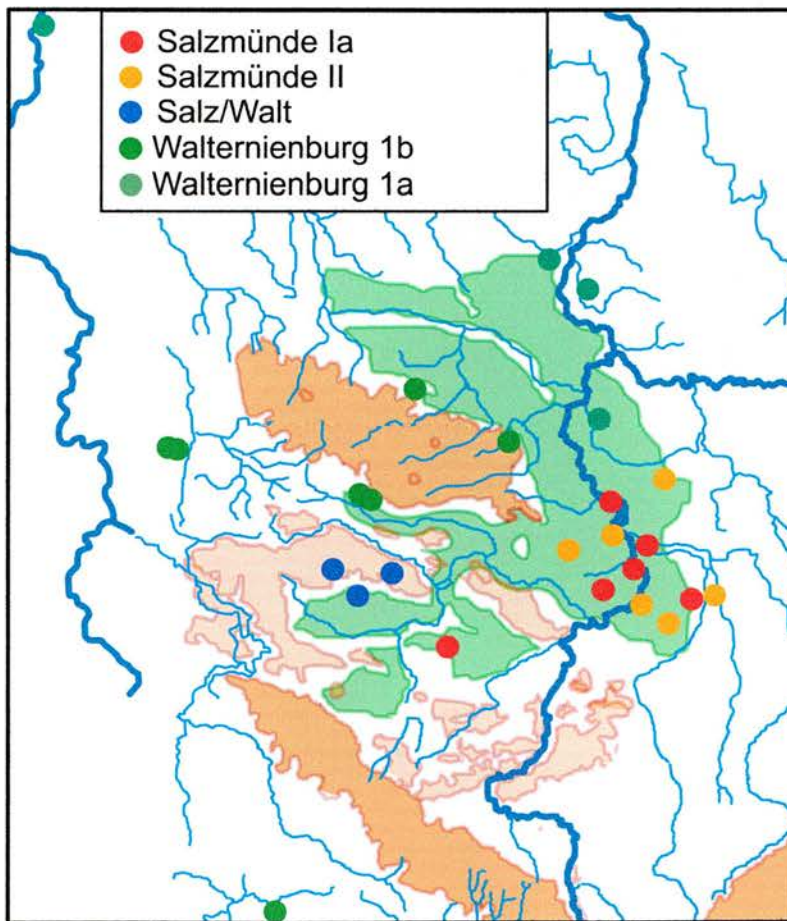
However, if we examine the ratio of the height to mouth diameter it is clear that those with a lower ratio, that is 1:0.75 or below, are found in graves while those with a higher ratio, from 1:0.85 and above, are found in settlements. Thus, based on the complete examples, during TRB MES V, drums associated with the dead are narrower, while those found in settlement contexts are more squat.

The classification of the clay drums is a little difficult; traditionally they were linked with assemblages defined as distinct, successive cultural groups, yet now we are faced with a cultural continuum in which these differences have been cited as merely gradations on the scale of cultural change, and which in many cases are contemporary rather than successive. As Müller used the traditional tags, we continue their use here (as in Table.3.8) as subtle variances of the TRB MES, in the hope that it aids the understanding of the assemblages of the TRB IV and V.

Based on the recurrent differences presented in the ratios of the measurements of the TRB IV and V drums, it is possible, by retaining the basic features of Fischer's scheme and linking this with the ratios as proposed by Koch (1992) and Müller (2001),

Neolithic Stage	TRB IV	TRB V	
Main Drum Category	3350-3100 BC cal	3100-2900 BC cal	2900-2700 BC cal
Salzmünde-Low Lugs	Salz I settlement context, profuse symbols		
	Salz II grave context, less symbols		
Walternienburg-Loop	Walt Ia curved	Walt/Salz curved prolific use of symbols	
	Walt Ib north subtle curve		
Bernburg-Lugs		Bernburg 1 settlement	
		Bernburg II burial	

Table 3.8. Classification of the TRB IV-V drums. Wyatt (2005)



Map 3.1. TRB IV Drum Types (Wyatt, 2005)

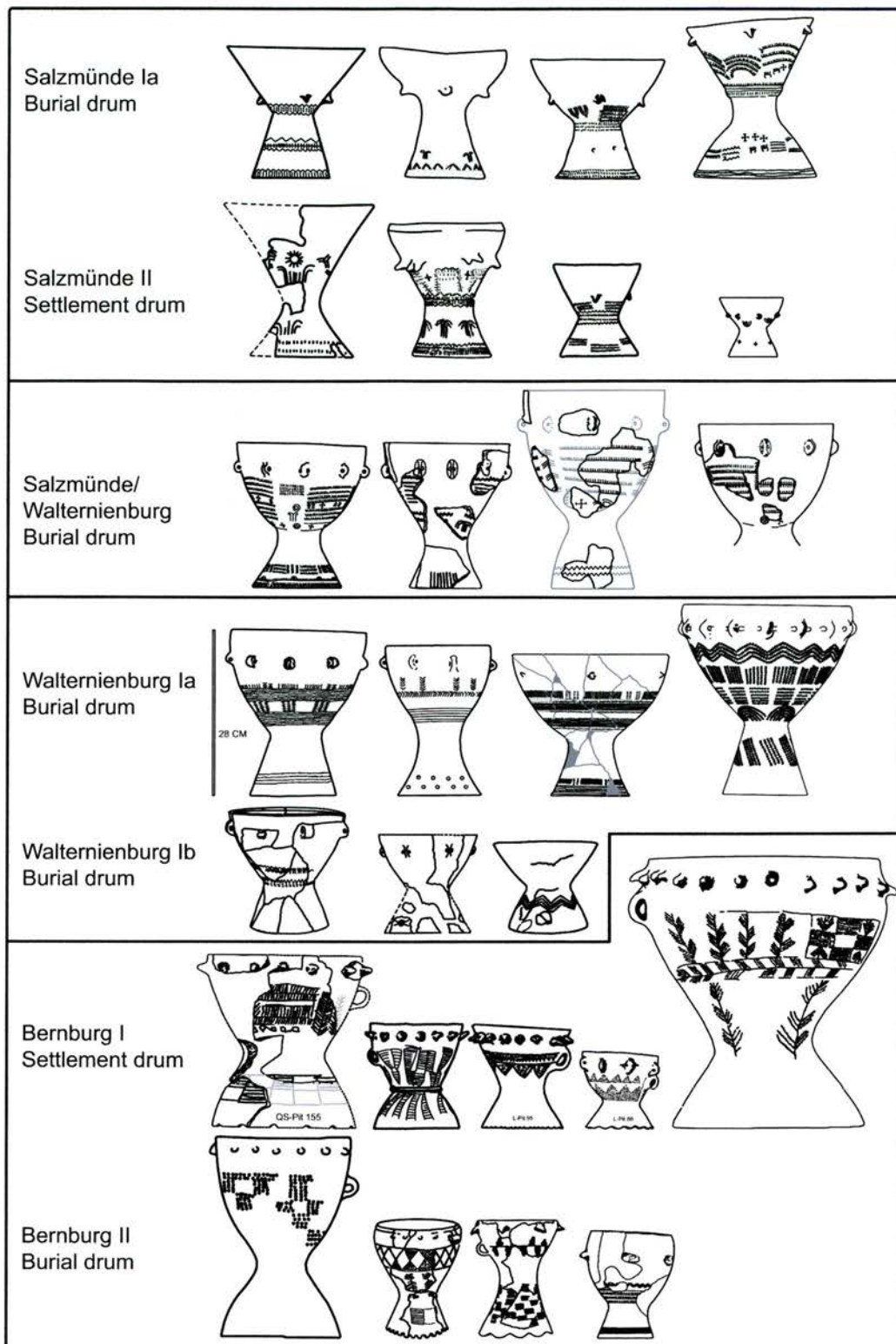


Fig. 3.5 Drum Types of TRB IV and V. Wyatt (2005): Spickendorf, Böhlen, Schkopau, Zorbau, Obermöllern, Leuna, Vippachedelhausen, Weinberg, Hornsömmern, Holzussra, Feldengel, Gräfentonna, Nordhausen, Ebendorf, Börnecke, Grosseibstadt, Hassel, Biendorf, Menz, Quenstedt-Schalkenburg pit 155, Klein Quenstedt, Langerburg pit 95 and pit 86, Derenburg, Edesheim, Nietleben, Spitzerhoch, Fredrichsaue. All images redrawn Wyatt (2005)

to propose seven drum types, Table 3.8. The top category of drum corresponds with Fischer's (1951) main groups (Fig 3.5), and as demonstrated on Map 3.1 the different types are geographically discrete.

Classificatory Anomalies

The examples of drums from the Langer Burg and Schalkenburg show that despite fitting largely with the cultural styles defined by Fischer (1951, 100), there are anomalies in the form and decoration of the drums, but these do fit with the exceptions he had recognized. Furthermore, following Müller's (2001) interpretation of the southern TRB, which manages to account for many of the disparate features of the material culture, it appears that any classificatory scheme which attempts to fit rigidly with the general ceramic styles may have problems, and a clearer picture may be achieved by combining the scheme with the cultural context. Subsequently some of the more well-known drum examples highlight this difficulty, namely the Salzmünde drum from Schkopau, which was discovered in a grave with a Bernburg assemblage, while the Hauseindorf example, a Bernburg style drum, was discovered in a settlement pit associated with Walternienburg ceramics (Behrens 1980, 147).

The Calbe 2 drum remains anomalous when applying this new classificatory scheme, since while it fits the ratio of the Salzmünde/Walternienburg drum type, it is clearly not of this form and the location of the site to the north of the Salzmünde B distribution places it outside the boundaries of Müller's (2001) Salz/Walt group and also our Salz/Walt drum type. Furthermore, it has a shape closer to the standard Salzmünde 1a drum type, yet has eyeloops and no decoration.

Behrens further cites drums in the Walternienburg style, found outside our immediate area of study, in the megaliths of Barskamp and Oldendorf, yet the presence of lugs, which are not positioned at the upper edge, suggests these example are more akin to the Salzmünde style drums, at least if we follow Fischer's criteria, which has been largely supported by the evidence cited above. However, as noted above Mildenerger has already dismissed the class of a distinct Altmark Tiefstich drum. A further problem exists in the inclusion of the Obereichstädt drums in the class of Salzmünde burial drums. This is due to the fact that although the assemblages show distinct Salzmünde style traits, the radiocarbon date range is 2890-2830 BC cal (Müller 1994, 159; Müller 2001, 138). Although this date is acceptable since Müller's (2001) Salzmünde C style corresponds to this date range, it means that it should not be included in the TRB MES

IV drum group. Two explanations are open to us, firstly a localized continuation of the tradition as seen in the clear Salzmünde style drum from Wallendorf Hutberg, also late, 2880-2620 BC cal (Müller 2001, 122). Or lack of a clear association, so while the Obereichstädt drums are associated with Walternienburg and Bernburg style ceramics but also distinct Salzmünde style influences we should be aware that these ceramics were discovered on top of the capstone and not in the chamber.

CLASSIFICATION AND THE RELATIONSHIP WITH DECORATIVE MOTIFS

Complete TRB IV Drums

So far we have been able to corroborate, to some degree, Fischer's model based on the relative proportions of the drum forms, but with the addition of a new type. Now we shall examine the decoration of the drums to establish whether these distinctions are paralleled by the distribution of discrete decorative motifs.

Table 3.9, in appendix 3, relates all complete TRB IV drums with their decoration. This not only allows the recognition of motif groups, but also supports this classification scheme.

The motif groups are defined by their occurrence on the already defined drum type, so they are not entirely independent of drum form, but they are also geographically distinct, and may thus be used to bolster the view that the drum types are contextually, socially and functionally distinct. This should allow the use of the motif groups as a tool for the recognition of the drum types of the fragmentary examples, where the application of the ratios is not applicable.

Since this table of data is rather unwieldy, it has been condensed here in order to make it more manageable (Table 3.10). If we examine the table of the relationships of the drum motif groups it appears, to some degree, that the association of the motifs is dependent on both drum type and also context.

Salzmünde 1a

- Thus Salzmünde settlement drum 1a is found solely with decoration group A, B or C but also with combinations of A+B, A+C, B+C, or C on its own.

Salzmünde II

- Group A motifs are, based on the complete examples that have survived, never found on Salzmünde II burial drums; these examples possess the combinations

of B+C, B+C+D, B+D, C+E or E on its own.

Salz/Walt

- The Salz/Walt drum type is found with the combination of motifs C+E+F, and in the cases of the Hornsömmern and Holzussra drums also with group H.

Walt 1a

- Is decorated with motifs from groups H, H+E and H+C.

Walt 1b

- Drum type has motifs from groups C+H, C+G, C+E+H, E+G, E+H, H.

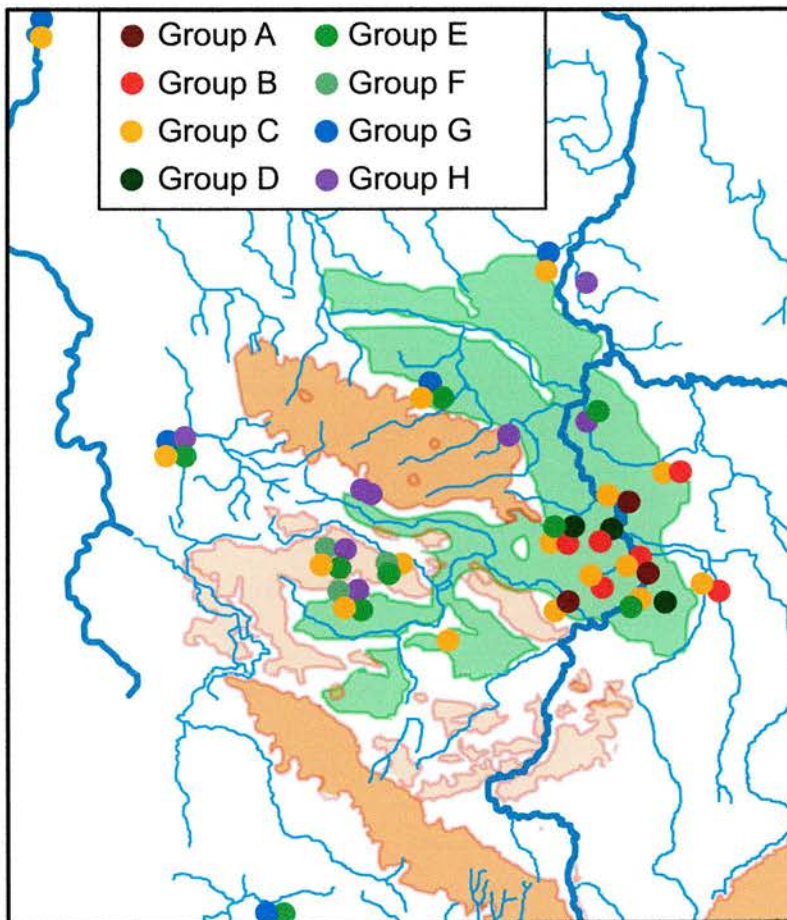
Context	Drum Type	Drum Site	Motif Group							
			A	B	C	D	E	F	G	H
Settlement	Salz 1a	Zauschwitz								
		Wallendorf								
		Sargstedt								
		Obermöllern	●	●	●					
		Leuna-Rössen	●	●	●					
		Weinburg	●		●					
		Stork-Pettstadt		●	●					
		Vippachedelhausen			●					
Burial	Salz II	Böhlen-Harth		●	●					
		Spickendorf		●	●					
		Obereichstadt 1		●	●	●				
		Mustchau-Kottichau				●				
		Schkopau		●		●				
		Zorbau-Gerstewitz			●		●			
		Obereichstadt 2					●			
	Salz/ Walt	Feldengel			●		●	●		
		Hornsömmern			●		●	●		●
		Holzussra			●		●	●		●
		Calbe 2							●	
	Walt 1b	Hassel			●					●
		Odagsen-no lug or loop			●		●			●
		Ebendorf			●				●	
		Börnecke			●		●			●
		Odagsen- loop					●		●	
		Grosseibstadt					●		●	
		Nordhausen 1								●
		Nordhausen 2								●
		Quenstedt								●
Walt 1a		Biendorf					●			●
	Menz								●	

Table 3.10. Condensed version of Table 3.9 which is to be found in appendix 3: drum type and motif group

Further condensation of the data provides the more manageable table 3.11, yet still demonstrates the significant relationships between drum type, context and motif group, this is further clarified on Map 3.2 and Map 3.3.

Context	Drum Group	Motif Group							
		A	B	C	D	E	F	G	H
Settlement	Salz Ia	●	●	●					
Burial	Salz II		●	●	●	●			
	Salz/Walt			●		●	●		●
	Walt 1a			●		●			●
	Walt 1b			●		●		●	●

Table 3.11. (further condensation of Table 3.9.)
Context, drum type and associated motif groups.

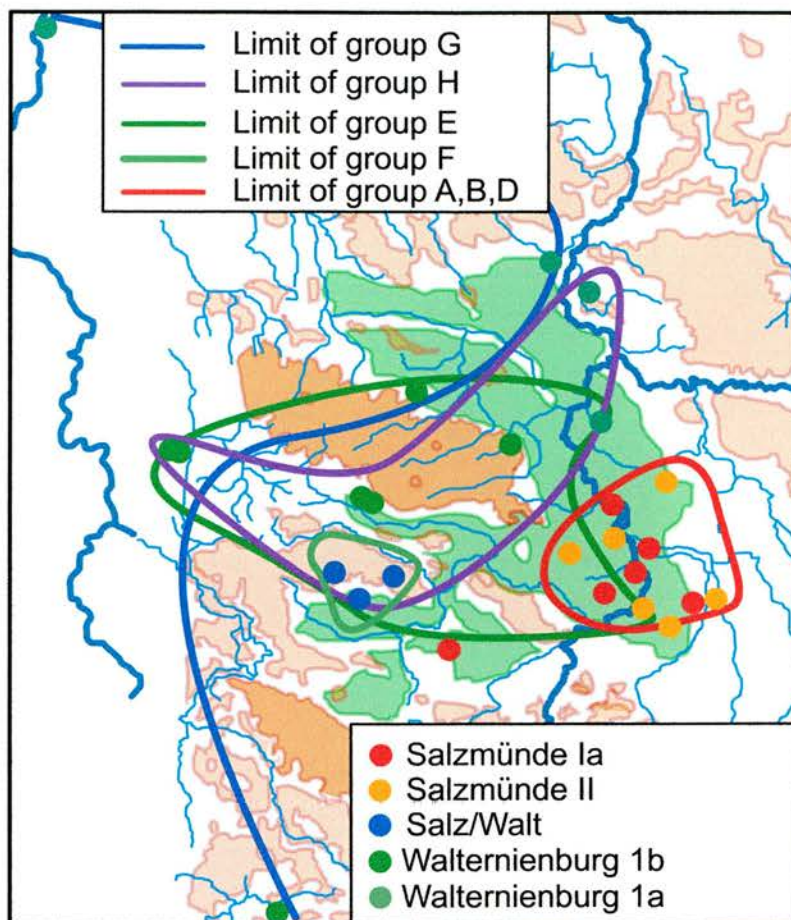


Map 3.2. TRB IV Motif Groups

In summary,

- All drum types may be decorated with group C motifs;
- Only drums from burial contexts are decorated with group E motifs;
- Group A Motifs are restricted to Salzmünde Ia settlement drums;

- Group D motifs are limited to Salz II burial drums;
- Group F motifs are found only on drums of Salz/Walt type;
- Group G occur only on Walt Ib drums;
- Group A, B and C motifs may be found in combination on Salzmünde Ia type;
- In burial contexts of Salzmünde II type drums we find B, C, D and E;
- The motif groups, as with the drum types, display distinct distributions, as in Map 3.3.



Map 3.3. TRB IV Drum Types and Motif distribution

Incomplete TRB IV Drums

When we apply a similar analysis to the incomplete TRB IV drums, some queries arise concerning the motif groups: however, in this instance the table presented here is the condensed version of the full table (Table 3.13 is found in App. 3). For example no group A motifs are found on the incomplete drum fragments, despite the fact that many are known to come from settlement contexts.

Considering the fact that the group A motifs only occur on three drums Obermöllern, Leuna-Rössen and Weinburg. An explanation may be posited that group A motifs should not be categorized separately from group B motifs and are not diagnostic of the Salz 1a settlement drum.

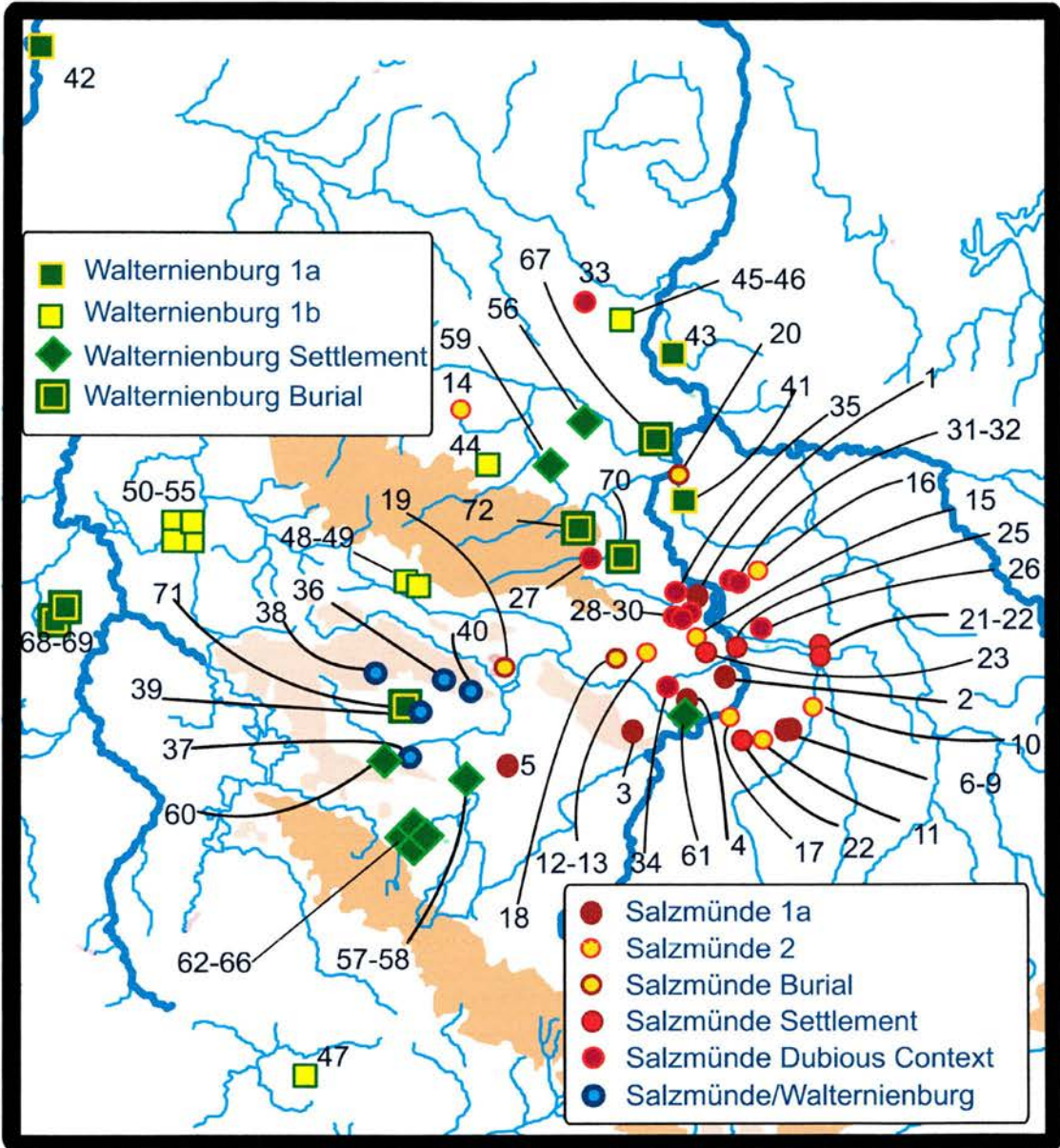
Drum Type	Drum Site	Motif Group							
		A	B	C	D	E	F	G	H
Salz	Niederschmon		●						●
	Brandberge 1		●	●					
	Klein brandeberge		●	●					
	Ammendorf			●					
	Leipzig Eutritzsch 1			●					
	Hohenthurm 1			●					
	Brandberge 2		●	●	●				
	Schiepzig			●	●				
	Hohenthurm 2			●	●				
	Mucheln					●			
	Pohlsberg					●			
Salz/Walt	Grafentonna			●		●	●		
Walt	Nägelstedt			●				●	
	Erfurt					●	●		
	Wandersleben					●		●	

Table 3.12. (Condensed version of Table 3.13 found in Appendix 3)
Incomplete drums: Context, drum type and associated motif groups.

Whether or not we choose to recognize the group D motifs as specific to the Salz II type burial drum is also queried here, but since the three instruments in question are from unclear contexts this matter cannot be settled based on currently available information. Motifs E, F and H occur on complete Salz/Walt drums, and if we apply this as a criterion then Gräfentonna would qualify as a Salz/Walt drum. The vessel shape and the method of skin attachment both fit with our Salz/Walt model. The presence of F group motifs on the Erfurt drum also suggests that it might be of the Salz/Walt type, a proposal supported by its shape and proximity to the other Salz/Walt drums. However, a *caveat* should be entered since although the table recognizes the presence of concentric circle motifs, the Erfurt motif is a large emblem, part of which is broken, and consists of lines made up of small impressions. On the other hand the concentric circles on the Salz/Walt drums are small concise motifs not consisting of joined dots. Finally group G motifs would support a classification of Nagelstedt and Wandersleben as Walt 1b, Group G still only being found on Walt 1b drums.

Summarizing the evidence for TRB IV drums both complete and fragmentary:

- No Group A motifs are found on fragmentary drums;
- Group D motifs are still limited to Salz II burial drums;
- In burial contexts of Salzmünde II type drums we find B, C, D and E;
- Group E motifs are not found in settlement except for the Mucheln example.



Map 3.4. Copy of Catalogue-map 1. Drums of TRB IV

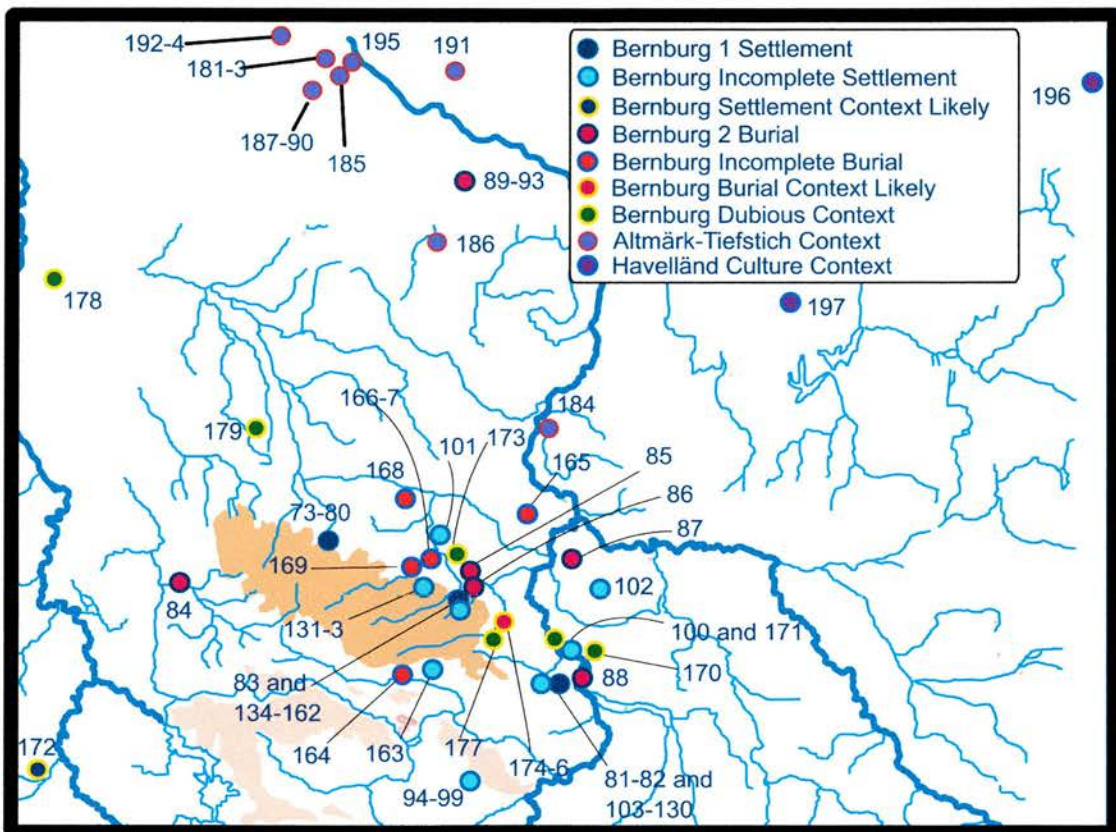
The interpretation proposed here suggests that we are faced with three distinct distribution groups. Drum types Salz Ia and II are associated with motif groups A, B and D. Drum types Walt Ia and Ib are associated with motif group E and H. And drum type Salz/Walt, which only occurs in the western limits of the Salzmünde B settlement distribution, is associated with motif group F and motif group G.

Incomplete TRB V Drums

When applying this analysis to the incomplete drums this distinction is not clear (see Table 3.15. found in App. 3), which may be due to problems related to the classification of the Nietleben and Fredrichsaue drums, this is discussed in Chapter 7.

TRB V Drums

One final point, before we leave the classification of the drums, is to observe the general distribution of the drums based on their context. Map 3.5 illustrates the dichotomy of settlement and burial drums in TRB V. The drums found in settlements are distributed in the south-east of the area while those found within burial contexts, with two exceptions, are found in the north-west of the distribution area.



Map 3.5. Copy of Catalogue-map 2. Drums of TRB V with the addition of drums in Altmärk-Tiefstich and Havelländ Culture contexts.

The TRB V settlement drums dominate in the area corresponding to the eastern half of the Salzmünde B settlement area. Exactly the area where drums are dominant within settlement areas during TRB IV.

Classificatory Conclusions

At the beginning of this chapter it was suggested that the most symbolic aspect of a classification scheme is often the most representative of the culture (Kartomi 1990, 12). This is recounted here in view of the classification scheme that has been proposed. When we proposed a model based on method of skin attachment and ratios of vessel dimensions, the data supported a case for a distinct Salz/Walt drum type, which while having a different form had only three examples, making it a rather sparse illustration of its kind. However, the analysis of decoration suggested that this drum type had its own decorative motif combinations, including some discrete motifs, which only occur in the distribution of the area of this proposed drum type. So although the vessel form might, on its own, be considered an anomaly, the individual decoration supports the notion of a distinct drum type. This definition of a distinct drum class, separate from the other TRB IV forms is all the more satisfying in light of Mildenerger's (1952, 32) comment that it "appears doubtful that the north thüringian drum examples are to be associated exclusively with the Walternienburg group". The remaining drum types defined here correspond largely with Fischer's (1951) model, although we are now able to recognize the characteristics, which distinguish the Salzmünde style burial and settlement drums and two types of Walternienburg drums, Ia and Ib. In the case of the Bernburg drums, of TRB IV, the dichotomy of drum context is again visible recognized here as a slender burial drum and a thickset settlement drum, which as we have seen is reflected in relatively distinct distribution areas.

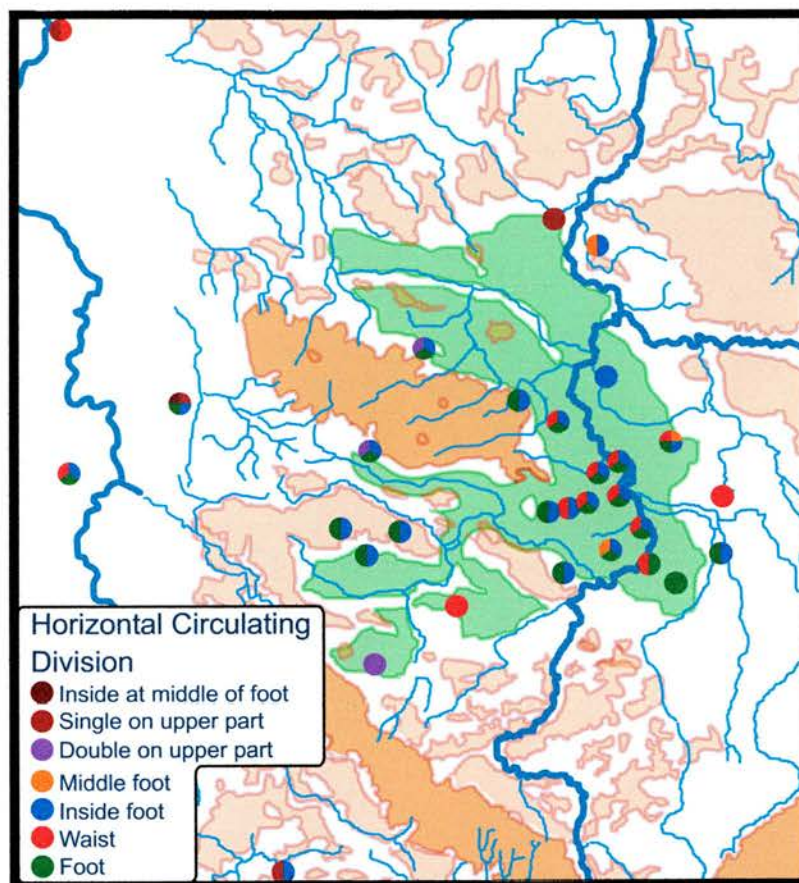
Kartomi (1990, 12) was cited above, stressing the social, cosmological and historical importance of musical instruments. We have proposed here a model for classification of the drums and now it is imperative to examine the different drum types, their decoration and context to search for possible meanings of these patterns.

AN INTERPRETATION OF DRUM TYPE, DECORATION AND CONTEXT

Visible Stratification

With the exception of the two outlying drum anomalies, Hassel and Calden, the decorative division of the drum at the waist is restricted to the eastern half of the Salzmünde B distribution. Furthermore with the exception of the Böhlen drum, the distribution of both internal and external foot decoration, without any higher division,

mirrors the limits of Müller's Salz/Walt assemblages. Thus the drums found in central and western Thuringia, where the predominant burial rite is collective, have a less rigid system of horizontal division. Conversely, those from the middle Saale are stricter in their emphasis on multiple divisions. This distribution coincides with the dominance of single burials, both simple flat graves and also those with more elaborate grave constructions, subsequently we may choose to interpret the horizontal division of the drum as representative of the hierarchical nature of the society. We shall discuss a shamanistic interpretation of the drum in following chapters, and it may be that the division of the drum may be related to a tiered model of the cosmos as found on some the drums of the northern Saame (discussed further in chapter 5).



Map 3.6 TRB IV Horizontal drum divisions, internal and external.

This method of interpretation is called a *formal method*, where although we possess no insight, knowledge may be derived from the motifs and their relationships to each other, their archaeological context and the landscape (Taçon and Chippendale 1998, 7-8).

It is exactly these two distribution areas that are further distinguished by the circulation of individual motifs of TRB IV. So those drums which stand out by their lower number of horizontal divisions, have a greater proportion of individual motifs. It is the association of these motif-rich drums, with the context of collective burial, and thereby with the repetitive association with the rites of death, which allows us our first phenomenological link with the worldview of the shamanistic practitioner, the drum and the relationship of both shaman and drum with death.

The role of psychopomp, guiding the deceased or dying to the afterlife, is a theme found not only in shamanism, but also in literature in the Tibetan *Bardo Thödol* and the Egyptian *prtmhrw*, both commonly known as the “Book of the Dead”. The shamanistic role, however, links this rite with the altering of consciousness, which has been proposed as one possible source for the origin of some rock art. In Chapter 5 and 6 we shall examine this model as a possible source for the drum decoration.

FURTHER CONTEXTUAL ASSOCIATIONS

Copper

Copper was a rare commodity in the Neolithic, yet relatively, TRB IV and V assemblages contain a high proportion of artefacts whose distribution is illustrated on map 3.7. Of the eight copper finds from contexts dating to TRB IV, 62.5% of these are associated with drums:

- Mutschau-Köttichau-Siebenhügel - an individual mound grave with copper spiral and drum (Billig 1961);
- Heiligenthal-Sehrinsberg – a *mauerkammer* with drum and copper remains (Fischer 1956, 62);
- Börnecke - a *Mauerkammer* with copper spiral fragment and drum (Krone, 1935, 405);
- Merseberg – a settlement find of two spiral rings and drum (Fischer 1951, 104);
- Nordhausen 2- contained the burial of a woman accompanied by two drums and a copper spiral (Stolberg 1932, 60; Müller 2001, 412);
- Other copper contexts include one single burial, one *holzkammer* and one *mauerkammer*, all without drum associations (Müller, 2001; 412). Müller proposes that the lack of link with axes is probably a research gap.

A relatively high percentage of copper also exists in TRB V, with 18 finds, more than doubling the quantity of the TRB IV. Despite this there is a marked decline of association of copper and drums, with only 20% correlation.

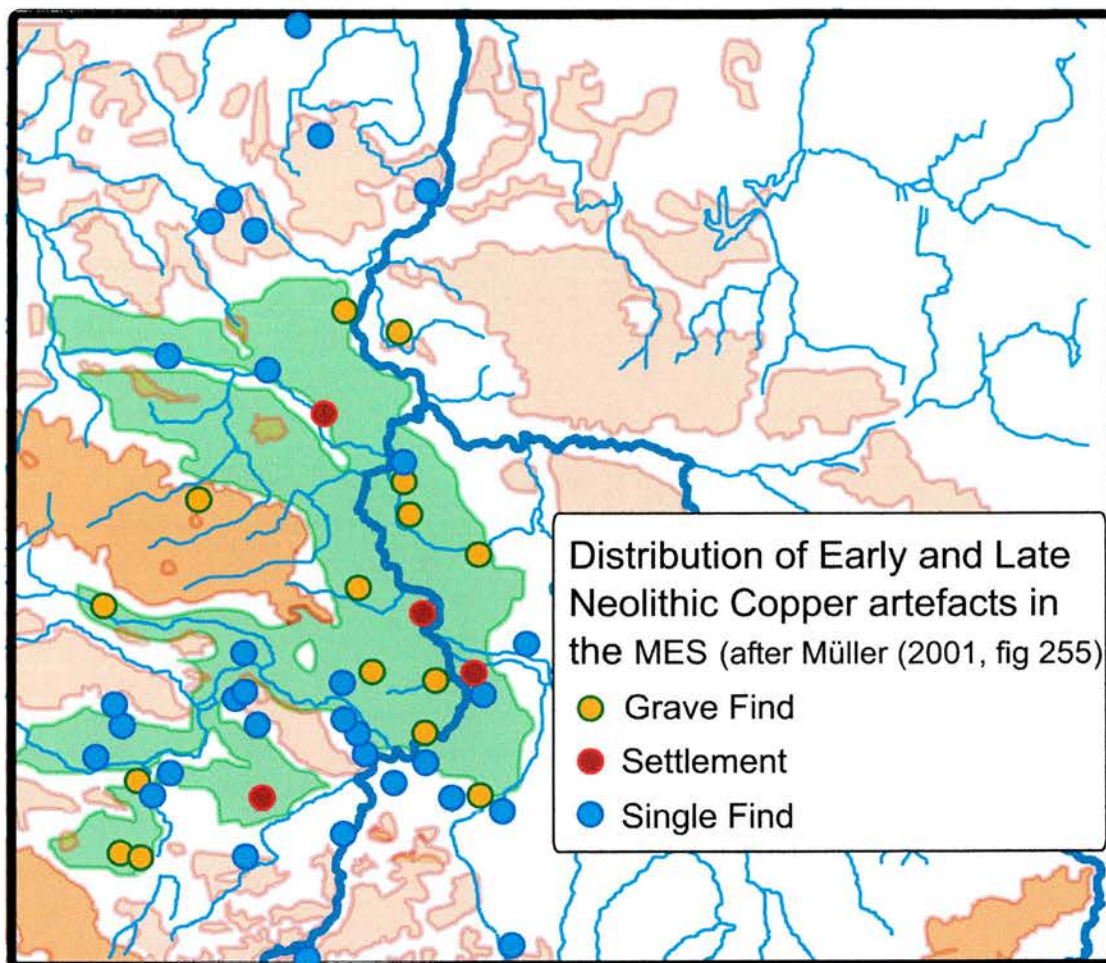
- Langeneichstädt – a *Mauerkammer* contained two copper spirals, two copper beads, a larger copper tube and two drums. (Müller 1988, 192);
- Latdorf-Spitzerhoch - with one of the three pockets of sherds two copper beads were found; (Müller 2001, 412);
- Grossobringen Sportsplatz - the site of a Bernburg Earthwork contained the remains of a casting crucible (Müller 2001, 412);
- A total of 5 single finds, 4 single grave finds, from two sites, 7 finds from chamber graves, 1 Megalith, 1 settlement pit, 1 earthwork;
- Copper analysis reported a high silver content which suggests a local product (Müller 2001, 412-3).

Two further example not included by Müller are from Latdorf-Pohlsberg and Heiligenthal-Sehringsberg. Behrens (1964) lists the Pohlsberg drum as item D121, found in the central grave, orientated west-east. Finds listed as D123, which were from the “so-called upper-grave” which lay above the central stone cist on a long stone slab, orientated north-south, included five copper beads. While (Müller 1994, 147) notes copper remains found in the *Mauerkammer* of Heiligenthal with the sherds of three drums. Difficulties exist in recognizing exact correspondences between the drums and other artefact types, especially when considering the relative scarcity of the data. Yet there appears to be a link between the drums and deposition of a highly valuable commodity, and the correspondence between drums and 62.5% of the copper finds from TRB IV should warrant our attention. Equally impressive is the association of TRB V: here we are able to recognize a flourishing of copper production but a decline in association with drums. However, the site of Obereichstädt, contains ceramics of a distinctly Salzmünde style (Müller 1994, 150; Müller 2001, 320), while the possible casting crucible from Grossobringen-Sportsplatz, although from a Bernburg period site, produced the fragments of six different drums, which are the only currently known

	Copper Finds							
	TRB MES IV			TRB MES V				
Context	Settlement	Single Grave	Mauerkammern	Settlement	Single Grave	Mauer	Single finds	Earth-work
Drum	•	••	••		•	••		•
No drum		•	••	•	••••	••••••	••••••	

Table 3.16. Data after Müller (2001, 412-3)

examples of Bernburg drums in Thüringia. Müller (2001, 201) describes this site as having a ritual function.



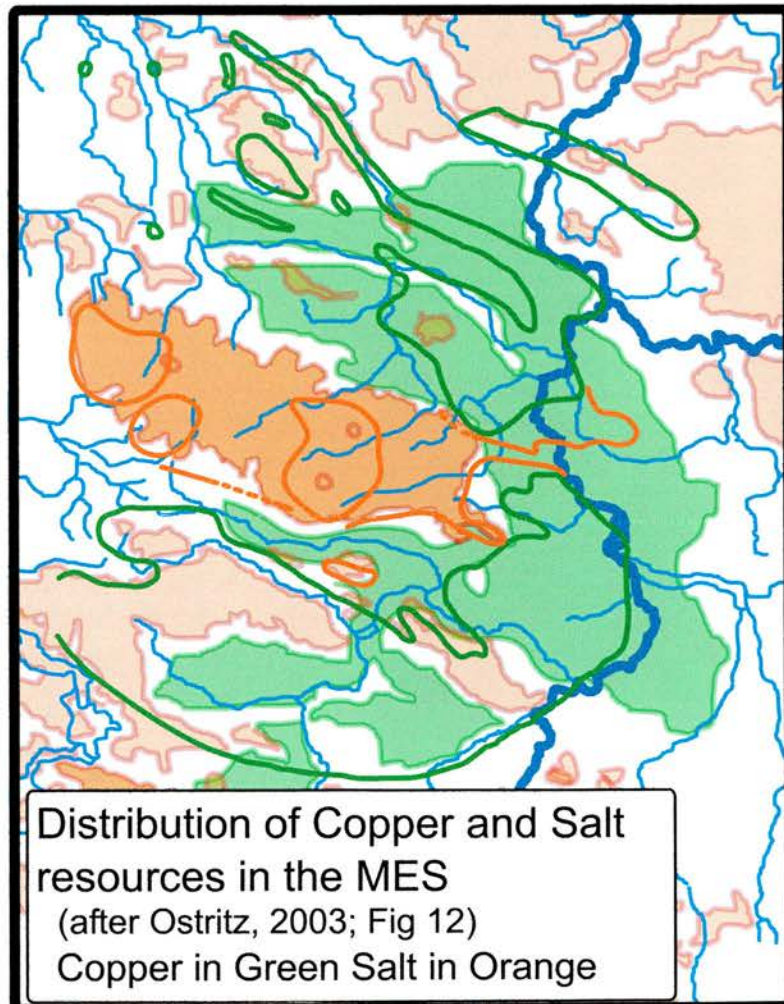
Map 3.7 Distribution of Copper artefacts after Müller (2001)

Copper Finds	Total	Single	Grave	Settlement
Salzmünde B distribution	71%	46	19%	5.8%
North of Salz B distribution	29%	1.7%	9.6%	1.9%

Table 3.17. Data for copper finds (after Müller 2001, 412-3)

If we take a hypothetical boundary at the northern limit of the east Harz and Middle Saale, this corresponds with the northern limit of the Salzmünde B style ceramics.

Thus our hypothetical cut-off leaves us with 24 single finds in the south, 10 grave-finds and 3 settlement-finds. The corresponding distribution north of the cut-off point shows 9 single finds, 5 grave finds and 1 settlement, map 3.7. As discussed, Müller (2001, 445) observes that from “3500 BC cal some form of crisis is obvious, which may be the result of new difficulties in accessing eastern alpine copper”, and with this in mind it is important to compare the distribution of copper artefacts with the distribution of the local resources, as in Map 3.8. The majority of the copper artefacts from the TRB IV and V, as illustrated on map 3.7, occur within the geographical limits of Müller’s (2001)

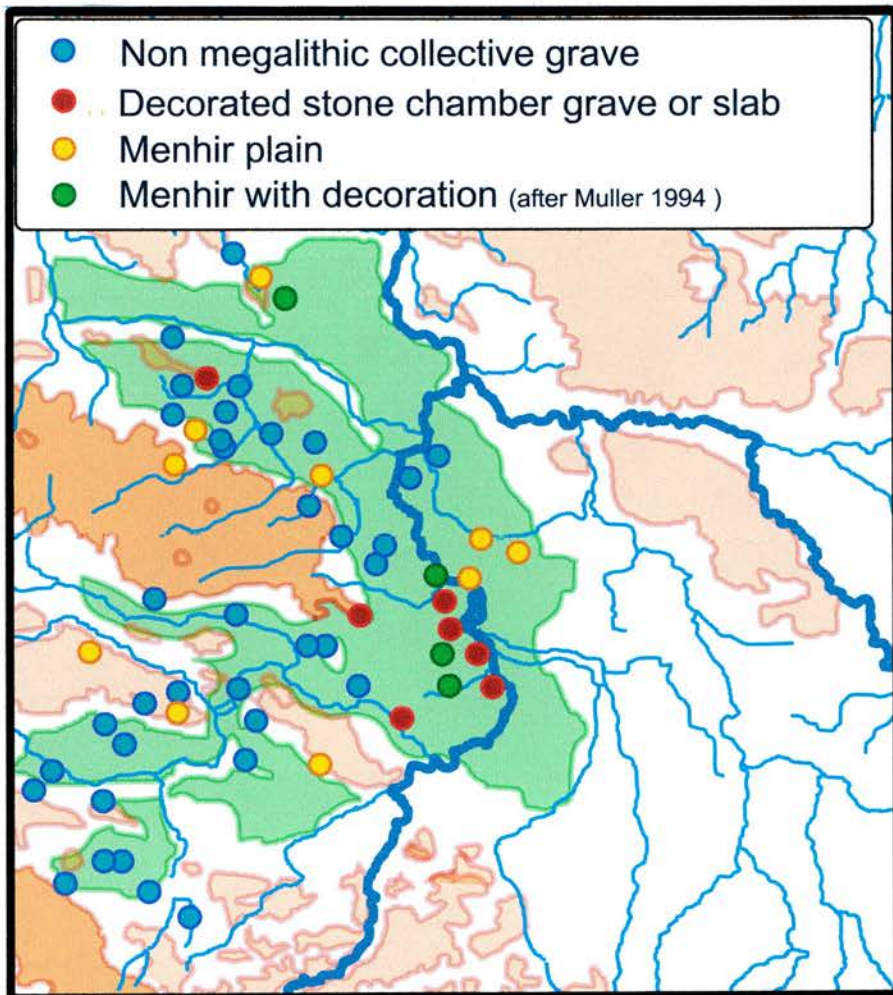


Map 3.8 Copper resources in the M.E.S

Salzmünde B settlement distribution, (which not surprisingly coincides with a large swathe of natural copper in the middle Saale and central and western Thuringia). Thus we may take Müller's social crisis, with the distinct features of displays of wealth in burials, and large "high" settlements, as related not only to access to the black earth but also with competition to control the local copper resources.

PARALLEL DISTRIBUTION PATTERNS

The distinction apparent in the copper distribution, which parallels the circulation of drums, is mirrored in other patterns of evidence, which together allow an understanding of the social development of the TRB IV and V. We appear to be able to recognize some form of social upheaval reckoned by Müller to be related to access to copper. The solution to the dearth of resources is the development of a local industry,



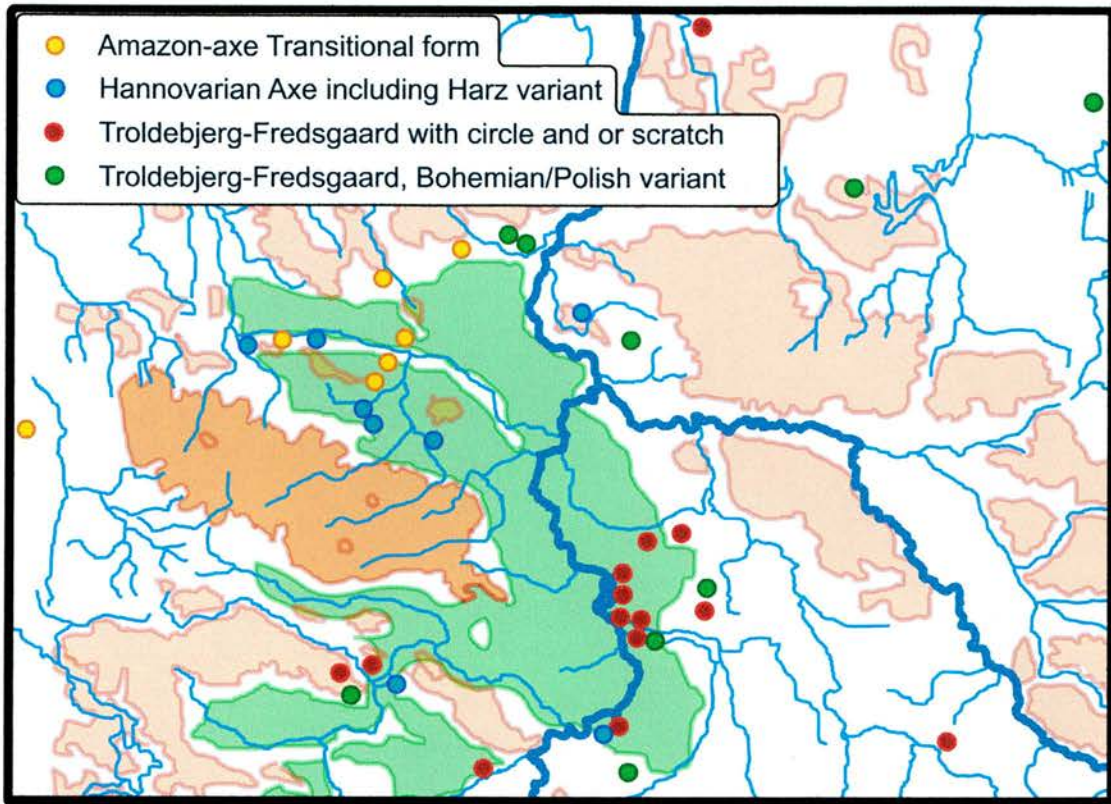
Map 3.9. Decorated Menhir and chamber stones after Müller (1994, fig 51)

which for the moment we shall link with the Salzmünde B settlement area. Within this distribution we are able to recognize collective burials in the west and richly equipped single graves in the east. The Salzmünde B single graves also parallel the distribution of strict horizontal division of the drum through decoration, while overall the decorated drums coincide with the copper resources and artefacts. So the emphasis on status may well be expressed in the drum decoration.

Here we may choose to examine the similar distributions of decorated stone axes, decorated menhirs and tombs. The axes may be assigned to this time period, TRB IV, without much difficulty. However, the dating of the “rock” art is more tricky, since this is relatively rare in central Germany (see Müller 1997 and 1999 for an overview). For example, at Obereichstädt, a tomb containing two drums, part of the roof consisted of a decorated menhir, presumably reused. Here we must therefore assume that the tradition of engraving is early, yet at Dölauer Heide, mound 6 we have a similar tradition as at Göhlitzsch (Müller 1994, 160). At Nietleben, the traditionally named *Rampenkeist* contained a drum and other vessels of the Bernburg style and one of the slabs was also decorated, while the Corded Ware, grave 70, from Schafstadts, Merseburg region, is later still (Müller 1999, 201). We have neither the time nor the space to examine the tradition of engraving in depth, suffice to say as Map 3.9 illustrates the tradition of the rare decorative stones coincides with the Salzmünde B heartland.

Additionally the decorated axes follow a similar distribution pattern, the decorated axes being found within Salzmünde contexts: map 3.10. Summarising Müller’s (2001, 403) discussion of axes, the early and late Neolithic examples were found in areas free from black earth, which were in turn areas mutually exclusive of burials and settlements; although some areas are still axe free. Generally speaking at the end of the Late Neolithic, circa 3500 BC axes are first found in graves but by this period there has been a great lowering of production rate, a drop of two thirds.

Müller relates the change in production and context of the axes as evidence of social change. Thus the valuable axe, prolifically produced in the early Neolithic, is deposited for the community but, in the later Neolithic, deposition within individual burials suggest there is now a limited access to these rare objects. Müller (2001, 398) suggests the increase in decoration after 38-3500 BC reflects an increase in the need to express social position and a distinction from outsiders; he notes further that this is conspicuously accompanied by the rise of more complex settlement systems.



Map 3.10. Stone axe distribution in the M.E.S. redrawn from Beran (1993, 88)

It seems that this repetitive pattern of the distribution of valuable artefacts, namely copper jewellery, decorated axes and decorated stones, is the marker we should seek for the recognition of Müller's social crisis, essentially a struggle for resources of soil and copper ore. The explosion of decorative forms on axes, stones and indeed our own drums may all be linked to social development and an attempt to display and control wealth.

For Müller (2001, 396-7), the social change begins around 3500 BC reaching a peak at 3350 BC, during this period he portrays the cup and the drum as reflections of this social change: the cup a vessel for consumption and the drum a vessel of communication.

The simultaneous development of the local copper industry and the drums may not seem so strange under these circumstances. Thomas (2001) proposed that we recognize a third transform in the development of the archaeological record, namely a Magical transform. By this he means the recognition of processes, which for prehistoric man must have seemed no less than magical. As we shall see in chapter 5 the abilities to control transformation and fire is a key feature of the Shaman's role, indeed Eliade

(1964, 470) quotes a Yakut proverb, “Smiths and shamans are from the same nest”, (cf. Creighton 2000, 40ff.).

It is here proposed then that the coincidences of expressive arts link the drum with the production of copper. Furthermore we may imagine the drum as the magical symbol of death and transformation. These tentative suggestions of a Shamanistic role for the drums and copper shall be examined in a later chapter.

Drums Associated With Trepanation

Of further interest is the fact that the “old man” buried in the mound at Böhlen-Zeschwitz had survived a double trepanation (Mildenburger 1952, 10). Elsewhere similar discoveries are also associated with drums remains. At the Börnecke *Mauerkammer*, two skulls, referred to as A and B, were trepanned. The holes in the skulls were both of similar size, 7 x 9 cm, but the individual represented by skull A seems to have survived the process while the individual represented by skull B appears to have been dead at the time of the operation, or to have died before any healing took place (Krone 1935, 406). Additionally, the *Mauerkammergrab* at Bennungen contained the fragments of a drum and one individual, out of the 20, who showed evidence of trepanation (Müller 1994, 77). Müller (1994, 85) further cites the Nordhausen *Mauerkammer* as containing an individual who had been trepanned, yet this is not listed as containing a drum. However, Müller (1994, 140) states that the presence of a drum at Nordhausen 2 is doubtful, which suggests there are pottery fragments, which might possibly be interpreted that way. The burial from Nordhausen, Friedrich-Ebert-Strasse, contained a woman with two “egg-shaped” holes in her skull. However, Stolberg (1932, 258) states these were not trepanation and informs us that anatomical examination suggests these injuries were sustained by the blow from a type of hammer, resulting in death. This burial was that of a woman accompanied by two cups, an amphora and two drums, furthermore a whetstone of Wiedaer slate, a copper spiral and the skull of a man.

Rudgley (1998, 126 ff.) recently reviewed the evidence for trepanation in prehistory. He describes experimental trepanning of skulls by scraping through the bone with obsidian, flint and an oyster shell, which is recorded as being easier than attempting the same operation with a bow drill. Of interest to this discussion is that it appears that trepanation seems to have been popular in the Neolithic but subsequently the practice declined. The earliest true trepanation, that is a case where there is evidence of healing,

occurred at Ensisheim, in Alsace, and dates to 5100-4900 BC. At this site a 50-year-old man, burial 44, had two trepanned holes in his skull (Rudgley 1998, 133). Rudgley cites “hundreds if not thousands” of trepanned skulls in the Neolithic from England to Russia. In some parts of the world trepanation is still practiced, and ethnographic and historical sources suggest it was practiced to treat epilepsy, headaches, vertigo, mental illness, deafness, demonic possession and the removal of foreign bodies (Rudgley 1998, 129).

In summary, four burial contexts, possibly five containing drums are associated with trepanation. However, whether we can suggest that there is a relationship between the act of trepanation and the use of the drum in shamanistic practices remains to be seen, but a closer examination of the skeletal remains warrants further research.

Settlement Drums And Associated Artefacts

The table below lists some of the finds in pits from the settlement at Quenstedt-Schalkenburg. In TRB IV drums were generally found singly, but occasionally in pairs, both in burial and in settlement contexts. In TRB V, however, we find that in addition to the changes in drum form and decoration, a greater number are found in settlements and also a greater number in close proximity to each other. Thus, at Derenburg eight instruments are known (Koch 1992, 115), while at Quenstedt and at Langen Burg, Dölauer Heide, almost thirty drums are known from each site (Behrens and Schröter (1980, 116ff).

Drum associations from settlement pits at Quenstedt-Schalkenburg						
	Drum	Axe	Spindle Whorl	Vessel with holes in rim	Conical vessel with double wreath of holes at rim and base	Collared Flask
Pit 100	●	●	●	●●		
Pit 114	●					
Pit 119	●	●		●		
Pit 155	●	●				
Pit 183	●			●		
Pit 184	●	●		●●	●	●
Pit 197	●					
Pit 241	●	●	●			
Pit 282	●		●●			

Table. 3.18 Data after Behrens and Schröter (1980, 116-120)

Here we find that the drum fragments are associated with the remains of axes, often seen as a symbol of prestige; but importantly they are also discovered with spindle-

whorls, in one case a collared flask and two categories of vessel with holes perforating the rim or rims. We shall discuss the association of the drums with axes and spindle-whorls in chapter 7, but here we turn to the class of ceramics with perforations through the rim of the vessel.

ALTERNATIVE DRUMS: VESSEL FORM AND DRUM INTERPRETATIONS

Following the discussion of the Gerwisch drum, (Lies 1954, 34-9: Koch 1992, 117: see above) Koch proposes this interpretation be applied to other ceramic vessels. These include ceramic cylindrical tubes with a double wreath of conical holes at both the top and bottom (Fig. 3.6), and also the ceramic vessels found at Langer Burg and traditionally referred to as storage vessels, but which have a wreath of holes under the

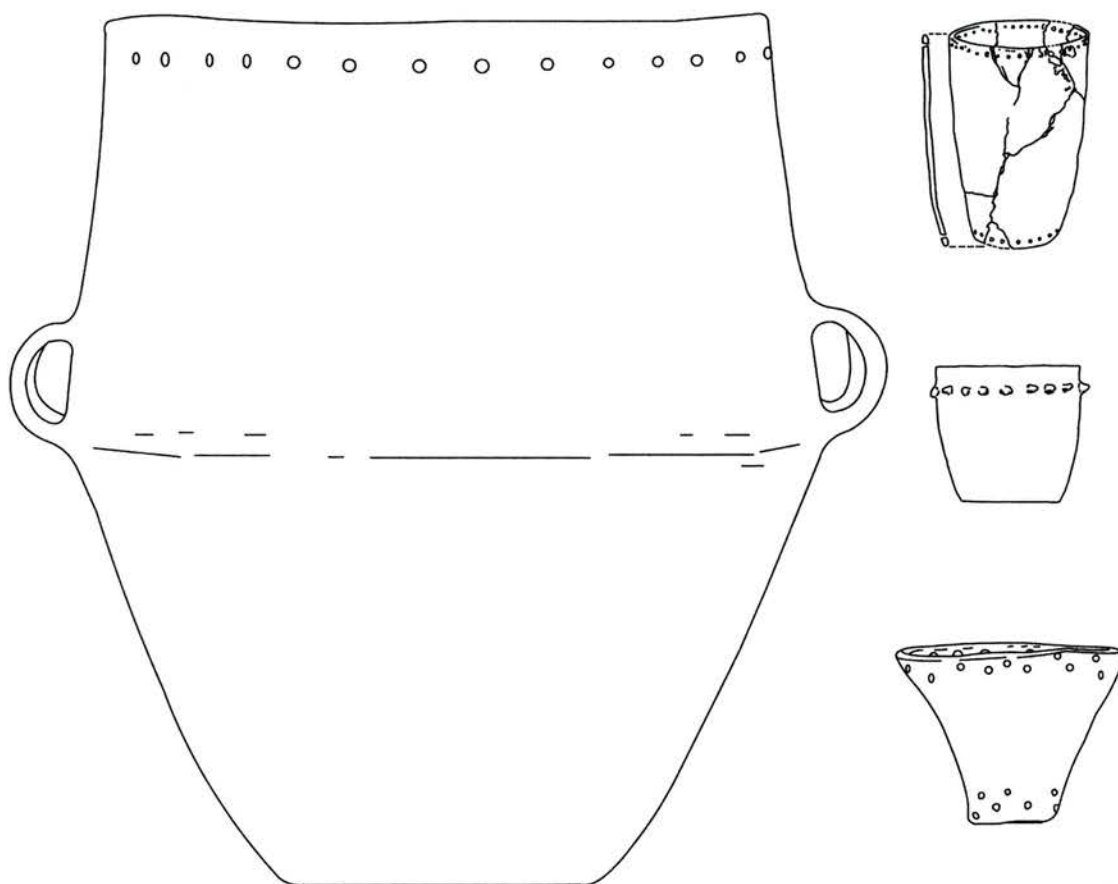


Fig. 3.6: Top right: Gerwisch drum. On the left a large vessel from Quenstedt-Schalkenburg pit 184, found with the vessel on the bottom right and a drum, middle right vessel found with the Watenstedt drum. All images to the same relative scale, the Gerwisch drum is 14 cm high. Images after Fischer (1951), Lies (1954) and Behrens and Schröter (1980)

rim (also Fig. 3.6). An essentially identical vessel from Egelin has already been interpreted as a drum (Behrens 1963, 22ff.; 1980, 151; Koch 1987, 24; Koch 1992, 117)

with one exception, that it possesses eye loops for the attachment of the skin rather than the holes mentioned here. Koch (1992, 117) cites ethnographic parallels from Africa, southern India and the Americas, for different methods of skin attachment.

Behrens and Schröter (1980, 126) discussed these vessels, with a wreath of holes under the rim, and a summary of their views is appropriate. One third of the settlement vessels have sets of holes, placed within the thickening of the vessel at the rim. These holes have a 0.5 cm diameter and are spaced 2-5cm apart, and are not to be considered as decorative elements since they occur only on large storage vessel (Behrens and Schröter 1980, 124). Furthermore, Behrens and Schröter (*idem*, 124) stress that these holes could not have been intended for the threading of cords for carrying the vessel since the rim would break. Behrens and Schröter note one example (fig. 72 h) where the vessel weighs 19 kg, and when full would weigh in at approximately 85 kg; this example would exert a pressure of 0.63 kg on each hole. The alternative proposal is as a method for sealing in the contents.

The Gerwisch example and the reliability of the reconstruction carried out as part of this project, suggests this is an excellent way to attach a drum skin (see Appendix 4). It seems quite plausible then that Koch's (1992) proposal be considered especially in the light of the example proposed by Behrens (1963, 22) from Egehn; yet Behrens states that the argument of Lies for the Gerwisch vessel is "not convincing". However, since the method of attachment has been shown to work and since it is the case that pots, known as storage vessels, have already been construed as drums by Behrens himself, it seems that there is no real argument against this interpretation. The presence of this vessel type found with the traditional Bernburg drum only corroborates the argument (Table. 3.18). Additionally the conical vessels with a double wreath of holes may also follow the Gerwisch lead. Fig. 3.6 also illustrates a vessel found with the Watenstedt drum in a burial context. It is argued here that, in the light of the above discussion and the fact that this pot has identical lugs to the Bernburg style drum, that this vessel must also be considered as a possible form of drum.

SUMMARY

We have discussed above the research concerning the classification of the clay drums. It is apparent that the Fischer's model has great merit and the flaws are only those of a model confined by the state of research at the time of writing.

Drum Classification

Using Fischer as the starting point and comparing the ratios of measurements of top, bottom and diameter (Koch 1992; Müller 2001), we are able to corroborate Fischer's basic model defining drum types to correspond with the traditional three ceramic styles. We are able to identify distinct burial and settlement instruments in the Salzmünde style and two forms of drum within the Walternienburg contexts, both burial drums. Additionally we have categorized an additional drum form, the Salz/Walt drum, named thus since it corresponds with the distribution of Müller's (2001) Salz/Walt ceramic style, and as is the case with Müller's ceramic grouping the Salz/Walt drum style shares Salzmünde and Walternienburg traits. The distinct distributions of the TRB IV drums is paralleled by the distribution of the decorative motif groups (see Map 3.3).

Similarly the Bernburg drums, of TRB V, may be divided into settlement and burial examples based on the ratio of height and diameter and although there are few complete examples it is also possible to identify funerary and settlement decorative motifs corresponding to this division. A point concerning distribution patterns is that while there is no clear-cut line between the circulation of Bernburg style settlement and burial drums, there is a predominance of settlement instruments in the area corresponding to the Salzmünde drum distribution. This suggests a continuation of a distinct settlement drum tradition.

Distribution Patterns

The horizontal division of the drums by circulating decorative bands corresponds to drum type. That is, the use of horizontal division at the waist and the foot corresponds to the area where there is emphasis on single burials where drums often occur in settlements. The lack of horizontal division at the waist corresponds with the Salz/Walt drum type. These distinctions may signify an outward appearance of a hierarchical society where there are single burials and individuality is emphasized in the

east. At the same time collective burial may be related to the lack of hierarchical division on the Salz/Walt drums. Alternatively, and something we shall return to later, is the plausible link between the presence of a horizontal division at the waist and use by the living, and a corresponding lack of horizontal division at the waist and use by or for the dead. Elsewhere, (chapters 5-7) we shall examine the use of shamanism as an interpretative tool for examining drums and we shall suggest that in a shamanistic world, where the drum may represent the *axis mundi*, drums associated with collective burial mounds and thus the underworld, have no decorative division at the waist because the division marks a barrier to a spiritual or metaphysical plane. Correspondingly the drum with divisions at the waist, separating the lower part of the *axis mundi* from the upper part, is associated with settlements and may be thought of as a tradition where crossing the boundary between worlds is more difficult for those in the world of the living.

There is a distinct correspondence between the drum contexts and the finds of copper artefacts in TRB IV and a distinct drop-off in correspondence in the later TRB V. Conventional views of drum-use and shamanism link the practitioner's powers with the notion of transformation and often the craftsman or metalworker: there is a common link between ritualization of complex and technical production (see Creighton 2000, 40 ff.). This association of the TRB IV drums, their distinct decorative motifs, and the transformation of copper may be one theme in our understanding of their use.

A further association is seen in the distribution of decorated menhirs and tombs, decorated axes and the distribution of the Salzmünde drums, in the area marked by single rich burials and horizontal drum-division, while the apparent relationship between drum and trepanation allows us to pose the hypothesis notion of a tentative relationship between the owner of the drum and patterns of brain function.

Conclusions

Through contextual analysis we are able to postulate the existence of drums for the living community and drums for the dead community. These peculiarities link distinctions between eastern and western burial traditions, and associate the ritual and transformational use of the drum with the transformation of metal ore and a need to express imagery on decorated axes, possibly menhirs and tombs but more specifically on the drums themselves. This is seen against the backdrop of an economic crisis and a search for local copper sources and control over the better soil types. We now turn to the decoration of these instruments.

CHAPTER 4
**A Comparative View
of TRB Drums:
Decoration and Drum Shape**

In India, the drum is associated with the emission of the primordial sound that lies at the origin of the manifestation and rhythms of the universe. The drum in question is the *damaru*...

Lucie Rault

This connotes Sound, the vehicle of speech, the conveyer of revelation, tradition, incantation, magic and divine truth

Heinrich Zimmer

THE STORY SO FAR

We have discussed the merits of earlier drum typologies and by combining different approaches have developed a system, which based on currently available examples is clear and consistent. Furthermore, examination of the distribution of these drum types and decoration has allowed the matching of drum form with specific combinations of motifs. And this in turn may be viewed in parallel with similar distribution patterns of copper artefacts, decorated axes and engravings on menhirs and stone burial chambers.

We will now attempt to examine some of the proposed origins, of both decoration and drum shape; to some degree this will be a review of the earlier research, which sought an interpretation of the source of decoration and drum shape, through the paradigm of diffusion.

DRUM DECORATION: INTRODUCTORY COMMENTS

We begin with a review of Schrickel's (1956) analysis of the drum decoration, research that was embarked on in the wake of studies undertaken by Grimm (1938), Fischer (1951) and Mildenerger (1952). Behrens (1980, 146) observed that Schrickel's study of 1956 was still valid, hence we begin this chapter with an overview of her study. A paper recently published by Eogan (1999) provides an analysis of Megalithic art, from a social standpoint, and although not mentioning drums, or their decoration, the

comparative analysis of the art supports the view of Schrickel, thus substantiating Behrens' comments. Judging then from the interest in the art of the Neolithic over recent years, it seems a perfect time to reintroduce the decorative elements of the central German drums to the discussion.

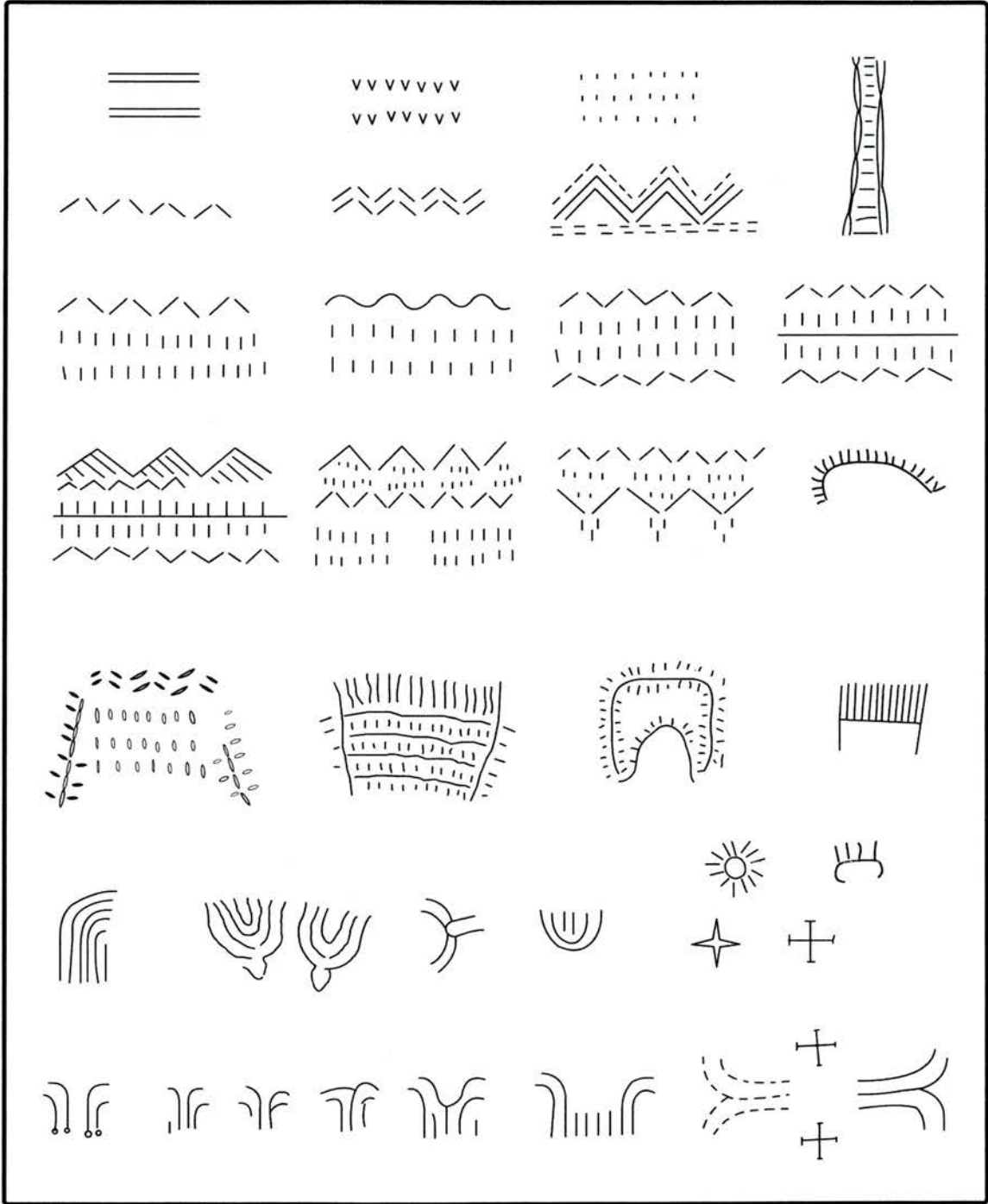


Fig 4.1. Decorative motifs of the Salzünde Drums redrawn after Schrickel (1956), Nitzschke (1986) and Beran (1993)

The drums of the TRB IV and V, representative of the Salzmünde, Walternienburg, Bernburg and the Salz/Walt ceramic styles, are decorated with a series of signs, from simple circles, radiating circles, crosses of different kinds, quarter-circles, semicircular and horseshoe curves, anchors and grill and “bib” motifs; there are also “pine” branches and “fir tree” twigs (figs. 4.1-4.4). The Salzmünde and Salz/Walt ceramic styles employ these signs in a striking way; that is they clearly distinguish themselves from other clay vessels. The motifs in question are not present on the Bernburg style ceramics, except for the pine branch and twigs; the use of the zigzag also

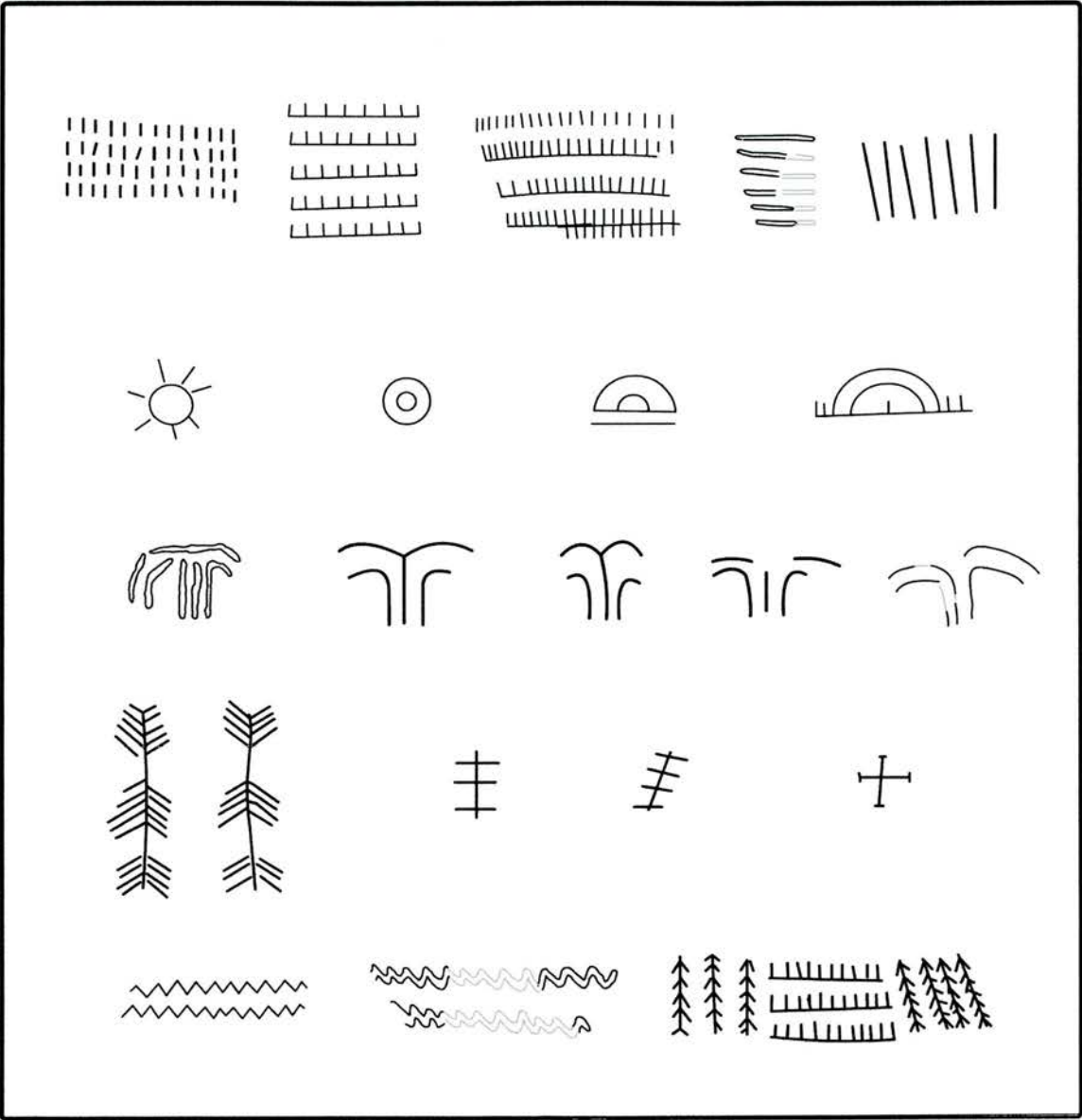


Fig 4.2. Decorative motifs of the Salzmünde/Walternienburg drums redrawn after Schrickel (1956) and Müller (1994)

remains while the blanket coverage of grid-like patterns comes to the fore (Schrickel 1956, 549). However, it is pertinent to note that the majority of motifs, which Schrickel assigned to the Walternienburg style, actually occur on our newly defined Salz/Walt drum type, rather than on the Walternienburg drum type.

An interesting point to remind ourselves of, in the light of the discrepancies in decoration, which one could easily put down to chronological differences, is that as demonstrated above, by a combination of typologies and radiocarbon dating, the order of the groups of the southern TRB is not purely sequential. The Salzmünde ceramic style would appear, based on the available evidence, to be a regional style developed from the Hutberg ceramics, both of these pottery styles being developed from, yet being partially contemporaneous with, the Baalberge ceramic assemblages. The Walternienburg style has been amply demonstrated, through typology and carbon dating, to be a contemporary of the Salzmünde style, although it may develop slightly later. The Salz/Walt drum type proposed above corresponds to some degree to Müller's (2001) Salz/Walt ceramic style prevalent in the west part of the Salzmünde B settlement distribution. The Bernburg ceramic assemblages are later, although radiocarbon dating suggests there is some chronological overlap with both Walternienburg II and Salzmünde B assemblages.

There are of course many difficulties when making a comparison of the geometric patterns, with the aim of explaining their origin, especially when they comprise of patterns of simple character (zigzag, triangle, ladder band, geometric checkerboard, circle). As far as these simple geometric motifs are concerned, they occur on drums and on other pottery forms. Yet in the case of the distinct symbols characteristic of the Salzmünde and the Salz/Walt style drum, the "symbolic" motifs stand out, prompting the following kind of comment:

"The drum plays a large role everywhere in the magic and cultic process. It is certainly no chance, that the prehistoric pieces, which are found so often in graves, also bear appropriate and numerous symbolic signs that possess some magic meaning"

(Seewald 1934, 65-66).

Mildenberger (1953, 30) highlights the ethnological parallels of drums with symbolic decoration as being for "cultic application", an observation supported by their frequent occurrence in graves. Mildenberger additionally proposed that the drum was evidence for the exercise of a magical defence, serving as the instruments of shamans, with whom the drum was ultimately buried (Mildenberger 1952, 41). Toepfer (1961,

779) surmised that the prototypes for the clay drums were wooden, and that they were used in “cultic acts and dances for rhythmic accompaniment”. Nitzschke (1986, 149), similarly, writes of the use of the drums as rhythmic sound instruments in a cult, and links this interpretation with the distinct symbols on the drum of Gerstewitz; he proposes

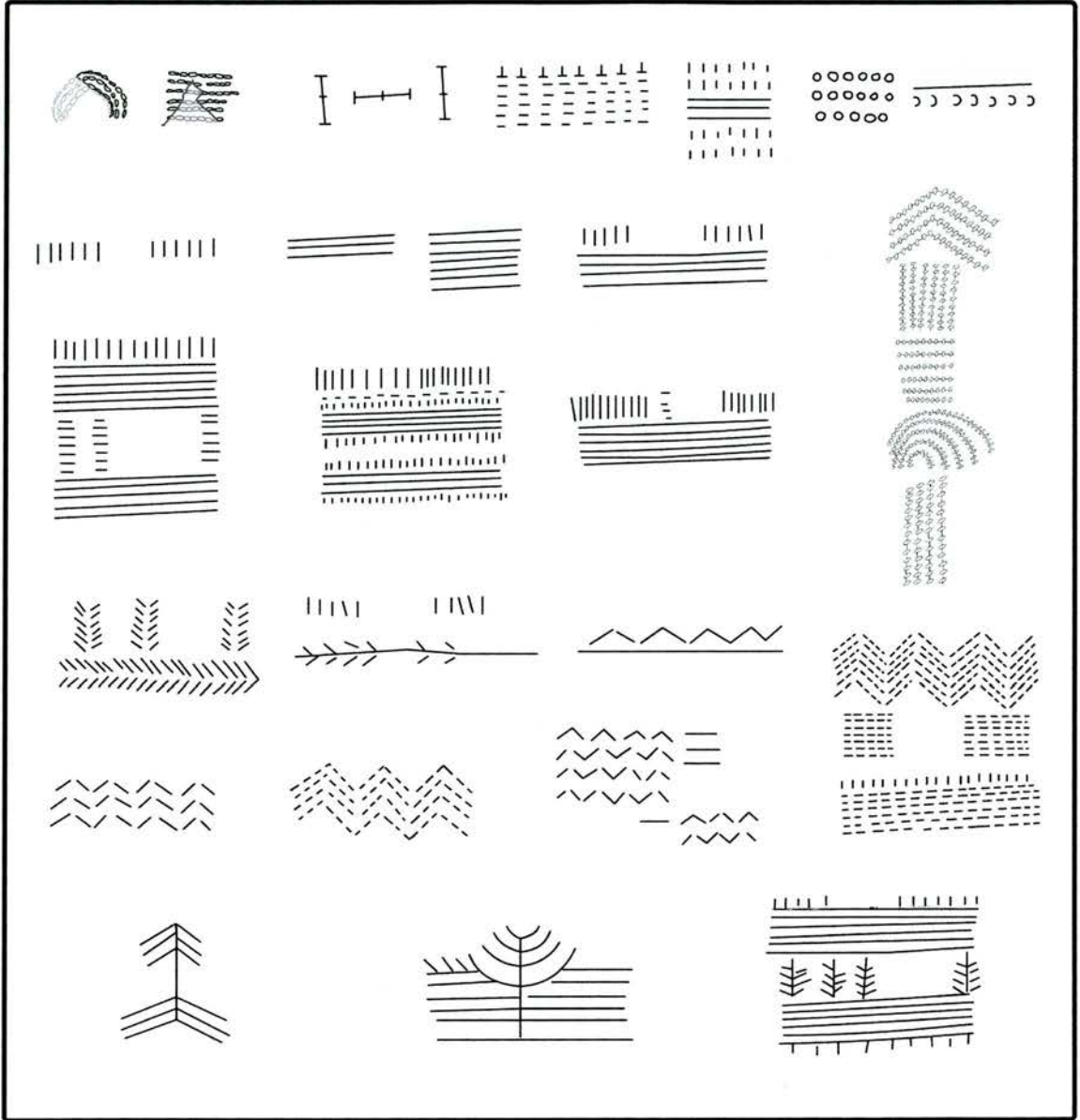


Fig. 4.3 Walternienburg Drum motifs after Schrickel (1956) Wamser (1983) and Nestler (1984)

that the function of the drum is linked to the symbols used to decorate the instruments. While acknowledging Mildenerger’s interpretation, Behrens (1981, 147) pursues the notion that the multiple finds of drums from the Bernburg settlements at Langen Burg and Quenstedt-Schalkenburg represent a cultic dance where many drums intoned the

rhythm; in chapter 5 we will examine the Saame drums, where in the southern distribution each household possessed its own instrument for use in divination (Westman and Utsi 1999, 20).

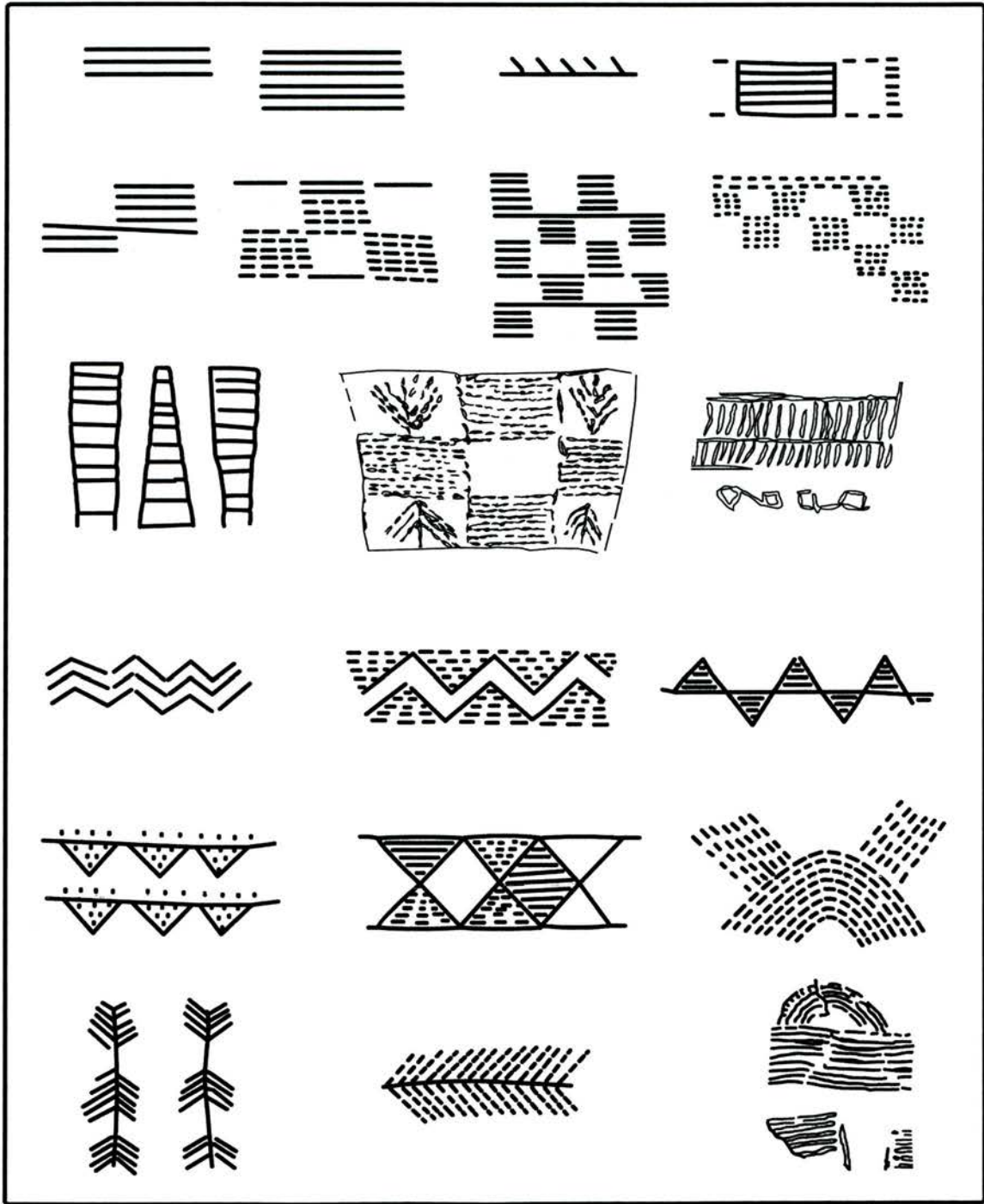


Fig 4.4. Decorative motifs of the Bernburg Drums redrawn after Schrickel (1956), Römmer (1962) and Behrens (1980)

Schrickel believes that only by linking the signs to other characteristic cultural elements could progress be made. It is interesting that such problematic decorative motifs are found in large numbers on the Central German drums. However, there are also, among the signs, some which are striking due to their originality, such as the semicircle and horseshoe-shaped image, anchors, and the grill and bib motifs (fig 4.1), and since parallels to these had not yet been demonstrated in the literature these signs naturally took the centre stage in Schrickel's (1956, 550) analysis.

In the older literature, referring to the decoration of the drums (Niklasson 1925 and Grimm 1938: in Schrickel 1956), there was no uniform opinion, and we are faced with two opposing views. The former is that either a central German (Northern European) origin of the signs is to be assumed, while the latter argues that a more southerly, or even south-eastern European origin should be sought (Seewald 1934, 121). Although the earlier studies will be briefly discussed here, and agreement may be reached as to the direction of influence concerning the drum vessels, the idea that we should look for a "homeland" for the origin of the signs will be questioned. Having said this, Schrickel's train of thought may have interesting repercussions for the subsequent chapters.

The Drum Decoration

Schrickel (1956, 550) decided to examine the individual patterns and signs with reference to theories of their origins, which had been proposed for the drums themselves, in the belief that there may be a connection here for the origin, or direction of influence, of at least some of the decorative motifs.

In addition to the drum motifs many signs occur on other ceramic groups, ranging from the circle, double circle, radiating circle and star, to the swastika, cross, horseshoe curves (separately and in pairs), and the anchor-motif as well as the comb and "animal crest", although these other contexts do not necessarily detract from the importance of the signs. Some motifs however, appear exclusively or in particular variations on the drums. e.g. the dot and the zigzag band found on the Böhlen drum, the grill motif variations found on the Schkopau and Rössen drums, the quarter curve and horseshoe curves seen on the Obermöllern and Schkopau examples, the "bib"-motif again on the Schkopau drum, while the simple decorative armed cross appears on the Rössen example. A series of anchor variations are found on the drum examples

from Böhlen, Rössen, Obermöllern, Halle-Brandberge 1 and Leipzig-Eutritzsch, and the anchor-cross combination on the Halle-Brandberge 1 and 3 drums. The Walternienburg and Bernburg ornaments are explained by Sprockhoffs (1938, 113) through the influence of the megalithic pottery of the north passage-grave age. Following this it was hypothesized that the Salzmünde style, the oldest ceramic style with drums, would assume the motifs of an ancestral central German group.

Of the symbols from central Germany the circles, semi-circles, checker-board and pine branches appear in other areas on other ceramics, while the geometric patterns, although occurring elsewhere in central Germany, appear to have independent characteristics from those in northern Germany (Schrickel 1956, 552). Having stated that some of the motifs occur on other pottery forms, the important point to make is that, in these cases, the motifs are largely subsumed within the decorative forms of the ceramics, whereas on the drums the motifs seem to stand out as specifically important images.

MESOLITHIC PRECURSORS

The obvious task in searching for a North European origin would be the comparison of the different motifs with the Mesolithic ornaments, which appear on bones, horn and amber objects. Tilley (1996, 43-49) discusses the Mesolithic art of Scania which, although belonging to a region further North than our area of interest, did develop into the northern branch of the TRB; therefore, although we look at the material here, it should be noted that it is not the direct geographical antecedent of the Neolithic groups of central Germany. The first important point to note is the fact that the majority of the finds consist of isolated bog deposits and are to be taken as votive offerings. This presents two trains of thought: firstly, this is surely an indication that these decorated items were important, but secondly and equally that since their context has provided the environment for perfect preservation, it does not mean that similar artefacts were not deposited in areas where they have not survived. For example it is striking that only three decorated items are known from Maglemosian or Ertebølle grave contexts (Tilley 1996, 44). The decorated artefacts appear to occur in contexts of the earlier Mesolithic, 4600-4000 BC, yet in the period we are interested in, 4000-3200 BC, there is a great dearth of decorated pieces, in bone or antler, in the region to the North of our study area. Tilley suggests that with the introduction of pottery to the

hunter-gatherer groups around 3700 BC, the novelty of this medium inspired the movement of decoration onto the pots. Tilley further notes (1996, 44) that almost all of the Ertebølle decorative designs are abstract or non-representational. The representations of animals or humans are confined to the earlier Mesolithic. Schrickel also notes that the essentially abstract forms found in the Mesolithic decoration in central Germany; the zigzag-step, triangle, rhombus and square decoration occur as well as a sign similar to a pine-branch formation (Schrickel 1956, 551). However, Schrickel remained doubtful as to what extent these motifs can be examined as direct precursors of the related phenomena on the dolmen and passage-grave age ceramics. It is also to be noted that forms of these motifs appear on Eastern TRB groups.

COMPARATIVE DECORATIVE MOTIFS

If we look at the Baalberge ceramic style, the immediate precursor of the Salzmünde style, there is neither the presence of drums nor decoration; almost all Baalberge pottery lacks decoration. The southern TRB is not, of course, the earliest farming group in this area, and is preceded by the LBK and the post-LBK groups, Rössen and finally the Gatersleben culture. In the LBK we do indeed have the armed-cross motif (Schrickel 1956, 552). However, Schrickel stresses that although there is no direct connection between the LBK and TRB, there may have been a continuing use of this motif, which has not survived for us to see. Müller's (2001) model has the TRB developing from the cultural background known to archaeologists as Late Gatersleben and Michelsburg cultures. However, the patterns on Stichbandkeramik, SBK, and Rössen ceramics, based on their manner of application, may have originated through influence from the northern TRB, rather than deriving from the LBK itself. The hourglass shape lying on its side is also present in the central German LBK but does not materialize again until the Bernburg group.

Schrickel proceeds to examine the contemporary surrounding cultures and she begins with the Jordansmuhl group, which borders the distribution of the Salzmünde ceramic style, in central Germany. But this is largely undecorated in its central German forms. Occasionally some triangles with panels of hatched lines appear, while somewhat more ample is the decoration of the Jordansmuhl ceramics in Saxony (Schrickel 1956, 553). Yet, although zigzag lines accompanied by dots and ribbon

stripes are found on the Salzmünde and Walternienburg drums, by no means can the Jordansmuhl ceramics be relied on as the bearers of the entire drum decoration.

Schricket next compares the Lengyel groups of southern Germany and the Hungarian form, the Babskakultur. The comparison made with the cultures and groups which possess vessels of similar form to the drum, shows that although the basic drum shape existed, in the form of pedestalled bowls, the motifs appearing on the drums, with the exception of some geometric patterns, are strikingly rare (1956, 554).

Schricket's case does not support the idea of influences from these southerly agricultural groups and so we turn now to comparisons of material with a more substantial correlation.

Checker-Board and Zig-zag

The checker-board design is found on the pedestalled bowls of MN I in North Jutland (Midgley 1992, 139), as is the repetitive geometric zigzag, while the checker-board pattern is also demonstrated on a pot from Olstrupgard dating to MN IVA (Midgley 1992, 162). At the same time as the zig-zag is found on these pedestalled bowls, it is also found on pottery from the Mecklenburg megaliths (Midgley 1992, 98), as is the ribbon-band design, which consists of two sets of zigzags where the space between, or alternatively outside the zigzags is infilled.

Naturally, for a balanced analysis, the geometric patterns should also be considered in a comparative light, especially since the zig-zag, triangle, and checker-board, as noted by Schrickel (1956, 554), are present in Spain and in France, notably the Megaliths in Brittany. The examples referred to at Pedra Coberta, in the province of La Coruña, are cited as comparisons for the zigzag and checker-board motif, and have recently been re-excavated, having been filled in for preservation, and colour photographs are provided in Devignes (1997) and Bello-Dieguez (1997) (images 2a-3b, between pages 56 and 57). These not only show repeated black and red zigzags on a white background, but also triangles surrounded by dots, which Schrickel noted as a peculiar combination of motifs as demonstrated by the Böhlen drum. The checker-board effect is also present, with each lozenge also surrounded by dots. We also appear to have examples of the double horseshoe motif. The checker-board effect is also found on kerb stone K52 of Newgrange (Eogan 1997, 99), a similarity to which we shall return below. Closer to our area of study, Schrickel (1956, 554) notes that the same

designs are carved on the walls of the stone cist of Göhlitzsch, Merseburg region. However, we may note that Göhlitzsch is of Corded Ware date (Beier 1984, 136). A new analysis of this tomb is given by Müller (1997). Schrickel suggests that these zigzag, triangle and checker-board motifs, rather than being purely ornamental, have a symbolic nature, due specifically to their appearance on “idols” (idol of slate-panel, limestone cylinders and carved long bones). This is especially true of the zigzag, due to its representation on West European grave-wall decoration; indeed this derivation is seen by Schrickel as secure, while other motifs can also be “clearly derived from here” (Schrickel 1956, 555).

Having compared the zigzags and checker-board motifs from the drums with rock art in Spain and France, Schrickel (1956, 55) has demonstrated that they are present in the local tomb architecture of central Germany, and we do not have to look elsewhere for their origin. Müller (2001, 127) has established that there may have been some overlap between Corded Ware and the Salzmünde C ceramic style. The search for an origin may seem therefore superfluous in this case, except perhaps to emphasize the use of these patterns, specifically on funerary material elsewhere in the Neolithic.

The Ladder Motif

The late TRB Mecklenburg pottery exhibits designs which resemble the ladder motif, although it could not be said to be identical, while the pine-branch motif also occurs (Midgley 1992, 99). A symbolic character is also to be ascribed to the ladder band, which is to be found on the pottery of Los Millares. Schrickel notes that this sign, although appearing on different ceramic forms, is however rare in the medium of stone engravings, although it occasionally appears in the Seine-Marne area on rocks, which are decorated in the “Iberian” style, and as lateral boundaries on the decorated grave wall-panels of Brittany (Schrickel 1956, 554). An example exists in the tomb of Gavrinis, sculptured stone no. 16 standing out distinctly amid the curved-patterns surrounding it (Le Roux 1995, 18). Again, returning to Central Germany, a similar example is cited on the Hornburg disk, while Müller (1988, 1997) provides us with two images, almost identical to the ladder motif, on a menhir reused as a capstone, from Langeneichstädt, also known as Obereichstädt. The tomb in question also contained two drums.

Similarly in the rock art in Yorkshire one may see similar designs, a very interesting example being that of the “Ilkley ladders” (Beckensall 1999, 30). These

carvings consist of a repetitive group of images of concentric rings, with a ladder motif leading up to the centre of each.

Schricket (1956, 554) implies that not only the distinctive signs used on the drums, but also the geometric patterns found on other pottery and even other media, are to be interpreted symbolically. Are we therefore to ascribe “symbolic” status to all the TRB ceramics, such as those which are adorned with horseshoe type curve, or zigzags, below the rim?

An important question may be posed at this juncture: does the presence of some signs, believed to have been ritually important, mean that they were excluded from common use? And are they therefore important only if they are rare? The use of direct analogy with present-day cultures should be dealt with carefully and used merely to widen the horizons of the archaeologist (Ucko 1969, 262ff.). Yet, it is interesting to note that among the Tukanoan Indians important ritual symbols, taken from hallucinatory images and used in a ritual context, appear to have parallels in the decoration of everyday vessels. In Central Germany the majority of the known ceramic types occur in grave contexts, and may therefore have a ritual importance. In addition, among the Tukanoans (to be discussed further in chapter 6), longhouse-dwelling agriculturalists, Reichel-Dolmatoff (1987, 14) notes that similar imagery may be placed on objects of ritual or common use, from the front of houses, posts and rafters, basketry, and pottery, to musical instruments, ritual staffs and even body painting and decoration, during rituals. Thus everything a person sees or uses bears familiar marks, carrying a message; and so the hallucinatory or spiritual sphere is always present.

Pine Branch or Fir Twig

In her discussion of the “pine-branch” motif Schrickel states that it often occurs as a central German drum decoration, also occurring on the other ceramics of the drum groups (1956, 562). She goes on to state that the peculiar shape they sometimes take demonstrates that this design has a specifically German construction. She says that a pine-branch emblem, with a border, is present on other Bernberg ceramic forms and continues on the Corded Ware. The design is slightly different in the Bernberg style and this use continues in the Corded Ware material, where however, ceramic drums are lacking. Again the comparison turns to Spain and Brittany where we are told that the motif occasionally occurs on the “Idol” ceramics; the Breton example cited is that of

Gavrinis, presumably Le Roux's (1995, 20) sculptured stone 24, yet in this case we are faced with a repetitive vertical chevron pattern with no central branch. In this case the comparison can be used in reverse since this repetitive chevron design actually occurs on a central German drum at Ebendorf, on which the pattern is found placed both horizontally and vertically. An interesting recent discovery, also in Brittany, consisted of a pottery disc decorated on the bottom with three wavy lines surmounted by a straight horizontal division and then two pine branch motifs (Cassen 1998). This was found in a megalithic tomb, at Erdeven, again linking images portrayed on the drums with a mortuary context. On our own doorstep, as it were, the stone cist of Göhlitzsch bears this similar emblem, as Schrickel observes; Müller (1997, 169) gives the most recent study of this site. Schrickel's final summary of this design is that it is to be examined as a local development.

Curved Lines

Circles and concentric circles exist in the Wiorek phase of the Eastern TRB (Midgley 1992, 54), radiating circles and concentric circles, with radiation, known as "eye" pots, found in the Mecklenburg megaliths (Midgley 1992, 98). This style of "eye" pot occurs again in the pottery of MN III, Bundso style, from the Danish island (Midgley 1992, 155). Concentric circles were found again on pottery of the Blandebjerg, MN II style from Jutland (Midgley 1992, 145), and finally "eye" pots occur again in the Danish MN IVA Lindo style (Midgley 1992, 162). It is quite remarkable to compare the "eye" pots of the Mecklenburg – noting that they are specifically from funerary contexts – with the "eye" motifs on ceramics from Los Millares. The similarities between different "symbolic" decorative forms in the different regions of Europe will be examined below.

Concentric semi-circles are present, situated just under the rim, on the earliest TRB ceramics from Schleswig-Holstein (Midgley 1992, 81), and are also found on the pottery of Mecklenburg (Midgley 1992, 93) and in the Danish Virum group (Midgley 1992, 120). Schrickel noted that at the time of the Neolithic group C in Denmark these semi-circles are present, but also that this is the first appearance of megalithic graves (1956, 558), leading to her conclusion that the influence bringing the use of this motif is the same influence which introduced megaliths.

The Drum from Weinburg, Halle, found on a settlement site, presents us with a series of double semi-circles just above the waist, which has two parallel vertical lines within the inner curve. This design is interesting in the light of Schrickel's comparison of drum decoration with the style of the Breton tomb art (1956, 558). Here she notes the similarity with the decorated axe of Wegewitz (Wallendorf), which has two horseshoe shapes sitting beside each other, filled with multiple parallel lines (for a picture see Behrens 1973, 93 and 217). This axe is also decorated with concentric circles and what may be interpreted as the pine-branch motif.

The drum of Obermöllern (Schrickel 1956, 557) has decoration consisting of a parallel lined quarter circle with two parallel straight lines attached to the inner of the two curved lines (fig 4.1 central motif on second from bottom line). This as far as we know has no parallels in any media. However, the use of multiple curved lines is a popular motif on stone, as noted above on some pottery forms, but it is the megalithic art of Brittany that Schrickel (1956, 558) turned to next, especially that of Gavrinis. The drum of Obermöllern, for example, has, next to the above-mentioned design, a group of multiple lines curved at the end which is almost identical to those that can be seen on the sculptured stones nos. 14, 16 and 24 at Gavrinis. While the drum of Schkopau, has on its upper part two designs consisting of respectively three and four horseshoe curves inside each other, the outside curve is in each case topped by a small lump. Again at Gavrinis this pattern is found on stone no. 9 (Le Roux 1995, 26).

It is not only in the realm of stone-engraving that some of these images appear; as well as being present on the drums they are found on some of the ceramic forms in Brittany (Schrickel 1956, 558), while the example given by Childe (1973, 355) of a "vase support", from Le Moustoir, Carnac, not only bears triple, concentric horseshoe curves but a wave line, both motifs present on the drums of the Salzmünde ceramic style. A similar design is found on a vessel from Conguel, Morbihan, consisting of six concentric horseshoe shapes with one vertical line in the centre (Childe 1973⁶, 365). What makes this even more exciting from the point of view of this study, is that Sherratt (1997, 410) has recently suggested that these "vase supports" were probably braziers "perhaps for opium", and he also notes this specific ceramic form is associated with a very particular decorative form. This train of thought will be elaborated in the second part of this chapter as will the similarities that Schrickel emphasizes between rock art in Brittany and the Neolithic tombs of Ireland (1956, 558), a similarity noted again by Bradley (1989).

In this same article Bradley (1989, 74) notes the presence of a number of these similar motifs on the Grooved Ware pottery of the British Isles; he stresses that this pottery is present in conjunction with the local ceramic tradition, and is the dominant style at many ceremonial sites.

Schricket next moves to North Africa and Egypt, where she highlights these curved designs. The Tunisian example she links to Portugal through “a series of relationships” (Schricket 1956, 558) where the curve motif is also found. However, the use of diffusion as a model is no longer regarded as the back-bone of explanation in archaeology, yet the latter part of this chapter will, hopefully convincingly, argue that there is no need to search quite so far afield.

An interesting point made by Schrickel, discussing the curve decorations, is that the order of these elements is the result of mirror imaging. This is given the name polyopia by Lewis-Williams and Dowson (1993, 56) and will be discussed briefly in chapter 6.

Schricket’s anchor motif is a doubled-up form of the “crooked rod” rather like a shepherd’s crook. This is of interest firstly due to its appearance on the slabs of graves in Brittany, both as an anchor form and also as a series of these “crooked rods” (1956, 560). A fine example is the back slab from the Table des Marchands. A striking similarity is to be seen in her comparison of some of these curved decorative motifs of the Salzmünde group, Böhlen, Leipzig and especially Obermöllern with the “boat” image from Mané Lud, Locmariaquer (1956, 560). A difference to note is that in Brittany the shepherd’s crook motif is sometimes separate, with no mirror effect. Interest is sparked here as the drum decoration contains not only an anchor motif and a “crooked rod” motif but that the two motifs as they appear on drums are both mirror images of the basic curve, yet produced from a mirror image in a different plane, thus being polyopia on an alternative plane. Toepfer (1961, 779) interprets a sherd as a drum specifically because of the anchor decoration.

Again of importance to the latter developments of this discussion in chapter 6, Schrickel suggests looking for some of these patterns in the imagination, and goes on to say that these elements are then assembled relating to the local cultural conventions or taste. This sounds remarkably like the notion of the adoption of culturally important motifs, or entoptics from the hallucinatory world.

Lines and Parallel Lines

The use of parallel or single lines as a decorative form is very simple and ubiquitous, and it would therefore be difficult to use this motif as a diagnostic form. Midgley (1992, 132) provides a fine example of the different manners in which it can be applied. The simple nature of these emblems aside, it should still be emphasized that this is also one of the standard entoptic images. The introduction of this as the basic building block of the Walternienburg decoration, as opposed to the emphasis in the Salzmünde style of distinct motifs, may be seen as a subtle shift in cultural emphasis. The details of entoptic imagery will be discussed below.

Grill and Bib Motifs

Having dealt with the simple design, Schrickel turned to her “grill” and “bib” motifs, which both occur on the upper part of the Schkopau drum, the grill motif noted as having a similarity with the upper part of the Rössen drum (Fig 4.1). The grill motif finds comparable patterns only at Los Millares. The “bib” motif of the Schkopau drum again has a similar design only in the Breton megaliths: the site of Les Pierres Plates has five such images reproduced by Schrickel (1956, 562) (see also L’Helgouac’h 1994, 23-29), although only the first three are sufficiently similar to allow instant recognition. Another close example is given from Mané Kerioned, Carnac. These are assumed to be anthropomorphic and are described, by Schrickel (1956, 562), as “headless”. This may seem to be a leap of faith, but the sequence can also be followed from the simple shape of the “bib” to the elaborate form at Les Pierres Plates. If we then examine the statue menhirs from Rougerat and the Haut Languedoc it is possible to see the similarity of the complex Breton form with these figures. The menhirs in the South of France, which are quite distinctly anthropoid, are in some cases highly stylized and it is here that we can recognize the Breton form, specifically in the groups from Lacaune and Tauriac-Montagnol (D’Anna et al 1997, 185). The similarity continues in eastern Languedoc and in Provence (D’Anna et al 1997, 187 and 190). It can be said that there is a striking similarity between this drum motif and anthropomorphic figures in France, yet it does not necessarily follow that one stems from the other (see below).

Hour Glass Emblem

The final individual emblem is the hour-glass. This is not a wide-spread sign and occurs only on the Bernburg drums, such as the examples from Doläuer Heide (Schrickel 1956, 549; Midgley 1992, 190). Interest in this motif is encouraged by its presence again in the rock art as at Göhlitzsch (Müller 1997, 168 and 170) and of course its resemblance to the actual shape of the drum, and Schrickel is the first to ask whether the drum-shape engraving on a rock a Backa (Brastad) is just that. Another option is the vessel from Vélez Blanco or indeed the hourglass form constructed out of dots on Los Millares, vessel 15 (Schrickel 1956, 563). Remaining in Spain, excavation of the passage tomb of Dombate provides us with carved images on orthostat C6 (Bello-Dieguez 1997, 34-35) which bear a striking resemblance to the drums of central Germany, or the pedestalled bowls of MN I in North Jutland (Midgley 1992, 139). Schrickel rules out the option that the hourglass form represents the double axe head as it is not depicted with the usual handle, and is portrayed vertically and not in the usual horizontal manner (Schrickel 1956, 564).

DECORATIVE CONCLUSIONS

Eogan (1999), as noted above, recently published an article entitled 'Megalithic art and society', in which he analyses the art of Portugal, Galicia, Brittany, Ireland and Orkney. This was done with a view to understanding the social organization of the communities which created the art, but this is not the point which is of interest to us here: what is of interest to us is the definitions used and the areas studied. The term 'Megalithic art' is defined as 'a form of art, consisting almost entirely of geometric and non-representational forms that are found on passage tombs in western Europe, and on the possibly related but later, tombs of the Paris Basin and the central west of France and possibly central Germany' (Eogan 1999, 416). He also notes, thus corroborating the above discussion, that this art also adorned mobile objects, which in most cases were pottery vessels (*ibid*, 416).

We have examined Schrickel's study in depth with reference to new finds and excavations which have taken place since 1956, and as Behrens noted in 1981, the analysis is still relevant today. It is indeed impressive to see Eogan's (1999) article noting the similarity of the art from exactly the same areas that Schrickel has examined and, except for the issue of the drums, reiterating the validity of her comparisons. The

most impressive aspect of this study, besides emphasizing that the drum decoration can be examined as quite distinct from the decoration of other TRB ceramics, is that for any comparative material we have to look largely to Spanish and Breton evidence (Schrickel 1956, 563). She observes that this influence is to be relied upon for explanation of the quarter- and horseshoe-curves, the “shepherd’s crook”, the “grill” and “bib” and the “eye” motifs. Similarly the zigzag and triangular designs also hint at some west European influence. In the case of the double circle she decides that due to the simplicity of the design and the wide dissemination, no particular home can be assigned. What makes this exciting is that in recent years studies of the art in these areas have adopted a new approach. Although this stresses the similarities of different motifs in geographically diverse areas, it does not result in a search for diffusion as an explanation but suggests an altogether more intriguing interpretation, without resorting to contacts between distant areas, not that these may not have existed.

Although the symbols, which are found on the Salzmünde, Walternienburg and Salz/Walt drums, are not limited to the grave pottery or solely to drums, they are dominant on the drums. Elsewhere the concentric circles are found on a jug from Salzmünde, find-place 1, the jug being regarded as a grave item (e.g the example from a place illustrated in Beran 1993, table 19), and also the concentric-circle motif is found on a large undiagnostic sherd from Salzmünde, find-place 4. Salzmünde find-place 4 also provided the home of another motif, a sherd with ladder decoration (Beran 1993, table 10). The anchor motif made classic by the Rössen drum is found on a sherd and on an unusually decorated amphora both from Salzmünde find-place 35 (Beran, 1993; table 28). A similar emblem is found on the shoulder of a jug with unknown context (Beran 1993, table 50). Again this symbol is found at Brachstedt on a sherd with ladder decoration (Beran 1993, table 55). Two concentric semi-circles with a dotted line on the outside are found on a sherd from Halberstadt (Beran 1993, table 109), and an example of crosses made of small impressed dots occurs on an amphora from Egelin (Beran 1993, table 110). The barrel vessel found in association with the drum from Heiligenthal Sömmerberg is decorated with circles with radiating lines and an internal cross and also a series of crosses along the base (Müller 1994, fig 23). The interpretation of these signs will be discussed in more detail below.

THE SEARCH FOR AN ORIGIN OF FORM

Seewald (1934, 64-65) was the first to approach the question of the source and the proto-shapes of the ceramic drums. The drum form is not known from the Baalberge ceramic assemblages, and both Fischer (1951, 103) and Mildenerger (1953, 35) proposed that it was a later development. Fischer (1951, 103) noted that the outward appearance of the drum shape was known in the Danubian lands and that this form of vessel appears within the TRB contexts at the same time as the drum. However, it is now clear in the light of radiocarbon dating that the Danubian appearances of this vessel form are of considerably older date.

Mildenerger (1953, 34) questioned the old arguments for a Danubian origin for the drums, since drums were not found in the area, although the particular vessel shape was represented in the pedestalled bowls. Thus Mildenerger (1953, 35) noted the pedestalled vessel form within the Babska-Lengyel-Jordansmühl groups and the Hungarian Tisza culture. Yet these are only superficially similar. Thus Mildenerger preferred a local origin with the Salzmünde style, in affirmation of Seewald (1934, 119), arguing that the appearance of the clay vessels in such a localized area suggests a “local transformation of available wooden drums in another material” (Mildenerger 1953, 41).

That distinct Kujavian, Bohemian and Moravian drums exist is clear (Fischer 1951: Seewald 1962: Behrens 1980). However it is also clear that these examples are outside the remit of this discussion on two counts. Primarily these drum groups are distinct from those of the MES, which are clearly from a recognizable cultural group. But furthermore, in the context of this discussion on the origin of form, the Bohemian vessels are a late phenomenon. The Bohemian settlement drum from Kralupy was found in association with vessels of the late Bernburg style while the Brozany drum was discovered in a flat grave of the Globular Amphora Culture (Seewald 1962, 262). Thus in the context of this discussion, examining the source of the actual vessel form we may ignore the Bohemian vessels since they can have no influence on the Salzmünde style of TRB IV. However, Behrens (1980, 150) places the Moravian drums earlier than the Salzmünde style, calling them the oldest in Europe.

However, having dismissed these Bohemian ceramics as having no direct bearing on the present discussion of origins, we may still look in this direction, but with reference to earlier cultural groups. Behrens introduces to the discussion vessels which resemble the drums and which also possess no internal base, but which have not

previously been interpreted as drums. Thus a vessel from grave 68 in the Tisza-Polgar Basatanya cemetery (Behrens 1981, 156) may very well be interpreted as a drum. However, in the original source (Bognar-Kutzian 1963, 142 and plate lxxviii), it is classified as a hollow pedestalled vessel and thought to be used as a support for another vessel. Further it is noted that both eggcup shape and straight-sided hourglass shape appear in the range of pedestalled bowl forms. However the argument that there is also obvious agreement between the drum decoration and that on southern European pedestalled vessel decoration (Mildenberger 1953, 35) only takes into account the simple blanket coverage ornamentation of the Bernburg style and not the elaborate use of signs of the Salzmünde, Salz/Walt and Walternienburg drum examples.

Regarding Hungarian examples, note was taken by Mildenberger (1952, 35) who stressed the similarity in the shape of the pedestalled vessels from Lengyel and associated cultures such as the Tisza. However, the example from Basatanya had yet to be published at the time Mildenberger wrote, and this similarity between hollow vessels without a base and the German drums was not made explicitly, although it has already been suggested that the outward appearance of the vessels did originate from the area of Hungary (Seewald 1934, 119; Mildenberger 1952, 35).

The Vessel from Basatanya is a hollow vessel with a slightly tapered cylindrical foot supporting a shallow conical upper part, which has four pierced lugs under the rim (fig. 4.5). The waist of the vessel shows a smooth join, suggesting that it was manufactured in one piece; an important feature in light of the following discussion. Near the foot are two circular perforations, which if we accept an interpretation as a drum would allow a change of pitch depending on whether they were covered or left open; parallels to this have been noted by B. Bass (pers. com.).

Pedestalled Bowls of the TRB

What deserves a fuller discussion here is the presence within the TRB of the pedestalled bowl associated with a ladle. These are very similar to the drums in outward appearance, but importantly they are found outside the southern TRB. So the pedestalled bowl is found throughout the TRB except in the southern group, while the drum found especially in the southern group is very rare elsewhere. If as Mildenberger (1953, 41) proposed, that outside the area of the southern TRB wooden drums were the

norm, it must be questioned why the pedestalled vessels with spoons are not known in the southern TRB.

Pedestalled bowls appear as a new form in the MN 1a Troldebjerg/Klintebakke horizon ca 3299+/- 150 bc (Midgley 1992, 215). In North Jutland, the Hagebrogard group is the equivalent of MN1a in southern Denmark, but contains some pedestalled bowls of the later Klintebakke style MN1b (Midgley 1992, 138). In the subsequent Blandebjerg group from MNII, ca 3135+/- 162 bc, pedestalled bowls become scarce: there are only four known examples (Midgley 1992, 145). Although being rare in MNII, pedestalled bowls are known from MN III contexts, from the late Ferslev style ca 3033+/-107 bc (Midgley 1992, 217). The pedestalled bowl common in MN I falls out of favour in MN II. These dates suggest a range of 3400-3000 BC for MN Ia to MNII (Midgley 1992, fig 71), which allows the drums of the TRB MES IV to be essentially contemporaneous (Midgley 1992, fig. 173). However, the pedestalled bowl and the associated ladle are a northern occurrence and essentially rare elsewhere, though Midgley (1992, 196) notes a possible connection with the southern drum form.

Behrens notes the similarity between the southern TRB drums and specific vessels from Sweden, which prior to his paper were still not referred to as drums. These hollow-footed vessels are recorded by Behrens in the Historic Museum in Lund, where they belong in the Middle Neolithic (Behrens 1981, 31). However, examination of these specific examples betrays their origin as pedestalled vessels, of which the surviving fragments do not include the base of the upper part of the pots. Furthermore the upper section is exceedingly shallow, paralleling the other known pedestalled vessels and thus also providing a poor resonating upper chamber. This dissertation does not recognize these vessels as drums.

The Danubian Pedestalled Vessels

It is possible, however, to push the interpretation of drums further back in time. Although referring to them as hollow pedestalled supports, Bognar-Kutzian (1963, 1972) provides us with other examples from the Tisza-Polgar period such as that at Darvas, on the Berettyo river, a tributary of the Tisza, which had a horizontally pierced lug pointing downwards directly above the waist of the vessel (1972, 15; see also 1963, 506-7). Bognar-Kutzian states that these vessel forms are quite rare in the Copper Age period, but that they were far more common in the Herpaly culture, the forerunner of

the Basatanya group of the Tisza-Polgar culture. Examples of these are that from Bekes-Delo from grave 3 (Goldman 1983, 110), and from Berettyo-Szentmarton. The Bekes-Delo example is strange in that it is a hollow pedestal as the result of being drilled through the base, and it may possibly hint at the original process for the manufacture of drums prior to manufacturing in their final form, that is as one-piece vessels with a smooth interface between the upper and lower parts. The Bekes-Delo sherds have a particularly small hole drilled between the upper and lower parts, while in other examples the hole is larger.

Elsewhere we read that

“Fruit stands appear to have been very popular in the Herpály culture: these were in fact small bowls set on a high pedestal, with a smaller or larger hole drilled through the base of the vessel”(Kalicz and Raczky 1987, 116).

It is interesting to note that in ethnographic parallels, the ritual of the manufacture of the drum is as important as its use. The ritual importance of a drum was noted already by Seewald, while Mildenerger proposed this instrument as evidence for the exercise of a magical defence, serving as instruments of shamans, with whom they were ultimately buried (Seewald 1934, 123; Mildenerger 1952, 40).

Thus we might cite an analogical drum manufacture from the Kaluli people of the Great Papuan Plateau, which Hart *et al* (1991, 110: cf. Feld 1990) repeats from a discussion he had with ethnomusicologist Steve Feld, describing the making of a drum. When the tree, to be used, is felled, soaked and the hollowing begun, but when the drum still has a thin membrane of wood left between the foot and the mouth, then

in the most dramatic aspect of the process, the throat and tongue of the *tibodai* * are placed on the wooden bridge that separates the two hollowed out sections. The bridge is then cut out, while the drum maker recites a magical saying (Hart *et al* 1991, 110)

(* a *tibodai* is a bird, whose whistle like voice is thought to be the spirit of a dead child).

It is speculated here that we may interpret the Herpaly vessels in this manner. Thus, where in the archaeological record, we have hollow pedestal pots, where the vessel has been manufactured as a bowl on a stand and subsequently the dividing clay as been remove by drilling, we may see this as the ritual manufacture of the drum which still echoes the process of manufacture used for wooden predecessors. An alternate interpretation is also possible, since a common African drum type has a small hole through which water is pour to moisten the drum skin (Trewin, pers. comm.).

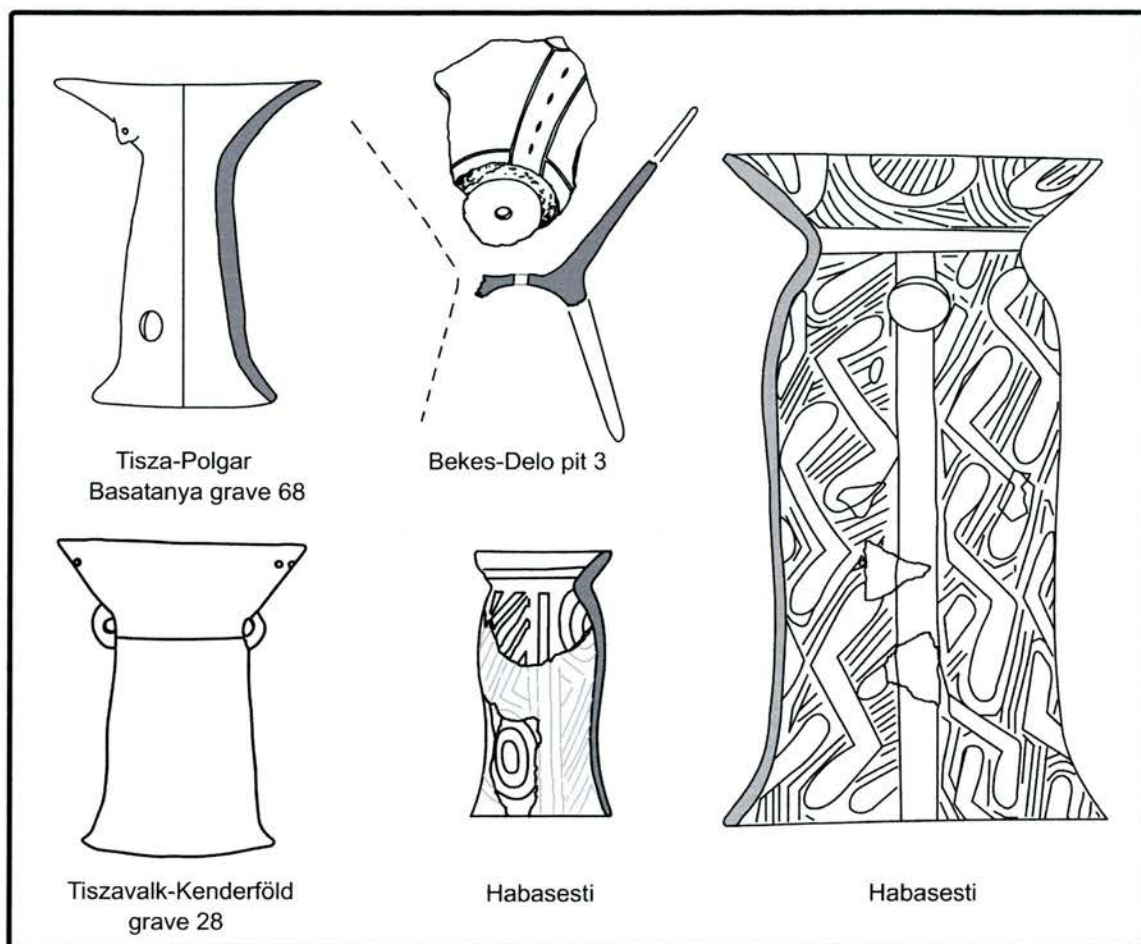


Fig. 4.5. Pedestalled vessels without bases which we may be interpreted as drums
 After Dumitrescu (1954), Bogнар-Kutzian (1963), Patay (1976) and Goldman (1983)

The most striking feature of Bogнар-Kutzian’s (1963, 506-7; 1972, 15) remarks is that she makes it quite clear that this hollow support vessel is very popular within Erösd—Cucuteni pottery, at Habasesti, Frumusica and Izvoare. The difference between these Cucuteni examples and those already discussed is that the Cucuteni examples are manufactured in one piece with a gentle curve flowing between the upper and lower internal parts; there is no post-manufacture drilling of a sound-hole, much like the Basatanya example.

The Gumelnitsa culture, which has evidence of contact with the Cucuteni group (Whittle 1996, 115), also has ceramic vessels, which may also be considered in this study. Habasesti, which is a classical Cucuteni settlement, has radiocarbon dates placing it at the same age as the late Herpaly and early Tisza-Polgar period. These ceramic forms also occur in the Zselic group, an example of which comes from Pomaz-Zdravlyak (a 1956 excavation) (Bogнар-Kutzian 1963, 256). Childe also refers to these tubular stands of the Cucuteni (Childe 1973, 185). Thus not only do the drum “forms” spread over a

much wider area than previously supposed, but they also occur within cultures such as that of the Herpaly of the Tisza region, which thus pushes the dates of the existence of possible drums back to at least the early 7th millennium BP. Similarly at Okol Glava, Gaul (1948, 198 and pl. XLVI) records a 'pot stand', which bears a remarkable similarity in shape to Salzmünde examples.

A general chronology of the culture groups so far discussed can provide their historic framework, which is not really too much of a leap of faith. We must of course view the Hungarian groups in the framework of the Lengyel development, and the relationship of the Lengyel groups to that of the early TRB is well-established. The introduction of the Cucuteni and Gumelnita forms are simply a recognition of the similar form of clay drum within the contemporary culture of south-east Europe. In addition to this, Behrens (1973; 70-71) discusses the evidence for contacts between the Bodrogkeresztur culture, of the Tisza area, and the Salzmünde ceramic style.

The Bodrogkeresztur culture is distributed in the area of the Tisza and its tributaries and the ceramics from the Basatanya cemetery are seen to develop directly from the Tisza-Polgar culture (Wyatt 1994). Behrens observes the presence in central Germany of the copper *kreuzscheidige* axes, which belong to the Carpathian basin distribution (Jászladány type), examples being found at Auleben, Nordhausen, and Karow, Genthin.

Behrens (1973, 70) cites Driehaus, who has examined the Danubian copper tools, calling them a parallel form to those of the Carpathian basin and Bohemia. In Hungary these tools have been found in contexts of the Bodrogkeresztur culture. Thus we may think of the central German *kreuzschneidige* copper axes as direct or indirect descendants of the Bodrogkeresztur culture, conceivably via the medium of the Jordansmuhls culture in Bohemia.

In the light of this discussion it is appropriate to cite a vessel specifically found within the Bodrogkeresztur culture. It is a vessel with a broad hollow foot and over this there is a shallow funnel-shaped upper part. Patay (1976, 372) stresses that since "the wall is perforated between the upper part and the foot, [this] means it was not a genuine vessel, for it could hold no contents". Furthermore there were two sets of double holes located at the edge of the mouth of the vessel. There is no example with an associated vessel which this "stand" could support. Furthermore they are rare, only one example being known from a "genuine" grave context, this being grave 28 from Tiszavalk-

Kenderfold, fig 4.5, (Patay 1976, 372). A fragment of a second stand originates from the same cemetery. We may see in this ceramic form the final development of the “pedestalled support” found in the preceding Tisza-Polgar and Herpaly cultures. If we were to interpret this as a drum the pairs of small holes at the edge of the mouth could be interpreted as for the attachment of additional rattles, as are commonly attached to the Senegalese Djembe.

Simplified Chronology

- **Herpaly** 4720-4493 BC cal (see Appendix 2);
- **Gumelnita** 5047-4408 BC cal (see Appendix 2);
- **Cucuteni (Habasessti)** 4331-4009 BC cal (see Appendix 2);
- **Tiszapolgar** 4360-3990 BC cal (see Appendix 2);
- **Salzmünde** 3350-2900 BC (see chapter 2);
- **Bernburg** 3100-2600 BC (see chapter 2).

CONCLUSIONS

Schricket has emphasized the point that the drum decoration be recognized as distinct from the decoration of other TRB ceramics, and that in the search for comparative material we should look to the Atlantic seaboard (Schricket 1956, 563: cf. Eogan 1999, 416). This recognition is exciting since the art in these areas have recently been examined from a new interpretative point of view, that of a shamanism. The motifs on Salzmünde, Walternienburg and Salz/Walt drums, do occur elsewhere but they are dominant on the drums; and it is the fact that these decorated vessels are drums that facilitates a shamanistic interpretation of the motifs and lends considerable support to the argument.

As for the origin of the drum form, it seems that we are able to trace the form of the instrument as far as the Tisza cultural group in Hungary, and it may be that these vessels are drums, but they are not adorned with symbols and there are currently not enough recognized examples within any cultural tradition to provide us with information about their use.

We have examined above the comparative examples of traditions of art and vessel form, and with regards to decoration have proffered the use of a shamanistic

model for the interpretation of drum motifs. Therefore it seems appropriate now to summarize the archaeological evidence before embarking on an examination of shamanism and its suitability for the interpretation of the TRB drums.

Summary of TRB Background

The essence of Müller's analysis is to stress the continuous nature of ceramic development from the early to the late Neolithic, from this point of view we are looking at one cultural group within which local communities distinguish themselves through the medium of material culture. We may recognize four groups of ceramic styles: Salzmünde, Walternienburg, Salzmünde/Walternienburg and Bernburg, which follow a staggered chronological and chorological development. We are also able to recognize four overall burial traditions: collective burial, individual flat-grave burials, richly equipped and richly constructed individual burials and settlement burials, which do not always coincide with the ceramic styles but which, based on numbers, do appear to reflect complete communities. The general settlement picture may be seen as one of centralized fortified settlements, sometimes associated with particularly elaborate burials and ritual enclosures. These sites are interspersed with unfortified settlements and temporary hunting and pastoral sites and also with places specifically used for the extraction of natural resources of stone, flint, copper, and salt. Müller (2001) proposes an economic crisis around 3500 BC cal resulting from a break in the alpine copper supply.

Summary of TRB Drum Discussion

Using Fischer as the starting point and comparing the ratios of measurements of top, bottom and diameter (cf. Koch 1992: Müller 2001), we are able to corroborate Fischer's basic model defining drum types to correspond with the traditional three ceramic styles. Within these groups we are also able to identify distinct burial and settlement instruments within the Salzmünde style and two forms of drum within the Walternienburg contexts, both burial drums. Additionally we have classified an additional drum form, the Salz/Walt drum, which has been named to correspond with Müller's (2001) Salz/Walt ceramic style with which they share a similar distribution pattern and a similar combination of Salzmünde and Walternienburg traits. The distinct

distributions of the TRB IV drum forms are paralleled by the distribution of the decorative motif groups (Map 3.3).

Similarly the Bernburg style drums, TRB V, may be divided into settlement and burial examples, based on the ratio of height and diameter, and although there are few complete examples it is also possible to identify funerary and settlement decorative motifs corresponding to this division. A point concerning distribution patterns is that while there is no clear-cut line between the spread of Bernburg style settlement and burial drums, there is a predominance of settlement instruments in the area corresponding to the Salzmünde drum distribution. This may be seen as a continuation of the Salzmünde settlement drum tradition.

The use of a circulating horizontal division at the waist and the foot corresponds to the localized emphasis on single burials where drums often occur in settlements. The lack of horizontal division at the waist corresponds with the Salz/Walt drum type. These distinctions may signify a hierarchical society where single burials and individuality is emphasized in the east. At the same time collective burial, suggesting the appearance of a lack of hierarchy, corresponds to a lack of horizontal division at the waist of the Salz/Walt drums. Alternatively, and this is something to which we shall return later, is the plausible link between a horizontal division or barrier at the waist and use by the living, and a lack of horizontal division at the waist and use by or for the dead.

There is a distinct correspondence between the drum contexts and the finds of copper artefacts in TRB IV and a distinct drop-off in correspondence in the later TRB V. Conventional views of drum-use and shamanism link the practitioner's powers with the notion of transformation and often the craftsman or metalworker; there is a common link between ritual and production (cf. Creighton 2000, 40 ff.). This association of the TRB IV drums, their motifs and the transformation of copper may be one theme in our understanding of the use of these drums.

Concluding Remarks

In recent years there has been a tendency to employ shamanistic approaches in the interpretation of rock art. Bearing in mind that the drum is conventionally associated with the shaman and the concept of transformation, and that the drum decoration has similarities with Neolithic rock art, in the next chapter we will examine

the world of the shaman. We shall firstly examine the conventional views of shamanism and the evidence for cross-cultural similarities. Then we shall present the “Shamanistic model” of Winkelman (2000: 2002a: 2002b), which examines the relationship between shamanisms and brain structure and function. Having done this we shall look at the relationship of the drum and methods of inducing a transformation in the quality of consciousness.

The Shamanistic Model

A Historical, Cross-cultural and Neuropsychological Perspective.

The timbers....shimmered with rainbow patterns: lines, curved
and crooked; dots, spots and twisted circles; some like the shapes
he saw in his head

Alan Garner

... the snake danced and danced all night through, and by morning
it had danced itself into such a tangle, and tied itself into so many
knots that it died.

W. Heath Robinson

INTRODUCING SHAMANISM AND ARCHAEOLOGICAL INTERPRETATION

We have identified distinct drum types for use in burial and settlement practices of the southern TRB IV-V and proposed a connection between these drums and the finds of copper in TRB IV. Additionally we have highlighted the horizontal patterns of the drums found in the area where single rich burials are prevalent; furthermore we have observed that a comparative view of the decoration on these drums suggests similarities with the rock art of the Atlantic coast. Recent interpretations of this rock art have employed shamanistic approaches and we shall examine two of these approaches here, the shamanistic model as proposed by Winkelman (2000; 2002a; 2002b) and the neuropsychological model as proposed by Lewis-Williams and Dowson (1988; 1993).

Winkelman's (2002b, 1882) shamanistic model combines the case for a universal human tradition of religious behaviour based on cross-cultural studies with evidence from cognitive neuroscience (cf. Clark 2003; 2006). This shamanistic model suggests that the brain wave frequency slows down, nearing that of deep sleep and meditation, and that during this time the, intuitive, right-brain and limbic system allow for a greater cultural acceptance of the symbolic and associative lines of thought. Thus the apparent global distribution of shamanisms, understood to mean a cultural

ambience which shares significant characteristics with Siberian shamanism (as the generic type), is the result of a common shared neural structure. Following the discussion of Winkelman's model, we shall define exactly how these experiences may be described in everyday language before progressing to examine methods of inducing a shamanistic awareness, involving the use of drums and the importance within this model for imagery and symbolism. Finally we shall briefly discuss the tangible beneficial aspects of shamanism, before examining the evidence for these types of practices in Northern Europe.

Briefly, the neuropsychological model (Lewis-Williams and Dowson 1988; 1993) recognizes that when an individual enters an altered state of consciousness (ASC), a series of abstract, random and geometric images may be seen; these are generally referred to as entoptic images, or phosphenes, being produced within the human optical system. Archaeologists have suggested that since some present-day societies practise a shamanistic form of religion, that is, they alter their consciousness and depict motifs similar to entoptic imagery in their "art", it is therefore plausible that some prehistoric art, which shares some of these patterns, may be explained in similar terms. Although the neuropsychological model of Lewis-Williams and Dowson (1988; 1993) appeared in the literature before Winkelman's model, here it will be examined in the subsequent chapter. The reason for this is that it seems logical to present a comprehensive understanding of shamanism and neurology before we seek to present an interpretation of archaeological evidence based on imagery and its relationship with neuropsychology.

Thus the shamanistic model argues for a universal human ability to experience shamanistic types of perception. The neuropsychological model proposes one particular method of applying a shamanistic interpretation to the archaeological record, based on the similarities of prehistoric art and the imagery experienced within an altered state of consciousness. Having examined the models of Winkelman (2000; 2002a; 2002b) and Lewis-Williams and Dowson (1988; 1993), at the end of the next chapter we will examine the criticisms that have been raised against these two models of interpretation.

SHAMANS, HEALERS AND MEDICINE MEN

In his classic overview of "shamanism", originally published in 1951, Eliade (1989, 4) began with a strict definition of a shaman precisely "to avoid

misunderstanding". A similar path will be followed here, as terms are introduced, again "to avoid misunderstanding" of the position held.

However, before continuing we must make note of the criticisms placed on over-reliance on the work of Eliade. Bottéro (1994, 296: cited in Bahn 2001, 56) refers to Eliade's melange of religion in which he took absolutely no notice of each religion's particularities, and his complete unreliability when employing the data of other researchers. Hutton (2001, 122) further remarks that for "the most part, however, he [Eliade] highlighted material which supported his arguments, and disposed of the rest." And in a similar vein, "if he read two different accounts of practices which in themselves did not support his argument, then he would splice them together to create a single one which did" (Hutton 2001, 122). With this criticism in mind the anthropological case for cross-cultural similarities, which shall be discussed as a definition for a shamanistic model, will be based on more modern publications than Eliade (1989). Occasionally, Eliade will be referred to with reference to more recent anthropologists.

Preliminary Definitions of Shamanisms

The term Shaman is conventionally used to denote a healer or medicine man, who performs, at least as a part of his role, in a "trance"; itself a phenomenon to be discussed below. Shamanism, as defined by Krippner (2000, 93), is a group of techniques which enable the practitioner to enter the "spirit world" in order to obtain information which will help or heal members of their social group. For Vitebsky (2001, 10) the shaman, simultaneously a doctor, mystic, priest and social worker, is chosen by the spirits and trained in the techniques of "trance", which enable the soul to fly between the worlds. Bahn (2001, 55) argues that "'trance' has been firmly, but spuriously, linked with shamans" and that "most Western researchers who see 'trance' as a necessary or characteristic component in the shaman's behaviour have based themselves on Eliade's definition". It is argued here that Krippner (2000) and Vitebsky (2001), to name but a few, rely on more recent research including statistical evidence, which will be presented below, that does link a change in consciousness with practices which would correspond to shamanism as a generic type.

The first published appearance of the word Shaman appeared in 1672, in the autobiography of Avvakum Petrovich, leader of the conservative Russian clergy (Narby

and Huxley 2001, 18). The origin of the western term is a word of the Tungus-speaking Evenki people, *šaman*, meaning “one who is excited, moved or raised”, while Hoppal (cited in Krippner 2000, 93) proposes an etymology from the Sanskrit *śaman*, meaning song. Rouget adds that the root *šam* is common to all Altaic languages and holds the notions of “dance” and “leap” and also “trouble” or “agitation” (Lot-Falck cited in Rouget 1985, 126: cf. Hutton 114-115). While the term *šaman* itself is from the Evenki language, individuals with similar roles were reported across Siberia throughout the 18th and 19th centuries among the Uralic, Turkic and Tungusic-Manchurian speaking groups (Price 2001, 3); the shaman is strictly speaking a religious phenomenon of Siberia and central Asia (Eliade 1989, 5). However, the Evenki themselves do not have a term that covers all aspects of a shaman’s role and as

“a term and a notion, shamanism is entirely an academic creation, and as such it is certainly a useful tool serving to describe a pattern of ritual behaviour and belief found in strikingly similar form across much of the arctic and sub-arctic regions of the world. Even within this broad understanding, the meaning of shamanism is entirely a matter of consensus, discussion and continuing redefinition” (Price 2001, 6).

Winkelman (2002a, 72) has claimed that the “convergence of neurology and cross-cultural research provides the structure for establishing a ‘shamanic paradigm’” as a tool for interpreting prehistory. Elsewhere Winklemann (1996, 20) employs the term “Shamanistic healers” to represent the “universal institutionalization of practitioners who use ASCs as a fundamental aspect of professional training and in community rituals”. Here we shall discuss, the world of the shaman in some detail, then in the next chapter the current trend of using the neuropsychological model in research. We shall end this chapter by turning to the evidence for shamanisms within Europe, examining mythology and the historical case of the Saame. Emphasis will be placed on areas that are relevant to the present work, and an attempt will be made to develop a shamanistic approach that can be applied to the material remains of the southern TRB group, and specifically to the interpretation of the clay drums.

ANIMISM AND SHAMANISM

An understanding of shamanism is linked with an understanding of animism, a term coined by Tylor in 1871 (Hoppal 1997, 1). While the notion of the human soul is common, the conventional understanding of animism is the belief that all animate and inanimate things have souls or spirits (Hoppal 1997, 2: Price 2001, 3), which means that

the ensouled environment is of primary importance for those who hold this belief. The conviction that souls, spirits, nature and natural phenomena have conscious life, that may be viewed as “other-than-human-persons” (Hallowell cited in Harvey 2002, 17ff.) implies that everything is alive and everything is interconnected, with the shaman acting as the intermediary between the different levels of existence.

The experience of dreaming may suggest that the soul can wander and even get lost, and in turn be retrieved, by the Shaman (Vitebsky 1995, 98). This is linked to the idea that when a living being dies, whether human, animal or plant, its soul, personhood, or essence is understood to leave its body. Thus the soul-flight of the Shaman may be viewed as the development of a controlled technique from an involuntary form of universal human experience (Vitebsky 1995, 14). Spirit helpers are one form of soul, spirit or essence that can be encountered by the shaman. These may be interpreted as a wise ancestor or a plant, which may teach, enhance perception or bestow special powers; a further spirit class is the spirit helper or guide who can aid the shaman in his work. Vitebsky (1995, 12) suggests that “essence” may be a more appropriate term than soul or spirit.

For our case it is the shaman’s role as intermediary that is important. Shamans in some hunting societies maintain the equilibrium of the spirit world by negotiating with the protective spirits of the animals they are going to hunt, for the welfare of their souls. Price-Williams and Hughes (1994, 3) observe that from an animistic point of view every mountain, lake and river has a spirit owner whose goodwill must be obtained through various ritual acts; this is sometimes referred to as the “game guardian complex”. Bateson (1973, 460) defines animism as “extending the notion of personality or mind to mountains, rivers, forests and such things”, which may be seen as similar to the view of Guthrie (1993 cited in Harvey 2005, 15). Although Guthrie (2001, 157) distinguishes between animism, “attributing characteristics of living things (e.g. sentience and spontaneous motion) to inanimate things and events, whereas anthropomorphism is best defined as attributing the characteristics of humanity (e.g. language and symbolism) to non-human things and events, including other animals”, Clark (2006, 173) argues that animism is “the attribution of souls to humans and creatures in general”, while distinguishing this from animatism, which is “the attribution of personality to non-human objects and phenomena”. Winkelman views animism as a “use of innate representation modules for understanding self and social others,

attributing human mental and social capabilities to animals, nature, and the unknown” (Winkelman 2002b, 1879).

However we define the terminology, we are faced with a belief in an “other” with which we must cooperate. Animistic principles are constitutive of sharing interaction with the environment which is ‘critical to maintaining... identity because it is crucial to maintaining personhood’ (Bird-David 1999, 73). Gell defines inner personhood as consisting of “replication of what we are externally” and “what persons are externally (and collectively) is a kind of enlarged replication of what they are internally”. This is of course considering persons “not as bounded biological organism” but as “all the objects and/or events in the milieu from which agency or personhood can be abducted” (Gell 1998, 222). An appropriate example of this is the drums of the Ojibwa, which were regarded as people; they had names, clothes and were ritually fed and given tobacco (Vennum 1982 cited in Hart *et al* 1991, 233-5). With this perspective, we must perceive the world as not only including “other than human person” but also as incorporating Gell’s model of our own extended minds (Gell 1998, 221ff.). With this in mind we may understand that different “persons”, both human and other, may share a part in objects or events, thus creating a bond between the participants. For example an artefact belonging to a human person, which is made from part of a non-human person must surely share aspects of personhood from both camps. Maybe we may see this as totemism, which “appears to be a special kind of animism in which animals are taken to be human kin” (Clark 2006, 174). “Ancestral shrines, tombs, memorials, ossuaries, sacred sites, etc. all have to do with extensions of personhood beyond the confines of biological life via indexes distributed in the milieu” (Gell 1998, 223).

Harvey states that “animisms are theories, discourses and practices of relationships of living well, of realising more fully what it means to be a person, and a human person, in the company of other persons, not all of whom are human but all of whom are worthy of respect” (Harvey 2005, xvii). Integral to this view is that Tylorian animism, that is old animism, relied on an underlying unity, and thus on dichotomy of all, us/them, male female etc. The new animism is based on respectful relationships and multiplicity rather than dichotomy (Harvey 2006, xiv).

It seems then that rather than being perceived as a religion, shamanism should be regarded as a system of techniques allowing the shaman to act as ambassador between the spirit realm and everyday existence (Bolin 2000, 157; Krippner 2000, 93).

Indeed in modern cases shamanism forms only one thread among the cloth of religion, ideology and practice. Returning to Eliade (1989, 8)

“shamanism always remains an ecstatic technique at the disposal of a particular elite and represents, as it were, the mysticism of the particular religion.”

It has also been described as

“a body of techniques and activities that supposedly enable practitioners to access information that is not ordinarily attainable by members of the social group that gave them privileged status. These practitioners use this information in attempts to meet the needs of this group and its members”

(Krippner 2002, 2).

Whatever the term used, whether “soul”, “spirit” or “other-than-human-persons” or “essence”, “shamans are necessary because of facets of animism” (Harvey 2005, 139). One of the problems facing animists is the fact that they have to eat and wear “other than human persons” and the employment of shamans is one method to cope with this issue (Harvey 2005, 146), Hoppal (1997, 9) and Bolin (2000, 157) both cite Drury’s (1996, 10) definition that “Shamanism is really applied animism, or animism in practice”.

In the later part of this chapter we will examine the neural processes which may in part provide an explanation for the numinous experience of sense of an other, be it termed spirit, essence or “other-than-human-person”.

THEMES FROM THE HISTORY OF SHAMANISTIC RESEARCH

The Primordial Shaman

The linking of the shaman with the concept of animism has prompted some researchers to propose a great age for the phenomenon, popularly known in the west as shamanism, indeed Halifax (1981, 5) states that it is “nearly as old as human consciousness itself”. Eliade also suggests a great age of Shamanism, although never clearly stating this, while the subtitle of his book “Archaic Techniques of Ecstasy” presupposes the great age of the phenomenon. Although the existence of “Palaeolithic Shamanism” cannot be proved, it is supported by the near universal relationship of the shaman with the hunter (Vitebsky 1995, 30). Recent research has emphasized this idea (Lewis-Williams and Dowson 1988, 1993; Bradley 1989; Dronfield, 1995; Winkelman, 2002a) but there are also outspoken opponents (Bahn 2001).

The Universal Nature of Shamanism

Although the term “shaman” originates in a small area of Siberia, today it is used globally in reference to spiritual practitioners, of many unrelated peoples. In the face of the geographical and cultural boundaries Halifax (1981, 5) maintains that in

“spite of cultural diversity and the migration and diffusion of peoples across the earth, the basic themes related to the art and practice of Shamanism form a coherent complex.... there are superficial features as well as deeper structures which appear to be constant.”

Similarly Vitebsky (1995, 11) argues that although shamanism is scattered and fragmentary, there are astonishing similarities between the arctic, the Amazon and Borneo and healing is only one part of it. Vitebsky stresses that from his point of view shamanism is not a religion but a “cross-cultural form of religious sensibility and practice” and it is this distinction, allied with research into the universality of “trance” and the underlying neuropsychology, which enables the academic world to create the model of a shamanistic societies, or even animistic societies which employ various forms of shamanism.

Winkelman (2002a, 72) similarly argues for shamanism to be recognized as a universal human trait and talks of a

“complex of related beliefs and practices found cross-culturally in hunter-gatherer and some agricultural and pastoral societies [which] is not the result of diffusion... Rather, these cross-cultural similarities are the consequences of independent inventions, or derivations, from a common neuropsychology.”

Winkelman examined the empirical characteristics of shamans in a cross-cultural study, which confirmed many central characteristics of magico-religious healers. He cites statistical evaluation of these criteria of healing practitioners found throughout the world and regards this as an “empirical demonstration of the cross-cultural characteristics of shamans” (Winkelman & White 1987 cited in Winkelman 2002b, 1875).

Rouget (1985, 3) discusses the universality of trance, rather than the appearance of the shaman himself, stating that it

“corresponds to a psycho-physiological disposition innate in human nature. The variability of its manifestations is the result of the variety of cultures by which it is conditioned”.

The criticism of these proposed universal characteristics are discussed at the end of the following chapter.

The physical sensations experienced during ASC often involve sensations of being or becoming an animal, a change in the feeling of the material world, that is a sensation of flying, drowning or weightlessness, and finally out-of-body experiences. The common themes in shamanism related to these sensations are the recognition of different orders of reality, the experience of “ecstasy” or “trance” and visits to visionary realms.

The expression “altered state of consciousness”, ASC, has been employed in the literature, in place of the term “trance”, for many years now, and the appropriateness of this will be discussed below, but in reference to the universals of shamanism it appears that these changes in consciousness are part of the psychobiological heritage of our species (Bourguignon cited in Price-Williams and Hughes 1994, 2)(see also Kalweit 1984, 17). As a consequence the differences that are manifested in the diverse forms of shamanism are the result of the individual cultural history of specific groups of people. The “archaic techniques of ecstasy” characterized by soul-flight are panhuman, the physical and psychological experience are universal; the other distinct trappings of shamanism are culture-bound (Price-Williams and Hughes 1994, 3). And we may say that above all that it is the social context and its animistic principles, which gives meaning to shamanistic activity (Vitebsky 2001, 7). Despite the stress placed here on the cultural differences, many of the distinctive key themes of shamanistic initiation are widespread, supporting the proposal of an underlying neuropsychological imperative. Noll agrees that the ability to alter one’s consciousness is a universal human trait; furthermore he cites Weil (1972 cited in Noll 1985, 447), who proposes that the “desire to alter consciousness periodically is an innate normal drive analogous to hunger or the sexual drive”. Fischer (1971 cited in Schechner 1988, 276) states that since the “intense meaning is devoid of specificities, the only way to communicate its intensity is the metaphor; hence, only through the transformation of objective sign into subjective symbol in art, literature, and religion can the increasing integration of cortical and subcortical activity be communicated”. Grimm (2003, 101) suggests that the act of focusing awareness on symbols or metaphors, which may be different for individuals even within the same community, within a healing ceremony allows both a shaman and a patient to believe that “supernatural power could be brought to bear on the illness”.

Peters and Price-Williams, specifically examining the state of consciousness of the shaman (1980 cited in Krippner 2000, 101: Krippner 2002, 10), made a comparison

of 42 societies taken from 4 distinct cultural areas, resulting in the recognition of three distinct shamanistic traits where consciousness was the issue:

- voluntary control of the altered state of consciousness,
- memory of the experience, and
- the ability to communicate with others during the altered state of consciousness.

The analysis recognized that 43% of those examined specialized in spirit incorporation, 24% out of body experience, 26% both procedures, and 7% practised a different form of altered consciousness. Krippner (2002, 10) cites Walsh (1990), who interprets this as identifying several different forms of altered consciousness of which not all employ soul flight. This is understood as being constricting on the definition given by Eliade, yet since he defined the term he would use at the beginning of his work, this should be taken to mean that the academic view of shamanism has expanded, rather than be seen as a criticism of Eliade. Dowson (1999 cited in Wallis 2004, 22) also proposes three criteria which “embrace intercultural similarity and community specificity:

1. Agents consistently alter consciousness;
2. these altered states are accepted as important ritual practices by the agent’s community; and
3. knowledge concerning altered consciousness is controlled as a way of seeing to it that certain socially sanctioned practices are carried out”.

In this discussion we adopt the view that it is the altering of consciousness that is a key constituent of the practice, which we term shamanism. Furthermore it is deemed to be a voluntary, recalled and socially sanctioned practice.

Recent Approaches to Shamanistic Research

The universal nature of this experience of is accepted here as part of our heritage, and we will now examine a few of the ways in which the ineffable experience of a shamanistic practitioner may be described. It is not proposed that one specific narrative may be employed as a blanket description of an original shamanism and thus be diagnostic for identifying shamanistic practices. The themes discussed here are those most conventionally associated with shamanistic practice and are engaged with here to highlight the otherworldliness of the experience and emphasize the metaphorical nature of these descriptions. Our examination is not exhaustive and given the time and space

we might choose to include discussion of the use of poetry (Balzer 2003, 307ff.: cf. Glosecki 1989), or to debate whether shamanism is a religion and the communities which employ it shamanists (Harvey 2003, 19). Similarly we might choose to examine the role of performance within different shamanisms. Schechner (1988, 248) discusses the role of drumming, dancing and visual displays in creating a specific moods, and the role this disposition may play in social control and the channelling of discontent. Vitebsky (2001, 120ff.) similarly discusses the way that “the performance transforms the inner reality or consciousness of a whole range of people who are involved in different ways”. Additionally he states that the shaman’s “equipment are in one sense theatrical props, but they are also genuine expressions or extensions of the shaman’s persona” (cf. Gell 1998 discussed above). The emphasis on shamanistic performance has been criticized for “concentrating on the superficial form rather than the spiritual content of much shamanic activity”, the practitioners themselves may consider the expression performance to be pejorative term (Vitebsky 2001, 121: cf. Blain and Wallis 2006, 32). Yet we might also examine the role of pretence by the shaman to achieve healing results (Schechner 1988, 225), and the relationship of this with the western notion of a placebo (Achterberg 2002).

It is also pertinent to mention the subject of gender within shamanistic research. Blain and Wallis (2000, 396) discuss *Seiðr*, both in the past and the present, traditionally practiced by women, but occasionally undertaken by men. Similarly Hollimon (2001, 123ff.) discusses the systems of multiple genders within Native America belief systems (cf. Vitebsky 2001, 32-33). We do not have the space to include further discussion of this topic but may note the finds of drums found with a female burial from Biendorf, accompanied by the burial of a cow and calf, and at Schkopau. Mildenerger (1953, 41 n. 66) proposed the contexts of these instruments were evidence for female magical practitioners during the Neolithic.

A theme repeated time again in recent shamanistic research is the need to recognize diversity and not to lump different manifestations together under a blanket definition of shamanism (Wallis 2004 b, 21-22). So we repeat that here we follow an understanding where altering of consciousness is a voluntary, recalled and socially sanctioned practice, but that we may recognize some similarities due to the fact that these are based of local interpretations of similar psychological and neurological experiences. So the themes examined below are highlighted specifically because they

“reveal core aspects of shamanic psychology, sociology, cosmology, and so on” (Harvey 2003, 15). Thus the model of a tiered cosmos, not always restricted to three levels, where a shaman may travel up, down or sideways, is linked to the neurological sensations of weightlessness and out of body experience. Many of the experiences of initiation are similarly seen as reflection of the psychological and physical sensations (cf. Wallis 2002, 748). The experiences of other worlds are intimately related to the concept of a “land of the dead”, however that may be pictured. We discuss these concepts because in the latter part of the chapter we will examine the neural counterparts for these experiences.

Conventional Characteristic from the History of Shamanistic Research

The tasks of the shaman are many and varied, and one of the most relevant roles is the relationship with the dead. The shaman is able to contact the dead either to gain help or to help lead a soul to the afterlife, but to achieve this the shaman must die, that is, become a spirit and then regain human form (Halifax 1985, 14).

Backman and Hültrantz (1978 cited in Price-Williams and Hughes 1994, 4) identified four distinct functions of the shaman:

- healing – not all healers are shamans, although the shaman is a healer;
- divination – searching for missing persons or objects;
- psychopomp – escort for the souls of the dead;
- hunting magic – relationship with the lord of the animals, bargaining for food or herbs.

To this group Winkelman (2000a, 72) adds the roles of directing hunting and warfare, and also the use of sorcery to harm others. In the shamanic rituals the shaman would display a theatrical performance mimicking the soul’s journey and struggle with spirits. Historically two other themes identified within shamanisms are the importance of initiation and the model of cosmology discussed below as Symbolic Mental geography.

Initiation

The initiation of the neophyte consistently includes one or more of the standard themes: dismemberment, a renewal of the internal organs and viscera, descent to the underworld and dialogue with the dead and the spirits or ascent to the sky and conversation with the spirits and gods (Eliade 1989, 34: cf. Elkin 1994, 25). Many of

these features have parallels with near death experience (see below), hence the common metaphor of dying for a shaman's experience (cf. Reichel-Dolmatoff 1979, 122). To these themes Vitebsky (2001, 8) adds selection by the spirits, crawling through crevasses into the subterranean world, fighting spirits, healing spirit victims, killing enemies, saving people from disease and starvation. The image of dismemberment may be related to the Buddhist technique of visualizing the skeleton, in recognition of the impermanence of the material world (Eliade 1989, 164). This imagery is one of the commonly repeated aspects of shamanistic experiences. Among the Tukano, the apprentice shamans live together in isolation, eating nothing but a little boiled manioc and taking their narcotic snuff (cf. Chagnon 1983, 106-9). After several months they spend their days with their

“emaciated bodies convulsed, their faces contorted, their hoarse voices chanting endlessly to the rhythm of their gourd rattles. This scene of dead or dying shamans, of skeletal beings in a remote spot of the forest, appears occasionally in Desana imagery: in tales, dreams and hallucinatory states” (Reichel-Dolmatoff 1979, 123).

To this we may append trial by fire and assimilation of the elemental forces and also that any ascension or descent is achieved through the *Axis Mundi*; the world tree or mountain (Halifax 1981, 7). Whatever the imagery consists of which the neophytes experience, the point of the initiation is to “establish relationships, knowledges and abilities that define who shamans are and what they do” (Harvey 2003, 27). Thus while some aspects of initiation occur in solitude and relate to a relationship with non-human essences, other aspects of the initiation occur in the community and establish human relationships (Harvey 2003, 27).

Vitebsky employs the criteria of soul-flight specifically as an essential feature in defining the shaman, in much the same way as Eliade, which prompts him to speak of shamanistic societies and cultures (Vitebsky 2001, 10). Furthermore, he states that a broader definition is someone who is in control of “trance”, a point we shall discuss further below (cf. Peters and Price-Williams 1980). When people die it is believed the soul leaves the body and dreaming may be seen as evidence as the soul's ability to wander and return, Vitebsky (2001, 14) proposes, as a model for understanding soul flight, that it is essentially controlled dreaming: the shaman learns the ability to “turn an involuntary form of universal human experience into a controlled technique.”

The *Mabarn* of the Mardudjara aborigines have special knowledge, psychic powers and the ability to communicate with the spirit world through the medium of

spirit-familiars. They treat illness, using x-ray examination and magical objects housed within their own bodies, they recover missing items and predict future happenings, but the *Mabarn*, of the eastern Australian desert are not subject to initiations modelled on death and rebirth (Tonkinson 1978, 106-8). Thus despite the global manifestation of common themes in initiation, we should not project them onto all shamanistic practitioners. The *Mabarn* employ dreams and dream-spirit travels in diagnosis, but dreams are important for all members of the community. So people who seek treatment from a *Mabarn* have often diagnosed themselves in a dream (*idem*, 109).

The initiation of the shaman may be viewed as a battle between cosmos and chaos, the shaman representing balance, battles disease, spirits representing chaos and through experiencing the initiation the shaman learns the rules for practising as a shaman (Halifax 1981, 10). Through the initiation the shaman learns about the world of spirits and this sacred awareness is coded in poetry, art, song and mythology; this is “art for survival” and it structures and provides coherence to the world (Halifax 1981, 11). After initiation the shaman may undertake many years of training. To be initiated the world of the dead becomes visible and death is “evaluated primarily as a rite of passage to a spiritual mode of being” (Eliade 1989, 510). The initiation teaches the shaman how to relate and how to act.

Cosmology and Symbolic Mental Geography

The mental topography of the practitioner is symbolized in the shamanistic geography of the spirit world and so “in all probability” mythological themes and funerary geography are the result of the “ecstatic” experiences of shamans (Vitebsky 2001, 17; Eliade 1989, 509). Thus the geography of the spirit world may be said to reflect processes which take place in the brain of the shaman during “ecstasy”. The existence of the shaman is universal exactly because it is a reflection and interpretation of these brain processes. Noll (1985, 450) proposes that the visionary journey of the shaman is analogous to following a cognitive map essentially similar to the mnemonic devices of Greek orators; each soul journey renews the cosmology of culture. At particular stages of information processing within the visual system there are levels at which physical objects and mental images are functional equivalents (*idem*, 446). The shaman exists in two worlds, and has the ability to recognize but not confuse the two

(Hultkrantz 1973, cited in Noll 1985, 446), a common metaphor being the “transformation of the Shamans eyes”.

The shamanic cosmos is conventionally divided into three cosmic zones connected via a centre, the *Axis Mundi*. The axis itself can be visualized as a tree, a mountain or merely a pole, and is found from the Mediterranean to India and China (Eliade 1989, 264). When an object is employed as a microcosm of the shamanic world, during a ritual it is seen to become the centre of the World. Thus being at the centre of the world allows the shaman the ability to travel to the upper or lower worlds, connected by the *Axis Mundi* (Eliade 1989, 270: see also Cook 1974, 9-12). The Siberian Chukchi recognize nine worlds, the Khants a seven-tiered heaven while the Altai tribes mention three, seven, nine or even more layers merely in the sky. While the sky of an upper level seems to have coincided with the ground of a subsequent level, for some there existed alternative worlds within the terrestrial plane (Hutton 2001, 60-61: Vitebsky 2001, 15-16: cf. Harvey 2005, 141).

Healing

In the world of the animistic society spirits hunt human souls in the same way that humans hunt animals for food; if a soul is abducted or eaten it causes illness or death; other causes of illness can be foreign objects placed in the body by the spirits or by an evil shaman, and also the breaking of a taboo (Vitebsky 2001, 31-2 and 98). Noll (1985, 450: discussed further below) observes that in an altered state of consciousness, shamans “induce visual mental imagery in order to ‘see’ and identify disease entities within the ill client’s body and then perform specific imagery-based techniques to remove them” (cf. Tonkinson 1978, 107).

The imagery associated with hunting often retains a strong ideological importance even when it has long ceased to have any economic significance for the society. It appears that the decline of hunting is linked to the appearance of healing and divination and this is reflected by a more ambiguous role for the shaman (Vitebsky 2001, 31-2). The shaman in hunting societies is primarily male, and emphasis is placed on spirit placation, but in agrarian societies females become more prominent as shamans, and simultaneously more importance is placed on the role of healing. This suggests that the function of the soul journey was originally linked to identifying the place to hunt and bargaining for the soul of the game in question. Later in agricultural societies it develops into a method for retrieving the souls of the community. This may

be interpreted as meaning that the shamans' role as a healer, in relationship to the soul, and possibly as psychopomp, are both late developments in the history of shamanism.

A key element in trying to understand the worldview of the shaman is to grasp the fact that it is absolutely contextual: it is the welfare of the community that is paramount and its place in the wider world. Any materialization of illness or any act that breaks the moral code is the result of an imbalance in the cosmos. Diagnosis and treatment re-establish the order of the cosmos (Vitebsky 2001, 33; Halifax 1981, 7).

Shamanistic cultures share beliefs about ontology and causality different from those in western societies, but if one shares a shamanistic worldview, healing may take place. This is comparable to the "ritual, awe and status involved in most people's consultations with a doctor", and the "placebo effect" shows that people given a dummy pill often respond to it as well as if it contained an active medicine (Vitebsky 2001, 142); an in-depth discussion of the placebo effect is given by Achterberg (2002, 84-99). Moreover, there

"are shamanic healing methods that closely parallel contemporary behaviour therapy, chemotherapy, dream interpretation, family therapy, hypnotherapy, milieu therapy, and psychodrama. It is clear that shamans, psychologists, and physicians have more in common than is generally suspected. For the shaman, however, the spiritual dimension of healing is extremely important" (Krippner 1988, 101).

Divination

Many cultures, which do not employ shamanistic practices, utilize divination and conversely the shaman generally has the power to divine. Fertility of people, animals and crops, food supply, weather and relationships are all addressed by divination. Dreams are often interpreted as prophetic and the practice of divination may be fundamental to the soul-flight. Often the flight of birds is used in this process, as are inanimate items such as crystal balls, quartz crystal and brass mirrors (Noll 1985, 450-1). The "use of enhanced visual mental imagery for divination may be an integral part of almost every magico-religious tradition" (Winkelman 1982 cited in Noll 1985, 451). Divination using a drum was carried out by the Saame, not just by the shaman but also by the head of the household. In this situation a pointer was placed on the drum skin and then moved by the vibration of the drum skin and it pointed to one of the decorations on the skin (Hultkrantz 1991, 12).

Hunting Magic

The guardian of the animals is representative of the collective souls of the animals. It is this guardian that the shaman must placate in order to have animals released for them to hunt. The placation takes the form of exchange and sacrifice, and strict adherence to social morality, which allows the shaman to fly over the landscape and locate game (Vitebsky 2001, 30-1; Backman and Hültrantz 1978). The experience of flying over the land to locate animals, may be seen as similar to the journey undertaken to retrieve lost human souls. Indeed the souls are commonly lost because they have been hunted by spirits (Vitebsky 2001, 32).

Psychopomp

The shaman's role as psychopomp is explored further by the anthropologist and psychologist Holger Kalweit (1984, 3), who stresses the intimate relationship between the shaman, dying and life after death and in addition the spiritual techniques through which the shaman crosses the boundary between living and dying.

Phenomena Experienced during Near Death		
Noise	Travelling at speed	Beings (relatives)
Out-of-body experience	Frontier/barrier/tunnel	Flashes of life
Awareness of cloud like body	Light	World of colours and timelessness

Table 5.1 Characteristics of near death experience after Kalweit 1984

Research carried out by Osis and Haraldsson (discussed in Kalweit 1984, 4ff.) examines near death experiences and the profound spiritual changes which occur after them.

The classic experiences of the shaman are paralleled by the experiences of individuals who have suffered near-death experience, which may not only explain to some degree the use of the death-analogy in shamanistic initiation and rites but also the appropriateness of the role of the shaman as a guide for the soul of the dead. The near-death experience of the shaman in initiation and subsequent soul journeys is also a transformation, providing revelations and messages from the dead (Kalweit 1985, 6). Indeed Kalweit describes the shaman as the classic investigator of the realm of death enabling him to produce a map of the *post mortem* realm (*idem*, 11). It is this knowledge that allows the shaman to guide the souls of the dead to the after-world. In addition the process of death and rebirth is the key therapeutic driving force in rites of passage in all tribal religions. One of the problems with anthropologists attempting to interpret

these symbolic mental experiences of the unconscious, has been to interpret them as material facts (*idem*, 20).

Levi-Strauss maintained that the logic developed in the shamanic belief system is “as rigorous and complete as that of modern science” (cited in Krippner 1988, 111).

The Shaman’s Social Position

Winkelman (1995, 22) proposes that while the employment of ASCs in healing is a universal phenomenon: “the interpretations of ASC and the forms of induction procedures used differ as a function of social complexity”. Elsewhere Winkelman (in Krippner 2000, 99ff.) made an examination of 47 societies, past and present with a view to examining religious and magical practices. He identified several different practitioners who, in addition to different roles within society, could also be related to different forms of social organization:

- the shaman was typical of classless hunter/gatherer societies;
- shaman/healer: in sedentary based agriculture shamans existed, although more emphasis was placed on healing and less on contacting spirits;
- the priest of class-based sedentary agriculture;
- diviners and malevolent practitioners were found to be characteristic of state level societies.

Paraphernalia: Instrument and Costume

The classic item connected with shamanism in many cultures of the world is the drum, and the imagery of the journey is immediately associated with the drum (Price-Williams and Hughes 1994, 7). The Mapuche Indians of Chile draw the symbolic cosmology on the skin of the drum (*idem* 1994, 7), a practice also carried out by the Saame and other Uralic speakers in northern Europe and Asia, in addition to the well-known cultures from Siberia. Noll (1985, 447) maintains that the costume and other paraphernalia used by the shaman are intended to enhance the production of visual mental imagery, acting as a mnemonic device, or a mind map. This costume in many cases was the embodiment of the shamanic worldview; in some examples aspects of the costume represent bones, representing the initiation and dismemberment of the shaman. Eliade (1989, 145) observes that the shaman’s costume “constitutes a religious hierophany and cosmography; it discloses not only a sacred presence but also cosmic

symbols and metaphysic itineraries”. In the southern Altai there is a complete identification of the shaman and the drum, the destruction of the drum is the equivalent of the shaman’s death (Devlet 2001, 43ff.).

The drum is often made from the branch of a symbolic world tree; as such the drum can communicate between the earth, the sky and the underworld. During a ceremony the drum, symbolizing the world tree, projects the shaman to the *axis mundi*, enabling ascent or descent (Eliade 1989, 169), by employing the symbol the shaman, accesses the sacred. The images, which decorate a drum and its skin constitute a microcosm, the three layers of existence, the tree and the sun, moon and spirits (*idem*, 172 and 176). In the same way that the drum may represent the world tree as the means by which the shaman is projected to the *axis mundi*, the drum may also represent a horse, the steed of the shaman. The Yakut and Buryat name the drum the shaman’s horse. Furthermore throughout North America and Asia the drum is used for diagnosis, soul-retrieval and as the tool of the psychopomp (*idem*, 183).

In discussion of Siberian and Central Asian Shamanism (Siikala cited in Hultkrantz 1991, 9) observes that the “drum may be claimed to be the central symbol of shamanism, and without it a shaman is not a shaman”. The role of music itself in addition to the artefacts used for its production should be considered as equally important. Music is an essentially universal component of ritual, except for rare examples, and the combination of sound and rhythm are used to structure ceremonies, through the organization of movement and connecting with the supernatural (Watson 2001, 178). Jordan (2001, 102) discuss what he terms the “materiality” of the shamanic world view, and he draws particular attention to the “routine and ritual treatment of specific animal parts (e.g. of the bear, elk and domesticates)” which he argues is related to wider cosmological concepts. This is worth noting in the light of the common use of animal parts such as dog-, wolf-, bear-, martin-teeth and jaws specifically found in the burial contexts of Thuringia; where we find the first *Mauerkammern* and where we find a clear preference for a burial drum rather than a settlement drum.

The Shaman and The Blacksmith

In one final note on shamanism in Siberia and Mongolia, Vitebsky (2001, 34) states that “in much of the area there is a special association of the shaman and the Blacksmith”. We are informed that, in Mongolia and Siberia, the shaman was generally not as powerful as the blacksmith. So while the blacksmith had knowledge of esoteric

techniques his mastery of fire was unequalled. He was responsible for making the ornaments for the shaman's costume and in fact the initiation of the shaman. "Smiths and shamans were nurtured in the same nest but the smith was the shaman's elder brother" (Vitebsky 2001, 85). This argument is not restricted to shamanism, and the case has been made that ritual and production are linked in "nearly all pre-industrial societies" (Creighton 2000, 41). Creighton (*idem*, 40-1) discusses Budd and Taylor (1995) and Hingley (1997), who call for an approach to technology which takes into consideration the symbolic nature of materials.

A WORKING MODEL OF SHAMANISM

The position adopted in this dissertation is that we may recognize here a cross-cultural form of religious sensibility, which is based on underlying universal neuropsychology (Kalweit 1984: Price-Williams and Hughes 1994: Rouget 1985: Vitebsky 2001: Winkelman 2002b: Winkelman & White 1987). Some of the themes discussed above, initiation and the ascent and descent to other realms, cosmology and travel up and down the *Axis Mundi*, hunting magic and healing and the actions of the psychopomp, are related by out-of-body-experience. It seems that the universality of the neural experience results in the production of similar metaphors to describe the ineffable. So as we have already stated the physical and psychological experiences are universal, the experience characterized by soul-flight is panhuman; the manner in which these experiences are employed is however culture-bound (Price-Williams and Hughes 1994, 3). Furthermore we acknowledge the traits of shamanistic consciousness identified by Peters and Price-Williams (1980 cited in Krippner 2000, 101: Krippner 2002, 10), namely voluntary control and memory of the experience and the ability to communicate with others during the altered state of consciousness.

While Backman and Hülkrantz (1978 cited in Price-Williams and Hughes 1994, 4) in their study of Saame shamanism identified four discrete roles: healing, hunting magic, divining and psychopompic activity, we stress here that these are by no means the only distinct features of all shamanisms but we highlight here the latter two roles and also note the conventional relationship of the shamanistic practitioner with the power of transformation and the ritualization of complex technology.

This is not an all-encompassing model; there may be other shamanisms, which do not share all these characteristics (Harvey 2003). However, we seek to establish a

model here which may be used in the archaeological interpretation of drums, their ability to induce an altering of consciousness, with the characteristics we have listed above and a reason for a shamanistic object such as a drum to be linked with transformative power and burial sites.

We turn now to the examination of altered states of consciousness, their relationships with cognitive processes, how these processes are experienced and how they may be induced, and subsequently expressed.

THE SHAMAN AND WESTERN SCIENTIFIC CONCEPTS

Conflicting Perspectives

The western view of the shaman has been a view of the strange and the misunderstood. Devereux (1956) stated that “the shaman is mentally deranged”, while Levi-Strauss (1949) proposed that rather than being a patient the shaman was a type of psychotherapist and a creator of order (both cited in Narby 1999, 15). Wilson and Barber (cited in Noll 1985, 449) expand the discussion to include “fantasy prone personalities”; those who fantasize a great deal of the time are able to fully experience the smell, touch sight and sound of their fantasies. These abilities have a striking similarity with the attributes of shamans in traditional societies. Narby observes that the view of the shaman has evolved with the evolving models of anthropology and that the “concept of ‘shamanism’ reflects the anthropologist’s gaze, independently of its angle” (Narby 1999, 16).

Ripinsky–Naxon (1993 cited in Krippner 2002, 8) maintains that the world of “a mentally dysfunctional individual is disintegrated. On the other hand, just the opposite may be said about the shaman”. Furthermore, only “those individuals can be called shamans who can access alternative states of consciousness at will” (Heinze cited in Krippner 2002, 9), Ripinsky-Naxon adds to this that clearly “the shaman’s techniques of ecstasy is the main component in the shamanic state of consciousness” (Ripinsky-Naxon 1993 cited in Krippner 2002, 9).

So there has been a tendency in western academia to categorize all ASC as psychopathological, but there are no indications that this is the case (Price-Williams and Hughes 1994, 10-11). Although ritual does not necessarily have to be carried out in an ASC, ritual requires special concentration and excessive attention to detail which in itself

has therapeutic value (Price-Williams and Hughes 1994, 12). It appears that the “persons most prejudiced against a concept of nonordinary reality are those who have never experienced it” (Harner 1990, xx), and that the “academic analysis of shamanism will always be the rational study of the non-rational” (Narby 1999, 18).

ALTERED STATES OF CONSCIOUSNESS

Sleeping, Dreaming, daydreaming, hysteria or hallucinations are just a few different forms of consciousness. Hallucinations are deemed to consist of imagery produced within the optical system but which are informed and partially dependent on images from visual memory (Dronfield 1996, 374). These forms, which have been caused by altering ordinary waking consciousness, can be defined as any mental state which the individual can subjectively recognize and which is the result of psychological, physiological or pharmacological induction (Ludwig 1966, 225). These altered states of consciousness

may be produced in any setting by a wide variety of agents or manoeuvres which interfere with the normal inflow of sensory or proprioceptive stimuli, the normal outflow of motor impulses, the normal “emotional tone,” or the normal flow and organization of cognitive processes. There seems to be an optimal range of exteroceptive stimulation necessary for the maintenance of normal, waking consciousness, and levels of stimulation either above or below this range appear conducive to the production of ASCs.

(Ludwig 1966, 225).

The methods of production of these states of mind may overlap in some cases. The reduction of outside stimuli or motor activity is one method, which would include sensory deprivation, a change in the pattern of stimuli or a repetitive stimulus. The opposite of the above method is the increase in these same stimuli but also including excessive emotional stimulation. An increase in alertness is another form produced when on sentry duty, through praying, or through excessive mental involvement, such as when listening to a charismatic speaker. Again the opposite action is an alternative method, being a decrease in alertness through passive meditation, musical trance (soothing lullabies) or other methods.

Somatopsychological factors are basically the alteration of body chemistry; this may be induced through hypo- or hyper-glycemia, dehydration, hyperventilation and sleep deprivation. Natural physiological phenomena such as migraine or epileptic seizure may also have this effect, as may abrupt withdrawal from drug-addiction or the

use of other drugs, be they medicinal or recreational (Ludwig 1966, 227: see also Lewis 1971, 39).

Distinguishing Features of Altered Consciousness

Among the general characteristics of these altered states of consciousness are subjective disturbances of perception, and of awareness of time, loss of control of consciousness, a change of emotional expression and of the perception of body and mind, while the individual suffers from hyper-suggestibility and also the ineffable.

Two characteristics worth elaborating are perceptual distortions and the sense of increased significance. The former of these include perceptual aberrations, consisting of hallucinations or pseudo-hallucination and subjectively felt hyper-acuteness of the perceptual field. These aberrations, which will be returned to below, have various determinants from cultural, individual, group or neurophysiological factors. An important point is the contextual significance of these perceptual distortions. The latter characteristic is the increase in the significance given to various experiences. This is a feature of almost every altered state of consciousness regardless of the method of induction, and can be best described as a feeling of “profound insight, illumination and truth” (Ludwig 1966, 228-229).

Ludwig (1966, 231) divided these states into maladaptive and adaptive expressions of consciousness. The first, which can vary from defensive functions to acute psychotic reactions are especially interesting for us. The second commonly materializes as aspects of healing. This latter form is employed in numerous aspects of psychological therapy, be it when the “healer” lapses into a trance for the purpose of diagnosis or alternatively, where the “healer” views such a change in consciousness within the patient as a prerequisite for healing. In this manner the healing relies on the suggestibility, increased perception of significance, and emotional catharsis. The modern equivalent is the use of pharmacological substances in psychiatry (for a comparison of shamanism and psychological healing see Kalweit 1992, Kjellström 1999 and Achterberg 2002).

Altered Consciousness, Social Context and Ritual

The differing forms of altered consciousness have many similarities, yet outside influences bear directly on the experience. These influences include cultural and

personal expectations, communication, role-playing and specific methods of induction (Ludwig 1966, 227). John Blacking (1973, 44) described an example, which emphasizes this point, since it is apparent that during the possession dance of the Venda, the music is of equal import to the social environment. The music does not affect everyone present, only the members of the cult, but even then only those who dance in their own homes; the effect of the music is very context-dependent. Thus the use by societies of altered states of consciousness in almost every case relies heavily on the social context. The means of production may produce no results unless the social conditions are correct. John Blacking (1995, 176) summarized the importance of this nicely when he stressed that music

“has no effect in the body or consequences for social action, unless its sounds and circumstances can be related to a coherent set of ideas about self and other bodily feeling”.

Equally it is important to stress that the result of any ceremony or rite involving a change in consciousness is interpreted through a rigid set of social ideas. Thus, only certain aspects of the imagery produced in the brain, by ritual behaviour, are recognized due to their similarity to socially important symbols.

Chapple (1970 cited in Lex 1979, 120) uses the term ritual to denote a precisely performed emotional interaction, and it thus follows that by this definition a ritual is a repetitive sequence of actions. Of course this is not to say that all ritual will produce a trance, (there are many altered states of consciousness which are not trance) but ‘rhythmic stimuli and fixed interaction tend to produce these states’. The purpose of ritual is to entrain, that is to synchronize, the biological rhythms through environmental stimuli, which remove or correct disequilibria. The repetitive actions of ritual, be it a rite of passage or burial ceremony, creates similar emotional states in those involved, which results in the restoration of the equilibrium of both group and individual, and this in turn guarantees uniformity of behaviour in the participants. It is the strangeness of behaviour under these conditions, be they speaking in tongues or the ability to walk on burning coals, which facilitates its association with the sacred.

Terminology: Demystifying the Jargon

Here we will identify and define a term to be used as an appropriate description of the state of mind of the shaman during a soul-journey. The following anecdote from

Rouget (1985, 17) sums up the problem of terminology. He cites Gaborieau on Himalayan trance, who discusses the local word for a shaman in a trance, “baulo”, which means “mad”. Immediately one thinks of early western views of the shaman as mad or schizophrenic, until we learn that the same term is used to describe the ethnographer because he can no longer carry out social and familial observations. In this case the shamans might be described as those who are outside their own social context, although the role of the shaman is culturally patterned and socially sanctioned. At the start of this chapter, Bahn’s criticism of Eliade was highlighted, and it is appropriate here to expand this theme. Bahn (2001, 55) summarized the problems of Eliade’s indiscriminate use of the terms “ecstasy” and “trance”, and observed, “to avoid all misunderstanding, one should not call the shaman’s ritual activities ecstasy or trance”.

Rouget (1985) examined the nature of music and trance and, although a large part of his work was directed at the use of trance in possession, the subject of shamanism was discussed in some depth. Furthermore he defined the terminology succinctly, not confusing “trance” and “ecstasy” and specifically disapproving of the term “altered state of consciousness”.

Ecstasy	Trance
Immobility	Movement
Silence	Noise
Solitude	In company
No crisis	Crisis
Sensory deprivation	Sensory over stimulation
Recollection	Amnesia
Hallucination	No hallucination

Table 5.2: The differences between Trance and Ecstasy after Rouget 1985

Rouget’s main concern, in discussing terminology, is the misunderstanding and confusion of the terms “ecstasy” and “trance” throughout the literature on the subject, which results in contradictory statements; table 5.2 highlights the distinction between the two. “Ecstasy” is characterized by being static, silent and alone, the essentials of sensory deprivation, during which hallucinations occur, which are able to be recalled after the experience. The opposite of these criteria are the defining features of “trance” and of important interest to us are the lack of hallucination and a lack of recollection of the “trance” experience. A “crisis” is a nervous fit or attack that may happen in a “trance” or at other times without “trance” and does not occur with “ecstasy” (Rouget 1985, 44; Vitebsky 2001, 64).

As we have observed above, Peters and Price-Williams (1980, cited in Krippner 2002, 10) made a comparison of 42 societies taken from 4 distinct cultural areas, resulting in the recognition of three distinct shamanistic traits. These were voluntary control of the state of consciousness, memory of the experience, and the ability to communicate with others during the state of consciousness; Noll (1985, 447) adds, “the mastery of visionary states is essential”. Elsewhere “spirit mastery” is seen as playing a central role in shamanistic definitions (Eliade 1989, 93; Harner 1980, 20; Lewis 1971, 51). The stress placed on the importance of memory suggests that the experience of the shaman is not the “trance” as defined by Rouget. In addition Hultkrantz (1973 cited in Noll 1985, 445-446) notes that

“a shaman may seem to act in a lucid state when in fact his mind is occupied with interior visions.”

The shaman is able to exist in these two worlds precisely because he is able to acknowledge the validity of both without confusing them.

“Ecstasy” and “trance” occur at either end of a continuum, making it sometimes difficult to specify what is occurring; furthermore both may be practised by the same individual (Rouget 1985, 11; Vitebsky 2001, 65). During a cataleptic performance, the shaman collapses on the ground while an assistant performs the drumming, the opposite is true of a dramatic performance, where the shaman chants, describes the journey and undertakes a theatrical performance (Rouget 1985, 129).

Shamanism	Possession
Journey to the spirits	Visit by the spirits
Control over the spirits	Control by the spirits
Voluntary	Involuntary
Musicant	Not musicant

Table 5.3. Differences between Shamanism and Possession Trance after Rouget 1985, 23

The importance of these definitions is clear, if the shaman undertakes a soul journey during which he may seem quite lucid, and is able to interact with individuals whilst at the same time describing the visionary world of the spirits, and in addition remember the event afterwards, this is not a “trance”. Alternatively the drumming, chanting and dancing, at least of the traditional Siberian shaman, rule out the description of the ritual as “ecstasy”. We may then propose, after Rouget’s (1985, 11; see also Vitebsky 2001, 65) description of “trance” and “ecstasy” as two ends of a continuous

spectrum, that the shaman's state of consciousness is somewhere between the states of trance and ecstasy.

An additional *caveat* is proposed here concerning the confusion of the shamanistic "trance" and the possession "trance", especially when the same term is used for widely differing phenomena. While in some cases the difference is recognized (Eliade 1989, 5), in other situations the distinction is not made (Lewis 1971, 18-9; Rouget 1985, 18). In addition to the relationship of the individual to the spirits and control of the "trance" a further difference exists in the relationship to music. Shamans are the musicants, actively creating the sound of ritual, while the possessee, responds to music made by others (Rouget 1985, 124-6). Of interest in relationship to this topic are the Nuba, to be discussed further in chapter 6, in connection to entoptic images or phosphenes and their relationship to art. Although the Nuba do not engage in a form of shamanism, which is in agreement with Dronfield (1995 a and b), the priest is nevertheless possessed (Rouget 1985, 24).

A final observation on the subject made by Bourguignon (1973 cited in Price-Williams and Hughes 1994, 2) is that a statistical link exists between possession and more complex societies while "trance" states without possession are found in less complex social systems.

Towards An Alternative or Shamanistic Terminology

Having examined the use of the terms trance and ecstasy we turn to the expression altered state of consciousness, disputed by Rouget since it is a blanket term used to describe anything from trance to hysteria and even dreaming. Rouget states a "trance is a trance" (1985, 17).

Krippner defines consciousness as an "organism's perceptual, cognitive and affective activities and/or experiences at any give moment in time" and an alteration as "a significant shift or deviation in an organism's customary pattern as experienced by that organism and/or observed by others" (Krippner 2000, 101). He continues to note that society has it own model for what is ordinary and altered. A problem then exists as to whether what we examine is termed altered by the society in question or by the academic examining it. Zinberg (1977 cited in Price-Williams and Hughes 1994, 2) proposes the term "alternate" since "different states of consciousness prevail at different times for different reasons and that no one state is considered standard"; a

move that may alleviate ethnocentric interpretations. Both Shamanistic consciousness and possession trance are normal in that they are learned and practised as part of the cultural experience. Herskovits (1943, cited in Rouget 1985, 177) thought that “possession trance should be viewed as a normal state resulting from apprenticeship to a cultural model, itself largely determined by history”.

Eliade (1989, 76-84: Price-Williams and Hughes 1994, 3: also Winkelman 1986 cited in Price-Williams and Hughes 1994, 10) distinguishes between the state of a shaman and the state of an individual practising Hindu or Buddhist techniques of meditation, although proposing that the latter were an influence on the former in North and central Asia. While not disputing the similarities proposed here, we should note that certain aspects of cultural assignment are not examined rigorously enough. Zimmer (1967, 281) states that the concepts of yoga and its twin Sāṅkhya

“do not belong to the original stock of the Vedic Brāhmanic tradition.....The two ideologies are of different origin, Sāṅkhya and Yoga being related to the mechanical system of the Jains, which, as we have seen, can be traced ...to a remote, aboriginal, non-Vedic, Indian antiquity. The fundamental ideas of Sāṅkhya and Yoga, therefore, must be immensely old”.

The differences are not disputed here between the Shaman and the Yogi; the point to be made is the great age of both systems, and that we are not predisposed to the implied perspective where the “latter” presumably seen here as more civilized and progressive has influenced the former. The shamanistic worldview as defined in this dissertation has a great antiquity as does Yoga and influence travels in both directions. Sutra 1.2 of Patanjali states, “*yogah cittavrtti Nirodhab*” (Iyengar 2000, 45-6), “Yoga is the cessation of movement in the consciousness”; while it seems that the shaman rather than withdrawing from these movements in the consciousness, embraces all of the neural activity and interprets it through imagery. The two perspectives are opposite sides of the same view, which we may interpret as the cultural interpretation of the same process of deliberately inducing theta waves in waking consciousness.

Meditation	Shamanism	Possession
Sleep deprivation	Sleep	Convulsion
Austerities	Unconscious soul journey	Spontaneous onset
Auditory driving	Excessive motor behaviour	Excessive motor behaviour
Fasting		
Social isolation		

Table 5.4. After Winkelman 1986 cited in Price-Williams and Hughes 1994, 10

Returning to the observation of Price-Williams and Hughes, in support of this point of view, EEG studies of brain wave activity distinguish between the physiological

states produced by different meditative techniques (Price-Williams and Hughes 1994, 9).

The theta wave is the characteristic wave pattern of long-term meditators (Maxfield 1994, 160). Heinze (1991 cited in Krippner 2002, 9) states that “only those individuals can be called shamans who can access alternative states of consciousness at will”, Ripinsky-Naxon (1993 cited in Krippner 2002, 9) adds to this that clearly “the shaman’s techniques of ecstasy is the main component in the shamanic state of consciousness”.

In a discussion of the research of Walsh (1990), Vitebsky (2001, 146) uses the expression “shamanic state of consciousness”, which was originally proposed by Harner (1990, xix). Here we are using a definition of a shaman as one who enters the spirit world during a soul flight, for whatever purpose, by altering their consciousness from the standard within that particular society. Where this change in perception is acceptable within the community in question, it may be appropriate that since as “a term and a notion, shamanism is entirely an academic creation” (Price 2001, 6) these same academics should use the term shamanic or Shamanistic State of Consciousness (SSC) (Harner 1980, 46-47; Noll 1985, 447). Krippner (2002, 11) provides an alternative Shamanic Modification of Attentional States (SMAS).

Towards the Shamanistic Model

Winkelman (2002b, 1882) proposes a “neurophenomenological framework” combining the arguments for universality, set forth in his cross-cultural studies (Winkelman 1992, cited in Winkelman 2002b, 1877), with the evidence from cognitive neuroscience. The universalities of shamanism

“reflect neurophenomenological and neurognostic structures, forms of experience and knowing based in innate biological and symbolic capacities (Laughlin, McManus, & d’Aquili, 1992). Psychobiological perspectives are a necessary interpretive framework for understanding the universals of shamanism and reveal the foundations of humanities’ original neurotheology” (Winkelman 2002b, 1873ff).

Furthermore

“procedures for inducing ASCs share physiological commonalities This normal brain response is reflected in synchronized brain wave patterns in the theta (3-6 cycles per second [cps]) and slow alpha (6-8 cps) range produced by activation of the limbic brain’s serotonergic circuits to the lower brain. This results in synchronous brain wave discharges across the neuraxis (the nerve bundles linking the hierarchical strata of the brain). These slow wave discharges produce strongly coherent brain wave patterns that synchronize the

frontal areas of the brain, integrating nonverbal information into the frontal cortex and producing insight” (Winkelman 2002b, 1878: see also Winkelman 1996, 38ff.).

Winkelman aims to explain the global distribution of shamanistic characteristics and the role of shamanistic states of consciousness, and names this model the “shamanic paradigm”. He observes that although there are distinct differences between deep meditative states and that of shamanism there are also certain fundamental similarities in patterns of brain activities. Nearly all alteration of consciousness involves a move towards

“increased slow wave activity across the frontal lobes, coupled with increased dominance of the limbic system activity, and a shift toward parasympathetic dominance in the autonomic nervous system.....synchronization of left and right frontal lobe EEG activity along with a general shift to right brain dominance... as the state deepens, there is a gradual decrease in frontal lobe activity followed by a similar decrease in limbic involvement, both of which seem to be associated with transcendent states of consciousness” (Krippner and Combs 2002, 80).

In everyday English the limbic system is the “seat of emotions” being the most ancient and primitive area in the cerebrum (Joseph 1993, 53). Areas of the Limbic system involved in memory, the cingulate and amygdala, are linked through nerve fibres to the olfactory system leading to the name “nose brain”. The nose brain is also linked to memory and learning, feeding, fighting, fleeing, sexual function and motivation. The Amygdala has strong links with Wernicke’s area, the centre of language comprehension, in the left temporal lobe and also the equivalent area in the right temporal lobe. This allows the amygdala to add “emotional coloration” to all that is heard (Joseph 1993, 245). Wallin (1991, 37) also discusses the emotional side of the limbic system, stating that since the

“limbic system represents an early part of the brain, the relationship between the limbic system and vocalisation is clearly confirmed in animals and some aspect of aphasic behaviour seems to support the idea for a connection between the limbic system and emotionally charged vocalisation in man” (Wallin 1991, 37).

Joseph (1993, 320) continues, noting that limbic speech

“is not bound up with thinking, the expression of thought, or conscious reflection. Although communicative, limbic speech occurs essentially independent of thought as it is predominantly emotional and concerned with the immediacy of the ‘here and now’ and reflects the emotional state of the organism”.....Thus, right cerebral language is social, melodic, emotional, inferential, and highly communicative of meaning and intent due to its more extensive interconnections with the limbic system” (Joseph 1993, 320).

Dominance of the Limbic system and the right brain, to some degree, mutually support each other, thus in the shamanic state of consciousness the brain is concerned

with immediacy and emotion, and therefore the emotional attributes of stimuli. The frontal lobes regulate the activity of the cerebrum and act as an inhibitors, yet during the onset of a S.S.C. there is a gradual decrease in frontal lobe activity (see above), leading the individual to “act and speak without thinking” (Joseph 1993, 274).

Winkelman (2000) refers to Winkelman’s book *Shamanism A neural Ecology of Consciousness and Healing* which was not directly referred to, due to accessibility. His model is thoroughly considered in Winkelman (2002a: 2002b) which have been referred to here. The following quotation from Winkelman (2000), is cited by Krippner (2000, 106) where he proposes that the classic motifs of the shamanic journey are “hardwired neurologically structured perceptual constants” which reflect perceptions obtained through shamanic states of consciousness.

“The neurological foundations of shamanism are represented in the principal characteristics of shamanism emphasized by Eliade—ecstasy, spirits, and community—as well as other universal characteristics of shamanism (e.g., soul journey, the use of music and dance, animal allies, and death and rebirth experiences)” (Winkelman 2002b, 1877).

To Winkelman the experiences of the soul-journey, conversation with spirits and healing are reflections of the neurological relationships between different brain structures while in a shamanistic state of consciousness. Krippner (2000, 106) elaborates by observing that these neurognostic potentials, literally neurological ways of knowing, work in tandem with social construction; he emphasizes that both views need to be taken. Here we accept Winkelman model as an explanation for shamanistic behaviour.

Having set out the basics for Winkelman’s argument, it seems appropriate to take note of Lewis-Williams’ comments on this model (Winkelman 2002a, 86ff). The model may be divided into three parts:

1. the cross-cultural parallels and differences in shamanistic behaviour;
2. the universal role of neurology as an explanation for the parallels and culture as an explanation for the differences;
3. the model for explaining the neurological functioning.

Points one and two are essentially empirical observation, the first ethnographic and the second neurological. Point three, the model for explaining the actual neurology, is the area of the differences of opinion. Unfortunately, there is not the space here to discuss the validity of the working of modular consciousness (see Mithen 1996, 31-78)

and we are not concerned here with Palaeolithic art. We merely note that shamanism, as defined here, has universal traits and that these are paralleled in the universal changes which occur in neurology, and are described above.

An Interpretation of the Shamanistic Model

BRAIN STRUCTURE

In the above discussion we have accepted the theory that human neurology is essentially universal and that similar repetitive effects may be induced and for our purposes register on modern examinations of neural mechanisms. But what does it mean when we are informed that what occurs in the brain is “synchronization of left and right frontal lobe EEG activity along with a general shift to right brain dominance...” (Krippner and Combs 2002, 80)?

A generally held belief links the right hemisphere with creativity while the left hemisphere is concerned with logic and the language centres. We have discussed the proposal that right brain dominance represents the principal characteristics of Shamanism but this seems vague and a more thorough explanation seems to be required. Here we are able to examine the neurological evidence and for this we turn to Clark (2003, 65-100; 2006, 79-118), whose arguments are based on an interpretation of neurology and are largely paraphrased below.

Research has demonstrated that different kinds of mental processes may be linked to specific types of location of neural activity and thus to different types of mental processes and states of consciousness (Clark 2003, 67; 2006, 81). It thus follows that religious experience also has its own specific neural correlates. Where a vision has no outside, objective origin, the equivalent of Dronfield's (1999, 363) “Subjective Visual Phenomena”, the neural activity in the visual cortices and the frontal lobes are essentially identical to processes operating when we see an actual object. This point is discussed below from the viewpoint of cultivation of mental imagery, where at the levels of information processing physical and mental objects are functional equivalents (Noll 1985, 446). What is lacking is the activity in the thalamus since no signal has been received from the optic nerve (Clark 2003, 68; 2006, 82).

Locating the Self

At this point in the proceedings, it is important to create a perspective which includes an understanding of the location of the neurological substrate of the self. Two options shall be discussed here.

The first proposal is the pre-frontal association cortices of the temporal lobes (Carter 1998, 61 and 67), this argument being supported by the work of Stuss (1991, 257-9: cited in Clark 2003, 70; 2006, 84), who proposes a hierarchical structure of the highest brain functions, which occur in the frontal lobes:

- Lowest Brain – organization of information, attention, memory, cognition and language, based on “autonomic, emotional, perceptual and motor data” (Clark 2003, 70; 2006, 84);
- Middle Brain – anticipation, goal selection, planning and monitoring;
- Highest Brain – self-awareness which relates to memory and not to sensory input; the data here are “abstract mental representations” for which it has been proposed that the information processing occurs in the anteromedial prefrontal cortex (Stuss 1991, 273-4: cited in Clark 2003, 70; 2006, 84).

The area referred to as the dorsal prefrontal cortex is situated behind the forehead and is provided with information from the parietal lobes. Positron Emission Topography (P.E.T.) evidence demonstrates that this area is active during the use of will (Clark 2003, 70; 2006, 84). The brain structures on either side of this dorsal area are known as the Ventral prefrontal cortex and they are principally linked with the hypothalamus, amygdala and the temporal association cortex (Clark 2003, 71; 2006, 85).

The second model proposed by Ramachandra (1999, 228 and 249-50: cited in Clark 2003, 73; 2006, 87) advocates that parts of the temporal lobe, amygdala, septum, hypothalamus, insula and the angulate gyrus are the structures which mediate consciousness and the self. It is generally understood that the memory functions of storage and recollection are undertaken in the temporal lobes. And it is in the cortex of the left temporal lobe and the limbic structures that Persinger and Makarec (1992, 220: cited in Clark 2003, 73; 2006, 88) locate the self, based on patterns of electrical activity.

Clark assesses the two models preferring a temporal lobe location. He observes that the linguistic areas are found in the left hemisphere, and memory is largely a temporal lobe phenomenon. Furthermore he states that the areas associated with

emotion, in addition to the brainstem, the septum, hypothalamus, are the amygdala and hippocampus both “deep within the temporal lobe” (Clark 2003, 75; 2006, 89-90). Clark admits there are problems associated with any synthesis of neurological data, which attempts to identify specific brain function especially when there is evidence that the initiation of voluntary action occurs in the prefrontal cortex. Furthermore, Clark (2003, 75; 2006 89-90) notes that while the will appears to be a prefrontal phenomenon the reflective awareness of self and memories, and their assumed linguistic-symbolic basis, are a temporal lobe phenomenon. In this dissertation we accept Clark’s proposal and this leaves us pondering on the activity occurring in the right temporal lobe to which we now turn.

Lateralization: Music and the Hemispheres

Lex (1979, 124-130), gives an overview of the lateralization of the hemispheres of the brain. In summary the left hemisphere’s function largely determines speech, linear analytic thought, temporal perception and importantly the sequential processing of information. The right hemisphere has a limited linguistic capacity and temporal perception is believed to be absent. However, in contrast spatial and tonal processing, pattern recognition, emotional and holistic thought can be demonstrated as primarily located in the right hemisphere. There are many studies which have shown a direct correlation between the physiological production and use of music and the right hemisphere, although there are some aspects of music dealt with in the left hemisphere due to the holistic nature of the brain. (Jaynes 1990: Ornstein 1986: Wallin 1991). While the left hemisphere has apparently superseded the right in human evolution, so “rational discourse has superseded the archaic modes of mythology, poetry, and music in the history of culture” (Young 1993, 102), or maybe western thought likes to believe that progress requires the subordination of these aspects of expression, in the wake of the all-encompassing logical science. There are naturally exceptions to any rigid ideas about lateralization of brain functions and the Japanese are one such case, where they deal with their traditional music largely with the left hemisphere as they do with language, yet, when listening to western music it is the right hemisphere that is most active in musical audition and comprehension (Wallin 1991)(c.f. Donald 1991, 40 and 60). If we therefore compare the functions of the right hemisphere with the effects of “ritual trance” we may begin to understand why Ornstein (1972 cited in Lex 1979, 125) argued

that the feelings produced in “ritual trance”, the ineffable nature of the experience and the distortion of temporal perception, are the result of the abilities of the right hemisphere. Ornstein clarifies this through a description of many ritual activities which he sees as deliberately inhibiting the left hemisphere while giving pre-eminence to the right (Lex 1979, 126).

If we explore this subject in more depth we may be able to illuminate the subject further. Although 92% of humans are right-handed and as a result the left-hemisphere is dominant, of left-handed individuals 70% also have a left-hemisphere dominance for language. It logically follows that in the majority of left hemispheres we find Wernicke’s area, centred on the posterior region of the superior gyrus of the temporal lobe, which is occupied with the interpretation of aural and written language and the generation of spoken and written language. Springer and Deutsch (1989, 17, 204-6, 284-5 and 311: cited in Clark 2003, 76) cite research which indicates the strengths of different hemispheres so that while the left hemisphere is associated with the actual language structure, arithmetic, sequencing and timing, the right-hemisphere operates on the level of language meaning, and also relates to spatial awareness, topological analysis and the drawing of patterns.

We have discussed above the process of domination of consciousness by the right hemisphere but an elaboration of lateralization may be of some benefit. Wallin (1991, 45) observes profound asymmetry on the level of speech. The facets of cognition, speech, reading, writing, memory, attention and sensory-motor mechanisms are missing from the right hemisphere, which uses “spatial visualising abilities in which a single mental image is more effective than a long series of words”. It seems that the vocabulary of the right hemisphere is clearly more connotative and associative, while the vocabulary of the left hemisphere is more precise and denotative or descriptive (*idem*, 55).

Jaynes (1990, 367-8) describes Electric Encephalogram (EEG) recordings of six-month-old babies, with the readings taken directly over Wernicke’s area, and the right-hemisphere equivalent. When the children were played recordings of speech the left hemisphere showed greater activity, yet when they were played recorded singing the right hemisphere was more active. Additionally “early poetry was song” (Jaynes 1990, 364), and electrical stimulation of the right-hemisphere equivalents of the posterior temporal lobe, specifically the anterior temporal lobe commonly results in hallucinations

of music and singing. This area is the equivalent of Wernicke's area. Since "poetry in antiquity was sung rather than spoken, it was perhaps largely a right hemisphere function" (Jaynes 1990, 365-366). All

"good poets, epic as well as lyric, composed their beautiful poems not by art, but because they are inspired and possessed... there is no invention in him until he has been inspired and is out of his senses and the mind is no longer in him" (Plato, *Io*, 534 in Jaynes 1990², 370).

Deacon (1997, 311-2) observes that the

"right hemisphere is not the non-language hemisphere. It is critically and intimately involved in language processing at many levels during both development and maturity. Perhaps most importantly, it is critical for the large-scale, semantic processing of language, not word meaning so much as the larger symbolic constructions that words and sentences contribute to: complex ideas, descriptions, narratives and arguments. Symbol construction and analysis do not end with the end of a sentence, but in many regards begin there."

Mithen (2005, 28-45 and 46-61) discusses the evidence for aphasia, the loss of language through damage to the specific language areas of the brain, and amusia, a parallel condition, when areas of the brain, which process music, are affected. The case studies discussed support the argument that music and language networks have some degree of independence, that is, it is possible to lose one faculty or part of it without the other being affected. This is called double dissociation, and presupposes that music and language are separate cognitive domains (Blacking 1976 12: Mithen 2005, 62-4, 65), although there is some sharing so that the neural pathways used for prosody are shared between music and language (Mithen 2005, 62)(see also Jaynes 1990, 101-6: Deacon 1997, 312-318). Deacon observes that the "right hemisphere also subserves...the processing of prosodic features of speech" (*idem*, 313), that is features concerned with tone and rhythm (cf. Storr 1992, 9).

It is however, difficult to generalize, since these faculties are not necessarily situated in the same places in every individual, although there appear to be some "gross overall patterns" (Mithen 2005, 64). Thus Mithen (2005, 36) cites the case of an individual who demonstrated more language function undertaken in the right hemisphere. This leads Peretz (cited in Mithen 2005, 65) to state that

"the demonstration of a similar brain organization for music in all humans remains elusive... [although the] ...vast majority of studies point to the superior temporal gyrus and frontal regions on the right side of the brain as the responsible areas for processing pitch contour."

Maess *et al* (cited in Mithen 2005, 65-66) used Magnetoencephalography (M.E.G.) studies, brain imaging which detects tiny magnetic fields produced by active neurons, to examine the reactions to unexpected chord progressions. The results suggested that

Broca's area and the right-hemisphere equivalent were both used for language syntax, although Broca's area was dominant; a similar pattern was noted for music, that is both areas were activated, but the right-hemisphere region was dominant.

Mithen progresses to explore Infant Directed Speech (IDS), noting some cultural differences but also some universals. These include an expanded range of pitch and the use of exaggerated vowels, the latter being linked to acquisition of language (*idem*, 74).

Dissanayake states

"No matter how important lexico-grammatical meaning eventually becomes, the human brain is first organized or programmed to respond to emotional/intonational aspects of the human voice" (cited in Storr 1992, 9).

Additional evidence indicates that an untrained musician favours the left ear when listening to music, thus indicating right hemisphere processing but in a trained musician preference is given to the right ear and thus to the left hemisphere (Clark 2003, 77; 2006, 91). Clark immediately follows this case with the argument that despite this the specialization of the hemispheres is not fixed, and he cites evidence which suggests that when an area of the brain is injured the opposite hemisphere is able to compensate by taking over the roles (2003, 77; 2006, 91). EEG studies have shown that results "demonstrate that any attempts to confirm a strict lateralization of musical functions of the brain, however, seem to be hopeless, since different and extended areas in both hemispheres undergo changes during musical tasks" (Wallin 1991, 107). This is interpreted as the creation of numerous functional connections between different areas, which are established during the musical tasks in question. According to Storr (1992, 35) it is not a strict lateralization of speech and music that we should seek, although "language is predominantly processed in the left hemisphere, whilst music is chiefly scanned and appreciated in the right hemisphere. Joseph argues that "musical production is an outgrowth of the limbic system and related to the ability to mimic environmental sounds", while the right brain is dominant regarding smell, comprehension of body language, touch and facial emotion, "the right hemisphere has been shown to be superior to the left in discerning and recognizing nonverbal and environmental sounds" (Joseph 1993, 325).

"The division of function is not so much between words and music as between logic and emotion" (Storr 1992, 35). Joseph also notes links between music and

emotion, observing the direct relationship “to the body ...heart rate...breathing” which can “cause us to dance and sway, snap our fingers, or tap our feet” (Joseph 1993, 325). As noted in chapter 1, recordings of muscle “action potentials” show increased electrical activity in the leg muscles when listening to music” (Storr 1992, 25).

A further area of research worth scrutinising, has been proposed by Ramachandran (1999, 133-6: cited in Clark 2003, 78; 2005, 92), and it states the left hemisphere is responsible for the operating of a stable model of the self, here the right hemisphere observes, notes discrepancies which are then integrated into the left hemisphere model self. If a discrepancy is too great to be incorporated, it will firstly be ignored by the left hemisphere until the right hemisphere forces a change in the model. As an addition to this model of the self, Clark (2003, 79; 2006, 93: citing Vining 1989, no page no.) reports evidence which the right hemisphere subserves negative affect and the left hemisphere positive affect. This may be understood to mean the left hemisphere is more confident and egotistical but the right hemisphere is shy and insecure. Corroboration for this comes from Davidson (1995, no page: in Clark 2003, 79; 2006, 93) who lists EEG and PET scans which associate negative behaviour and attitudes with elevated right frontal pole activity and the opposite behaviour with left frontal pole activity. Along a similar line of argument it has been demonstrated that effective hemisphericity can be altered in the same individual by an action as seemingly trivial as breathing through one nostril. EEG scans have indicated an increase in activity in the contralateral hemisphere when a subject breathes through one nostril, thus left nostril breathing has been shown to increase spatial skills while right nostril breathing increases verbal dexterity (Backon and Kullo 1989, 212: cited in Clark 2003, 80; 2006, 94). It seems that left and right hemisphere differences are not simple, although in some tasks one hemisphere does perform better (Gordon 1989, 47-53: Brown and Kosslyn 1995, 79: both cited in Clark 2003, 80; 2006, 94).

The Numinous Neural

Clark discusses the work of Rudolf Otto (1925: cited in Clark 2003, 40; 2006, 52) where Otto proposed an emotional dimension which was the inner core of any religion, sophisticated and “primitive” alike. This he characterized as

“a numinous state of mind, which is qualitatively different from and not reducible to any other feeling. This numinous state of mind is an awareness of the uncanny, that which is in itself numinous, a *numen*, the holy” (Clark 2003, 40: 2006, 52).

Clark proposes that we link various types of numinous experience with individual brain structures and this data is presented in the tables 5.5-5.7.

Types of Numinous Feeling	
Minor Paranormal	Déjà vu, Jamais vu, Tingling, Bright light
Hallucination	Hearing Voices, Seeing visions
Depersonalization	Out-of-body experiences
Sense of Presence	Benign, Threatening
Sense of Oneness	Mystical union with all beings, or deity

Table 5.5: after Clark 2003, 94; 2006 110

What Clark (2003, 94; 2006, 110) wishes for is an explanatory model, which links each type of numinous experience with its specific neural activity but it is not yet available. As it is, Clark proposes that religious experience is sometimes the correlate of abnormal brain activity, which may include:

- Brain lesions;
- Ingestion of substances which mimic natural neuro-transmitters;
- Abnormal stimulation; magnetic fields or driving (which may be visual or auditory);
- Input deprivation.

At this stage of the discussion Clark (2003, 96ff.) introduces the notion of a homologue self in the non-linguistic hemisphere, that is in the non-dominant hemisphere, which is the side not controlling the dominant hand. This proposal was forwarded as long ago as the nineteenth century (Myers 1885 cited in Clark 2003, 96) and was developed in the theory of the bicameral mind which Clark advances, with a *caveat* and the proviso that it is possible to form the inter-hemispheric communication in the manner discussed by Jaynes (1990).

Brain Structures Identified in Numinous Activity	
Prefrontal Cortex	Concentration, Meditation
Superior Parietal Cortex	Location in space, Boundaries of self
Temporal Cortex and Hippocampus	Association memory, Language, Self
Amygdala	Emotion, Fear, Excitement
Hypothalamus	Emotion, Arousal, Quiescence, Bliss

Table 5.6: after Clark 2003, 94; 2006 110

Briefly, Jaynes (1990) proposed that the two cerebral cortices processed information independently, even as late as early antiquity. Upon the need for decision-making the natural build-up of stress, moderated by the hypothalamus, induced hemispheric communication. This is the essential process described by Jaynes and since this is the important aspect we are interested in here we shall not elaborate on the direction in which Jaynes takes these observations (cf. Ramachandran 1999).

Aetiology of Neural activity Correlated with Numinous Feeling	
Spontaneous Activity	Epilepsy
	Subclinical Epileptic or Quasi-Epileptic activity
Abnormal Input Affecting Neurotransmission	Elevated Stress
	External electrical stimulation
	Magnetic Stimulation
	Ingested Chemical
Deprivation of input	Disruption of normal Neural pathways by ingested chemical substance
	Disruption of normal Neural pathways by concentrated meditation

Table 5.7: after Clark 2003, 94; 2006, 111

The right hemisphere surpasses the left when facing problems involving synthetic spatial processing. As proposed above it is also able to send advisory information to the left hemisphere and since this information is sent and received by the language areas, Wernicke on the left and the homologous language area of the right hemisphere, these signals are perceived as voices (Jaynes 1990, 105). Jaynes is able to cite numerous experiments conducted with the homologous language area, when the right cortex was stimulated the results on many occasions was “admonitory voices” (Clark 2003, 97; 2006, 114; Jaynes 1990, 109-111).

These ideas correspond with our discussions above, which place the self in the language centre of the left hemisphere and suggest that the equivalent area of the right hemisphere constitutes to some degree a homologue self which when acting independently is perceived by the left hemisphere as an ego-alien (Clark 2003, 97; 2006, 114).

Furthermore, the information transfer need not necessarily be perceived as distinct voices but may be mutterings or non-linguistic. Clark (2003; 98; 2006, 115) proceeds to argue that in abnormal conditions right hemisphere proto-consciousness may occur, where this proto-consciousness, which is defined as processes similar to the

left-hemisphere processes, which we recognize as actual consciousness, will communicate with the left-hemisphere self. These abnormal conditions may be stress-related.

It seems that although there are qualifications to Clark's proposals, which he notes himself; he places the self in the linguistic processing areas of the left hemisphere (2003, 99; 2006, 117).

"Abnormally, a resonance is set up between the electrical activities of the left and right hemispheres, and the left-hemisphere self and its right-hemisphere homologue come temporarily into anomalous communication. The temporal cortices transmit cognitive or perceptual data via the corpus colosum and the limbic structures transmit affective nuances chiefly via the anterior commissure but also via the basal amygdalar nuclei and brainstem pathways. This communication can disturb the subject's sense of identity and continuity, and may be the cause of diplopic sensations such as out-of-the-body and near-death experiences, déjà vu, jamais vu, a feeling of loss of self, voices self, thoughts which seem to be imposed from the outside, panic attacks and commonly negative affect" (Persinger and Makarec 1991, 1244; Munro and Persinger 1992, 899 and 903; Richards et al 1992, 667; Persinger 1993, 915-8; Persinger 1994, 1060 and 1063: all in Clark (2003, 100; 2006, 117-8).

The intrusion of Clark's right-hemisphere homologue self into the left-hemisphere self consciousness may be perceived as a sense of a presence, which may be correlated with seeing lights, movement in peripheral vision, feelings of strangeness or suicidal thoughts (Persinger and Makarec 1991, 1244; Persinger 1994, 1059: both cited in Clark 2003, 102; 2006, 119-20). This "transient intercalation" may occur when either hemisphere is activated to a degree above or below its normal functioning (Clark 2003, 101). Importantly, Clark (2003, 101; 2006, 118-9) further proposes that diffuse communication may present a feeling of strangeness while a sensed presence would be the result of a more coherent imposition on the consciousness by the right-homologue self. This may be interpreted as spiritual beings. These are the main components of Clark's argument that we are concerned with here, if the Shamanistic States of Consciousness model of Winkelman proposes right-brain dominance, the vestigial ego of the left hemisphere would perceive the right-hemisphere homologue self as an other or Clark's ego-alien.

Here we will accept Clark's model as it may provide us with an understanding of the neurology of the shamanistic paradigm. We may then equate the sensation of the left-hemisphere recognition of the right-hemisphere sense of self, with the numinous experiences, which constitute the basic to the premise of animism (Clark 2006, 220). So the sensations Clark cites in table 5.5 (see above), may be seen to parallel the sensations of the shamanistic experience, as described in conventional accounts of soul-journeying.

Towards an understanding of the Shamanistic Model?

We have discussed the neurological evidence of Winkelman and company and hopefully, for the case of this argument, squared these distinct patterns of brain-wave change and neural activity with the explanatory model of Clark (2003; 2006). It is here proposed that the numinous experience of Clark corresponds with the Shamanistic model as presented at the start of this chapter and that one of the key features, the notion of the soul, spirit, essence or other-than-human-person (Hoppal 1997, 2: Price 2001, 3: Vitebsky 2001, 12: Price-Williams and Hughes 1994, 3: Harvey 2005, 17) is paralleled in the “sense of other” discussed by Clark (2003; 2006).

Tests have demonstrated a connection between occurrences of inter-hemispheric communication and an increase in waking alpha and theta activity in the right-hemisphere (Munro and Persinger 1992: in Clark 2003, 102; 2006, 119). During normal waking beta wave consciousness only small groups of neurons discharge together but during waking alpha and theta consciousness a great number of neurons rhythmically discharge; this is discussed further below in relation to auditory driving (Achterberg 2002, 43). The neural activity, which we find, associated with Clark’s (2003, 114; 2006, 131-2) numinous or paranormal experiences is quasi-epileptic in that the EEG evidence in experimental contexts resembles patterns seen in epileptic discharges, similarly the subjective experience in these conditions resemble epileptic auras (for more on this topic see Clark 2003, App 5a 287ff.).

There is not the space here for a full discussion of the pros and cons of “modular” consciousness but we may briefly summarize a couple of recent publications. Mithen’s (1998, 65-78) proposed three stage, neo-recapitulation, model posits firstly a domain of general intelligence, developing to include multiple specialized intelligences and culminating in the flexible flow of information between these specialized intelligences. Parker and McKinney (1999, 277ff.) similarly forwarded a three stage module, not to be fully discussed here except with the observance that their final stage also ‘emphasizes the “cognitive fluidity,” the integrative, flexible cross-domain aspect of human cognition that apparently distinguishes it from that of other primates (Mithen 1996: cf. Parker and McKinney 1999, 286). Both make the case for cognitive fluidity.

Similarly Deacon (1997, 293-7) supports this view, presenting a catalogue of evidence against the notion of neurological modules, which must be linked with specific tasks. His proposal features functional units, which are adapted and co-opted in language processing, but do not rely on the existence of specific modules only that the actual processing is dealt with by one or more functional unit.

The purpose for this brief modular interlude is as a rebuttal to Knight who accuses Winkelman (2002a: comments in Winkelman 2002a, 89) of proposing that, “shamanism comes from a shamanism module”. He does not! He advances the case that the “the neuropsychological basis of shamanism is manifested in cross-cultural similarities in shaman’s characteristics”, “The Universals of shamanism are manifestations of *neurognostic* structures” and that “Shamanic thought [is}... produced by cross-modular predication of innate modules...(Winkelman 2002a, 72-74 and 94).

Unless we are missing the point here it is cognitive fluidity that is the most important feature of the argument. For our purposes the neural structure can be considered constant since we are within stage three of both Mithen’s and Parker and McKinney’s frameworks. The hypothesis of Clark is adopted as an explanation for the workings of Winkelman’s model and it is maintained that shamanistic practices are just one of the cultural methods of interpreting the physiological experiences.

We end our digression with Clark’s (2003, 115-6; 2006, 133) acceptance that any research equating neural activity with religious experience is in its infancy but that although the model is speculative it is testable.

The Shamanistic Model

Here an academic model of shamanism has been constructed, based on recent anthropological publications and not merely Eliade (1989) who has often been criticised (Bahn 2001, 54-6: see discussion below). Furthermore it is at no time implied that this model is an explanation of all art, or all rock art, it is constructed as a tool for the interpretation of the decoration on the drums of the Southern TRB.

We began by emphasizing the function of initiation and the importance of symbolic mental geography and related this to the key roles of healing, divination, psychopompic activity and hunting magic. Additionally, emphasis has been placed on the importance of voluntary control of the state of consciousness, memory of the experience and the ability to communicate with others during the state of

consciousness. Similarly the importance in the use of symbolism provides a tentative explanation for the expression of the shamanic other worlds.

Furthermore Rouget (1985, 3) states that this socially sanctioned altering of consciousness “corresponds to a psycho-physiological disposition innate in human nature”. As far as we are concerned this universality is accepted here since the current neurological evidence does support this notion. This does not mean that everyone is or was a shaman, nor that at the drop of a hat our prehistoric ancestors, through lack of food or due to the lack of sensory input due to the darkness of a cave, entered a “trance”. The reason that Shamanistic training is long and arduous is not solely down to the understanding of the concepts but to the difficulty in training the mind to allow access to the numinous through the ability to induce waking alpha and theta consciousness.

The shamanistic model is not merely a sham and the argument that the shaman may indeed provide valuable input to a community is supported by the evidence for the release of natural endorphins and brain hormones which decrease pain, a boosting of the immune system, and indeed the similarity of brain hormones to the hallucinogens used among some societies (Achterberg 2002, 43; Krippner 2002, 10; Vitebsky 2001, 148).

A discussion of the vagueness of the terminology, namely the use of trance and ecstasy, has led to the adoption of the term Shamanistic State of Consciousness (SSC), which is employed as a correlate for the key features discussed here. Therefore possession, which allows neither recollection and control nor the ability to communicate, is not covered by the criteria of our model. Thus a SSC implies voluntary control, memory, and the ability to communicate with others during the state of consciousness, of which a feature is the slowing of brain wave frequency, for a criticism of the use of the term trance see Bahn (2001, 54-6; discussed below).

This shamanistic model points to a universal ability of the human species, which includes recognizable patterns of neural activity, with some qualifications, and links the SSC with right-brain dominance. Following from this line of discussion, the model of the numinous neural, as proposed by Clark (2003, 65ff.; 2006, 79ff.) is adopted as an explanation for this shamanistic neural model and the role of the right hemisphere as the key feature, which is accessed during the SSC.

It will be appropriate to discuss the altering of consciousness in more general terms below and in these instances the common abbreviation ASC will be employed.

INDUCTION OF THE SHAMANISTIC EXPERIENCE

Natural/Non-Cultural Induction of Hallucination

The Charles Bonnet Syndrome, an example of non-shamanic induction of hallucination is discussed by Bahn (2001, 53) as a possible explanation of goblins and old hags in fairy tales. These hallucinations are caused by chronic lack of external visual input due to eye diseases. These images commonly resemble distorted, disembodied faces with prominent eyes and teeth, and they are forwarded as evidence that shamanism need not be the cause of all visionary experience.

Clark also discusses the Old Hag, suggesting sleep paralysis and hypnogogic hallucination as the probable cause (2003, 113; 2006, 130). Elsewhere the real basis is hypothesized. Studies indicate that areas within the ventral temporal cortex and the parahippocampal gyrus are involved in the recognition of faces and hands. Stimulation of these cell formations may produce potential experiential representations of those body parts (Clark 2003, 103-4; 2006, 121). One case study records abnormal EEG peaks in the right temporal lobe associated with fear and a sense of presence, which was followed by the appearance of a gnarled hand in the left visual field. It is suggested by Budden (1994: cited in Clark 2003, 104; 2006, 121) that the hallucinatory representations of gnarled figures is the homunculus from the somatosensory cortex. Working with Clark's theory of right-hemisphere intrusion we might be inclined to interpret this as a "right parietal homunculus being communicated imperfectly to the left hemisphere" (Clark 2003, 104; 2006, 121). Pondering the data of both Bahn and Clark suggests that Clark's model provides the basic explanation, while his case study and Bahn's discussion of Charles Bonnet syndrome are evidence of two different forms of right-hemisphere intrusion caused by two different stimuli. Further on Clark explains that neurons "which inhibit inter-hemispheric communication are said to be among the most vulnerable to reductions in metabolic levels of glucose. Therefore right-hemisphere intrusions should be facilitated by lowered general metabolic activity. They should also be facilitated by subjective fragility of the self" (Clark 2003, 103; 2006, 121).

Clark (2003, 94) observed that the abnormal stimulation, which might trigger a numinous experience, included magnetic fields or driving, which we have taken here to

include visual and auditory methods. Suess and Persinger (2001: cited in Clark 2003, 106) record paranormal phenomena at a closed and flooded magnetite mine, in Ontario. The owners of a local farm have established “stations of the cross” here, close to a site of old Ojibwa petroglyphs, and visitors report spiritual experiences, peaceful states, glowing colours in the sky and even visions. Suess and Persinger observe that the rocky outcrops have “sufficient magnetism to hold miniature magnets and propose that flooding of the mine has caused localized tectonic stress, which has induced electrostatic fields “within the rock, extending several hundred metres into the earth”. This “would be strong enough to orient particles in the air, causing diffraction and glows”. On site recordings detected a variety of intensities of magnetic fields at numerous surface locations lasting for between 1 and 10 seconds. After comparison with laboratory experiments they hypothesized that these fields caused abnormalities in the processing of the limbic structures and temporal lobes of sensitive individuals, resulting in “opiate-like effects, and – it would seem- a sense of presence” (Clark 2003, 106).

We have mentioned here the Old Hag phenomena in reference to Bahn’s Charles Bonnet Syndrome, and suggested that this experience is also reflected in the intrusion of the right-hemisphere homunculus. Also recorded is the effect of magnetic fields. These are not shamanistic experiences but it is postulated that they do support the case for the universal neurological model. At the risk of repeating the argument it is not proposed here that every art form may be traced to a shamanistic origin, whether prehistoric or otherwise, but in some cases we may be faced with a cultural development which mirrors certain shamanistic practices and is employed as an interpretation of the neural experiences. An interesting research strategy might involve the recording of magnetic anomalies in the areas of major outcroppings of rock art, such as those where the hands and heads of figures are distorted, or indeed other expressive media, whether artistic or indeed maybe repetitive cultural tendencies which have been interpreted under the blanket term “ritual”.

We now turn to the means of production of these much-discussed SSCs, and especially their relationship with brain wave frequencies. As we have observed, the different forms of altered consciousness can be induced by different means, which affect structures of the body other than just the rhythm of the cerebral cortex. Sherratt has recently noticed the similarity between the TRB collared flasks and the Cypriot base

ring juglet of the Middle Bronze Age (Sherratt 1997, 416). The Cypriot vessels have similar form and decoration, and are thought to represent the head of the opium poppy. As yet we are unable to cite any analysis of contents of any TRB pot confirming this, but Cypriot examples in Egyptian tombs do show traces of opiate-based substances (Sherratt 1998, 416), while Egyptian texts refer to it quite plainly in the Ebers papyrus. Furthermore Opium poppies, placed in bags within Neolithic burials in the Spanish site of Cueva de los Murciélagos have recently been dated to 4200 BC (Rudgley 1993, 25; 1998, 181). Sherratt (1998, 415) suggests that the TRB collared flask, is a skeuomorph, manufactured to advertise its content.

However, Behrens and Schröter (1980, 126) cite collared flasks and record 24 examples at the time of publication, and their resulting speculation leads them to dispute Niklasson's (cited in Behrens and Schröter 1980, 126) interpretation of the collared flask as a foreign form. They propose that due to the number now known, these vessels are likely to be part of the local assemblage repertoire, having a frequency equated with that of the drums (Behrens and Schröter 1980, 126). Of interest to us here is that Behrens and Schröter rule out the link with a ritual use due to the common occurrence in settlements, but they cite traces of sulphur (*idem*, 126). Whether sulphur is constituent of Opium is unclear but currently this is the only example found in this research, which provides an analysis of the contents of a collared flask.

Copper can be produced from a sulphide ore through the process of powdering and flotation with a foaming agent and an agent to make the copper-bearing particle water repellent, the particles gather in the foam. Until further analysis is undertaken we only know of a sulphur constituent, and an explanation that the collared flasks were used for the carrying of powdered ore is an alternative explanation.

As a brief digression, we may note the presence of Spondylus shell (*Spondylus gaedoropus*) from LBK contexts and later which Midgley (2005, 69) states

“evidently had not just ornamental but religious and magical properties”.

The relevance of this may be understood in the light of a Peruvian researcher (Glowacki 2005, 257ff.) who notes that

“the flesh of *Spondylus* under certain conditions could have produced psychotropic experiences and other related reactions, which early societies of ancient Peru may have viewed as a vehicle for spiritual communication. This shellfish may have come to symbolise spiritual transcendence, a highly coveted power intimately tied to the realm of the ancestors.”

Returning to our discussion, within the group of archaeological cultures with which we are concerned there is material evidence which may be interpreted as a method for inducing alternative methods of altering consciousness. The essentials of altering one's consciousness suggest that the different methods used together, such as a combination of drumming and dancing, possibly combined with fasting or hyperventilation or all of the above, affect different parts of the body, altering the body chemistry and over-stimulating the nervous system.

AUDITORY DRIVING: EMPLOYING RITUAL MUSIC

Bahn (2002, 87), during comments on Winkelman, asks why “should percussion instruments and bird-bone flutes necessarily have the slightest connection with ‘shamanism’”? The simple answer is that they ‘should’ not, but they may! And at this stage in the discussion we shall examine the evidence for how music might affect human consciousness.

A reductionist view of the evidence for rhythmic driving, suggests that entry into a SSC affects the rhythms of the cerebral cortex. In a relaxed and waking state the brain produces alpha waves, which have a frequency of about 10 Hz, that is cycles per second, while beta waves, with a higher frequency, between 18-30 Hz, occur during higher states of arousal, such as when thinking (Lindzey *et al* 1975, 60-61). Theta waves, 4-7 Hz, are characteristic of meditation and hypnogogic states while delta rhythms, 4 hz and below are typical of deep sleep. When rhythmic noise is used to stimulate the production of a trance the typical rhythm used is 4-8 beats per second, and this auditory driving is equated with an enhancement of alpha-waves, those of the waking brain at rest; this may be said to synchronize the brain-waves with this frequency. It is this process which we shall now examine.

“Rhythmic stimulation, resulting not only from sounds but from other factors, influence consciousness.... Rhythm and consciousness are intimately bound together. An alteration of our body rhythm creates a change in our consciousness” (Kalweit 1993, 84).

Light is the main synchronizer of the body in all species (Chapple 1970 cited in Lex 1979, 123), the use of a rhythmic light stimulus with a cycle in the region of alpha waves entrains the brain rhythm, and following changes in the light rhythm alters the brain-wave frequency (Neher 1962, 153).

Brain Waves		
Beta Rhythms	13-30 hz	Normal waking consciousness
Alpha Rhythms	8-13 hz	Awake but relaxed
Theta Rhythms	4-7 hz	Drowsy, hypnogogic, meditation
Delta Rhythms	4 hz and lower	Deep sleep/unconsciousness

Table 5.8 Frequencies of different brain waves

Neher (1962, 151ff.) maintained that auditory driving gave similar results to the affects of photic driving and examined the ‘physiological explanation of unusual behaviour in ceremonies involving drums’. This research consisted of two separate sections, first the observation of the effects of drumming within the laboratory, compared with the second, ethnographic evidence from drum ceremonies in the field. Neher proposed that the harmonics and multitude of different frequencies within the beat of the drum are ideal for this same form of entrainment.

“Stimulus conditions and responses observed were comparable to characteristics of drum ceremonies, as well as to laboratory studies of the effects of rhythmic light stimulation” (Neher 1962, 159).

The equation of rhythmic stimulation using light and sound is important, since until more recently there were no studies directly investigating the entoptic phenomena produced by auditory driving. Rhythmic dance may aid the desired effect by causing a flickering of light on the retina due to “shifts in ocular focus” and movement of dancers between each other and various light sources (Lex 1979, 123). Many research projects have cited Neher, since publication, and despite criticisms many researchers have continued to do so.

Rouget’s (1985) criticisms of Neher run as follows: primarily the unusual behaviour produced in Neher’s experiments only produced involuntary eye blinks (not psychopathic states or epileptic seizure); there are many types of convulsion not all being representative of possession. Neher used a constant rhythm as opposed to the varying rhythm typical of possession séances (Rouget 1985, 174) and finally where Neher cites musical transcripts he uses examples unrelated to possession ceremonies (*idem*, 175). Further criticism was made of Neher’s finding due to the lack of control for “movement artifact” (Achterberg 2002, 44: Maxfield 1994, 159).

Rouget’s view holds that the drum or other instrument is involved in the triggering of the Shaman’s trance through its accompaniment of singing and dancing, in addition to the significance of its very presence due to its symbolic meaning, and in turn

its emotional power. However, this is still largely due to “psychological and cultural conditioning” (Rouget 1985, 318). Rouget dismisses Neher’s thesis based on the way the research was carried out, preferring to rely on the psychological and cultural context of the individuals in question as an explanation. He states, “the power of music alone cannot be held responsible for the shaman’s entry into trance”. Furthermore that there is no mechanistic or automatic link between either music or dance, and trance (*idem*, 319). Rouget views music as a tool used to provide the fitting conditions for the induction of trance rather than the induction itself; music regularizes the form of the experience. While Rouget allows for music as an aid in the production of trance he is stressing the importance of cultural context, and indeed cultural learning, as an important aspect of why music is associated with trance. Music plays a crucial part in aiding trance, but trance should not therefore be reduced to the result of repetitive techniques; the techniques are used “at the service of belief” (*idem*, 320). In his argument against the attempt of Neher to reduce trance to physiology, Rouget sums up by saying trance is emotional, but is socialized by music.

More recently, research investigating the influence of rhythm and trance, has been carried out by Maxfield (1994). The purpose of this research was to “determine whether various drumming patterns would be associated with different brain wave activity as measured by cortical electroencephalogram (EEG)” and whether the subjective experience associated with this activity produced a common theme (Maxfield. 1994, 157). In relationship to this subject it is pertinent to understand the physiological background to a link between sound and the drumbeat, and a shamanic state of consciousness. Achterberg (2002, 43) states that the

“auditory tracts pass directly into the reticular activating system (RAS) of the brain stem. The RAS is a massive “nerve net” and functions to coordinate sensory input and motor tone and to alert the cortex to incoming information. Sound travelling along these pathways is capable of activating an entire brain. Strong, repetitive neuronal firing in the auditory pathways and ultimately in the cerebral cortex, such as would be experienced from drums, could theoretically compete successfully for cognitive awareness. Other sensory stimuli from ordinary reality, including pain, could thus be gated or filtered out. The mind would then be free to expand into other realms.”

We have already cited Clark (2003, 114) stating that neuronal rhythmic discharge can be equated with waking alpha and theta consciousness.

In line with the theorizing of Neher, Maxfield (1994, 159) cites Jilek’s (1974) investigation of drum-beat frequencies of the Salish Indians, highlighting the fact that the dominant frequency was 4-7 beats per second “allied to the theta wave EEG

frequency of the human brain.” As noted above, theta waves are those associated with hypnagogic imagery (cf. Lewis-Williams 2005, 42-49, 56-7), creativity and states of “ecstasy”. Maxfield’s (1994, 159) research employed three distinct drum rhythms:

- 4-4.5 beats per second (the theta wave band);
- rhythmic syncopated drumming of 3-4 beats per second, and;
- free drumming with no sustained rhythm.

During the research four cortical sites were monitored, the bilateral parieto-temporal and parieto-central areas. The results of this study support the theory that a link exists between the use of a drum and neurophysiological effects associated with temporary changes in brain wave frequency. This “may facilitate imagery and entry into an altered state of consciousness” (Maxfield 1994, 160). The pattern of 4-4.5 beats per second was that most associated with increases in the production of theta waves. Maxfield noted that all the participants, experienced visual or somatic imagery (Maxfield 1994, 160); two thirds of this imagery included at least one episode that was a journey, an out-of-body experience or a visitation (*idem*, 162).

As argued above the evidence for the effect of auditory driving is ample (Maxfield 1994, 157; Achterberg 2002, 43), and supports the notion that it results in slowing of brain wave frequencies, creating what Clark (2003, 102; 2006, 119) calls waking alpha and theta consciousness. This in turn may be equated with right-brain dominance (Krippner and Combs 2002, 80: see above), which we may, in turn, equate with the intrusion of a right-hemisphere homologue self into the left-hemisphere self-consciousness (Persinger and Makarec 1991, 1244; Persinger 1994, 1059: both cited in Clark 2003, 102).

Winkelman (2002b, 1878-9) sums up, the

“capacity for music and dance coevolved to enhance social bonding through communication of internal states. Music induces the theta and alpha brain wave patterns characteristic of ASCs and promotes group cohesion, by enhancing synchrony, coordination, and cooperation among group members. Music enhances mutual cognitive and emotional expression through mimesis, the unique human ability to entrain the body to external rhythms, including imitation and dancing”.

Before leaving the subject of the effects of sound it is worth mentioning the observation of Lessell and Cohen (1979, 1524 ff.), who discuss case studies of patients who experiences “phosphenes”, described as flashes of light, which are induced by sound. They propose that the mechanism may be similar to the underlying system

responsible for hypnagogic hallucinations. “Hypnagogic hallucinations occur in the interval between wakefulness and deep sleep, and typically consist of scenes, objects, animals, or people, but may consist of flashes or patterns” (*idem*, 1525). The case studies discussed individuals who experienced phosphenes when they heard noise while lying quietly in a dark room, and although they insisted they were awake they may not have realized that they were, based upon EEG criteria, in the early stages of sleep. Lessell and Cohen (1979, 1526) suggest that one possible cause is ephaptic transmission. This is the non-synaptic spread of impulses between axons in the adjacent visual and auditory pathways. An alternative could be the convergence of visual and auditory signals within the same postsynaptic areas of the brain (see also Achterberg 2002, 43 discussed above).

One final point on the theme of auditory induction, is the subject of infrasound. Watson (2001, 187) discusses the role of low-frequency sound in producing effects which may be described as supernatural. Watson (2001, 188) reports the experimental production of low-frequency standing waves in Maeshowe, which produced sensations of “dizziness, feelings of ascent, and modification to breathing patterns and pulse”. Elsewhere, Tandy (2000) has pursued this phenomenon more closely and in laboratory experiments has linked a frequency of 18.9 Hz with an experience of apparitions and also feelings of nausea (Tandy 2000, 3 and 7). In the experiment, different frequencies were noted, specifically relating to the individual resonance of room length and width (*idem*, 6). Green (1968: cited in Tandy 2000, 8) discusses the impact of infrasound caused by storms, as much as 1500 hundred miles from the point of its effect. During the period when the infrasound of a storm could be measured, there were higher than normal rates of both absenteeism from school and automobile accidents. A final observation on this theme is cited in a discussion of Tandy’s experiment at the web site <http://www.meta-religion.com>. That is, the human eyeball has resonant frequency of 18 Hz and will vibrate in sympathy with infrasound, which may create evanescent hallucinations on the visual periphery. In the light of Watson’s experiments at Maeshowe, we cannot fail to ponder the relationship between the drums and their contexts, which are often of burial chambers.

RITUAL ART AND CULTIVATION OF IMAGERY

Price-Williams and Hughes (1994, 8) maintain that effects of imagery can be examined to some degree independently of dance and movement, which are linked with

other stimuli. Although in some cases this may be difficult, we may note Australian aboriginals combine dance, music and images painted on their bodies (*idem*; 7).

Noll (1985) following the title of his paper, proposes mental imagery cultivation as a cultural phenomenon; which he defines as the deliberate repetitive induction of enhanced mental imagery. The important feature of this argument is that, in opposition to the view that ASC is the goal of shamanic practice, Noll regards ASC as the tool; the aim is to obtain vivid mental imagery (Noll 1985, 447). He explains that mental

“imagery enhancement entails increasing the *vividness* and *controlledness* of mental imagery for its functional and adaptive value”,

this is a practice which is best documented in the magico-medico-religious complexes of traditional non-literate societies collectively known as shamanism (*idem*, 444). Noll goes on to say that imagery cultivation may be viewed as the core of the indigenous traditions; indeed he maintains that the essence of shamanism is to induce, maintain and interpret enhanced mental imagery (*idem*, 445).

There are two stages to Noll’s model:

- the neophyte is trained to block external stimuli and increase vividness, the point is for the mental imagery to become the primary experience. He cites Fechner (*idem*, 445), writing in 1860, who described the process of imagining “the attention feels as if drawn backwards towards the brain”.
- The secondary stage concerns controlling and manipulating the imagery.

In addition to the training there are certain procedures that may be carried out to enhance the susceptibility to imagery through blocking of external stimuli. Shirokogoroff observed, “shamanistic performances [are] usually carried out in the dark” while the costume paraphernalia are intended to augment the production of visual mental imagery (*idem*, 447). In reply to Noll (*idem*, 452 ff.), Honko observes that paraphernalia “such as the costume, the pipe, the drum etc., are instrumental in reactivating models of experience from the past, from the initiation and the previous séances of the shaman in question.” Similarly, Reichel-Dolmatoff (1987, 14) noted that objects of both ritual and common use, from houses and pottery to ritual staffs and the human body, may be adorned with imagery similar to that experienced in a shamanic ritual. Thus both everyday objects and those of ritual importance remind the community that the spiritual sphere is always present.

Two further lines of evidence support Noll's thesis of the power of imagery as a method for blocking external stimuli from consciousness, since

“(e)ngagement in a visually creative act is said to produce hyperreality experience akin to that produced by trance or drug inducement in that the artist is in a state of focused awareness detached from the outside world (Bahn and Vertut 1997). Furthermore a hypnotic trance can be induced by having the subject focus intently on entoptic phenomena (Hunchak 1980)”

(Hodgson 2000, 872).

Once the dominance of outside stimuli has been overridden, within the information processing of the visual system there are levels where events, physical objects and mental images are functional equivalents (Noll 1985, 446), which is no doubt part of the basis of the belief in the spirit world throughout non-literate traditional societies. Noll (*idem*, 450) argues that the “shaman's visionary ‘travels’ to various ‘levels,’ each pregnant with specifically organized cultural meanings, operates as an imagery mnemonic for the retention of mythological beliefs”. Furthermore, in order to “see” and identify the cause of illness the shaman uses enhanced mental imagery additional specific imagery techniques are then used to remove them (*idem*; 450).

Imagery may be used to aid the induction of a SSC but in turn the SSC plays its part in production of the imagery in question, as Myers (in Winkelman's reply to Noll 1985, 457) stresses: imagery provides the means for unconscious symbols to move into consciousness.

SYMBOLISM AND CONTEXT

If music's ability to induce the phenomenon of SSC is universal, why is everybody not in a trance each time they hear music? Essentially because of the importance of the mental and social context; which cannot be stressed too greatly. Blacking (1973) described the possession dance of the Venda, stressing the importance of not just the music but also the social environment. The music does not affect everyone present, but only the members of the cult but even then only those who dance in their own homes; the effect of the music is very dependent on context. He continues, summarizing the importance of this nicely, stressing that music

“has no effect in the body or consequences for social action, unless its sounds and circumstances can be related to a coherent set of ideas about self and other bodily feeling”

Blacking (1995, 176).

In discussing possession trance in Brazil, Bastide (in Rouget 1985, 177) claims the “music does not inevitably lead to trance...A set of factors, regulated by society, must all be present together, otherwise the music will have no effect at all. The essence of this argument is that the trance — admittedly in this case, of the possession variety — is a conditioned reflex.

Although the drum is the shamanic instrument *par excellence*, the musical means of entering a trance varies, but more importantly the trigger operates only within the context of the overall situation. The drum is often understood to symbolize the world tree, which the shaman needs to climb in order to reach the upper world (Krippner 2000, 102). The symbolism of the drum and costume of shamanistic practitioners have the power to transport the shaman to the world of the spirits; the socially recognizable artefacts have the ability to create the required social context.

A large part of the phenomenological content of the shaman’s state of consciousness is obviously derived not only from pre-existing cultural constructs but also from specific situational demands (Price-Williams and Hughes 1994, 2). Both of these are key elements in understanding behaviour stressing the importance of context. Both “trance” and “possession” are normal, that is, they are culturally prescribed, learned and practised (Price-Williams and Hughes 1994, 2): they are normal within the appropriate context.

Pelletier (cited in Price-Williams and Hughes 1994, 9) argues, “each state is consistent with the philosophy of its respective meditative tradition”. Price-Williams and Hughes (*idem*, 9) claim that culturally relevant philosophy and mental constructs are at least partially responsible for the physiological correlates of SSC, and thus it can be imprudent to compare different “ASCs”. It is therefore appropriate to close this stage of the findings by saying that above all it is the social context which gives meaning to shamanistic activity (Vitebsky 2001, 7).

Beneficial Side Effects

SHAMANISTIC HEALING

Achterberg (2002, 24) warns that the

“belief that shamans dealt primarily with psychiatric cases (thus using the imagination to heal only imaginary ailments), or that the shaman’s skills were based upon trickery and hallucinations (i.e., the shamans were psychopathological themselves) is a failure on the part of the observer to understand the ramifications of differing states of consciousness.”

The implication of this is that our inability to comprehend the ramifications of alteration from our society's notion of consensus reality will surely be detrimental to our society as a whole. The use of drumming, leading to strong, repetitive neuronal firing in the auditory pathways and cerebral cortex may compete successfully for cognitive awareness, thus reducing the other sensory stimuli, including pain (Achterberg 2002, 43: see below).

Harner and Tyron (1996 cited in Krippner 2002, 10) studied students of shamanism in drumming sessions, observing enhanced positive moods and also an increase in positive immune response. These findings were supported by Bittman *et al* (2001 cited in Krippner 2002, 10).

Further neurological changes included an increased production of certain neurochemicals, namely endogenous opiates or endorphins (Krippner and Combs 2002, 80). These chemicals, which are similar to morphine, can induce amnesia, euphoria, altered consciousness and a reduction in sensitivity to pain. Noradrenaline, a brain hormone, has a very similar structure to peyote (Vitebsky 2001, 148) an hallucinogenic cactus used among others, by the Huichol Indians. Indeed, Winkelman (1996, 27) cites McKim's proposal that different type of natural hallucinogens be classified based on their resemblance to specific neurotransmitters. Winkelman (1996, 39) further asserts that therapeutic roles of ASCs are the consequence of their resultant physiological changes. They improve psychological and physiological welfare by the induction of relaxation, and the induction and elimination of psychosomatic effects. This helps to promote inter-hemispheric communication and synchronization, thus encouraging cognitive-emotional integration.

“ASCs heal by producing psychological integration, eliciting opioid and serotonergic functioning, providing access to repressed emotional dynamics, and promoting social bonding” (Winkelman 2002b, 1878).

MUSIC AND INFANT DIRECTED SPEECH

We have already observed that the use of exaggerated vowels and the expanded range of pitch in Infant Directed Speech may be linked to acquisition of language (Mithen 2005, 74). But what are the physical effects of IDS? Studies show that babies are more focused on recordings of singing than speech, with a resulting increase in physiological response, based on the production of salivary cortisol, in non-distressed

babies (Mithen 2005, 79). Furthermore, this is not merely a reflection of socialization based on the emotional power of music but rather evidence of physiological change: in premature infants there is an increase in sucking abilities (*idem*, 79). Additionally, music stabilizes the oxygen saturation levels, which enhances physical development (Mithen 2005, 80).

Music	Respiratory and Cardiovascular Response
Sad music	large changes in heart rates and blood pressure, skin conductance and temperature.
Fearful Music	large changes in pulse rate and amplitude
Happy music	large changes in respiratory patterns

Table 5.9. after Krumhansl cited in Mithen 2005, 95

If we examine the physical effects of music by monitoring the respiratory and cardiovascular effects, the results are intriguing. Thus, when subjects were asked to listen to six excerpts of classical music which had been assessed as expressing the range of emotions of fear, sadness, happiness and tension, there were significant correlations between the response and the music (Krumhansl 1997: cited in Mithen 2005, 95).

It is possible to recognize four influential factors of music which will influence the emotional state:

- acoustic qualities - melody, rhythm, tempo, etc;
- manner of the performance;
- musical expertise, disposition, mood of the listener, and;
- the context of the performance e.g. formal or informal.

(Scherer and Zentner 2001 cited in Mithen 2005, 95).

Here Mithen states that all of these factors are manipulated in music therapy, and while this may be the case it is equally true that they are also manipulated by shamans. Mandel (cited in Mithen 2005, 96-7) employed music in the reduction of stress, noting that “music is a potent force for wellness and sound health”. A further factor of music is that participation is more beneficial than listening (Bailey and Davidson 2003 cited in Mithen 2005, 303 fn. 38).

THE SHAMAN IN EUROPEAN CULTURE AND MYTHOLOGY

Indo-European Evidence of shamanism

So far we have discussed the key features of shamanism and their universality with reference to neurological constants and methods of induction. We turn now to

evidence of shamanism in the culture of Europe, since there are a large number of shamanic characteristics within Indo-European societies (Eliade 1988, 375). Eliade proposes looking for essential shamanic features but warns that recognition of individual shamanic elements does not justify regarding that religion as dominated by shamanism or as having a shamanic structure (*idem*, 376). Within the worldview of the Indo-Europeans the shaman had to fit beside other magico-religious practitioners.

Within Germanic mythology the figure who bears a great resemblance to the shaman is Odin, the terrible sovereign and great magician (Ellis-Davidson 1993, 77). Primarily Odin spent nine days hanging in the world tree to acquire occult knowledge, which is an essential feature of death and rebirth. Symbolic hanging is found among other Germanic initiation rites.

If we recall the origins of the word shaman we again find parallels in Germanic mythology. The Old Norse *ōdr*, Odin, signifies inspiration and poetic genius while the Anglo-Saxon Wodan is related to the word *Wut* meaning fury, intoxication, possession and high mental excitement (Ellis-Davidson 1964, 147).

The etymology of Yggdrasil, the Germanic world tree, links *Ygg* or *Ygg*, meaning frightening one, an appellation of Odin, and *Drasill*, meaning horse; during his initiatory hanging in the tree it changed into an eight legged white horse (Bates 2003, 56). This parallels the Siberian metaphor that the drum, as the world tree, is the horse of the Shaman. As in other shamanic mythologies Yggdrasil is a central feature of Germanic cosmology and Odin tethers his horse, Sleipnir to the world tree, another tradition found in north and central Asia (Eliade 1989, 380). The continental Saxon name for this world tree was Irminsul. Norse myths describe the world tree as an Ash, or Evergreen Ash, but an alternate view is that of the Yew. The Old Norse for Yew is “barraskr”, which is translated as needle-ash (Bates 2003, 54).

Of further interest is the nature of Odin’s steed which, having 8 legs and the ability to carry Odin to the underworld, Eliade names the Shamanic steed *par excellence* (Eliade 1989, 380: Ellis-Davidson 1964, 143). The eight-legged horse motif appears in a Bouriatic Shamanka story, whilst in India a funeral dirge recounts the story of Bagri Moro, an eight-legged steed which is the name given to a bier used to carry the dead; the steed is eight-legged because it is carried by four individuals (Ellis-Davidson 1964, 142). Additionally the Vedic world tree, *Aśvthā*, means, literally, “horse-tethering post”, identified in ritual with *Yupa*, “sacrificial post” (N. Wyatt pers. comm.).

Odin's reason for hanging in the tree was to acquire the ability of divination, which is described early among the Germans; Tacitus (Histories 61) refers to a seeress in a secluded tower (Ellis-Davidson 1964, 141).

While in a trance Odin could travel in a bird or animal form, sometimes appearing as an eagle, at other times two ravens Huginn and Muninn (Thought and Memory), which bring Odin news from far afield may be thought of as Odin's spirit helpers (Ellis-Davidson 1993, 77). These birds "are symbols of the mind of the seer or shaman, sent out over vast distances" (Ellis-Davidson 1964, 146). The Ynglinga saga emphasizes the magical lore of Odin and his shape changing abilities (*idem*, 145).

Odin also appears as Psychopomp since he is portrayed riding Sleipnir to the land of the dead. Sleipnir is ridden to Hel's Kingdom to rescue Balder. Elsewhere, in the Volsunga Saga, Odin appears in the role of Charon, rowing the boat to the underworld (*idem*, 143). In

"a state of trance, he [Odin] is believed to journey in spirit to the furthest heaven or to the land of the dead, so that he may visit the gods to obtain knowledge, or rescue some soul which disease or madness has expelled from its body" (*idem*, 141).

An individual who practises *Seidh*, the act of divination, could be female (*seidhkana*) or male (*Seidhmenn*). The importance of the music, costume and "ecstasy" all linked *seidh* with shamanism and although divination was a key element of it, soul-retrieval was also carried out by the practitioner of *Seidh* (Eliade 1989, 386).

Bradley discusses further evidence for some sort of psychopompic activity, where he speculates a link between carved footprints, from Bronze Age Bohuslän, and the hel-shoes of Scandinavian mythology. This special footwear is an aid to making the journey to the other world (Ellis 1943: cited in Bradley 1997a, 322). He asks whether the hel-shoes could be "an echo of the beliefs enshrined in Bronze Age rock art" (*idem*, 322).

Similarly Bates (2003, 191 and 195-7) discusses a character in Iceland's Eirik's Saga, here a seeress named Thiorberg, possesses a pouch in which "she kept the magical stones, feathers, implements and objects of her craft". Ellis-Davidson (1964, 117-8) discusses this saga observing the parallels of Thiorberg's behaviour and shamanism. Bates makes a speculative link between Thiorberg's pouch and the examples found in some Danish bog bodies. One of these bags contained a piece of amber, a flint flake, a small conch shell, a small cube of wood, a number of different dried roots, a piece of bark, the tail of a grass snake, a falcon's claw and inch-and-a-half long leather case

containing the lower jaw of a young squirrel (Glob 1983, 116). Bates interprets some of these items as having possible “symbolic referents”. Thus the cube of wood represents the world tree, the claw represents the bird of prey living in the branches of Yggdrasil and the snake tail representing the serpent which devours the roots of the tree. The squirrel jaw may be representative of the squirrel of Norse literature which climbs up and down the tree between the Lower world, middle Earth and the Upper World, passing insults between the bird and the serpent (Bates 2003, 197; Ellis-Davidson 1964, 27).

This is a speculative interpretation, which like Bradley’s searches for an “echo” of prehistoric symbolism in later literature. Following this line of speculative enquiry we might cite the *Mauerkammer* of Niederbösa, the grave goods included 38 perforated animal teeth, a perforated pig tooth, 11 lower jaws of the fox, a decorated bone disk but also a drum and the lower jaw of a squirrel. Technically the term used in by Beier is “hamster” meaning hamster but the term “hamsterer” may mean squirrel, since “hamstern” means one who hoards (Terrell et al 1981)(Beier 1984, 147; see also Jordan 2001, 102). With a shamanistic interpretation of the drum might we can recognize the squirrel as an earlier representation of the shaman.

In Germanic mythology Odin undergoes initiation, hanging in the world tree, which becomes his steed. This he uses to visit the upper world and the underworld to gain knowledge of the runes and the ability to divine. He is a shape-shifter with spirit animal allies and becomes the psychopomp searching for the souls of the dead or diseased. “The shamanistic element in the worship of Odin can hardly be doubted” (Ellis-Davidson 1964, 148).

The Perception of Fate

Bates (2002, 178 ff.) discusses the three sisters known as the Nornir in Scandinavian, and the Wyrd sisters in Anglo-Saxon, lands. The Poetic Edda describes the Norns as spinning:

“the threads of his destiny:
They stretched out strings of gold,
Fastened them under the hall of the moon” (Bates 2002, 178-9).

This belief in the web of destiny being spun out when we are born is supported by linguistics. The Anglo-Saxon word *gewaef* meant “wove” and its cognate word *gewif*

meant “fortune” (Bates 2002, 179). Bates subsequently suggests that the symbols of weaving spools, spindles and looms were thus seen as emblems of the fates. He proposes that the presence of decorated spindle-whorls throughout prehistoric Europe supports the argument that the history of this concept is exceedingly old.

Indeed it is not only found in Northern Europe. There is an equivalent in Greek mythology, the Moirae whom we know as the fates. They are three, Clotho, the spinning fate, Lachēsis, the one who assigns man his fate and Atrōpos, the one who cuts the thread of fate. The fates are described as the spinning the web of life and are sometimes represented holding spindles (Smith 1877, 270-271). We shall return to the symbolism of the spindle in chapter 7.

In the context of Greek mythology we may also find a relationship with the world-view of the shaman. Martin (2005, 14) observes “a memory of age-old shamanistic practices involving out-of-body experiences and animal transformation”, reflected in the ancient poem the *Cypria*.

This line of enquiry may be followed further afield, thus in the Hindu Scriptures we find a similar notion, that is that reality is woven. The Brihadāranyaka Upanishad, III vi, follows a conversation between Gārgi Vācakanvī and Yājñavalkya in which Gārgi asks:

“Since this whole universe is woven, warp and woof, on water, what is it on which water is woven, warp and woof?
On the wind, Gārgi, said he
What is it, then, on which the wind is woven, warp and woof?
On the worlds of the atmosphere, Gārgi.
What is it, then, on which the worlds of the atmosphere are woven, warp and woof?
On the worlds of the Gandharvas, Gārgi.
What is it, then, on which the worlds of the Gandharvas are woven, warp and woof?
On the worlds of the sun, Gārgi.
What is it, then, on which the worlds of the sun are woven, warp and woof?
On the worlds of the moon, Gārgi.” (Zaehner 1966, 52).

Additionally in the same text, III vii, one Uddālaka Āruni inquires of the Patañjala Kāpya:

“Kāpya, do you know that thread by which this world and the next world and all beings are strung together? [...] Kāpya, whoever knows that thread and that Inner Controller, will [also] know Brahman, [all] worlds, gods, Vedas, contingent beings, the Self,—everything.’ [...] ‘Wind, Gautam, is that thread,’ he said. ‘By this thread which is the wind, this world and the next world and all beings are strung together. So it is, Gautama, that it is said of a dead man that his limbs are unstrung, for they are strung together, Gautama, by the wind as by a thread.’” (Zaehner 1966, 53: cf Radhakrishnan 1953 224ff.).

Thus the concept of an invisible thread binding one to existence and the belief that the act of cutting this thread results in death is found from northern Europe to the Indian subcontinent. Indeed, both the Poetic Edda and the Brihadāranyaka Upanishad make a link between this thread and the moon; the Upanishad further linking it with the sun, stars and numerous spiritual beings (Zaehner 1966, 52). That this concept may be linked to the act of weaving and its paraphernalia is found in Europe if not beyond.

Saame Shamanism

Arctic shamanism is understood to extend east from the Saame, to the Innu, and the differences manifested within its different forms are the result of the influence of the civilized neighbours and religious institutions (Hultkrantz 1991, 10).

Up until the early modern period the Saame had

“specialist practitioners who served others by drumming and chanting themselves into a trance, during which their spirits were believed to venture forth from their bodies to discover the requisite information or effect the necessary work. They had spirit helpers and their drums were distinctive pieces of magical equipment, often elaborately painted”(Hutton 2001, 137).

These shamans were soothsayers, and it was believed by their neighbours that their souls could travel and report events from far away. Additionally, the bear ceremonialism of the Saame and other religious practices are taken to indicate a strong relationship with Siberia (Halifax 1981, 56). Hutton (2001, 137) expresses that they represent a western continuation of the “Siberia shamanic province”.

The Saame name for the shaman was *noaidi*, and a recognizable difference existed between the *noaidi*'s drums from the north and the south. In the north the boles and knots of the pine and spruce were used to create the drum body while in the south a piece of straight wood would be bent into a frame (Westman and Utsi 1999, 10). Some Saame drums had elaborately carved wooden bodies while others were left plain. Of interest to our research is the fact that there was also a distinct difference between the decoration of the drums from north and south. At the centre of the skin of the southern drums was drawn a square with four lines, one radiating from each corner, symbolizing *Beaivi*, the sun. The northern drum-skin was divided into different layers, using horizontal lines, which represented the upper, lower and middle worlds. The Saame who lived between the north and the south combined the three-tiered symbolism with that of the sun (Westman and Utsi 1999, 11). In line with the general model of

shamanism we have developed, the *noaidi* with enough power was believed to be able to cross between these different layers of the cosmos.

Pentikäinen (1998, 36) asserts the “drum is very sun-centred”, where the sun, *beaini*, is the axis-mundi and the surface of the drum represents the manifestation of the *Saame* Weltanschauung, literally worldview. This consists of the upper realm of heavenly deities the middle or human realm and the lower realm or world of the upside-down. The drum structure and the position of the figures suggest a cyclical view of life, mirroring the *Saame* view of life, where “economy and culture is highly dependent on the sun” (*idem*, 37). Until recently the majority of *Saame* were nomadic, reflecting the migratory lives of the mammals and fish. In some cases they have even distinct summer, winter, autumn and spring settlements reflecting the different branches of their economic system (*idem*, 37).

The *noaidi* dressed in his best clothes warmed the drum, then beat out a rhythm with the hammer-drumstick.

“While this was going on, everyone gathered there chanted the special Sami songs called *luobti*. At last the *noaidi* fell down and lay there, as if he were dead. Through the effects of the *luobti* and the power of the drum he had entered into trance. Someone placed the drum on top of him, with the skin against his body. With the support of his helping spirits he then travelled to the other world...All the time one of the women in the gathering continued with the *luobti*, to remind the *noaidi* of his mission and to guide his soul back to them” (Westman and Utsi 1999, 12).

The drum’s special sound characteristics may be one of the reasons why drums are used in religious ceremonies all over the world. Kristoffersson (1991, 172) suggests that it is possible, through study, to increase the sensitivity and to specific types of sounds; he further hypothesizes that this might have been one aspect of *noaidi* initiation.

Additionally we are informed it was only the *noaidi* who had complete knowledge of the mystical world and the symbolism of the drum. “ Only he could understand all the signs painted on the drum-skin, and only he could master the power that existed in the body of the drum. The drum gave him the ability to travel, independently of time and space” (Westman and Utsi 1999, 12).

“The figures of the drum were a kind of cognitive map for the trip of the shaman’s ego-soul between the three levels of the universe. At the same time it was the collective side of the drum, open to the public to be observed collectively and interpreted publicly by the shaman to the audience who shared the same cosmologic beliefs” (Pentikäinen 1998, 39).

However, it should be stressed that only a few people could “use the drum to enter a state of trance” (Westman and Utsi 1999, 12). It took a long time to learn how to summon the spirits and seek their aid and protection. Additionally the dead might be

coerced into helping the *noaidi*, normally his own deceased relative, and they would protect as long as he gave them sacrifices.

Westman and Utsi (1999, 16) record the description of a typical *noaidi* soul journey. We shall not reproduce the complete text here but we will observe that the journey took the *noaidi* to the kingdom of the dead where he saw those who had lived before. Throughout this journey a spirit guide accompanied the *noaidi* and Westman and Utsi (*idem*, 16) record that the *noaidi* would state “all the time my guide was with me. I could always reach her or feel her presence”. Here we may draw parallels with the numinous sensations discussed above.

However, the drum was not the exclusive property of the *noaidi*, who travelled to other worlds. Saame drums exhibit a huge range of decoration its first role may have been the “instrument of ecstatic excitation” but its second role was divination (Hultkrantz 1991, 12). Its use as an oracle appears to have been more common in the south where every house had a drum. Questions that might be asked of the drum, included: would the hunt be good? Or what kind of weather was coming? In these ceremonies the drum would be warmed and a pointer would be placed in the centre the beat of the hammer caused the pointer to move across the skin, the answer to the question depended upon which image the pointer stopped on (Westman and Utsi 1999, 20). It is stressed that the route of the pointer across the drum was never predictable (Westman and Utsi 1999, 12), and Vitebsky (2001, 80: Kristoffersson 1991, 172) proposes that the harmonics of a drum membrane are very complex and while the, surviving examples of, Saame drums can be used to demonstrate that the drums were repeatedly struck in the same places the complexity of the harmonics controlled the pointer and this could therefore not be reliably predicted. Briefly, it is interesting to note in this context, the dichotomy of distinct burial and settlement drums from the TRB. Furthermore, while the Salzmünde settlement drums bore symbols a far greater concentration of symbols was found on the burial drums which have been defined here as Salz/Walt. Thus we may be able to recognize two distinct drum uses, divination and auditory driving.

The archaeological evidence suggests that the ornaments associated with this historical European shamanism are found in settlements and graves from the eleventh century. The earliest written documentation of a *noaidi* using a “trance” for healing is in

Latin and dates between 1170-90 AD. Persecution by the church in the seventeenth century led to its overall demise (Hutton 2001, 137).

Helskog (1987), proposed a direct continuity from rock art, dating to 4200 BC, with the drums of the Saame. However, Tilley (1991, 127) argues that the examination of motifs rather than “design field structure and interrelationships” and some of the major differences in motifs, which Helskog cites, make his case rather thin. This does not, of course rule out the possibility of shamanism, which Tilley, himself goes on to discuss, but merely the case made by Helskog.

Archaic Germanic and Saame Continuity

The idea of early shamanism is not new. We have discussed the evidence and proposed a shamanic approach, which may be used as an interpretational tool for understanding the TRB drums. Furthermore in examining the Germanic evidence both Norse and Anglo-Saxon it can be demonstrated that in the first Millennium A.D. a group of cultures bearing marked shamanistic tendencies existed in Northern Europe. Further discussion of Saame evidence has shown that a recognized shamanistic culture, employing drums for the induction of S.S.C. and divination existed in northern Scandinavia and furthermore was influenced by and in turn influenced the Germanic cultures to the South. However, is it possible to argue that these shamanistic tendencies, based on the evidence of these mythologies reached further back into prehistory?

Gelling and Ellis-Davidson (1969, 34-36) discuss the relationship of the mythological character of Odin or Wodan and his historical cult with the evidence of earlier parallels. Engravings of the spear wielding Odin only appear in the 7th century A.D. Yet Tacitus describes the principal Germanic cult in the first century A.D which “is with little doubt that of Wodan” (Germania ch. 9 in *idem*, 36). Similarly we have discussed above hypotheses presented by Bradley and Bates, both of whom search for early evidence of Germanic mythological symbolism.

Finally, it is important to mention here the similarity of some of the motifs from the Saame drums, and those of the TRB drum (see below Fig. 6.6). Of course any continuity in the use of symbolic motif does not necessarily imply that the beliefs behind them were identical yet in an area of research where there is no direct contemporary written sources, they may be used as inspiration.

CONCLUSION

We have presented the shamanistic model of Winkelman (2002a and 2002b) as a method of employing universal neural characteristics for the good of the community. These characteristics include soul-flight (Price-Williams and Hughes 1994, 3), the ability to communicate during a shamanistic state of consciousness, voluntary control and memory of the experience (Peters and Price-Williams 1980 cited in Krippner 2000, 101: Krippner 2002, 10: cf. Rouget 1985, 23).

Clark's (2003; 2006) research, has allowed us to understand what this may mean in terms of the everyday experience and how the intrusion of a right-hemisphere homologue self, linked with numinous sensations of hearing voices, seeing visions, out-of-body experiences may equate with the animistic and shamanistic experience.

We have also presented the evidence for auditory driving as a valid means of inducing these experiences and discussed the proposal that since the experiences are so overwhelming, intense and indescribable, the metaphorical mediums of art music and ritual are the best means of expressing them.

Furthermore we have examined the case for European shamanistic practices, and briefly followed some of the lines of enquiry, which have sought evidence for speculative links between these beliefs and practices in the Bronze Age.

Next we shall discuss one of the methods, developed in recent years, which has been used to support the applicability of a shamanistic approach to archaeology. This is the neuropsychological model of Lewis-Williams and Dowson (1988; 1993) and we shall now discuss whether it is an appropriate method of interpretation, both generally and specifically, for the interpretation of the TRB drum motifs.

CHAPTER 6

The

Neuropsychological Model:

Application of a

Shamanistic Approach

“the chaos is the vast shadowy canvas that lies behind our eyes and on which phosphenic patterns constantly merge and fade.”

Robert Calasso 1994

CE N’EST PAS LES SYMBOLES DU MEGALITHISME

This research project began with the aim of examining the musical instruments of prehistoric Europe, and while this would have been productive, the sheer scope of the topic would have necessitated a relatively superficial examination. As a result the subject matter was refined, with the aim of analysing the material evidence for clay drums found in the southern TRB due, to some extent, to the author’s *penchant* for percussion instruments, but also the fact that no broad study of these Neolithic instruments had been previously undertaken in the English language. We have presented the case, above, for cross-cultural similarities of shamanistic forms of practice, and argued that this may be associated with a shared common neurology. In turn these observations are equated with right-hemispheric dominance of consciousness and various numinous experiences, which have parallels with certain aspects of animistic thought; this is our understanding of Winkelman’s “Shamanistic model”. Furthermore we have presented evidence, which supports the case that the drum, when used in the appropriate cultural context, may act as a method of inducing just such a change in consciousness. At this stage we shall examine one proposed method for interpreting the drum motifs which may allow us to acknowledge the decoration as the result of a change in consciousness as proposed in the shamanistic model of Winkelman.

There are three methods which we may employ to interpret and art, generally, and rock art specifically; the first is *informed* method, which requires the contemporary

insight of ethnography, and is thus ruled out for the study of prehistoric European evidence (Taçon and Chippendale 1998, 6). The remaining options are those under the overall term *formal methods* and analogy; *formal methods* have no insight, thus knowledge may be derived only from the motifs and their relationships to each other, the archaeological context and the landscape (*idem*; 7-8). Analogy, succinctly put, suggests that if we are able to observe x that is sufficiently like y , although we cannot observe y , then we are able to infer meanings about y based upon observations of x .

We are not examining rock art here, but the portable artistic medium of drum decoration, although in many of our examples, like megalithic rock art, the drums are associated with burial contexts. As a result we shall discuss the theoretical approach known as the neuropsychological model of Lewis-Williams and Dowson (1988: 1993), developed as one of the many shamanistic approaches, and endeavour to evaluate its applicability for interpretation of the TRB drum decoration.

DAS SYMBOL DER TROMMELN

Having begun to collate the original sources, Schrickel's (1956: see chapter 4) analysis of the decoration revealed the comparable nature of the drum motifs and the engraved art found on Megaliths in north-western Europe, see fig. 6.1. Therefore, almost by default, this dissertation became concerned with the popular and often disputed "neuropsychological model" as a possible method for the interpretation of the artistic expressions exemplified on these drums. For the purpose of this introduction the model, to be discussed in depth below, posited that certain abstract images, commonly known as entoptic images or phosphenes, found in the art of present-day and prehistoric people, were the result of an altering of consciousness, the imagery being the representation of neural constants within the human species; this imagery, produced by the human neural structure, was then transferred onto a material medium. As already stated above, Fischer (1971 cited in Schechner 1988, 276) suggests that the reason for the transformation of the experience onto an artistic medium or into religious practice is due to its indescribable nature; meaning that metaphor is the only method to communicate its intensity.

We have already examined the case for a shamanistic model from the anthropological literature. The neurological evidence has been presented as verification of the universality of the human neural structure, and thus supports the possibility of

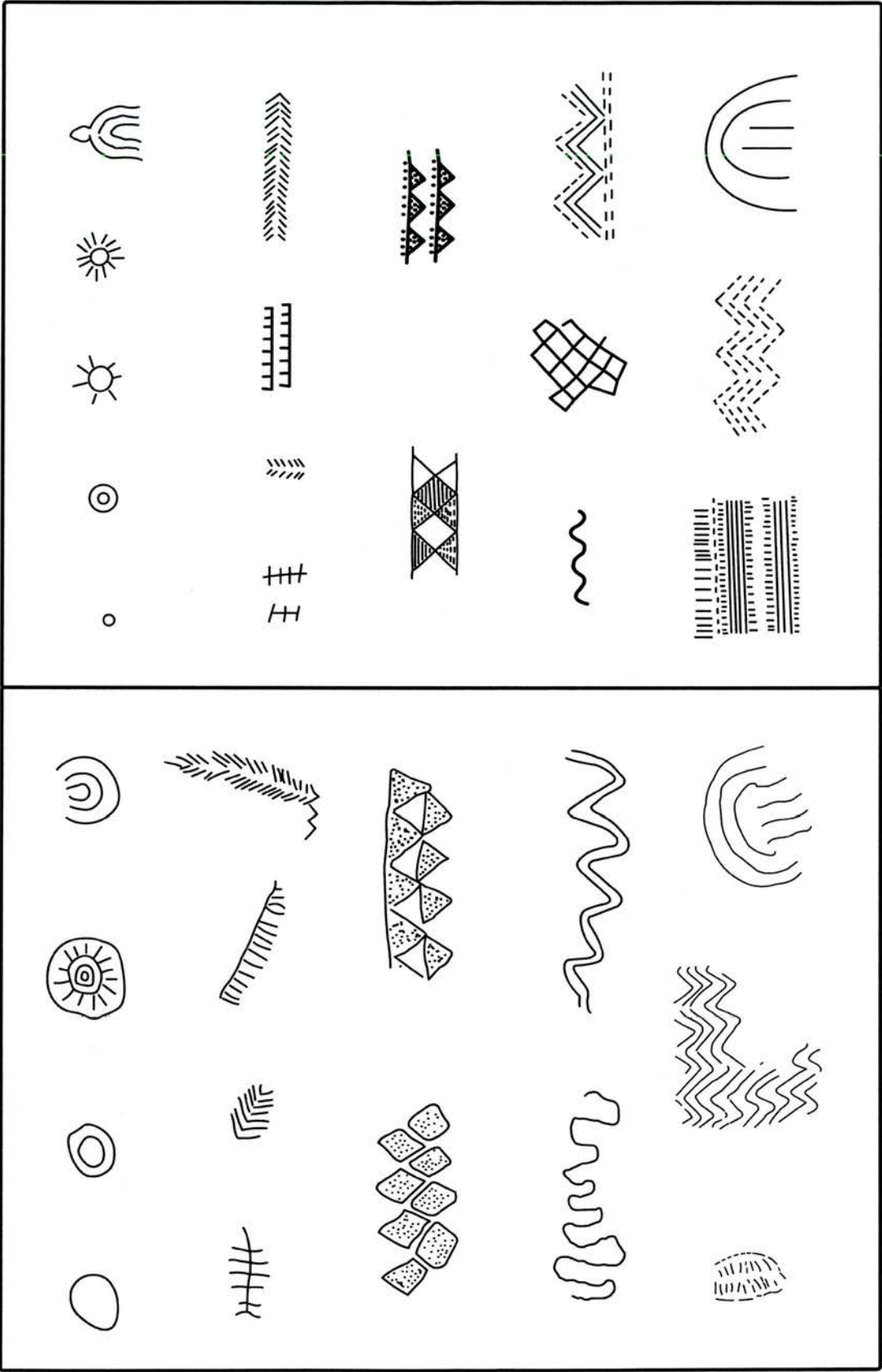


Fig. 6.1 A selection of motifs from central German Drums, top, after Schrickel 1956 and from Co. Meath, bottom, after Harbison 1988, 65

universal manifestations of the Shamanistic model. Additionally, a synthesis of the neurological evidence has been applied to provide a real understanding of what the neural evidence actually means in the language of everyday experience (Clark 2003; 2006).

It may be all very well to advance the Shamanistic model as an explanation for some correlate of material culture, but what is now important for this discussion is the question, how can this model actually be applied to the archaeological evidence?

One fundamental principle of this approach is the premise that the human central nervous system, the detailed structure of human perception and the images, which are experienced by our conscious mind, are constant both cross-culturally and diachronically, as has been argued above for certain aspects of the shamanistic model. Current research, discussed above, allows us to propose the universality of the neural structure of *Homo Sapiens*. In addition Dronfield has discussed the evidence that a similar universality exists, specifically within the optical system of our species. He suggests that there is a discernible cross-cultural constancy of entoptic images between populations, geographically separated since the early Holocene and thus before the Neolithic and the stage of prehistory with which we are concerned. For a full discussion of the state of the phylogenetic study of the human nervous system see Dronfield (1999, 363-4; Mithen 1998, 35-78).

INTRODUCING THE NEUROPSYCHOLOGICAL MODEL

There are many reasons for applying the principles of neuropsychology in the interpretation of art, not least the fact that Bourguignon (1968, cited in Lewis-Williams and Dowson, 1993) demonstrated that of the 488 different societies surveyed, 437 (89.55%) contained a form of institutionalized altered state of consciousness (ASC), and these do not necessarily rely on the use of mood-altering substances, but may involve drumming, breathing exercises, or meditation.

A recent development in archaeological literature has been an interest in entoptic phenomena as a comparative method of analysing art forms, (Reichel-Dolmatoff 1975; 1978; 1987; Lewis-Williams and Dowson 1988; 1990; 1993; Bradley 1989; 1997b; Patton 1990; Dronfield 1995a; 1995b; 1999; Whitley 1998; Pearson 2002; Wallis 2002; 2004). Following the trend of criticism, which we will discuss below, this is a vigorously debated topic and again terminology is one of the crucial issues.

Original discussions suggested that these phenomena were produced within the eyes due to various forms of stimulation of the optic nerve, producing perceived images known as phosphenes or entoptic phenomena. The proposed case is as follows: phosphenes, one by-product of an altered state of consciousness, being neuropsychological in origin will exist universally and will appear within contexts where behaviour producing these effects is culturally acceptable. The emphasis of these images will be culturally specific, depending on the local interpretation as to which images are important and as such examples will be found both in the archaeological record and within modern cultural contexts. Lewis-Williams and Dowson’s model proposed three stages of imagery within an ASC, primarily the perception of entoptic motifs, complex combined motifs and iconic imagery with or without entoptic motifs.

Some criticisms laid at the use of the term “entoptic” are as follows. Lanteigne (cited in Dronfield 1999, 362) asserts we are faced with an inherent contradiction in the use of the term since, despite the fact that the etymology suggests a meaning of “within vision”, precedence has been set by previous use, referring to phenomena generated specifically within the eyeball. Lewis-Williams and Dowson (1988, 202; Dronfield 1996, 373; 1999, 362) argued that the correct term for these phenomena, which have been generated “within the eye” should be “entophthalmic” and that “entoptic” was less accurate, yet the precedent had already been set.

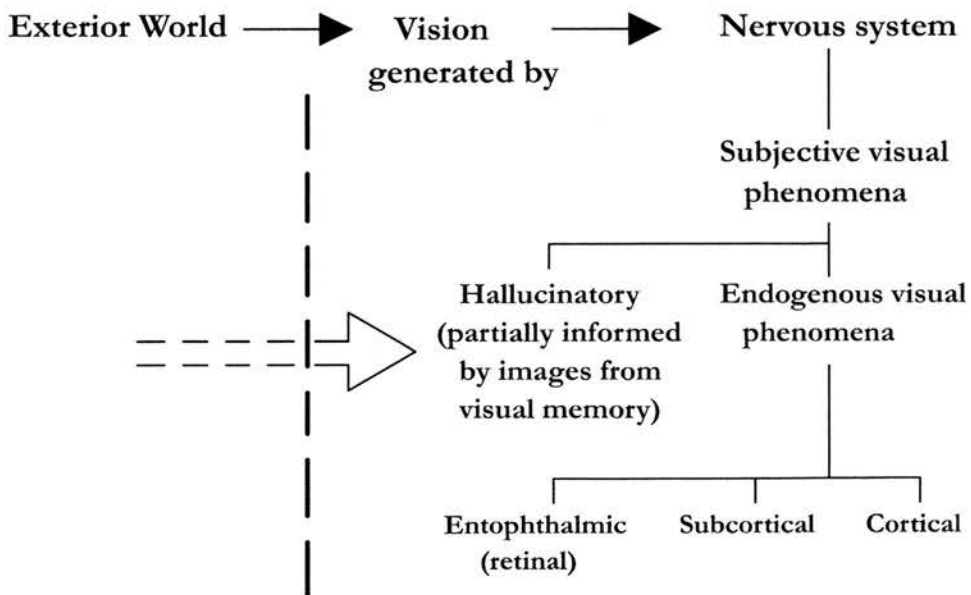


Fig. 6.2: Hierarchy of subjective visual phenomena redrawn after Dronfield (1996, 374)

The subjective experience of visual phenomena has its neural correlate in the sequence of activity, which begins in the retina, continuing along the optic nerve to the lateral geniculate body of the thalamus. From there it passes to the primary and then secondary visual cortices and ends in the association cortex in the temporal and frontal lobes (Clark 2003, 67; 2006, 81ff.).

Dronfield's (1996, 362-3) proposed term "subjective visual phenomena", S.V.P. sidesteps the argument by providing a neutral term, which is represented as a class of phenomena, within which hallucinatory images and "endogenous visual phenomena", EVP, constitute parallel sub-categories. Here we shall use Dronfield's (1996, 377-8) term "endogenous visual phenomena", defined solely as the imagery produced within the optical system (cf. Wallis 2002 employs the term "endogenous forms"). This is done since we are looking solely at the endogenous phenomena (EVP) and not at hallucinatory images. Hallucinatory images are partially informed by images from visual memory and may be deemed iconic imagery. Dronfield's diagram illustrating the "hierarchy of subjective visual phenomena" is reproduced above as fig. 6.2, and illustrates the distinctions between "subjective", "endogenous" and "hallucinatory" imagery.

Figure 6.3 illustrates these EVPs which Dronfield himself has defined as

"visual percepts or percept-like experiences which are 'generated' or spontaneously released within the neural network of the visual pathway, having their source at various points between the retinas and processing areas of the brain"

(Dronfield 1999, 363).

While, on occasion, many people experience these EVPs, the full range is only viewed as the result of an altering of consciousness such as "in hallucinogen intoxication, trance, stress, by stimuli such as flickering light or sensory deprivation, or in certain psychological conditions such as migraine, epilepsy, schizophrenia" (Dronfield 1999, 363). We may note that this list of possible causes essentially mirrors Clark's (2003, 94; 2006, 111) table (reproduced above as table 5.7), of Aetiology of Neural activity, correlated with numinous feeling.

Analogy

Although it seems that the acceptance of such an interpretation was tentative, Lewis-Williams and Dowson (1993, 55) believed that they were able to strengthen the argument, through the adoption of Wylie's (1985, 100-105) suggestion concerning the

use of relational analogies (cf. Twohig 1997, 71). Wylie examined the use of analogy in archaeological interpretations, discussing the New Scepticism, which arose as a reaction against evolutionary approaches and their employment of analogy with “unmitigated enthusiasm” (Wylie 1985, 65, 71-73) and then the further criticism of the New Archaeology (*idem* 84ff.). Wylie postulated that it was possible to recognize degrees of relevance (*idem*, 95), when “analogs are compared for the relations that hold among the properties they share rather than for the simple presence or absence of these properties considered independently of one another”, these may be termed “relational analogies”. Concluding, Wylie stated that “analogical inference is not radically faulty or categorically misleading” (*idem*, 107).

Wylie’s (1985) argument, as understood here, runs as follows: if analogy is to be used, the greater the number of contextual similarities, the greater the chance that the comparison may be valid, and therefore employed as an interpretational model.

Stages of Trance and Transformational Principles

Plausible cases were put forward for a correspondence between megalithic art and E.V.P by Bradley (1989) and Patton (1990), and these ideas were elaborated by Lewis-Williams and Dowson (1993), where they developed their three principal stages of mental imagery: Stage I, geometric imagery; stage II, interpretation of images as things of significance (thus the identification of the endogenous imagery as symbolic, followed by stage III, being culturally-controlled iconic images combined with geometric forms (Lewis-Williams and Dowson 1993, 56). They also state (Lewis-Williams and Dowson 1988, 204) that these “three stages are not necessarily sequential. Some subjects appear to move directly into the third stage, while others do not progress beyond the first stage”.

Lewis-Williams and Dowson (1993, 56) developed the ideas of Reichel-Dolmatoff (1987, 13) who in addition to making comparisons between the Tukanoan art and entoptic imagery as early as 1973, proposed three stages of trance and several transformational principles that are capable of altering the basic elements of the stages. These are as follows:

1. Polyopia: multiplies the entoptic image along the lines of the infinite corridors produced by mirrors. This is very interesting when considering Schrickel’s

comments on the mirror image effect of certain drum motifs. The perfect example of this is the parallel horseshoe effects at Gavrinis.

2. Integration: different entoptic images are integrated, creating more complex geometric images.
3. A combination of iconic imagery with geometric forms.

Lewis-Williams and Dowson (1988, 203) formulated what they termed seven principles of perception, which, they state, govern the way subjects experience EVP; these elaborate Reichel-Dolmatoff's transformational principles. These are named, replication, fragmentation, integration, superpositioning, juxtapositioning, reduplication and rotation, and are presented as further criteria for assessing arts which may contain imagery produced in the human optical system (Lewis-Williams and Dowson 1988, 203; 1993, 56). So when we identify an EVP the argument that it has been produced during an ASC is bolstered if it can be seen to have undergone one or more of these transformational principles.

Another point of note, concerning Reichel-Dolmatoff's work, is that in discussion with the Tukanoan Indians, the hallucinogenic imagery is described with reference to the cultural interpretation of the images. Also discussed is the development of processes such as polyopia, of which they are quite conscious. Bahn (2001, 54) has criticized the use of a three-stage model by Lewis-Williams and Dowson, since no parallel exists in a standard neurological text. Furthermore Helvenston and Bahn (2003, 213-214), referring to the three stages of trance model, TST, argue that "the only trance states that are consistent with those described in the TST model are drug-induced trances caused by plants containing mescaline, lysergic acid diethylamid (LSD), or psilocybine". They subsequently state that only LSD (*idem*, 214), a chemical constituent of the parasitic ergot fungus (Rudgley 1998, 149-52) is found in Europe, where "evidence of its ingestion is non-existent" (Helvenston and Bahn 2003, 214). The implication is that this rules out the case for a three-stage model of trance existing in Europe. However, Rudgley (1998a, 206ff.) informs us that "Psychoactive *Psilocybe* species are found almost the world over, including Europe".

It is apparent from Reichel-Dolmatoff (1987, 13ff.) that his description of the three stages of imagery is taken from the Tukanoan description. We may ask if there is any perception of a motif without the human mind placing a cultural value on it, and it

is proposed here that Reichel-Dolmatoff's, and hence the Tukanoan, three-stage model may well have only two stages where the first and second steps are essentially subtle progressions within the same stage. We may repeat here that since we are only concerned with the non-iconic imagery, which presumably has been represented for its symbolic cultural significance, we shall elaborate no further on the discussion of the stages of SSC imagery.

Although some EVPs appear to have parallels on the decoration of everyday vessels, in central Germany the majority of the known ceramic types occur in grave contexts, and may therefore have a ritual significance. While living among the Tukanoans, Reichel-Dolmatoff (1987, 14) observed, as noted above, that similar imagery may be placed on objects of ritual or common use, from the front of houses, posts and rafters, basketry and pottery, to musical instruments, ritual staffs and even body-painting and decoration, during rituals. The use of this symbolism, repeated on the objects of everyday life act as a constant reminder of the spiritual realm. However, it should be noted that artists do not paint exact copies of their images, but meaningfully select and modify them (Lewis-Williams and Dowson 1993, 60). The Tukanoan Indians have 'coded a number of phosphenes' and 'this code refers to mate-selection, exogamy, fertility' and to the 'pivotal complex of values and prescriptions of Tukanoan social and religious life' (Reichel-Dolmatoff 1987, 15).

Bahn (2001, 72) criticized the research of Reichel-Dolmatoff for his reliance on Eliade (1964/88), but this dissertation maintains that to some degree this is beside the point. Reichel-Dolmatoff observed the similarities of the Tukanoan Art and what we have defined here as EVP, endogenous visual phenomena. The Tukanoans describe the hallucinogenic imagery with reference to their cultural interpretation, and they employ the images they experience in their "trance", which they recall but modify.

The counter to the criticism of Reichel-Dolmatoff, is that while the reliance on Eliade may be criticized, this does not alter the fact that the Tukanoans take hallucinogenic substances and as part of a religious ceremony, experience EVPs and hallucinatory images, and then they code these in relation to their cultural ideology and employ them as decorative motifs. Presumably even if we refrain from the use in this case of the term shaman, or any reliance on Eliade, we are still faced with ritual altering of consciousness and the employment of the resulting imagery for cultural purposes.




















Shape by Siegel and Jarvik	Passage tomb art shape	Example
random	dots	
	blobs	
line	parallel line	
	square	
	triangle	
	zig-zag	
	chevron	
curve	non-concentric circle	
	non-concentric arc	
	non-concentric ovoid	
web	filigree	
	meander	
lattice	lattice	
tunnel / spiral	concentric circle	
	concentric arc	
	arc-spiral	
	spiral	
kaleidoscope	radial	
	fortification	

Fig. 6.3. EVP and Passage Tomb examples. Redrawn after Dronfield 1995, 266

Applying Relational Analogies

Lewis-Williams and Dowson (1988; 1993) are interested in Palaeolithic and Neolithic art, yet in this discussion the relevance of this model for Palaeolithic art is unimportant and will not be discussed further.

In their integration of Wylie's (1985, 95ff.) idea of "relevance", Lewis-Williams and Dowson (1993, 60) look at the function of passage graves; they note that a "trance" is generally accompanied by a sensation of travelling through a vortex, or a tunnelling of vision and in deeper "trance" states this vortex may appear to surround the individual. They further postulate that (*idem*, 60) the tunnel-like perspective, produced as the subject enters into a deep "trance" state, and which may be marked round the edges by lattice works or other imagery, is paralleled by the view into a tomb such as Gavrinis. They propose (*idem*, 60) that the tomb is a recreation of the tunnel phenomena. For a comparative view we may cite Richards' (1992, 73) "Doorways into Another World". In the light of this idea, it is interesting to note that the funnel shapes of the drums, which are decorated with geometric images inside the foot, may also parallel this tunnel effect; (see images in Appendix 4). Indeed, in Appendix 4 (below) it is argued that the most acoustically rewarding position for playing the TRB drums is held near or placed on the shoulder. Such a method of playing the instrument provides not only the best sound, being close to the ear, but also situates the foot of the drum at head height and facing anybody standing behind the player. Thus anybody situated behind the drum would experience not only the most intense range of tones but also the vision of the vortex produced by the internal decoration within the conical funnel of the drum foot, additionally with a light at the end of the tunnel, as it were due to the translucent nature of the drum-skin. It is not argued that all Neolithic art was entoptic, but that the similarities depend on formal neuropsychological principles. The political link with the ritual world is emphasized, and the authors (Lewis-Williams and Dowson 1993) examine the use of tombs to control access to the dead and the spirit world. The "possession and display of imagery of hallucinatory religions probably had to do with the political implications of access to the spirit world", and therefore it would seem appropriate that the possible appearance of these images on the drums of central German TRB would seem to be very important, specifically since the majority of tombs in the area with these decorated drums lack the very images seemingly present on these drums and the

megaliths of Brittany. The other significant point to note is the importance of the drum within all non-industrial societies and especially of the person, whether male or female, who is in possession of the instrument.

Megalithic Art and Drum Decoration

Schricket (1956) noted the similarities between the symbols on the drums, specifically of the Salzmünde group with the art of Brittany – and, we may add – that of much of the Atlantic coast; however, Lewis-Williams and Dowson (1993, 61) stress that if we employ the model of universality which their case implies, common motifs of entoptic form do not therefore indicate contact between the regions in question, and that only on a local scale are similar images likely to bear the same social meaning. They go out of their way to emphasize the importance of the social conditions of the art in creating a meaning for psychological experiences (Lewis-Williams and Dowson 1993, 65), which, if we accept their hypothesis, would explain the presence or absence of some of the images (see below for Dronfield's view).

It would seem, therefore, that Schrickel's (1956) comparison of the symbols of the TRB drums with this art from Brittany may have some very interesting implications, especially in view of the fact that drums in many cultures around the world are known to be used in rituals. Thus drums often facilitate the production of the state of mind in which entoptic phenomena are the by-product of the desired result, although they may be interpreted differently within the experiential framework of the specific culture involved, or indeed within the individual social group. In reference to Wylie's concept of relevance, the knowledge that drums may be found to induce a SSC within the correct social context, combined with Maxfield's (1994) recognition linking the drums' function with altering of waking *alpha* and *theta* waves and hence the shamanistic mentality, is of great importance. It is proposed here that there is a substantial case to support the argument that the imagery on the drums is not only entoptic, but that much of the megalithic art may also be induced by rituals involving drums. Simply searching for EVP among art forms and using parallel imagery as support for evidence of shamanistic practices has been criticized for being an excessively simple approach (Wallis 2002, 736). However, there are ways in which this approach may be supported and so this is the direction in which we will now proceed, after a brief comment on the TRB drum decoration.

Although the decoration of the drums parallels that of the individual cultures of central Germany, the symbols on the Salzmünde and Walternienburg-style drums except for a few examples, as Schrickel (1956) demonstrated, have no parallels except in the megalithic art of Brittany although we may add examples from Ireland. Yet it seems that in the light of the perspective introduced above, direct cultural contacts were not necessary when suggesting that the origin of specific art forms was a neuropsychological phenomenon, although we may consider parallels to represent a manifestation of similar mentalities. This approach may be very helpful in understanding the importance of social ritual in the region of central Germany.

Application of the Principles of Transformation

We have discussed Lewis-Williams' and Dowson's (1988, 203) formulation of what they termed seven principles of perception, which, they state, govern the way subjects experience EVPs. As noted above, these are named replication, fragmentation, integration, superpositioning, juxtapositioning, reduplication and rotation, and are presented as further criteria for assessing arts consisting of geometric motifs (Lewis-Williams and Dowson 1988, 203; 1993, 56).

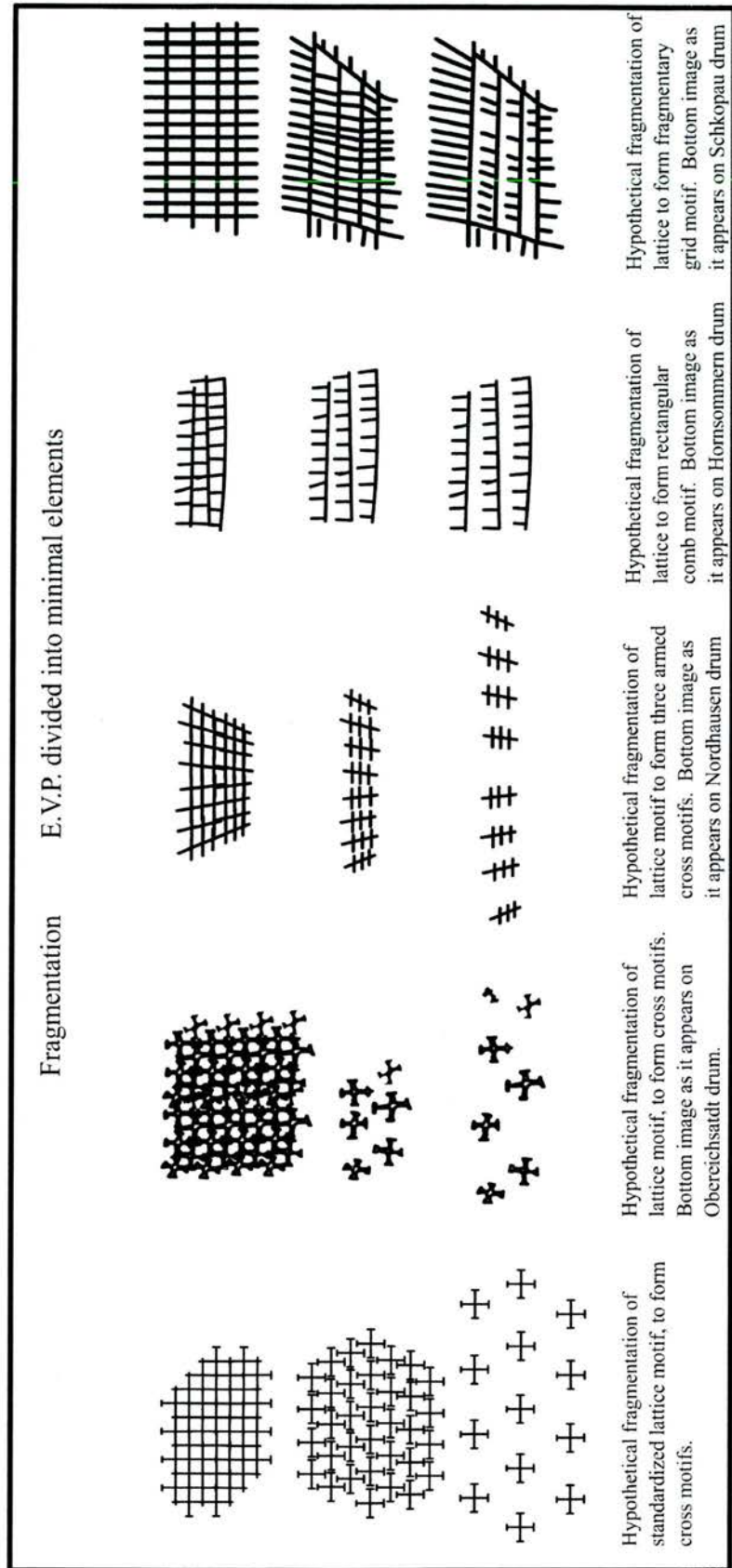
Principle of Perception	Definition
Replication	Perception of a standard EVP
Fragmentation	EVP divided into minimal elements
Integration	Complex combinations of EVP
Superpositioning	One EVP positioned on top of another
Juxtapositioning	One EVP positioned next to another
Reduplication	Duplication of single EVP
Rotation	EVP rotate within the field of vision

Table 6.1 Principles of Perception after Lewis Williams and Dowson 1988, 203

As we have observed above, the TRB drums are decorated with some images which we may term EVP (fig 6.4), but the fact that we are able to apply Lewis-Williams' and Dowson's (1988, 203) principles of transformation further supports the case. Before we commence we should note that the comparisons discussed below are based on published archaeological drawings of the drums and not on analysis of the fragments. Fig 6.4 shows that some categories of EVP are not replicated on the drums of certain periods. However, by considering other transformational principles we may

	Replication		Perception of a standard E.V.P.	
Example after Dronfield	Drum Example			
	TRB IV		TRB V	

Fig.6.4 Replication of EVP, Passage Tomb and drum motifs, after Dronfield 1995 and Wyatt 2005



regard this absence as ill-informed and may occur, but in transformed states. Although the cross motif appears on some drum examples, e.g. Leuna-Rössen, the armed-cross found on other drums does not have an exact match with an EVP, e.g. Hornsömmern, Obereichstädt.

A speculative case is proposed here which suggests that three different examples of drum motif, namely the armed cross, the three-armed cross and the comb motif may all originate from fragmentation of the lattice EVP as illustrated in Fig. 6.5. This case is supported by the presence on the right of the motif which still resembles a grid from the Schkopau drum; each example is found on a drum from the Salzmünde or Salz/Walt style of drum although the examples from Obereichstädt and Schkopau were discovered in late contexts. The motif of a zig-zag from the Böhlen drum, illustrated at the bottom of Fig. 6.4 in the category of fortification, might be also be interpreted as evidence of the fragmentary principle, this motif is discussed below.

The principle of integration is highlighted by the motifs illustrated in Fig. 6.6, where we may see several examples of combined EVP. Part of the hypothetical

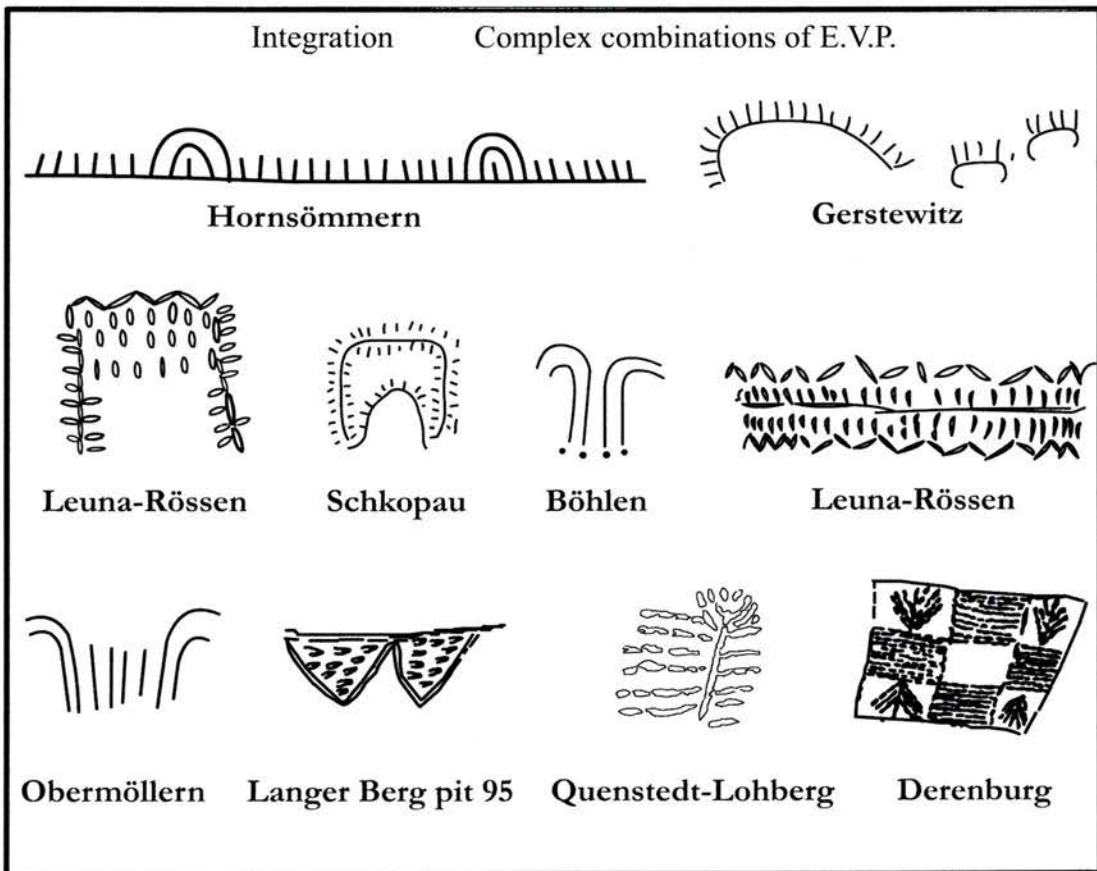


Fig.6.6 The principle of Integration and drum motifs Wyatt 2005

fragmented lattices from Hornsömmern and Gerstewitz integrated with concentric arcs, concentric arcs integrated with dots from Böhlen, the lattice of dots integrated with the fragmentary zigzag from Leuna-Rössen, concentric arcs integrated with parallel lines from Obermöllern, non-concentric arc combined with dots from Schkopau, fragmented grid, or dots combined with a zig zag, from Leuna-Rössen and two examples where we find parallel lines associated with a tree-like motif in the example from Quenstedt-Lohberg, and from Derenburg of a lattice with line and branch motif.

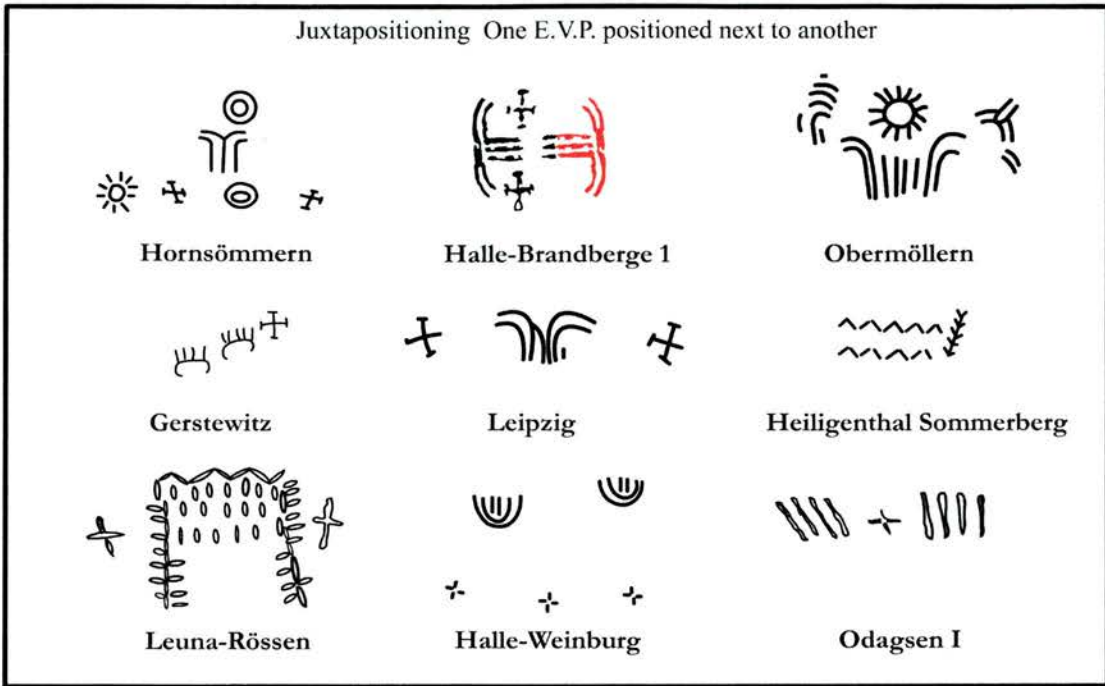


Fig.6.7 The principle of Juxtapositioning and drum motifs Wyatt 2005, (red shading reconstructed)

The juxtapositioning of motifs (fig. 6.7) is a little difficult since we must ask ourselves, at what degree of nearness do two motifs become juxtaposed. In some cases the repetitive nature of this principle leads the way. So from Halle-brandberge 1, Halle-Weinberg, Leipzig, and Hornsömmern we see the juxtapositioning of the concentric arcs with the cross, and in the case of the Hornsömmern drum these motifs are joined by concentric circles and the sun motif; taken here to be a radial EVP. The complex motif from Leuna-Rössen, already discussed under the integration, is flanked by two radial cross motifs.

The reduplication of motifs is a common occurrence on the clay drums as Fig. 6.8 makes clear. Multiple instances of the concentric arc or anchor motif appear to be a standard of the decorative repertoire.

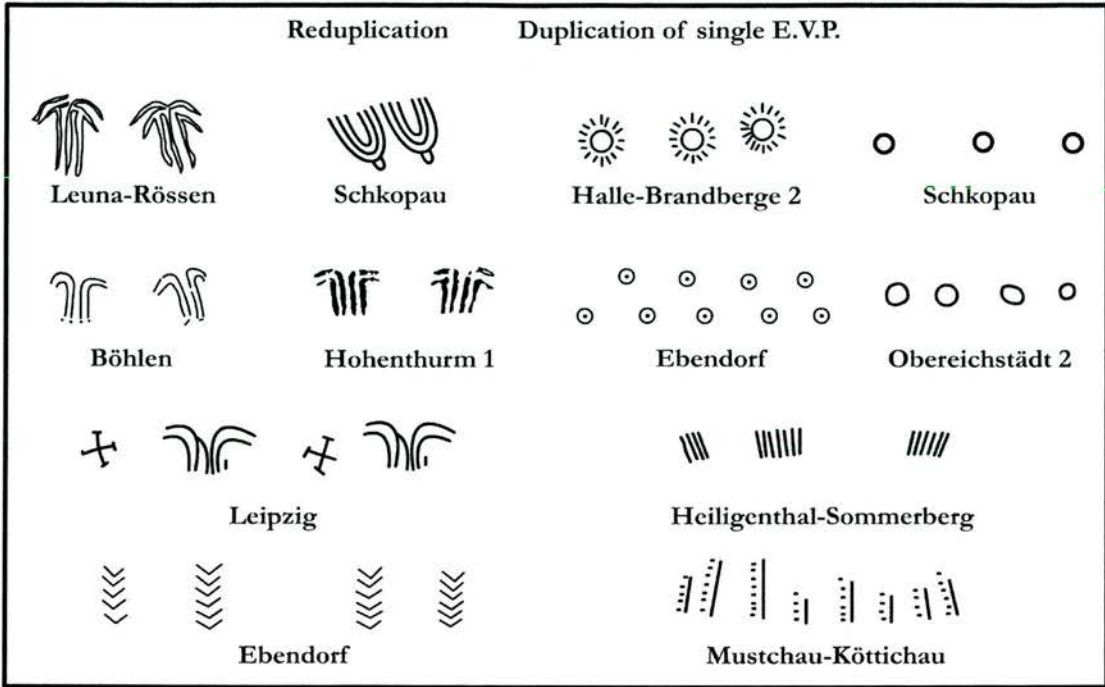


Fig.6.8 The principle of Reduplication and drum motifs Wyatt 2005

Only two clear examples of rotation are demonstrated here from the repertoire of the clay drum motifs; these are the examples shown in fig. 6.9 from Halle-Brandberge 1 and Halle-Krollwitz-Klein-Brandberge. Both drums are fragmentary, the area in red being reconstructed, and images also illustrate juxtapositioning and reduplication.

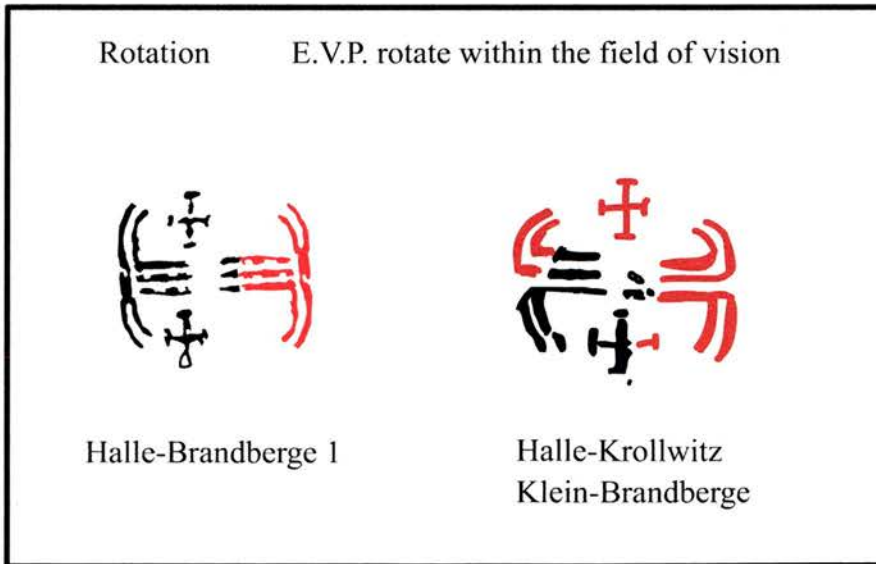


Fig.6.9 The principle of Rotation and drum motifs Wyatt 2005 (red shading reconstructed)

There is a case then for the recognition of at least six of the transformational principles of Lewis-Williams and Dowson on the TRB drums. This supports the case

that the motifs, which have similarities with EVPs, may have been produced within the human optical system.

Hypothetical Explanation for some Transformations

It is quite striking that when we compare the motifs used in TRB IV and V we see a marked decline in the use of some of the individual motifs, but this may also be interpreted as a change in the specific transformational principles being emphasised. So in TRB IV we are confronted by the common use of the cross motif and the concentric curves, in various recognizably similar manifestations e.g. Hohenthurm, Leipzig and Halle-Brandberge I, (see fig 6.8 and 6.9). And the use of broken, multiple and singular, linear zig-zag bands running round the vessel body and block use of parallel lines also ceases. The alternative decoration in TRB V sees ladder motifs, large panels of checker-board patterns and also an emphasis on empty zig-zag bands, that is decorated bands of in-filled triangles, pointing up and down creating an unshaded zig-zag stripe (see fig. 6.4). Additionally motifs such as triangle and grid may also be constructed from dots (fig 6.4) as on the example from Edesheim and Bollberg.

If we focus on the transformational principles we may be able to provide a speculative explanation for this progression. The crosses employed on TRB IV drums may be the result of fragmentation of a grid pattern, a standard EVP motif. At the same time the use of square panels, checker-board, and ladder images may result from the same starting point with less emphasis on the fragmentation principle and we may say emphasizing cohesion. Similarly, in TRB IV, while some fragmented zig-zags, e.g. Böhlen, may be argued to be evidence of fortification, it seems that similarly they may be compared to fragmented zig-zags. In TRB V the zigzag is still a prevalent motif but it appears as the result of integration of triangle motifs with dots, while the zig-zag itself, once emphasized is now only created as a by product of other motifs interacting.

In this way we may be inclined to see the decoration of TRB IV drums as consisting of a formalized but fragmentary layout but the decoration of TRB V drums as being equally formalized but more cohesive. Thus the early drum use, plausibly associated with shamanistic practices is troubled by fragmentary motifs mirroring social upheaval and the social need to emphasize distinction between the local Salzmünde, Walternienburg and Salz/Walt ceramic styles, linked to access to soil type and possibly copper ore. In juxtaposition to this social picture the TRB V period is marked by a

more coherent cultural milieu, the Bernburg pottery style is dominant although there are small areas of Walternienburg II and Salzmünde C style ceramics; this cohesion is reflected in the better grasp on local copper production and less reliance on fragmentation principle in the production of drum motifs. This is of course an entirely speculative interpretation of the principles of transformation.

It is clear that some EVPs do appear as motifs on the drums, of the southern TRB, and it is also apparent that at least six of Lewis-Williams and Dowson's (1988, 203) transformational principles also occur. We have already discussed some of the ideas of Dronfield's above and below we will discuss his search for diagnostic motifs. For the moment we highlight his assertion that the less geometric motifs were closer to endogenous forms. This assertion is important in the case of the TRB drums since it seems that to some extent the decoration has been formalized. In such a situation the importance of the geometric nature of the decoration, or indeed lack of it, may be called into question. Dronfield has a point that the presence of EVPs does not necessarily signify the presence of shamanistic practices, but based on the nature of the artefacts discussed here, their contexts and other associated patterns of social life, it seems plausible that in the present instance the decorative drum motifs *do* derive from endogenous visual phenomena.

Limitation and Formalization of Drum Motifs

When we are faced with a limited set of formalized imagery, this may challenge an interpretation of the type we are presenting. Creighton (1995, 293-5) proposes that while in rock art imagery may be produced directly by a shaman, it is a different case where craft specialization is involved. He cites cases where an Inuit shaman could produce a mask which depicts the spirits while another shaman might appoint a craft specialist to make a mask. However the primary mask was made it might then become a prototype not only for future masks but also of a formalized cultural style.

It is possible then, that a series of drums on which the imagery is very similar may be based on a prototypical drum. Thus the set of drums from Salzmünde settlements including the Leuna-Rössen, Halle-Brandberge 1 and 2, Hohenthurm 1 and 2, Leipzig-Eutritzsch 1 and the Spickendorf examples have such similarities that the idea that they followed a prototypical model is very plausible. Does this then mean that the decoration was not based directly on primary experience but on a traditional pattern?

Additionally does this mean that the drums were not made by, but manufactured for, the end user? We should also note that the Salzmünde drums do occur within the distribution of specifically rich burials which stresses the importance of the individual and may be equated with a community which emphasizes the hierarchical nature of the society; if this is the case the rigid formalization of the decoration may be a reflection on the rigid structuring of the social group.

At the end of the last chapter we noted that the Saame drum was not the exclusive property of the *noaidi*, who travelled to other worlds; it had a second use, that of divination (Hultkrantz 1991, 12) and within the southern distribution of the Saame every house had a drum. It has already been suggested that within the southern TRB we can recognize different formal drum types associated with the living and the dead. Now we may add that those from the Salzmünde settlements have a formalized decoration, while the drums of the Salz/Walt group, e.g. Hornsömmern, Grafentönnna, Feldengel and Holzussra, although having distinct decoration, do not follow such a rigid layout of motifs. The fact that these instruments are associated with the dead rather than the living, have a greater range of motifs and are generally found within the entrance area of tombs, suggesting some form of ritual activity, may support the notion that these instruments were used by a shamanistic practitioner for inducing a SSC and that their decoration does reflect direct experience of the EVP

We must recognize then that artefacts which display evidence of EVP may not be the result of a direct experience of an SSC yet, we should be equally careful to note that when such formalization is equated with a hierarchical community, it may reflect this social stratification rather than at a formalization of a style do to its basis on a prototype.

Dronfield: A More Analytical Model

Primary Problems

Dronfield wished to introduce a more analytical method, providing a definition of art that has a connection with altered forms of consciousness. His “highly specified diagnostic shapes and patterns” (1995, 539) are introduced to demonstrate that it is not simply a task of showing the presence of entoptic forms, which have shamanistic influences, and then comparing these images with prehistoric examples; but that some simple EVPs are used by non-shamanistic societies. He thus defines two groups of

patterns, his “category *N arts*” (non-diagnostic), which while associated with altered consciousness, is also present within groups with no such association; and “category *S arts*” (diagnostic), which are linked solely to various forms of altered consciousness. Thus shamanistic societies contain both categories, while non-shamanistic societies contain only “category *N arts*”. The category *N* examples, originally taken from the arts of Rome, Nubia, Nuba, Benin and Chilkat, are used to produce an analytical method. This would allow the recognition of clearly defined motifs, which could be more firmly related to altered forms of consciousness. This would be a great step towards understanding art in prehistory, at least that which consists of diagnostic EVP. However, as with his criticism of Lewis-Williams and Dowson, Dronfield’s methods have their own difficulties.

The lack of reference in Dronfield’s (1995a and b; 1996) early publications to his sources of information of the “category *N*” cultures is the first drawback in his analysis, and thus it is difficult to know, for example, to which period of the culture’s history he is referring, as will be seen below in the case of Nubia. However, in other research (Dronfield 1999), these factors *are* clearly identified. The comparison of Rome, Nubia and Benin also entails another problem of comparison, namely, the fact that these “city”-based societies, with a very centralized organizational system, would have an overtly political structure, which would therefore imply problems when compared with Neolithic farming and contemporary tribal societies.

Incidentally, Iamblichus, writing “On the Mysteries” in the late third and early fourth centuries AD, discusses possession by the gods, the effects and the different manners of “awakening the divine spirit” (Grant 1953 cited in Eliade 1967, 491-2). He was born in Syria, which was part of the Roman Empire, and therefore, supposedly, one may assume that this was a religion of the Empire. Although the comparison of state society with that of tribal society is slightly impractical, it is interesting to note that there was some practice of altered consciousness within the Roman Empire, and that straightforward classification of Rome as a society with “category *N art*” is thus inaccurate.

The Nubians, prior to invasion by the Egyptians of the New Kingdom, were pastoralists. After learning their lesson, they took up the imperial flag themselves and in turn conquered Egypt and ruled as the 25th Dynasty. They then spread their influence to the south, conquering the vast Sudanese plains, and their descendants are known as

the Meroitic kings (Kemp 1991, 319). It is unclear which period of Nubian history we are to associate with “category *N* art”, while as noted above, the form of society in the later periods of its history ought, on Dronfield’s approach, to rule out comparison.

Benin, although not perhaps developed to the extent of Rome or Nubia, was a walled city-state, whose rulers were regarded as divine and lived within the large palaces of the city (Wassing 1994, 164-5). Again, Dronfield’s system of categorization appears to fall down.

The last two examples of “category *N* arts” belong to tribal societies, which most certainly have shamanistic tendencies. The Chilkat tribe is a sub-tribe of the Tlingit, who inhabit a stretch of the north-west coast of North America in British Columbia. The women of this tribe are presented with the task of making special ceremonial blankets, the designs of which are drawn for them on bark by the men of the tribe. In the rituals, these blankets were worn in addition to dancing aprons and leggings, the “enigmatic, complex raven rattle”, and whistles and drums, in order visibly to combine social power and the supernatural. The chief in his headdress thus represented the head of state and the shaman (Taylor and Sturtevant 1996, 347-48). The body and ceremonial artefacts from curing rituals would have been buried far from the village, as the shamans were both feared and revered (Mcquiston and Mcquiston 1995, 84).

A form of religion which involves the altering of consciousness is also present among the Nuba people of the Nuba mountains in the South-eastern area of the Kordofan province in Sudan (Stevenson 1984, 1). However, in this case the situation is a little more complicated. “Nuba” is the name given to a group of aboriginal peoples living surrounded by peoples of Arab or Hamitic origin (Nadel 1947,1), and while the total Nuba population is around 300,000 people, these inhabitants can be divided into more than 50 ethnic groups. Nadel (1947, 440ff.) compared Nuba beliefs, that is, the beliefs of the three subgroups Koalib, Nyima and Dilling, with the classical shamanism of North America and Central Asia. In addition to this the Heiban and Otoro tribes are known to consult the Koalib shamans, some of whom actually live within Heiban territory (Nadel 1947, 156). The cult is based upon individuals who are able to go into a “trance” state or mental dissociation, which is believed to be spirit-possession; this can be achieved spontaneously or through self-induced means. Within the Nuba group, although there are sharp contrasts between different kinship structures, different clan

concepts and even very different patterns of chieftainship, in fact it is only within the cult of shamanism that they share a common dominant feature (*idem*, 476). In total the Koalib, Nyima and Dilling number around 65,000 and the Heiban and Otoro around 40,000, which implies that over one third of the population have largely shamanistic tendencies. The area of the Nuba mountains is approximately 14,400 square miles and no tribal sub-group lives more than 120 miles apart, and it would therefore seem unlikely that the non-shamanistic groups would have no contact with the other groups, and that consequently any definition of the “Nuba” as having no connection “with various forms of consciousness altering” (Dronfield 1995a, 539) is simply wrong.

In basing his argument on these comparisons, Dronfield’s case does not stand up, not least because two of his examples of societies with “no altered forms of consciousness”, actually do use this very method of “contacting spirits”, while the other three examples should not be compared with societies of completely different structural form.

Shee Twohig (1997, 70) elaborates Dronfield’s work to say that he was referring to Romano-British art, but even here Mithraic beliefs were widespread and the Frisians and Angles were also employed in the legions in huge numbers. Now in the case of Mithraism there was a seven-runged ladder (Eliade 1988, 488), symbolic of changing consciousness, while the Germanic tribes of this period also had shamanic tendencies in their religions (Ellis-Davidson 1964, 144: see chapter 5).

So we reiterate here that if we return to the EVP categories as examined by Siegel and Jarvik (1975), and Lewis-Williams and Dowson, it is clear that these categories all occur in megalithic art and on the TRB drums (fig.6.4), with the additional support of the transformational principles.

Further Relational Analogies

Despite Lewis-Williams and Dowson’s (1988; 1993) intention of strengthening their analogical case with their principles of transformation, Dronfield (1999) argues that their case comprises an analogy, which is too simple. It runs as follows: because society A has shamanism, and society B has similar decoration, then society B employs shamanistic practices (see also Taçon and Chippendale 1998, 7-8); this is despite their (Lewis-Williams and Dowson 1988) argument for relational analogies and their seven principles of transformation.

We have already discussed the shortcomings of Dronfield's (1995; 1996; 1999) approach, but for the sake of presenting all sides of the case we shall examine these diagnostic EVPs. As we have observed, Dronfield proposed that a more thorough model could be constructed if we knew which of the EVPs are diagnostic forms, that is, found specifically within the decoration of shamanistic societies, fig 6.4. Likewise, identification of the undiagnostic forms of EVP, similarly produced by the central nervous system, is important, since these are found within societies with no culturally accepted form of altered state of consciousness (Hodgson 2001, 867). It follows that the presence of these undiagnostic EVP should not be understood to imply evidence of socially acceptable altering of consciousness. For example squares and triangles do not occur as EVPs while random dots and filigrees, which are both non-geometric, do occur as EVP (Dronfield 1999, 366). Furthermore, rather than employing a straight analogy, Dronfield seeks to combine notions of the inference of similarity, linking the modern and prehistoric neural structure with a search for the causal determining mechanism, Fig. 6.10.

Dronfield (1995b) carried out an analysis of passage tomb art which he believed would allow a correlation between the distribution of shapes in passage grave art, and various forms of stimulation of endogenous visual phenomena. His categories included electrical stimulation (as an equivalent to the flickering lights of visual stimulation), hallucinogen stimulation and a randomly-generated control sample. This analysis is relevant to the present discussion on two counts. Firstly in this analysis Dronfield appears to have negated his prior argument (1995a), by using the study of Siegel and Jarvik, on substance-induced EVP, and Eichmeier and Hofer's study of electrically induced EVP. Here he compared examples, which do not fall into his own category of "diagnostic" EVP. Secondly, the results of his investigation, through a statistical analysis, concluded that while in a few examples hallucinogenic substances and migraine may have been responsible for the some of the art, the overwhelming evidence suggests that the majority of imagery was induced by flickering lights (1995b, 273).

Returning now to the work of Neher (1962), we recall that the responses to auditory driving both in the laboratory and in drum ceremonies were comparable to the laboratory studies carried out on the effects of rhythmic light stimulation' (*idem*, 159) (cf. Reichel-Dolmatoff 1978, 251). In the light of the lack of experimentation in studying the EVP produced by auditory driving, if it is statistically possible to equate Irish

passage-grave art with flickering lights as a visual stimulus (Dronfield, 1996), we should be able to offer the hypothesis that the imagery is the result of auditory driving, through the use of drums. It therefore follows that Schrickel's symbols on the central German drums are very probably endogenous visual phenomena.

We have already discussed the problems with Dronfield's (1995a and b, 1996) early model, but we now turn to later developments made to the model.

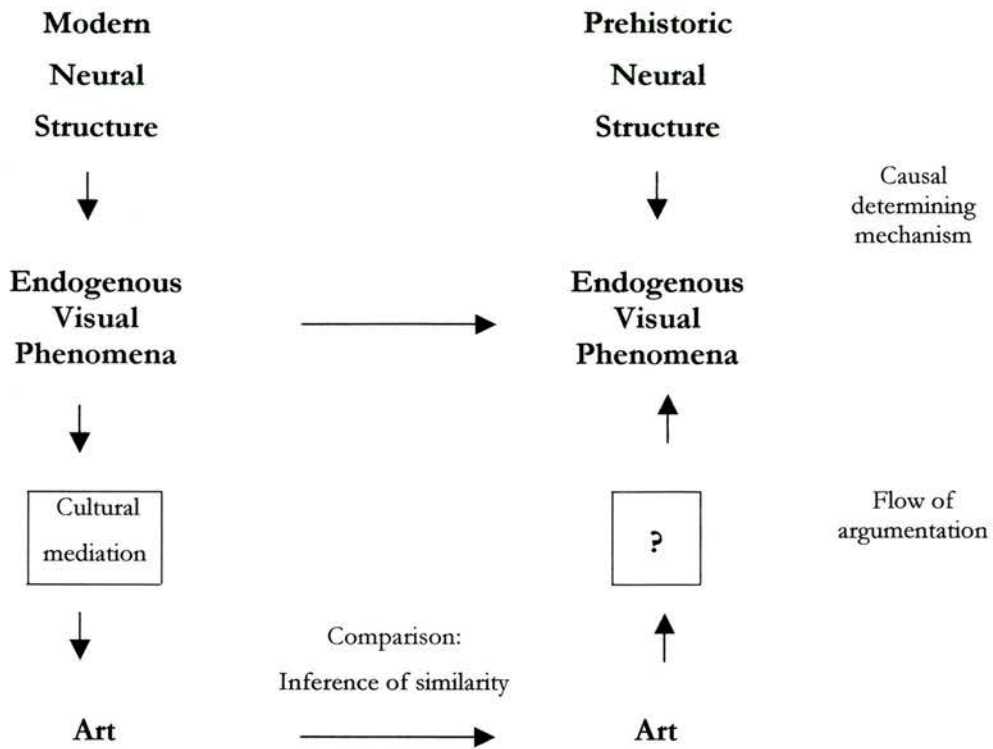


Fig. 6.10 Diagram redrawn after Dronfield's (1996, 378, fig. 5) revised model

Dronfield emphasizes the importance of non-geometric forms as part of the diagnostic criteria (see fig. 6.11), and comments further on the individual forms:

1. The irregular steep-sided meander with unknown neuropsychological origin.
2. Fortification, associated with mild ASC, migraine and occipital lobe epilepsy, originates in the "spontaneous firing of waves of neurons in the primary visual cortex (Dronfield (1996, 375). These neurons are coded to detect edges of specific orientation. We noted above Bahn's objection to claims that images could be drawn accurately from memory, yet Dronfield, (1999, 367) notes that the fortification pattern is superimposed on the real world and moves across across the field of vision.

3. The arc-spiral Dronfield (1999, 366) cites as rare and therefore of uncertain diagnostic value.
4. The Filigree is caused by abnormal stimulation of the photoreceptive cells, and represents images of the retinal blood vessels. It is proposed here that if we were seeking to apply the EVP diagnostics to the drum motifs, this would be unlikely to occur as in the case of drums we are faced with auditory driving, not visual driving associated with photoreceptive cells.

In discussion of the dots, Dronfield calls them of dubious diagnostic use, but in discussing the parentheses and small arcs states that the “category’s subjective diagnostic capability is enhanced” (Dronfield 1999, 375). Additionally, the use of imagery which has been derived from an EVP might well survive as the core of an artistic tradition even within a society where the altering of consciousness was no longer used (*idem*, 371).

For the sake of presenting all comparisons (figure 6.12) presents Dronfield key diagnostic EVPs with similar drum motifs alongside. The meandering pattern of example 1 lacks the geometrical appearance of Dronfield’s non-diagnostic form, while the drum examples compared with Dronfield’s diagnostic EVP 2 are also superficially similar. These zigzag motifs from the drums lack the curved appearance of the fortification, although it is possible to argue that the curve is subsumed into the curve of the vessel wall. Alternatively, as we will discuss below, this broken zigzag motif may result from fragmentation during the SSC. There is no parallel for the concentric spiral, which Dronfield proposes as diagnostic example 3, and the concentric curves are the nearest parallel from the drums, although Dronfield himself questioned its validity as a diagnostic form (see above). The branch motif from the Quenstedt-Lohberg drum may plausibly be argued as a parallel for the filigree motif and the dots and curves of diagnostic example 5 are similar to many motifs found in the drums.

Absence of Evidence ...

In a previous publication Dronfield (1995b, 540: discussed above) introduced us to the art of the Chilkat Indians from British Columbia, and classified them as one of his category *N* arts, that is from a non-subjective art from a group with no evidence of socially accepted altered states of consciousness. I argued above, and previously (Wyatt 2000), based on Dronfield’s (1995b) model, that this case was untenable since the

		Diagnostic	Undiagnostic
Endogenous	1		
	2		
	3		
	4		
	5		
Endogenous	6		
	7		

Fig. 6.11 Proposed Diagnostic and Undiagnostic EVPs. Redrawn after Dronfield 1999, 367

		Diagnostic	Drum Motif
Endogenous	1		 Sangerhausen Heiligenthal-Schringsberg 3
	2		 Böhlen Hohenthurm 1 Fredrichsaue
	3		 Halle-Weinburg Hornsömmern
	4		 Quenstedt-Lohberg
	5		 Ebendorf Halle-Weinburg Hornsömmern

Fig. 6.12 Diagnostic EVPs and drum motifs. Redrawn after Dronfield 1999, 367

Chilkat are a sub-tribe of the Tlingit, who inhabit a stretch of the North-west coast of North America in British Columbia, and they do employ shamanistic practices.

Independently from my argument against their inclusion, Dronfield (1999, 370) subsequently removed the Chilkat from his model. However, this allows a further criticism since in his primary model the Chilkat were placed within the “category *N* arts”, despite the fact that they engage in shamanistic practices. It would seem that if a known shamanistic society is able to be classified as a member of a category *N* art group, and fit within the diagnostic criteria, then there is a flaw in the model. Furthermore the removal of the group from the model does not nullify the fact that this known shamanistic society does not employ within their artistic expression the very group of motifs which Dronfield has deemed to be diagnostic.

Additionally, despite no direct reference to Dronfield’s attempt to identify diagnostic motifs, Bahn (2001, 58: citing Quinlan 2001, 93) states that Dronfield has concluded that it is not possible to identify any motifs, which were diagnostic of “trance imagery”.

The Drum decoration of the Saame

Although the use of ethnographic analogy should be used with care, there is a comparison which we may find pertinent in the present chapter. A recent lecture by Zvelebil (2000) discussed the spread of Indo-European languages. His proposal was that the Saame, a Uralic-speaking group, are the last speakers of the language family that was formerly used across Eastern Europe. The TRB Culture, the first farming population of the north European plain, was the product of a Mesolithic people, which adopted an agricultural economy. Zvelebil logically supposes that the TRB farmers were Uralic speakers who at this juncture gradually adopted an Indo-European language. It should therefore follow that the Saame are the nearest congeners to the first farmers of northern Europe, and may therefore throw some interesting light on understanding the latter.

The Saame (see chapter 5) are nomadic herdsmen and a very important object in their culture is the drum, which is endowed with complex symbolism and has various magical functions, one being to aid the shaman to enter a SSC. In this state the Saame shaman can become a wolf, bear, reindeer or fish, and with the aid of his helping spirits

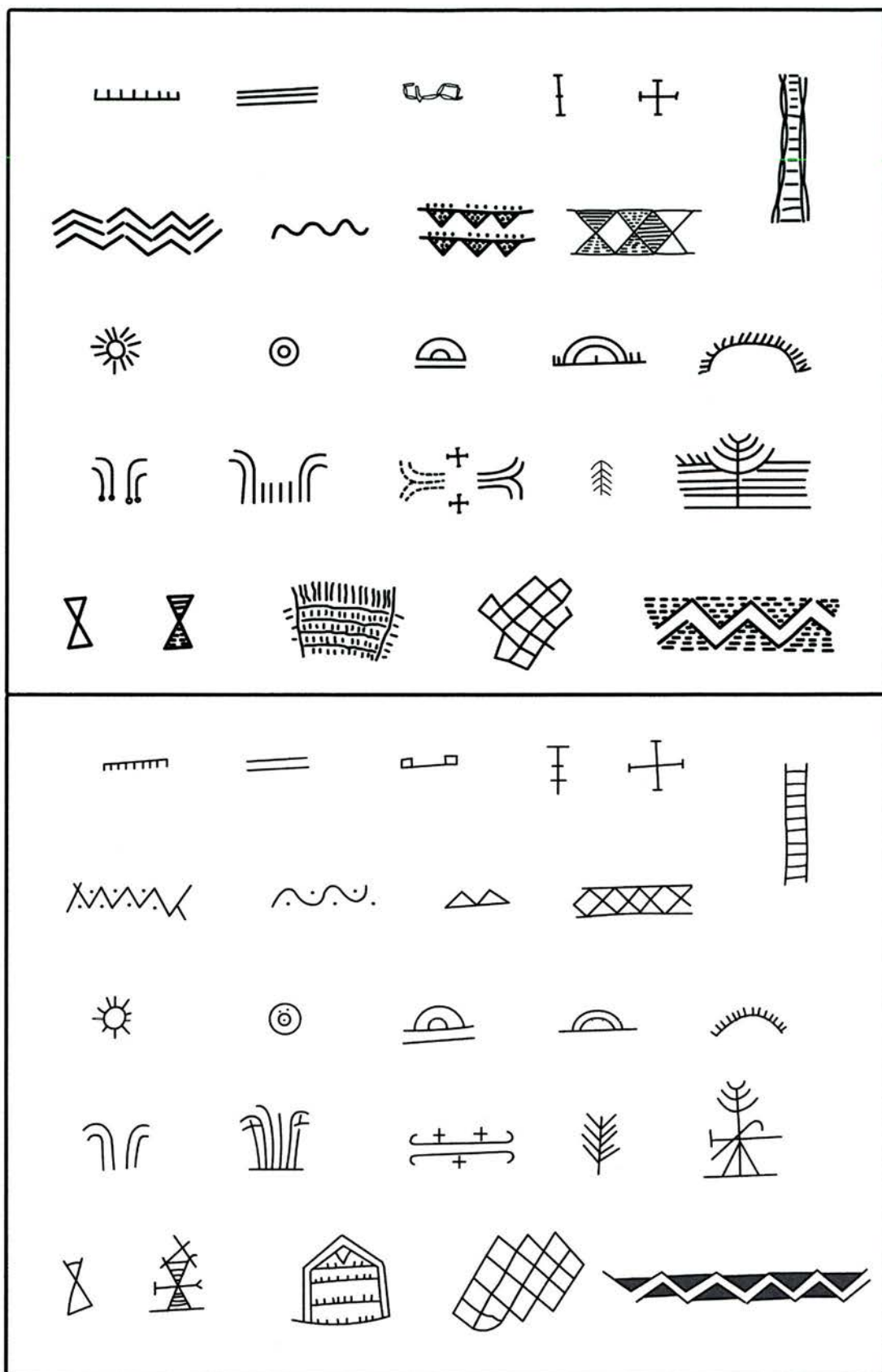


Fig 6.13 A selection of motifs from southern TRB drums, top, after Schrickel 1956 And a selection of Motifs from Saame Drums, bottom, after Manker 1938; 1950. Redrawn by Wyatt 2005

travel on a celestial journey to the heavens or the underworld (Eliade 1989, 93 and 172: Westman and Utsi 1999, 16: Pentikäinen 1998, 39: cf. Hutton 2001, 137).

The purpose of introducing this discussion is that the most striking features of these drums are the images, which are used to decorate the skin. There is a great variety of motifs, although some images will always be present, including the world-tree, the sun and moon and the rainbow (Eliade 1989, 172: cf. Manker 1938). The imagery used on the Saame drum is dominated by symbolism of the ecstatic journey, and it depicts the sky, earth and underworld, in essence it is an itinerary of the shaman's journey (Pentikäinen 1998, 39).

Figure 6.13 provides a comparison of the motifs used on the central German drums which we have argued are derived from EVPs experienced during a shamanistic state of consciousness, presented with a small selection of the motifs of the myriad Saame designs. One very interesting point in Manker's (1938; 1950) study of the Saame drums is that the analysis of the decoration spans imagery used over a period of seven hundred years, and which have a longer pedigree. Therefore these same symbols have probably been used to decorate the drums of the Saame for up to at least a thousand years. The importance of this observation is to show that the use of the motifs on the central German drums, which lasts from the mid to the late fourth millennium BC, bear a remarkable resemblance to those of the Saame drums, which originate within a known shamanistic form of practice. Also the use of motifs on the clay drums has a parallel in their continued importance over a similar scale of time. The designs in Fig. 6.13 are only a selection of the Saame emblems and numerous other symbols are used. However, the similarity between these and those on the central German drums is beyond dispute. One point to note is that the sample presented from the clay drums is by the very nature of the archaeological record on the clay body of the drum, since the skin has not survived. In the case of the drums of the Saame people the designs decorate the actual skin of the drum, except for the zig-zag emblem, which along with others is carved on to the frame of the drum.

A further similarity may be seen in the image on Saame drums of a figure holding a hammer (Manker 1950, 388 and 414). This figure is associated in Saame mythology with Thor, and the hammer is the one with which he makes thunder, while as Manker's (1938) work shows this is the characteristic form of the Lapp Drumstick. This motif has been traced back to the rock art of the Northern Bronze Age (Gelling

and Ellis-Davidson 1969, 11 and 115), which the authors also link to the Germanic mythology of later times. It is therefore plausible that the images of the figure on Saame drums and on southern Swedish rock art is of a figure holding drumsticks and that the lack of drums of clay in the cultures following the late Neolithic is due to the change of material from which they were constructed.

Another repetition of decoration is found in the “anchor motif” found on a large number of drums, but the Böhlen vessel is a good example. Gelling and Ellis-Davidson (1969, 59-60, Fig. 26d), illustrate a very similar motif found on rock art and Bronze Age razors, which they class as part of the world-tree repertoire, and while we do not make a specific link between the two it is of important to note the significance of the tree symbols for the shamanistic world view.

A relatively untestable hypothesis could suggest that the ritual importance of the drum can be traced from Neolithic times, if not earlier, through the Bronze Age and Iron Age and late Germanic mythology to the Saame rituals of the last thousand years. Equally the materialization of the drum as a ritual instrument for altering consciousness may have occurred due to a crisis within the societies, as posited by Müller (2001, 445). While the Saame altered their consciousness and decorated drums with distinctive motifs this does not, of course, imply an unbroken cultural continuity, yet the speculative evidence for some continuity is intriguing (Bradley 1997a: Gelling and Ellis-Davidson, 1969: Bates 2003).

However, it seems that while it is possible to make a comparison of Dronfield’s EVP with the drum motifs, it is not possible to claim that any individual symbols are diagnostic, and so we must use the traditional evidence of the archaeological context, related to the evidence of the drums ability to induce changes in consciousness.

Criticisms of a shamanistic approach

The Presentation of Theory as fact

The most appropriate place to end this discussion is with the perceived flaws in the model. Bahn (2001, 51) begins by criticizing what he deems the “uncritical unfounded presentation of ‘shamanism’ as a ‘key’ to understanding prehistoric rock art.” He continues that equally wrong is the presentation of the model to the public as a

“key” to some or even all rock art, rather than a theoretical model proposed as one possible interpretation of one specific group of decorative evidence.

To understand Bahn’s point, of the public presentation of this model, we only have to look at the recent B.B.C. documentary “How Art Made The World” broadcast from May to June 2005, presented by Dr Spivey. In the second episode, 10th May 2005, we were introduced to the research of Lewis-Williams concerning the paintings of the San bush men and, despite the fact that on one occasion the presenter stated, “here we’ve got a theory”, elsewhere the fact that this was a portrayal of one particular model of interpretation, was not made clear. We are told that Lewis-Williams had “finally found an answer” but more assertively “they weren’t copying nature but reproducing visions created inside their heads”. Furthermore Lewis-Williams observes, “it became clear that the paintings were not pictures of everyday life, they were about spiritual experience in trance; this was the *true meaning* behind the San paintings” (my italics). And this we are told with suitably atmospheric, rhythmic music. The San “shaman”, we are informed, visits the spirit world in “a trance, or altered state of consciousness”. When making the comparison of the San images with those of Palaeolithic Europe however, no statement that these artists were shamans is given, it is merely announced that the “prehistoric artist experienced sensory deprivation, and this induced hallucinations of abstract shapes and patterns, which our ancient ancestors painted”.

So while the program presented the neuropsychological model, it did so with a bias for the case, with no dissenting specialists to rebut the apparent facts or the reliability of the model. Furthermore the terms “trance” and “altered states of consciousness” (ASC) were never defined. This last point is an apparently common theme and Bahn (2001, 54 and 56) asserts that academic papers employ “loosely” defined and “indiscriminate” application of the terms “trance” and “hallucination”, and the title of “shaman” itself. So far, the assertions of Bahn are justified, but it is questioned here why none of the critics of the model have bothered to provide constructive criticism in the form of definitions for these terms, as we have discussed above.

Elsewhere, Bahn (2001, 52) believes it is “unlikely” that any individual would “meticulously recall and recreate hallucinations in a non-intoxicated state”; this is hardly a rigorous argument against the possibility of the theory being valid, on some occasions. Indeed later Bahn (2001, 78) asserts there “may certainly be instances where

“shamanism” or something like it, can provide a plausible and appropriate interpretation for some rock art”.

The Main Objections

Bahn’s (2001, 54) three main objections to the neuropsychological model are as follows. Firstly, Lewis-Williams and Dowson (1988), in their seminal paper, proposed a three-stage model for the development of imagery in the altered states of consciousness of the societies they were examining. Yet this is refuted by Bahn’s (2001, 54) evidence that no three-stage model of “trance” is recorded in any standard neurological text. This may be true, but it is maintained here that a culturally constructed, and sanctioned event such a shamanistic state of consciousness, during a religious ceremony or healing, would not necessarily conform exactly to models based on laboratory research and conducted on individuals with no experience of the altering of consciousness, or else upon individuals suffering with abnormal neural processing or brain lesions. These laboratory studies may begin to help us understand the workings of human cognition, but if an overly simple shamanistic analogy is an insufficient interpretation of prehistoric art, it is maintained here that laboratory analogies make a similarly poor analogy for the historical development of socially sanctioned employment of altering one’s consciousness. While we may be able to glean important information concerning the neural functioning of human consciousness and employ this in a working model of the brain, it does not allow the categorical rebuttal of the shamanistic or neuropsychological model. Consequently, we have discussed similar laboratory evidence, not for the purpose of defending the universality of shamanism *per se*, but of defending the universality of the human neural structure. But it has further been proposed that the shamanistic model is one possible cultural tool employed to make sense of the human neurological system.

Bahn’s (2001, 54) second main criticism is a statement that “hallucination is totally unnecessary to account for any imagery in rock art, whether simple geometrics or more complex figures”. But this does not mean that hallucination was never the cause.

Finally, Bahn argues that if hallucination were ever the “ultimate source” for any imagery, it must be noted that there are many forms of hallucination, most of which do not involve shamanic activity. This point may be countered here by the thought that, while there are many forms of hallucination as perceived by the western “critical” mind,

they may arguably be perceived as being authentic to a prehistoric mind. A “hallucination” may occur naturally due to sensory deprivation, a head injury or through deliberate stimulation, through the employment of ritual techniques or ingestion of hallucinatory substances. However, to use Bahn’s own argument, it seems “unlikely” that an individual experiencing the event will deem it invalid, due to its method of stimulation.

Definitions have been provided above for the terms trance, ecstasy and shaman. In addition to providing these definitions, their validity as a description of the experience of the individual we term a shaman has been considered. The definition of the term shaman has also been presented firstly from an anthropological standpoint, but also from the viewpoint of neurology. Finally, we have examined the neural model of Clark (2003; 2006) providing an answer to the questions of which factors are universal, and how this relates to the use of the shamanistic model as an interpretative tool.

For and Against Universals

As criticism of the arguments for the existence of Winkelman’s (2002a and 2002b) shamanistic universals, Bahn cites numerous authors who view this suggestion as reductionistic. Thus Le Quellec (cited in Bahn 2001, 65) suggests that adopting this approach is responsible for “[d]iluting the motivations of rock art into a universal and timeless shamanism”. This is seen to be an unhelpful comment because the archaeologist’s role is to “shed light on the reasons why a particular culture occurred in a specific place, a specific time”. Additionally, Solomon (cited in Bahn 2001, 65-6) states that even “if the origins of art owed something to hallucinatory experiences, the fact remains that universals are essentially uninteresting. They explain nothing, and certainly cannot accommodate differentiation and change — surely the backbone of any historical account”. Bahn (2001, 72) adds that the “shamanistic model as a whole implies that hunter-gatherers are naturally uncreative, and that induced hallucinations are required for them to generate an artistic record. The model reduces symbolic behaviour to a simple physiological response rather than recognizing the intrinsically social nature of symbolic production and communication”.

This view is countered here by the observations of Dunbar (2005, 104-5) who observes that any evolutionary explanation implies genetic determinism. He cites “Tinbergen’s Four Whys”:

- why something happens, that is the purpose it serves for an individual;
- what bodily machinery, including motivational systems are involved;
- how this is produced during development, and;
- when it came about in the species' development.

Why certain behaviour is enacted is a combination of genetic inheritance, environmental determinism, and experiential learning which for us includes culture. "The capacity to be able to make the decision to behave in a certain way may be genetic, but that does not mean that the decision to act in a particular way is itself genetically determined" (Dunbar 2005, 105). This capacity, inherent in the brain, allows the pros and cons of specific behaviour to be evaluated, and decisions to be made based on the evidence. Action is initiated by choice not determinism.

CONCLUSION

While the shamanistic model has been criticized, this is seemingly always undertaken in reference to the interpretation of rock art, and in the case of the original proposal, prehistoric European rock art. A further criticism is that of a lack of cultural context of a large majority of rock art, (see Bradley 1997b). While Palaeolithic art occurs in cave sites, in cases such as the site of Niaux, we find the art in a cave on the southern side of a valley but the contemporary settlement evidence is found in the Grotte de la Vache, which is on the northern side of the valley. The point is that while art may be distinguished by its presence in the depths of a cave or on rock outcrops in out-of-the-way places, but with a nice view, we do not have the cultural association, which might aid our interpretation, indeed in some cases only an approximate age is known for the art.

In the case of this dissertation we have the remarkable good fortune to be presented with a class of object which in popular belief has the connotation of being shamanistic. Furthermore, these drums are decorated with distinctive motifs and, at least in the case of some of the individual sub-groups, are found within burial contexts, and are believed to have been involved in some form of ritual activity related to dying or to the deceased. We know the dating and the typological chronologies, and have good evidence of settlement change, conspicuous burial of individuals emphasizing status and the beginnings of exploitation of local copper resources. This we may link through

contextual association with the drums themselves. Additionally we may note the use of symbolic drum motifs on drums found within the limits of the Salzmünde B settlement area; a settlement distribution, which coincided with exclusive access to the rich black earth. Furthermore, the drum decorations have a striking resemblance to EVPs, and their proposed transformational principles and the drum itself provides us with a causal mechanism for the induction of a shamanistic state of consciousness. However, it is argued here that Dronfield's search for diagnostic EVPs is currently unsustainable.

The aim of this dissertation is not to advance the notion that everyone in prehistoric Europe was a Shaman, nor that every society engaged in a form of socially sanctioned altering of consciousness. Clark (2003; 2006) proposed that certain neurological processes may be seen as the potential starting-point for what became the religious mind. Under certain historical conditions it is possible that these neurological processes may be engaged in by a society, through the medium of shamanistic practices. Clark (2006, 291) observes that occasionally "religious thinkers are able to dominate the people and to have their theories accepted. In other cases this does not happen. It is the economics of subsistence that determines whether the thinker succeeds". Thus Clark (2003, 222; 2006, 291), discussing Radin (1938) proposes that economic and social changes might create a societal need for the benefits of a more rigid spiritual belief system. Mithen similarly proposes that the appearance of Palaeolithic art and thus a belief in supernatural beings coincided with a time of economic stress (Mithen 1998, 98). On a more general level Storr (1997, 220) explains that if "a society is sufficiently disrupted, or seriously threatened, politicians who promise to restore order or save the society from its enemies become transformed from men of affairs into magical, guru-like saviours" (cf. Cohn 1993; 1994). In the archaeological record of the southern TRB it may be argued that just such a social and economic crisis came into existence around 3500 BC cal. As we have discussed above Müller (2001, 445) observes that from "3500BC cal some form of crisis is obvious, which might be the result of new difficulties in accessing eastern Alpine copper". Furthermore he suggests that the appearance of the Altmark Tiefstich pottery may have created "some kind of instability" in the central Elbe and Saale region". At the same time we see the appearance of drums within the Salzmünde B and Walternienburg pottery styles, while Müller observes that "a new expansion of the TRB-MES-system takes places which might be made possible

by the discovery of the independent exploitation of regional copper sources” (Müller 2001, 445).

We will now draw together the threads of our argument in our concluding chapter.

Psychopomp and Circumstance
or
Shamanism and Context:
Die Zaubertrommeln

a paradigm..... is an object for further articulation and specification...Paradigms gain their status because they are more successful than their competitors in solving a few problems that the group of practitioners has come to recognise as acute.

Kuhn (1967, 23)

BRINGING IT ALL BACK HOME

Interpretation of Material Culture Development

Müller's synthesis provides a remarkable backbone to the examination of the clay drums and the cultural groups of the southern TRB. In map 2.4, TRB IV graves, it is apparent that Salzmünde B burials are not found in the western distribution area of the Salz B settlements (compare with map 2.3), but Salzmünde/Walternienburg and Early Walternienburg burials are. Similarly on map 2.6, TRB V graves, late Walternienburg graves exist in Thüringia, and clearly represent a different distribution from the Bernburg Graves; in this case the Bernburg grave distribution mirrors the Salzmünde B pottery style, within the burial distribution. However, map 2.5, TRB V settlements, shows the Bernburg sites south of the Harz, covering the same area as the Salzmünde B settlement. Thus Bernburg burials do not occur in the western part of the settlement area, which parallels the TRB IV pattern. We may recall that throughout this dissertation the continuous nature of the southern TRB has been stressed and the ceramic artefacts have been viewed as variations in the style of the TRB as a whole. It is proposed here that these repetitive patterns in settlement and burial distribution are the best evidence for suggesting a continuation from the Salzmünde to the Bernburg style.

For the case of the argument, we equate the Salzmünde B pottery with a group of descendents of the Baalberge population who maintained their distinctness through symbolic differences in the ceramic forms, from the Walternienburg folk, who were

settled to the north of the Harz. However, some of the population, represented by the Walternienburg pottery style, presumably lived in the Salzmünde B settlements, in Thuringia and the southern Harz, and are recognizable from their distinct pottery forms in the burials of these regions. Thus in everyday life an image was portrayed of an integrated society but the eastern and western populations chose to distinguish themselves in death. This pattern is still discernible two hundred years later when the Bernburg settlement distribution mimics that of the Salzmünde B population, although it has also spread to include the area from the north of the Harz as far as the north of the Magdeburg border. However, in the area south of the Harz, although the settlement does indeed spread into Thuringia and the southern Harz, people still distinguish themselves within the burial tradition, from their eastern counterparts. This seems to imply the development of the populations, represented by the Salzmünde B ceramic style, and the Salz/Walt pottery style, into Bernburg society. We may equate this with a fundamentalist group declaring their distinctness, through a burial rite in the west (Walternienburg burials), paralleled by an enclave of traditionalists emphasizing their distinctness in life, in the east (Salzmünde C settlement assemblages). The stress-free components of the population followed the traditional Bernburg burial custom.

This distinction is paralleled in the distribution of copper artefacts, since one quarter of all copper is found in Thuringia. Concerning the decorated axes, Müller lists fourteen, two found in the same general area of the west, but eight within the distribution area of the Salzmünde B graves on the middle Saale. The remaining four axes are more widely distributed. The distribution of the decorated stones dominates in the eastern area, again the distribution of Salzmünde B graves. Map 3.9, produced by Müller (1994), illustrates decorated standing stones and burial chambers suggesting that this distribution largely coincides with the distribution in the upper and middle Saale and eastern Thuringia of the Salzmünde and Salzmünde/Walternienburg drums.

We must note that Müller views this period as a time of economic crisis and we may interpret the population's exuberant production of aesthetic luxury objects, decorated axes, rock carving and the display of copper artefacts, as society's attempt to assert their cohesion symbolically. Maybe it is an expression of land rights: Salzmünde B settlements occur in the richer areas of black earth distinguishing them from the Walternienburg assemblages found outside these areas, yet we already begin to see Walternienburg burials within the Salzmünde settlement area in TRB MES IV.

The Implications of the Classification of the Drums

During the TRB MES IV, the general patterns in the archaeological record may be interpreted as evidence of social differences, or at least as a different manner of expressing the same social reality between the areas of the middle and upper Saale and Thuringia, that is between the Salzmünde B area, on the one hand, and the Salz/Walt and Walternienburg area on the other. The first is distinguished by settlement drums, decorated axes and stones and single burials, the latter distinguished by a greater amount of decoration on burial drums, collective burials, and a pattern where the funerary ceramics are closer in decoration to the Salzmünde B settlement ceramics than to those found in the single burials. Thus we may suggest that the western burial drum is associated with a similar decorative tradition as the eastern drum found in settlement assemblages. An additional parallel is that the Salzmünde B settlement area is distinguished by the practice of settlement burial, so we might speculatively propose that the Salzmünde settlement drum may have funerary associations.

When we examine the TRB MES V assemblages, there is a decline in the presence of the drum in burials, a larger number now found in settlements, although this may be a distorted view based on multiple drum-finds at the Langen Burg and Quenstedt-Schalkenburg. Despite this *caveat*, this may be taken as further support for the case of the development of the Bernburg style from the Salzmünde style. Thus the emphasis on the deposition of drums within settlement contexts may be a continuation of the Salzmünde B tradition. This of course begs the question, what became of the tradition of the burial drum in Thuringia? As the distribution map of TRB MES V drums shows, they have yet to be found. Currently we know of one drum site in central Thuringia, from a Bernburg context at Grossobringen which contained the fragments of six drums, one drum from the site at Sangerhausen in the southern Harz but no examples from western Thuringia. This may be related to the staggered development of the ceramic styles and such clear-cut distribution maps may in fact confuse the issue. So for example Bernburg settlements follow the pattern of Salzmünde B settlement but only late Walternienburg burials appear in Western and central Thuringia. Additionally we may cite the case of the Nietleben drum: the context is a *Rampenkist* which contained ceramics of the Bernburg style, including a distinctly Bernburg style drum. This is one of the sites where the walls of the chamber had been decorated. A similar pattern is seen at Schkopau, which contained Bernburg style ceramics and wall decoration; the

difference here was that the drum bore distinct similarities with Salzmünde-style drums. In these two examples, we have the rarity of drums found in Bernburg burial assemblages but significantly associated with wall decoration (Fischer 1956, 89). It is difficult to interpret this evidence in a generalizing way because other similar decorated chambers or stones are of later dates. Again we may speculate that in the TRB MES V, the drums' use is different, based on the change in decoration. Subsequently we may hypothesize that the decoration previously applied to burial drums stays within the burial context, but now occurs on the walls of the tombs themselves. We must also wonder at the decoration now lost due to its application in less lasting media.

A final consideration here should be the purpose of the drums, and whether we use the contextual differences to support an argument for different functions for them, one associated with death, the shamanistic-style soul-journey and spiritual guidance, the other associated with divination in life; this will be discussed in the following section.

CONTEXTUAL APPLICATION OF THE SHAMANISTIC MODEL

Distinct Distribution Patterns and Drum Function

The archaeological evidence from the middle Elbe and Saale presents us with a series of patterns which are able to fit with a theoretical model based on our knowledge of Shamanism.

We have a distinction between east and west style of drums in the TRB IV period: both of these drum types bears symbolic decorations which have numerous similarities not only with Neolithic rock art and the decoration on the known shamanic drums of the Saame, but also with the images defined here as endogenous visual phenomena or EVP. What makes this interesting is that except for hypothetical links proposed in previous research, linked largely with the upper Palaeolithic cave art, in the case of the TRB drums we are faced with symbols which may be linked with a plausible mechanism for the production of these images, namely the use of the drums themselves for auditory driving. Also in the case of the drums found in burials we may recognize the relationship of the drum with death, and the journey to the afterlife commonly associated with the shaman's role.

We may question why the area of study has been picked out for the production of these drums and their decoration, and for this the supporting archaeological evidence can be summed up as follows. The Salzmünde style of drum is found within the eastern

distribution of Salzmünde settlements, associated with settlements and with individual single burials. This eastern distribution is mirrored by the general distribution of menhirs with incised decoration and also non-megalithic collective burials, also with decoration. Furthermore, an additional distribution pattern, also paralleling these, is that of the decorated axes, specifically being confined to the eastern area of the Salzmünde B settlement distribution (see above). One problem already discussed is that the dates of the decorated stones do not all coincide with the dates of the drums, but perhaps we are able to recognize a more general social discourse which is linked but manifested in different media at different times.

The distribution of the drum decoration is worth further comment. It occurs on the traditionally-defined Salzmünde drums, distinguished in chapter 3 as Salzmünde burial and Salzmünde settlement styles, but is prone to greater elaboration in the examples found in the Thüringian *Mauerkammern*. The emphasis on the collective allows the greater symbolic expression on the drums, while the eastern Salzmünde drums with less decoration are paralleled by symbolic expression on other media, namely menhirs, axes and tombs. Of course, we lack the evidence for alternate symbolic expression on perishable material. As a whole the Salzmünde settlements are defined by the distribution of black earth in the middle Elbe and Saale, as opposed to the contemporary Walternienburg distribution, which is limited to the alluvial gravels outside the black earth. Thus it may be understood that in the Salzmünde B distribution area a better quality of soil sparked an economic advantage in a time of social crisis, first recognizable in the distinct Hutberg assemblages of TRB II, which typological developed directly into the Salzmünde B ceramics.

Bradley (1997b, 14) discusses the research of Hartley (1992) on rock art in northern Colorado, and it is pertinent to cite it here. Hartley concluded that sites that were used by the most stable population contained the least amount of differentiation in the rock art. At the same time those sites which were visited by the more diverse groups contained a wider range of imagery. We have observed that during TRB V, drums may be associated with individual households and that the Salzmünde settlement drums of TRB IV may follow the same tradition. It is interesting then, though speculative, to suggest the settlement drum, which had less diversity of decoration was restricted to individual households. On the other hand the burial drums in the Salz/Walt style of the southern Harz and Thüringia are decorated with more complex

combinations of motifs, are found outside collective burial site, and presumably were seen by a more diverse group of people during burial rites. Similarly the Salzmünde style burial drums have more complex decoration e.g. Schkopau and Gerstewitz, although other examples do not e.g. Böhlen.

The Shaman and the Smith

This area (Orsitz 2003) also has distinct copper deposits and the contemporary copper artefacts are similarly confined to the Salzmünde B distribution. Indeed half of all copper finds in the TRB IV are associated with drum deposits, while in TRB V, the enclosure site of Grossobringen contains the sherds of six drums and the remains of a crucible. Given the wide-spread association of early metal workers with a status on a par with the shaman, due to the magical transforming abilities, the association of the extremely rare copper remains with the drums bolsters the argument for the shamanistic model. Thomas (2001) proposed the adoption of a third transform for the understanding the processes by which the archaeological record reaches us, the archaeologists. He termed this *magical transforms*, whereby processes, which we understand, would appear in the past to have had magical properties, due to their transformative nature and novelty (cf. Creighton 1995; 2000; Budd and Taylor 1995; Hingley 1997). Here it is proposed that the production of copper in the TRB IV and V may have been viewed in exactly this manner, and have therefore been linked to the use of the drum similarly associated with a transformative nature.

The importance of the community in shamanistic societies may be reflected in the emphasis of the collective, in the western part of the Salzmünde B distribution, where an almost exclusive “burial drum” can be defined. In the eastern area the single burial was the norm and the wide differences of expenditure of man-hours on the burials was clearly graded from the simple to the elaborate. The most “important” burials in this area, although containing only single burials, were placed beneath mounds, which to the outsider would essentially resemble the scale of the western *Mauerkammern*. Thus we may understand that the outward appearances masked the underlying social distinction prevalent in a society where the economic resources of soil, and raw material, exceeded that of their neighbours. The intriguing distinction of collective burials in the west, and the eastern emphasis on the individual, may provoke further tentative explanations. The western stress on the drum as solely part of the

burial rite may be another way to emphasize the collective, the shamanistic importance of maintaining social cohesion through ritual performance and psychopompic activity, and may reflect ancestral claims on good soil and copper sources, while the eastern large mound burials may be an attempt to disguise the lack of emphasis on the collective, with the realm of the living.

The *Axis Mundi* and Drum Symbolism

Throughout TRB IV- and V there has been a distinct use of orientation in both burial construction and positioning of the dead, such spatial symbolism presupposes a centre from which one may orientate oneself. If we further elaborate the use of the Shamanistic model, the *Axis Mundi*, whether represented as the world tree or the world mountain, may have its expression in the drum, which in many cultures is often believed to represent the world tree thus allowing the shaman to be transported, during a ceremony, to the *Axis Mundi*. The *Axis Mundi* further represents the entrance to the other worlds of the shaman and as such the *Mauerkammern*, representing the mountain and entrance to the land of the dead, is an ideal location for the deposition of another representation of the world tree, namely the drum. The drum is often constructed from a branch of this tree, although in the case of clay drums this may not be argued; yet in an animistic worldview making a drum from the clay of the earth may well have been equally sacred. We may further speculate that these repetitively used *Mauerkammern*, viewed as the resting place of ancestors and representations of the entrance to the underworld, are like the drum also representations of the World Mountain, at least in the western part of Salzmünde B distribution. We may also recall the discussion of the presence of a small rodent jaw at Niederbösa, and the proposed symbolism of it as representative of a shaman travelling between the worlds (see chapter 5)(Ellis-Davidson 1964, 27; Glob 1983, 116; Bates 2003, 197).

The decorative waist of the Salzmünde drums further suggests the separation of the cosmic layer of the universe, comparable with the shamanic worldview.

We observed above that the *Mauerkammern* have the smallest range of decorative motifs on the general ceramics, although they do have some of the more complex ornaments (Müller 2001, 325). These motifs are also commonly found on settlement vessels but not on flat grave assemblages. Thus there is a symbolic relationship between

the *Mauerkammern* contexts and those of the settlements, which may be why we find drums in *Mauerkammern* in the west and in settlements in the east.

The drums, reflecting the shape of the Northern TRB pedestalled bowls, are found with distinct geometric decorations and, in a many cases, are found in funerary contexts (see above). While shamanistic traditions exist which do not employ drums, the drum can be said to be a universal trait of Shamanism, often decorated with geometric and iconic images said to reflect the spirit realm.

At Obereichstädt (Müller, 1988; 1999) a decorated menhir was reused as part of the roof of the chamber. Considering the rarity of decorated standing stones and burial chambers in this area it must have been a significant act. Employing the shamanistic model this would be interpreted as using a concrete example of the world tree and employing it to sanctify the burial chamber, which comes to represent the world mountain. This idea may be further expanded with reference to two further drum sites. Thus, at Böhlen-Zeschwitz, the drum had been broken and placed beneath the sherd paving area upon which the burial had taken place (Mildenburger 1952, 10), we may speculate that firstly the drum, as representation of the world-tree would sacralize the burial mound. Additionally we may note that in the southern Altai, there is a complete identification of the shaman with the drum, on the death of the shaman the drum is destroyed (Devlet 2001, 49). Lewis-Williams and Dowson (1993, 60) suggested that the decoration of the passage tombs was designed to mimic a vortex experience at the onset of trance. This analogy may be carried over to the drums, since as we have observed the geometric decoration on the inside of the drum-foot creates the same impression if one looks up at the skin from the base (see Appendix 4, for discussion and illustrations). The Obereichstädt example parallels the Table des Marchand and the chamber at Gavrinis.

The drums from Leuna-Rössen, Wandersleben, Halle-Brandberge, Obereichstädt and Hornsömmern all have one thing in common; they are found in close proximity to a large natural stone. In the case of Hornsömmern and Obereichstädt this stone contains fossilized shells while at Ebendorf two pieces of petrified wood were discovered. In the light of the case presented above we may speculate that these stones represent an *Omphalos*, the navel of the world, the *Axis Mundi*. Müller (2001, 279) observes the presence of sandstone slabs in the centre of

houses at Halle-Heide, in Bernburg contexts of TRB V, but whether there is a relationship between these two uses is unclear.

Raetzl-Fabian (1999, cited in Vosteen 2000, 1) proposed an interpretation of Neolithic monumental causewayed enclosures in west Central Europe, in which “the enclosed space” is related to the realms of ritual and mortuary practices and subsequently cultural consolidation, communication and representation.

Vosteen (2000, 2-3) expands this discussion, observing that it is important to define a geographical region with a border between this side, the world of the living, and the other side, the world of the sacred and the dead. He further argues that a “holy area” can be “cult place” and “settlement” at the same time, where the use of space is defined by the nature of the time; thus if it is a “holy time” then ritual may be practised.

“An everyday or profane use of the construction is quite conceivable outside holy time and is not contradictory to ritual actions, on the contrary both uses, everyday and sacred, may have been viewed as two aspects of the same affair” (Vosteen 2000, 3).

This is particularly interesting in relation to the changing nature of drum context, for example the finds of the sherds of six drums at the Grossobringen enclosure can under these circumstances still be viewed as related to ritual practices involving the dead. Additionally, this argument would bolster the case for a relationship between metal work and the sacred, since the Grossobringen finds were associated with a crucible.

Additionally, we may consider the role of the drum in sacralizing a place and time during which ritual practices may take place.

The Mechanism of Induction

It has been argued above that the decorative elements on the TRB MES IV drums, classed after Müller (2001) as Salzmünde, Salzmünde/Walternienburg and Walternienburg groups, may originate as endogenous visual phenomena (EVP), formerly known as entoptic images or phosphenes, and that they may be produced during what is defined here as a SSC (Shamanic State of Consciousness). The drum, through the mechanism of auditory driving, linked with costume, place and social context, is part of the equipment used to induce this socially acceptable change in consciousness. It is this observation linked with the common theme of the importance of the drum for the shaman and the role of the shaman as cartographer of the afterlife that are the key issues for supporting a shamanic model for the interpretation of these

artefacts. This line of thought allows two suggestions as to why the drums are found in the collective burials: firstly the drum is used by the psychopomp leading the souls of the dead to the afterlife, essentially a funerary ritual, although not necessarily taking place after death, and secondly the drum as representative of the *Axis Mundi* is the equivalent of the *Mauerkammer*. Rinne (2002) supports this argument, observing that at Odagsen the presence of drums in the entrance of the tomb are related to ceremonies and cultic acts. Additionally, Storr (1994, 231 and 235) observes that symbols, are needed to form bridges between the inner world of the imagination and the external world. They “both express states of mind and tend toward inducing them”. More specifically, consciousness may be altered by focusing attention on EVPs (Hunchak 1980 in Hodgson 2000, 6). Thus the decorated drums, menhirs and tombs may all play a parting the induction process, while we must not forget the symbolic power of the drum itself.

Changing Contexts and Changing Function

We have seen that in TRB IV the drums were associated with specific symbolic motifs. Furthermore these instruments were found in distinct contexts, which reflected the differences in form and the use of these motifs. Thus in TRB IV we are presented with a general pattern of burial drum with profuse decoration in the west and settlement drum with less decoration in the east. Additional contextual information allows us to link the drums with the presence of copper, a very rare commodity, and as noted above there is often a link between the metalworker, who is the master of transformation, and the Shaman, who is thought to be “from the same nest”. It may be that we should see a further speculative link at Leuna-Rössen and at Wandersleben, where the drum fragments were associated with large stone slabs, possible anvils or merely altars.

What we may say is that with the transition to TRB V, there is a change in drum use. Far more drums are now found in settlements, exemplified by Quenstedt-Schalkenburg and the Langen Burg on Dölauer Heide, (although see Vosteen (2000) above on sacred space). However, there is a dramatic decrease in the number of drums associated with copper artefacts, despite the fact that in TRB V the quantity of copper finds increases. What we do see is the contextual association of the drum in the settlement, at least at the site of Quenstedt-Schalkenburg, with the axe and the spindle-whorl. As we have discussed, there was a change in the practice of axe deposition

around 3500 BC. This is represented by a move away from the deposition in areas away from settlements and cemeteries, interpreted as deposition for communal reasons. Instead we see the deposition of axes within settlements and graves, a tradition that Müller (2001, 398) links with an increased need to express social position and distinction from outsiders. This is paralleled by the rise of more complex settlement systems but also a drop in axe-production of about two thirds (Müller 2001, 403).

The lack of clear associations of the drum with axes in the TRB IV is difficult to interpret, due in some degree to old excavations, but also the deposition of the drums in collective burials, which makes it difficult to identify a relationship between any individual grave goods. However, we may speculate that in the early period a link is to be recognized between the drum and copper, while in TRB V we may recognize a link between the drum and the axe and hammer axe, related to copper production.

Before we draw to a close in our discussion of the changing nature of drum associations, it may be appropriate to remind ourselves of the suggestion made by Sherratt (1998, 415), discussed in chapter 5. This was the observation that the collared flasks found in TRB V contexts may have contained an opium-based substance. Unfortunately, there has been no chemical analysis to support this idea, so the conclusions must be speculative. However, it is perhaps more than coincidental that when we see the modification in drum-use reflected in the change of context and decoration, we also see the appearance of the collared flask found in settlement contexts. They were possibly an alternative method of inducing a SSC.

Finally, we noted in chapter 3 the recurrence of the drum in relationship to the spindle-whorl, while in chapter 5 we discussed the widespread association of the spindle-whorl with the mythological characters of the fates, spinning out our destiny. We may speculate that the interpretation of the drum as a method divination in TRB V is supported by the association of the spindle-whorl, which we may interpret as a symbol of the web of fate (see chapter 5) which we find echoed in the widespread personification of fate in the later mythology of Scandinavia, the Mediterranean and the Indian subcontinent.

A SHAMANISTIC CONCLUSION

We have already discussed Müller's observation that the general ceramic trend of the late southern TRB Neolithic is a move from complex tripartite vessel with very

little decoration to simple one-piece vessels (globular) with complex decoration. Gell (1998, 160) sought a way to link the patterns of art motifs with the structure of a culture, and we may be able to make some tentative suggestions along this line of thought. In TRB IV we are faced with three stylistic groupings of ceramics viewed here as existing within a larger southern TRB (see chapter 2); these are related to distinct settlement distributions and slightly less clear burial distributions which in turn are related to soil types and access to copper and salt sources. We may add that even within each area burial practices are very diverse. By TRB V, although there are traces of localized continuation of the Walternienburg and Salzmünde C style ceramics, the bigger picture is the widespread use of the Bernburg globular style. Thus we see a movement away from the earlier fragmentation of the larger cultural group marked by localized and one may argue fragmentary styles, towards an emphasis on a more cohesive social pattern, marked by the more widespread use of ceramic types with unbroken profiles. We may hypothesize that the move to a more cohesive society is mirrored in the cohesive appearance of the ceramic style.

We have discussed above the similarities of drum motifs with the groups of images known as EVP and the transformational principles, which govern the manner in which they are perceived. Without a doubt the drums are adorned with some motifs which resemble EVPs, and, it may be argued, demonstrate some of the principles of transformation (cf. Lewis-Williams and Dowson 1988). So there appears to be a trend during TRB IV toward recognition of the transformational principle of fragmentation while superposition or juxtaposition is the characteristic principle of TRB V. Thus we may recognize the same structure as we have just discussed above, that is that the decorative style of the drum mimics the structural patterning of society, and we are able to recognize a changing nature from fragmentary to cohesive, as we move from TRB IV, 3350-3100, to TRB V, 3100-2700 BC cal. This is may be paralleled in the earlier period by a relationship between the drum, its decoration and the ritual production of copper, and in the later period by a decline in this relationship.

It is proposed here that in the TRB IV the drum and its decorative motifs are associated with shamanistic practices, notably the role of the psychopomp. As a reflection of the shamanistic world-view the drum may be interpreted as a representation of the *Axis Mundi*, hence its association with the collective burial structures which may have a similar symbolism, and represent an entrance to the land of

the dead. The role of the shamanistic practitioner as the magical transformer is also related to the role of the metalworker, represented by the contextual association with copper artefacts. In the eastern part of the Salzmünde B settlement area the role of the drum may be interpreted as slightly different due to its repetitive appearance in settlements, although the relationship with copper still exists, e.g. the Merseburg find.

It is possible that we should interpret this difference of function by the use of analogy. The drums of the Saame were split in function, so that in the north they were predominantly used for the purpose of the soul-journey, while in the southern distribution each household used its own drum for divinatory purposes. It may be that we should see a similar pattern here. In TRB V, the drums are predominantly found in settlements, and the association with the axe may suggest a continued relationship of the drum with metalworking and even with the concept of fate, seen in the association with the spindle-whorl. This interpretation is of course speculative, but is supported by circumstantial evidence. Furthermore we do find drums associated with burials in TRB V, and even with decorated burial chambers, e.g. Obereichstädt, Schkopau and Nietleben. The first two of these drums are highly decorative and fit with the diagnostic ratio proposed for the Salzmünde burial drum; the Nietleben drum corresponds with the ratio of the Bernburg burial drum, but bears the broken-branch motif found on the Salz/Walt burial drum of TRB IV. Elsewhere during TRB V this motif occurs only on the Derenburg drum and the fragments from the Langen burg pits 165 and 107. During TRB IV it is found only in burial contexts, and in line with the model presented here we may tentatively suggest that it represents the *Axis Mundi*, envisaged as the “world tree”. Since Müller (2001) has demonstrated the continued existence of the Salzmünde tradition within his Salzmünde C ceramic style found along the east bank of the Saale, it is proposed here that these later, highly decorated burial drums reflect a final, dwindling, continuation of the TRB IV shamanistic tradition. One further addition to this is the Fredrichsaue instrument. Müller (2001) classified the accompanying *Mauerkammer* assemblage as Bernburg, yet the number of lugs and the decoration are again reminiscent of the Salzmünde and even the Salz/Walt style drums.

THE ROLE OF MUSIC

Organizing the Self

Despite being an examination of clay drums, this research has raised questions about the more general relationship of music and the mind. In chapter 5 we discussed Ramachandran's view (cited in Clark 2003, 78) that the left hemisphere is responsible for maintaining the stability of the "self", and when this is out of kilter with the perceived model; the right hemisphere will maintain the equilibrium. Our perception of self maintains stability by the recognition of patterns and relationships, thus our self and its perception of a relationship with the group is a necessity of maintaining mental stability.

Storr, citing Berlyne, observes that

"pattern making, Gestalt perception, is an integral part of our adaptation. Without it, we should only experience chaos. The creating and perceiving of apprehensible schemes goes on at every conceivable level in our mental hierarchy, from the simplest auditory and visual perceptions to the creation of new models of the universe, philosophies, belief systems, and great works of art including music" (Storr 1992, 168).

Storr further suggests that people gain satisfaction from solving problems and recognizing patterns exactly because it reduces the stress induced by the perception of the surrounding chaos (Storr 1992, 177). Dunbar's social bonding may be seen as similar to McNeil's (cited in Mithen 2005, 209) notion of "boundary loss", described as a "blurring of self awareness", during music making. Similarly music

"perhaps provides a unique mnemonic framework within which humans can express, by the temporal organization of sound and gesture, the structure of their knowledge and of social relations" (Sloboda 1985, 267: see Storr 1992, 19).

Blacking (1976, 8) suggests that human

"reason and the development of conceptual thought are the consequences of discoveries in the fields of sensory awareness and social interaction that were made corporately, and these discoveries were achieved through the mediation of a special kind of sensori-motor communion amongst men which generated, and generates, new forms of communication by dividing space and time into contrasting sequences of social experience".

This returns us to the implication of our opening quotations, stressing the importance of the ability to measure space and time and music's capacity to do this. Furthermore, Blacking (1973, 104) proposes that music

"is not a language that describes the way society seems to be, but a metaphorical expression of feelings associated with the way a society really is".

The relationship between music, space and time may have some connection with the development of the auditory system. Storr asks why music is described as moving, since in fact it consists of discrete individual tones. He speculates that the reason has to do with the fact that the auditory system developed from the vestibular system which is responsible for the providing information about up, down, left, right back and front. The auditory system is able to identify sound and the direction from which it comes (Storr 1992, 172). Thus we may further speculate that the relationship between the auditory system and the individual's spatial position is mimicked by the relationship between the auditory system and the individual's social position.

In her discussion of the classification of musical instruments, Kartomi (1990, see chapter 3 above) proposes that the most symbolically developed scheme is often the most representative of the culture. While Merriam (1967) suggests that a relatively slow change in the development of musical instruments is the result of music being carried below the level of consciousness and therefore being particularly resistant to change. It can change, but except for cultural accident, it changes within what seems to be a culturally determined framework.

Shanks and Tilley (1987, 81) discuss artefacts and their meaning for a society, quoting Gifford, who observes that types

“are the material manifestations of the regularities of human behaviour...The basic attributes involved in any type come together in the combination of a mental image plus the motor habits of the prehistoric artisans”.

They further observe that classification is not necessarily independent of theory (Shanks and Tilley 1987, 83): hence the inclusion in chapter three of not just form and decoration but also context. Furthermore, the recognition that artefacts are not only reflections of cognitive systems but are actively involved in their formation and structuring, may help explain apparent contradictions when attempting to interpret the archaeological record in simple terms (*idem* 84-5). Thus it is worth repeating that the fact

“that material culture differs from language in its communicative form and effect does not require that we evaluate the communicative intent of material culture negatively, in terms of its difference from language, and conclude that material culture as a communicative form is too ambiguous to repay study” (*idem*, 85).

Summing up, material culture is most definitely the product of cognitive behaviour, but cognitive behaviour in the sense of conceptual thought may be argued to be the product of social behaviour and regulation by the social group. The result is an

ability to structure the social group by organizing its position in time and space, which may have developed from grooming, the first singing, and dance. Thus musical instruments may represent a manifestation of this behaviour.

Self, Symbolism, Community and the Right-Hemisphere

Blacking proposes the use of the term “dance” to signify the ritual behaviour which distinguishes man from animals, without the connotations of “cult”, “ritual” or “play”. This is a uniquely human process. He also seeks to distinguish this from contemporary dance, since he is referring to something which existed before *Homo Sapiens* and maybe even before tool-making. Due to the fact that it may be described as a form of “social co-operation generated by sensori-motor communion”, he opts to call it “biosocial dance” (Blacking 1976, 10-11). It seems appropriate to equate Blacking’s “dance” with Donald’s mimetic skill (Donald 1991, 164, 167), which he defines as “conscious, self-initiated representational acts that are intentional but not linguistic”. Indeed, Donald (1991, 175) further mirrors Blacking when he argues that it “is likely that mimesis was the basis, if not the only formative element, behind this new cooperative, specialized social organization”. Mithen continues the train of thought of Blacking (1973, 101; Mithen 2005, 209), where Blacking implies that it is during times of no stress that music is made. We may counter this by suggesting that while the repetitive nature of life, hunting, tending crops for subsistence may well be stressful, it has its own rhythm. When the work is done and there is leisure time this is exactly when the human mind needs to be occupied. This is the period of unstructured chaos. The threatening chaos of an independent self may well be the trigger that causes a search, through music, for the “somatic state of sensori-motor communion” (Blacking 1976, 11), which here we equate with Dunbar’s model of music and grooming. Accessing of the right hemisphere through grooming, group singing, dancing and shamanistic practices all reinforce the perception of order in our lives.

Following Dunbar (2005), we may speculate that people who live in a time of great social stress, such as that postulated by Müller (2001, 445), sought a way to access the right-hemisphere mentality because it was synonymous with an endorphin release and feeling of well-being. This chemical relaxant is the very component produced in monkeys during grooming, and if we recall the discussion of Dunbar in chapter 1 (Dunbar 2005, 126), the reason that grooming was pursued.

The essence of Dunbar's idea is that grooming evolved through laughter, music and finally language. These were the necessary developments when grooming was impractical due to the expansion of the social unit. Yet there is no link between the endorphin release and language use. That is it, does not have the "feel-good" factor (Mithen 2005, 135). Singing together on the other hand provides an inherent feel-good factor and facilitates social bonding, and thus we may speculate that the religious experience stems from group singing; hence the importance of music in ritual practice.

Thus despite the possibility that language developed for bonding at a distance within a large social group, perhaps the religious endorphin-release was the next logical progression to maintain the stability of the ever-growing social group, specifically in times of social and economic stress. If this was the case, we may further expect a society that seeks to increase social bonding and the concept of the group, to express this through the implementation of collective burial. Thus we may speculatively view collective tombs as the material expression of grooming. Bringing in metaphor, the language of poetry, and even everyday language, Jaynes sought to find the evidence of right-hemisphere poetic licence (see also Storr 1992, 14ff.). Rhythm pitch, intensity and timbre, the key features which infants respond to are the prosodic elements fundamentally important in poetry (Storr 1992, 9).

The more individuals you may groom the larger your social group will be, and thus in times of stress grooming, laughter and group-singing would be sought to alleviate this stress. To this list it is proposed here that the rhythmic language of poetry may well be linked. We may recall that the shared prosodic neural pathways are located in the right hemisphere (Mithen 2005, 62; Deacon 1997, 313). Thus while language is largely a left-hemisphere process, Deacon suggests that the symbolic aspects of speech are organized by the right hemisphere (*idem*, 311-2). Donald (1991, 219) argues that there must logically have been advancement in conceptual thought before it was possible to use symbols. Furthermore, one of the earliest uses of language was Mythic narrative, the model for the universe, the local Myth, which supports the social group in that it provides purpose (see Donald 1991, 213 and 256). Shamanistic practices allowed intentional access to the right-hemisphere consciousness, through ritual activity and this promoted the use of symbolic awareness.

The speculative progression of this argument is that the aspects of culture, such as rhythmic repetition, music, repetitive phrases and symbolic behaviour, which may be

linked with the right hemisphere, are the precursors of ritual and religious experience. As we have seen, the shamanistic state of consciousness is dominated by the right hemisphere. Thus we may speculate that as grooming may be demonstrated to have a role in stress-relief, so engaging in shamanistic practices may well induce the same frame of mind and in turn lead to social stabilization in times of social stress and economic upheaval. Although language today may not have the feel-good factor, the symbolic language of Myth required right-hemisphere organization. It may not be coincidental that myth often mirrors classic examples of shamanistic initiations and soul journeys. The accessing of the right hemisphere by the shaman, created the opportunity to use language symbolically, creating Myth. Through the recitation of Myth the right hemisphere of the listener would be stimulated and the grooming function of language achieved. The explosion of symbolism in the late Pleistocene and early Holocene is the best evidence to support the argument for a great age for shamanistic practices.

The model of consciousness proposed by Jaynes (1990) suggested that when stress was too great, the right hemisphere would intrude, by way of an auditory or visual hallucination, which our ancestors would interpret as being the gods and what Clark (2003; 2006) has called the right-hemisphere homologue self. Indeed, Mithen (2005, 266) proposes that with “the emergence of religious belief, music became the principal means of communicating with the gods”. He further cites Nettl (1983 cited in Mithen 2005, 332, n. 7), who argues that one of music’s universal features is that it is used to communicate with the supernatural. In chapter 5 we discussed Clark’s (2003; 2006) proposal that the numinous or supernatural in fact stems from right-hemisphere experience. The evidence presented to support the basis for these views is substantial, but here we may interpret the evidence slightly differently. Furthermore, this experience may be equated with the release of natural endorphins and brain hormones, which ease pain, boost the immune system and also affect blood-pressure, heart- and pulse rates and respiration (Achterberg 2002, 43: Krippner 2002, 10: Vitebsky 2001, 148: Mithen 2005, 95). Here this experience is equated with that induced by shamanistic practices.

Dunbar proposes that the purpose of religion is fourfold. The functions are firstly to provide coherence for the world in which we live, a metaphysical scheme; secondly to allow us to feel that we may affect the chaos of life, through ritual; thirdly enforcing rules of morality and ethics and finally creating the opportunity for a few to control the many politically (Dunbar 2005, 168), which sounds remarkably similar to the

thoughts of Thomas Paine. Dunbar cites a recent publication by Newberg and d'Aquili, in which they suggest that religious adepts are able to reduce the level of activity in the area of the left hemisphere responsible for our spatial self, an area thus related to the ego, supported by brain scans of these individuals. This is in the posterior part of the left parietal lobe, above and behind the left ear; this reduction is also related to increased right-hemisphere activity. The disengagement of these neurones, allows them the independence to send impulses to the hypothalamus via the limbic system, thus creating a feedback loop between the frontal cortex and the area related to the spatial self. This appears to shut down the awareness of the spatial area completely, but it is the hypothalamus link which interests us here since this is related to the release of endorphins, natural opiates (cf. Marx). This corroborates our discussion in chapter 5.

CONCLUSIONS

The case presented here argues that the drums of the southern TRB were used for shamanistic activity which included the shaman assuming the role of psychopomp to guide the dead or dying to the after-life. Knowledge of this realm presupposes the practice of soul-journeying, as a local manifestation of the experiences of a shamanistic state of consciousness, characterized by the dominance of the right hemisphere linked to out-of-body experience, hearing voices, seeing visions and the sense of other (see chapter 5). These experiences are deemed, here, to be correlates for the animistic notion of an "other" (Clark 2006, 220). This experience is also the proposed origin of the drum decoration. It is likely that the prestige awarded to the drum in the light of this practice allowed it to be used for divinatory purposes, and possibly had some symbolic relationship with the local production of copper due to its socially recognized power of transformation. This accessing of right-hemisphere mentality, Clark's (2003; 2006) right-homologue self may be equated with the ritual practice of employing music to connect with the spiritual realm, and create social cohesion. The association of the drum and prestige objects such as the axe and copper and the presence of large monuments produced for the individual also support Dunbar's final function of religion, to allow the few the means to control the many. As presented here, the repetitive appearance of the drums and their decoration within specific contexts, the parallel distributions of other cultural features and the possibility that the drum could be used as the means of induction, all support the plausibility of this dissertation.

Appendix 1.

Catalogue: The Drums of the Southern TRB

The classification scheme developed in chapter three was based on complete drums, which were defined as drums which had enough surviving fragments to allow a true recognition of the shape, height and diameters at the top and bottom. Since there are many drums which do not fill these criteria the catalogue will take the following form, each ceramic style will have a section devoted to it, this will be divided into those drums which follow the taxonomic scheme presented above, followed by those which are too fragmentary to qualify for this classification but, based on similarity of form and context, warrant being placed within the general class of that particular drum style. Thus we will begin with Salzmünde Drums divided into the subcategories Salz Ia (burial drum), Salz II (settlement drum) and Salz general (accepted as Salzmünde style within a Salzmünde context, but unable to be placed more accurately within this scheme, due to fragmentary nature of finds). These general Salzmünde drums will be grouped by context. This catalogue does not include drum finds from outside the Area of the middle Elbe and Saale although, drums found in Altmärk-Tiefstich- and Havelland-culture contexts are listed at the end. The catalogue number given to each drum corresponds with the numbers on the map accompanying this catalogue.

Thus the drums of TRB IV-V will be presented in the following order:

TRB IV-V Drums. Organization of Catalogue

Salzmünde	Salz/Walt	Walternienburg	Bernburg
Salz Ia Settlement	Salz/Walt	Walt 1a curved	Bernburg I settlement
Salz II Burial	Salz/Walt	Walt 1b subtle curve	Bernburg II burial
Salz General Burial	S/W possible	Walt General settlement context	Bernburg General Settlement
Salz General Settlement		Walt General burial context	Bernburg General Burial context
Salz General No Context			Bernburg General Unclear Context

SALZMÜNDE

Salz Ia Settlement Drums

1 HALLE-WEINBERG, Saale.

A Salzmünde style drum was found in a settlement context. The drums has a height of 13.3 cm. On the upper part of the drum the motif of two inverted concentric semicircles, surmounted by two small parallel vertical line is repeated; it is possible that this is a variation of the common anchor motif, examples of which are found on the drums from Böhlen, Leipzig 1, Rössen, Feldengel, Hornsömmern and Holzussra. On the foot of the Weinberg drum are a series of small crosses, which are placed half way up the foot.

Literature: Toepfer 1961.

2 LEUNA-RÖSSEN, Merseburg.

In 1918, a pit filled with earth and a large "sofa cushion" size granite stone was discovered high on the left bank of the Saale, south-east of Merseburg. The finds included a well-preserved drum.

The instrument is a beaker-drum with slender, funnel-shaped upper part; the waist has the form of a gentle curve, and the mouth also slopes inward; it is 23.2 cm high. Approximately

in the middle of the upper part are five downward-pointing lugs, with forked ends. The decoration at the waist consists of two series of circulating, short vertical lines, separated by a horizontal line; zigzags border the band above and below. The waist decoration is repeated on the foot inside and out, without the lower zigzag. There are seven anchor motifs half way up the foot of the drum. Between the waist and the lugs we find a combination of motifs repeated round, the vessel body. This motif-complex is repeated round the vessel interspersed with single crosses.

Literature: Seewald 1934, Fischer 1951.

3 OBERMÖLLERN, Weissenfels.

A richly decorated drum was discovered in the Salzmünde settlement, with a height of 25.2 cm. Fischer classes it as belonging to the Salzmünde style presumably based on the decoration as there is no visible form of skin attachment.

Müller (2001, 127) places the Obermöllern assemblage in the Salz/Walt style, which may account for the profuse decoration on the drum despite the fact that the vessel proportions indicate a Salzmünde Ia style vessel.

Literature: Grimm 1940, Schrickel 1956, Müller 2001.

4 STORKAU-PETTSTÄDT 1, Weissenfels.

The fragments of two Salzmünde style drums were discovered from a settlement pit at Pettstädt. The foot of a decorated drum with relatively sharp waist was reconstructed from the fragments; the surviving sherds at the waist indicates that the upper part was cauldron-shaped. The diameter and height of the foot are both 14.5 cm. The decoration is composed of three deeply pierced, precise rows of dots at the lower edge, over which two zigzag line are found. Approximately half way up the foot a decorative band divides the foot in two; this consists of a two rows of dots above and below a circulating straight line; this group of decoration is set within two zigzag bands which run round the vessel foot. This central section of decoration exactly parallels the foot decoration of the Spickendorf drum and although, in these two examples, this pattern is situated half way up the foot of the drum, it also parallels the waist demarcation of the Rössen drum. The inner edge the foot part is decorated with three dotted lines with a zigzag line above it. The existence of two further sherds belonging to this drum are interpreted based on the character of the clay and its firing, wall thickness and also the kind of the decoration. The decoration is filled with a white incrustation. A reconstruction of the drum from the sherds results in a broad eggcup shaped. No lugs or loops survive.

From the same settlement as the Pettstädt 1 drum a small fragment of the upper part of a second drum was recovered. The position of the waist is just recognizable allowing the height of the upper part to be given as 9 cm. An estimate of the diameter of the mouth is 20 cm. The skin was fastened with small, horizontally-bored through loops, which are placed in the upper half of the upper part. No evidence of decoration survives.

Literature: Müller, H. H. 1960.

5 VIPPACHEDELHAUSEN, Sondershausen. Mbl. 2743/4731

A drum was discovered from a deserted settlement "Wüstung Kettlingen", to the south of Vippachedelhausen. No better contextual information is given, although Seewald reports some other fragments of Bernburg style ceramics. The drum has a funnel-shaped upper part, with a height about 16 cm; upper part 10 cm foot 6 cm. Diameter of the upper edge about 17 cm, waist about 9 cm, a diameter at the base of the foot of about 7 cm. At the middle of the upper part are found three downward-pointing lugs. The foot is decorated with staggered

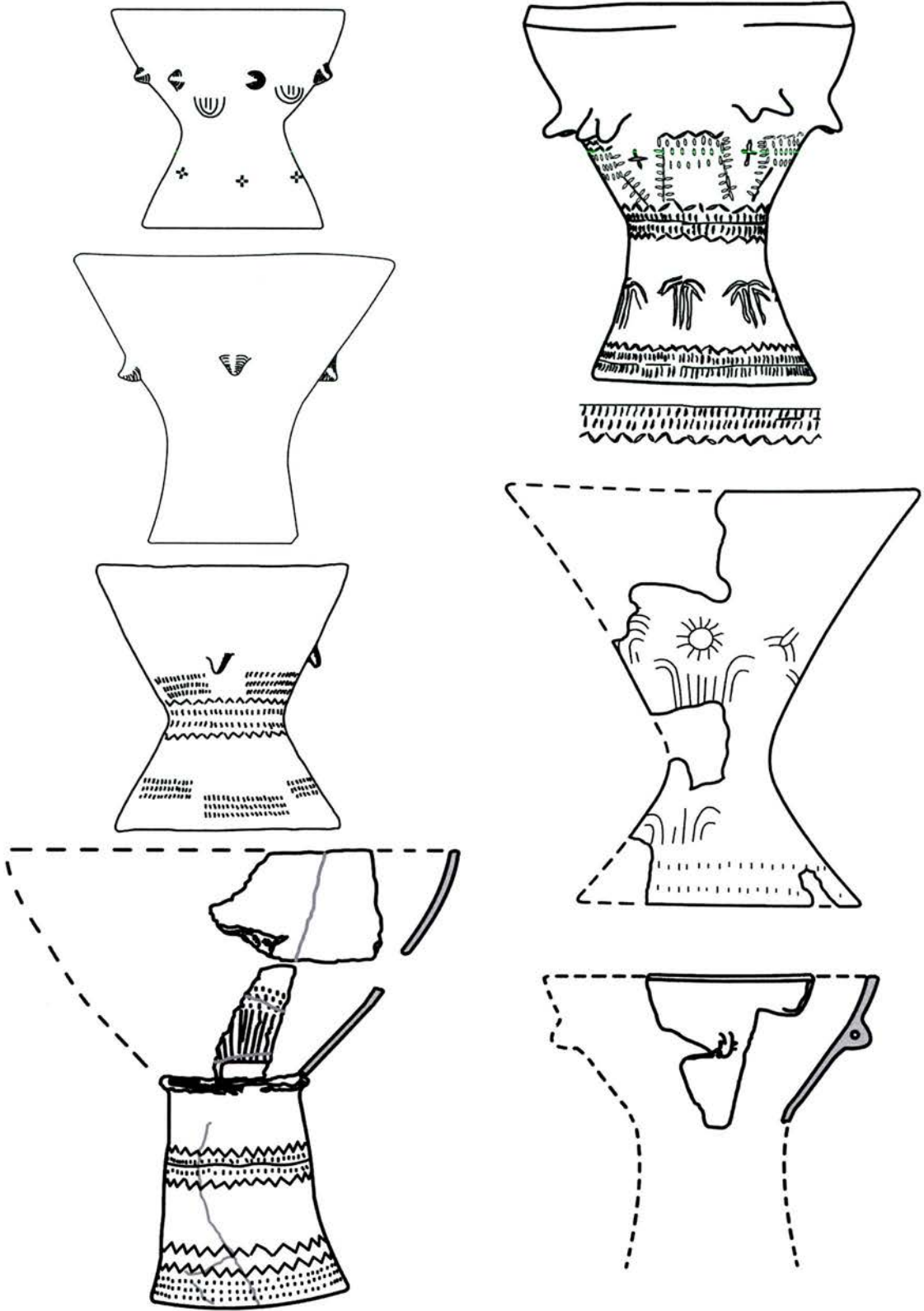


Fig. Cat. 8.1. Salzünde Ia settlement drums. Clockwise from top left Halle-Weinburg, Leuna-Rössen, Obermöllern, Storkau-Pettstadt 2 and 1, Vippachedelhausen, Zauschwitz 1. All the same scale, dimensions given in catalogue entry.

rectangular panels of small vertical lines, a motif we find on the upper part of the Hornsömmern drum and elaborated on the Leuna-Rössen example. This decoration is repeated above the waist, which is marked by a circulating double band of small vertical lines, bordered above and below by zigzags. This decoration is reminiscent of the standard Salzmünde waist decoration, parallel examples being found on at Leuna-Rössen, Spickendorf, Halle-Brandenberg and Leipzig. Müller (2001) classifies this assemblage as Walternienburg I. The piece is preserved in the Germanic museum at Jena.

Literature: Seewald 1934, Schrickel 1956, Müller 2001.

6-9 ZAUSCHWITZ 1 -4, Borna.

The fragments of two drums were discovered in a pit in the Salzmünde settlement at Zauschwitz. The illustrated example, height 17.4 cm, has a funnel-shaped upper part with four lugs just below the middle of the upper part. The foot of the drum is slightly conical and there is no decoration. Koch (1992) lists a four drums from this site.

Literature: Weber. 1966.

Salz II Burial Drums

10 BÖHLEN-ZESCHWITZ, Leipzig.

A burial mound, measuring 20 x 30 m in diameter, survived to a height of 3 m. The single central burial lay on an oval layer of stone paving, 2.8 m by 1.5 m, 5-10 cm thick. On the paved area rested a layer of sherds, 70 x 90 cm; the burial lay on these sherds, beneath a further chalky layer. The body was crouched on the right side; the head in the south, facing east, the hands were positioned in front of the face. The body was that of an old man whose skull had been trepanned twice. "9.5 cm above the bridge of the nose, 2 x 1.5 cm oval penetration of the skull cap, 1 cm to the left was a similar example".

A 15 cm layer of chalky lime, measuring 3.9 x 3.1 m, covered the complete grave construction. This was "probably deposited as lime paste", and thin layers were added to create a uniform layer 20-30 cm thick. The burial was accompanied by a Salzmünde-style Opperschöner jug, placed below the knees. A drum, an amphora and a storage vessel were reconstructed from the fragments of the paving.

The drum, manufactured from fine smoothed clay with a mottled appearance, has a cauldron-shaped upper section and a conical foot. Drum height: 22.6 cm, mouth diameter: 21.1 cm, foot diameter: 13.7 cm and waist diameter: 7.3 cm. 8 cm below the mouth of the drum are four vertically-pierced lugs, which hint at the Walternienburg or Salz/Walt style of skin attachment. On the foot, both inside and out are two horizontal patterns consisting of deeply impressed dots, which run round the base of the vessel. Above these lines are a row of zigzags, consisting of sets of two parallel cut lines. These are surmounted by a further row of impressed points, which follow the contour of the triangles. On the outside, above the triangles, are five inverted anchor motifs: each consists of four lines, which sit on four impressed points. Müller (2001) classifies this assemblage as Salzmünde B style, TRB IV.

Literature: Mildenerger 1952.

11 MUSTCHAU-KÖTTICHAU, Hohenmölen. Mbl. 2811 (4838) N 13.9; W 6.7.

An oval burial mound survived to a height of height 4.3 m and had diameters of 24 and 17m. It contained an assemblage of the Salzmünde style. The central Salzmünde burial lay on the old ground surface; orientated North-South. The skeletal remains were badly preserved and lay on an uneven deposit of chalk, which had been placed directly on the black earth, this is reminiscent of the sherd paving of the Böhlen central burial. Above the burial was a layer of decayed wood. At the feet of the skeleton lay a clay drum, with straight profile, three lugs on

the upper part, and punctures and stroke decoration on the edge of the foot; the upper part of the drum faced the body. The drum had a height of 17.4 cm. An Opperschöner jug, an angular cup with funnel edge, and a small band of shaped copper spiral (1.25 circuits) was found to the west of the skeleton. To the south, outside the limits of the wood covering, lay a second Opperschöne jug and a large globular vessel, and to the northwest a smaller cup similar to the first. A second layer of chalk rubble covered all finds and wooden remains. We may interpret this as a timber structure over the burial and the second chalk layer is again reminiscent of the Böhlen burial. On the southern side, a 50 cm thick wedge-shaped deposit of earth was deposited between the two chalk layers. The central-part of the mound also covered the remains of two hearths situated to the east of the grave and some old bones and cranium; these lie on the old surface (preserved in situ and not yet explored). Traces of a primary mound were recognizable which are interpreted as being associated with the two hearths and earlier human remains. The mound had been dug into for secondary Corded Ware burials. Müller (2001) placed these assemblages in the Salzmünde B style, TRB IV.

Literature: Billig, 1961.

12-13 OBEREICHSTÄDT (a.k.a.) LANGENEICHSTÄDT

The capstone of this burial chamber was unearthed in 1987 and the grave was investigated April to July 1987. The find-spot stands out in the landscape, being visible over a long distance from other mounds, whose chambers are located on the edge of the terrain. The excavation revealed a stone chamber with a total length of 5.3 m, yet the sealed entrance in the west meant that the actual chamber was 3 m long. The width of the chamber was 1.9 m, the capstones overhanging the sides. The height from the ground surface to the capstone was 1.7 m. Two post-holes were uncovered in the floor of the chamber. The chamber floor consisted of five layers of thin limestone slabs showing evidence of burning, in the form of charcoal and red coloured broken limestone with fossil shells. Between the slabs of the floor were skeletal elements (finger and toe-bones and the detached heads of femurs), bored through animal teeth, copper jewellery; two copper spirals, two copper beads and a larger copper tube. Three additional beads were also found; two of bone, one of amber. One of the capstones, 1.76 m long, 0.34 m broad and 0.25 m deep, is composed of light grey-yellow sandstone; it is engraved and is described by Müller (1988) as a statue. The joints between slabs had been filled with clay and smaller stones, and the entire construction had been coated in a layer of loess.

In the chamber at a depth of 1.3 m from the upper edge of the capstone, some very crumbly human skeletal remains were discovered without grave goods. In the next layer at a depth of 1.5 m, at the north face, numerous bone fragments of adult domesticated cattle were found. At a depth of 1.66 m, situated under the stone/clay chamber-floor some bored through animal teeth and a few human-bones were found. The chamber did not contain many pottery remains, and Müller (1988) suggests that the finds from the top of the capstone correspond to the clearing out of the chamber, and appears to represent a uniform assemblage. The vessels included the fragments of two drums, one with lugs and one with loops. Both drums were straight-sided, the upper part being very shallow in profile; the drums with most similar form are the Mustchau-Köttichau example and the fragmentary instrument from Oldisleben. The first drum has loops and a height of 18.4 cm. The second, more fragmentary drum has a foot fragment 6.5 cm high. Müller classes these two drums as Salzmünde style based on the similarity of the decoration. The other vessels suggest Salzmünde, Walternienburg and Bernburg forms, which fits with Müller's (2001) model. Müller (1988) suggests that the engraved menhir would have consecrated the burial site; he further observes that it lay with the only piece of red sandstone in the chamber, the remaining slabs being yellow. This site has a radiocarbon date range of 2890-2830 BC cal Müller 1994, 159): this is TRB V (Müller 2001, 138).

Literature: Müller, 1988; 1994, Müller 2001.

14 SARGSTEDT 2 Fdpl. Thieberg. Mbl. 2233/4031 or 2234/4032

A small drum was discovered in the 1930s, allegedly from a flat grave containing the burial of a child. The drum is 11 cm high with a mouth diameter of 8 cm. and a foot diameter of 7 cm. The drum has four low placed lugs. It appears to be of the Salzmünde style.

Literature: Hemprich 1938, Fischer 1951, Beier 1984.

15 SCHKOPAU, Merseburg. Mbl. 2679/4637.

In 1854 a stone *Rampenkist* was uncovered in a large mound at Schkopau. The cist had a length of about 2 m, a height of 1 m and a width between 0.80-1.30 m. There was no surviving trace of an entrance passage. In addition to the skeletal remains it contained five vessels of the Bernburg style (a clay barrel shaped vessel, one undecorated vessel, an almost double conical cup, the lower part of a large, bulbous cup and a drum. One wall was decorated with an engraving consisting of two vertical branches, one pointed up, the other down, and a wheel cross.

The drum has a height of 19 cm, at the edge of the foot a fragment was broken. The diameter of the upper edge measures 21 cm, at the bottom 13.5 cm and at the waist 7 cm. A little underneath the middle of the upper part sit four downward pointed lugs. The decoration on the foot consists of three bands of small, vertical strokes; on the inside of the foot there are two rows of lines topped by a zigzag line. Based on the associated vessels Seewald classed the assemblage as Bernburg II. Yet while the ceramics are of the Bernburg style, the drum belongs to the Salzmünde style, based on the shape of the vessel, the position and number of lugs and also the decoration. Müller (2001) also classes the assemblage as Bernburg, but we should observe that Salz B and Bernburg styles are partially contemporaneous. LM. f. V. Halle

Literature: Seewald 1934, Fischer 1951; 1956, Beier 1984, Müller 2001.

16 SPICKENDORF, Saalkreis (a.k.a. Niemberg and Opperschöner Mark).

In 1858 a burial mound was examined on the Opperschöne Mark, between Spickendorf and Niemberg. The associated finds included a drum and three pot handles.

The drum has a straight-walled, funnel-shaped upper part, manufactured from reddish grey clay, and is 22.5 cm high; the foot is also straight-walled. The diameter of the upper edge totals 23.7-24 cm, the lower 13.5 cm; the diameter at the waist is 7 cm. The wall of the foot is roughly 4 mm thick while the upper part is 7 mm thick. About 4 cm above the waist are four downward pointed lugs, each 1.5 cm long.

The decoration at the base of the foot consists of two series of vertical strokes, which are bordered above by a zigzag line. A similar decorative band sits at the middle of the foot, consisting of two vertical rows of lines separated by a horizontal line; again this is bordered above and below by zigzag bands. An identical pattern is found at the waist but without the horizontal dividing line. The decoration of the lower foot is repeated on the inside. All decoration has white incrustation. It appears that this drum, called by Seewald "Opperschöner Mark", is the same drum as Fischer's Niemberg example and possibly also the Latdorf drum of Childe (1973, 240). Beran calls this example Spickendorf.

The age of the site was originally determined through the associated finds of Bernburg II-III. Müller (2001) places this assemblage in the Salzmünde B style, which is possible since the Salzmünde B style overlaps with the Bernburg Style. The drum is in the Provincial museum at Halle a. d. Halls (Inv. - No. II. 333).

Literature: Seewald 1934, Fischer 1951, Beran 1993.

17 ZORBAU-GERSTEWITZ, Hohenmölsen..

A rectangular grave-pit, 2.15m wide and 1.75m deep, contained numerous pieces of red, burnt clay facing, the sherds of a drum and a mug of the Salzmünde style. A rescue excavation produced further Salzmünde settlement finds. The complete, decorated drum had a funnel-shaped upper-part, with five thick lugs directly below the rim, reminiscent of the

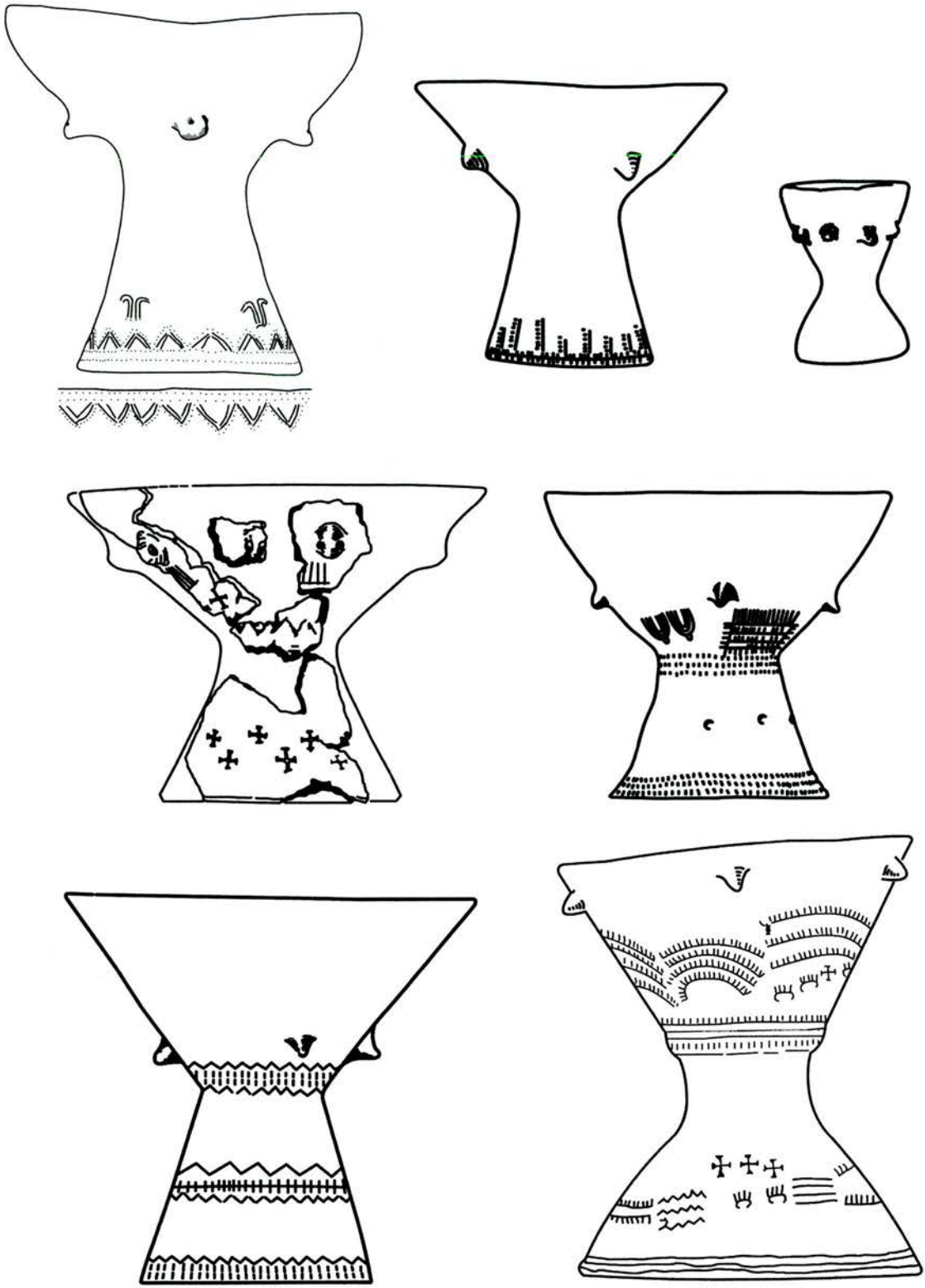


Fig. Cat. 8.2 Salzmünde II burial drums. Clockwise from the top left Böhlen-Mustchau-Köttichau, Sargstedt 2, Obereichstädt 2, Schkopau, Zorbau-Gerstewitz, Spickendorf. All the same scale, dimensions given in catalogue entry. Images redrawn after Fischer (1951), Hemprich (1938), Nitzschke (1986), Müller (1994), Schindler (1994)

Bernburg style. The upper part is separated from the foot by a cylindrical neck of 4cm. The clay belly has a smooth surface area, coloured pale grey/brown. The mouth diameter is 24.2 cm, the foot diameter 22 cm and the height 27 cm.

On the upper part and on the drum foot were small semicircles, open at the base, carved with vertical punctures on the upper side of the line. On the inside of the foot Nitzschke describes two vertically carved motifs, and proposes that they are anthropomorphic, but does not illustrate them. The form of the drum and some of its decoration have no parallels. Additional finds included a handled cup with five lugs on the belly-kink.

Müller places the age of this site as Salzmünde B, but it is worth noting that the associated cup was biconical, suggesting an age contemporary with Walternienburg II (late in the Salzmünde B sequence), thus from 3100 BC cal.

Literature: Nitzschke 1986.

Salzmünde Incomplete Drums: Burial Context

18 NIEDERSCHMON, Querfurt-Saxony. Mbl. 2677/4635: N 18.5: 0 22.

In 1893 a large oval mound was excavated on the “Niederschmon height” its dimensions were 16.6m x 5.1m x 1.25 m. The disturbed dry stone chamber had walls up to 60 cm thick and was orientated North-South; no details concerning the burials were recorded. The finds included the sherd of a straight walled cup, a small funnel vessel and two sherds from the foot of a drum. Two perforated animal teeth, skull remains and bones were also found within the ash and stones.

The drum fragments are composed of yellowish clay; the largest sherd surviving to a height of almost 10 cm; thus allowing an interpretation of most of the body shape. The sharp angle at the waist allows the classification of the drum as a beaker form. The diameter of the lower rim was 10 cm. The foot was decorated on the outside edge with two double rows of short vertical strokes, which were separated by three horizontal lines. The inner edge is decorated with a similar pattern, two horizontal lines surmounting two rows of short vertical strokes with a further row above the horizontal lines. The find was originally listed as Bernburg II. Müller (2001) lists it as Bernburg. LM. f. V. Halle, Inv. 12186-1218951.

Literature: Seewald 1934, Fischer 1956, Beier 1984, Müller 1994.

19 OLDISLEBEN, Artern. Mbl. 2675/4633: approx. S 1,7: W 0.5

In 1872 a *Mauerkammergrab* was excavated, in mound B9/1872, in the “Hagen” forest. The mound, with a diameter of 18 m and height of 1.5 m, consisted of stone packing covering an “allegedly” circular paved area. The skeletal remains of at least 20 individuals lay close together on this surface. The finds consisted of eight perforated dog-teeth and three perforated bear-teeth, two Opperschöner jugs, the remains of three further jugs and a drum sherd, 6.5 cm high. All teeth are bored through at the root. Of note, is the fact that at the time of publication (Mania, 1966), this was the first tooth jewellery observed in a Salzmünde-style burial. Mania cited a third peculiarity, namely the position of the burial site far away from the centre of Salzmünde settlement areas. However, in the light of Müller’s (2001) research we now see the Oldisleben site as situated in the middle of the Salzmünde B settlement area, but significantly placed between the Salzmünde B and Salz/Walt burial areas.

The sparse data concerning the construction and burial connects the grave with the other Thuringian collective burials. In addition, the occurrence of animal-tooth jewellery reflects the proximity of traditions more often found in Thuringia. Müller (2001) classified the assemblage as Salz/Walt, TRB IV. Mus. Jena 6031-6040, 6124-2145

Literature: Fischer 1956, Mania 1966, Beier 1984, Müller 1994, Müller 2001.

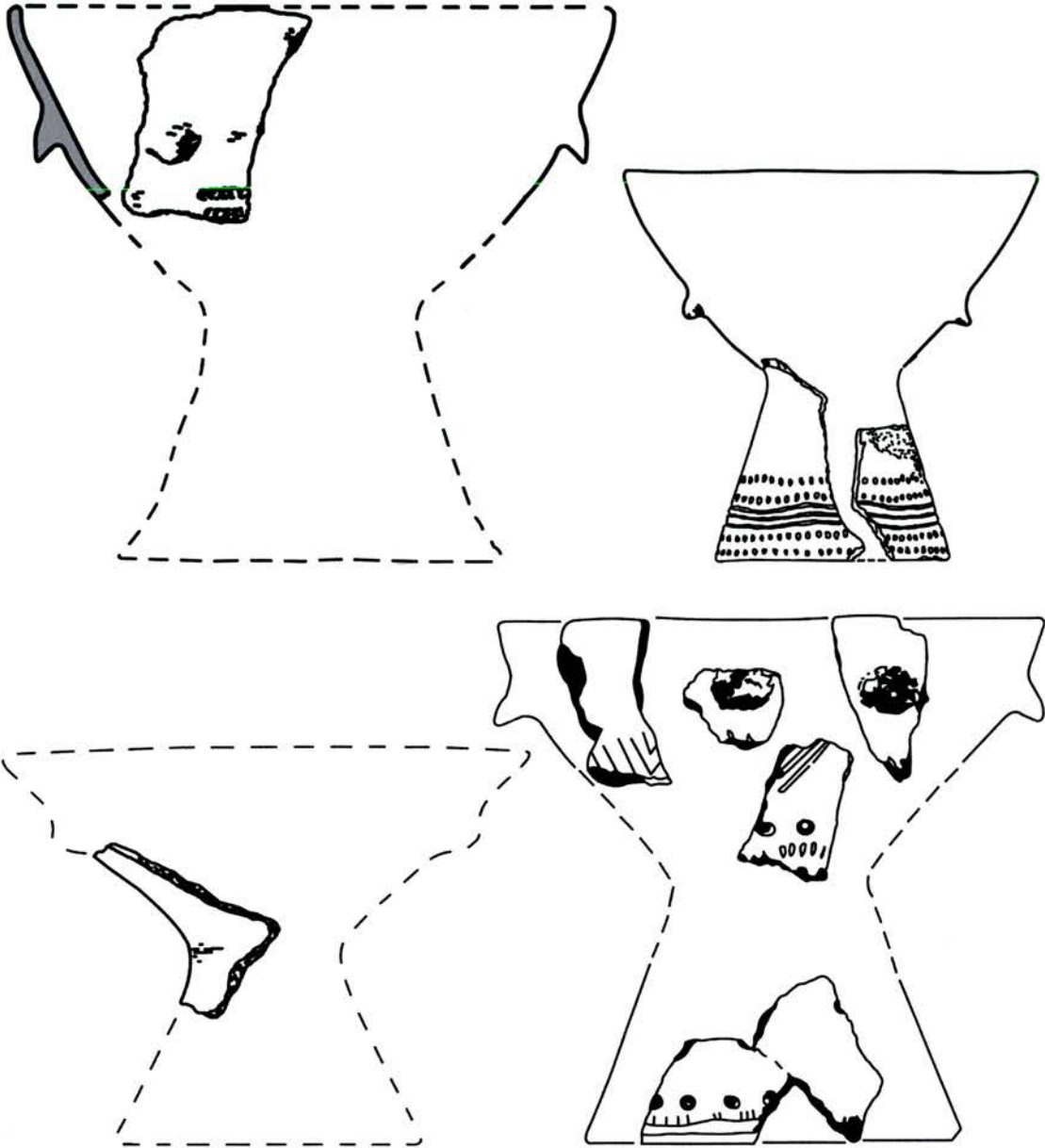


Fig. Cat. 8.3 Salzmünde Icomplete Burial drums. Clockwise from the top right Niederschmon, Obereichstädt 1, Oldisleben, Pohlsberg-Latdorf. The Oldisleben profile is based on that of Obereichstädt 2, and both Niederschmon and Pohlsberg profiles are based on the Schkopau drum. All the same scale, dimensions given in catalogue entry. Images redrawn after Behrens (1964), Müller (1994),

20 POHLSBERG. Fdpl 1 Latdorf. Mbl. 2311/4236; S 2.0; E 5.9.

In the Pohlsberg grave-mound, a central stone cist, orientated east-west, contained the badly-preserved bones and a pot as a grave good. The stone cist was situated close to the eastern inner edge of a trapeziform stone border, which was also orientated east-west. Two skull fragments and an additional vessel were found nearby, possibly with a grave connection. Near the upper grave an individual edge sherd with lugs was discovered. An 8 cm high, black-brown, edge-herd with a funnel profile and a downward-pointing lug about 6 cm beneath the

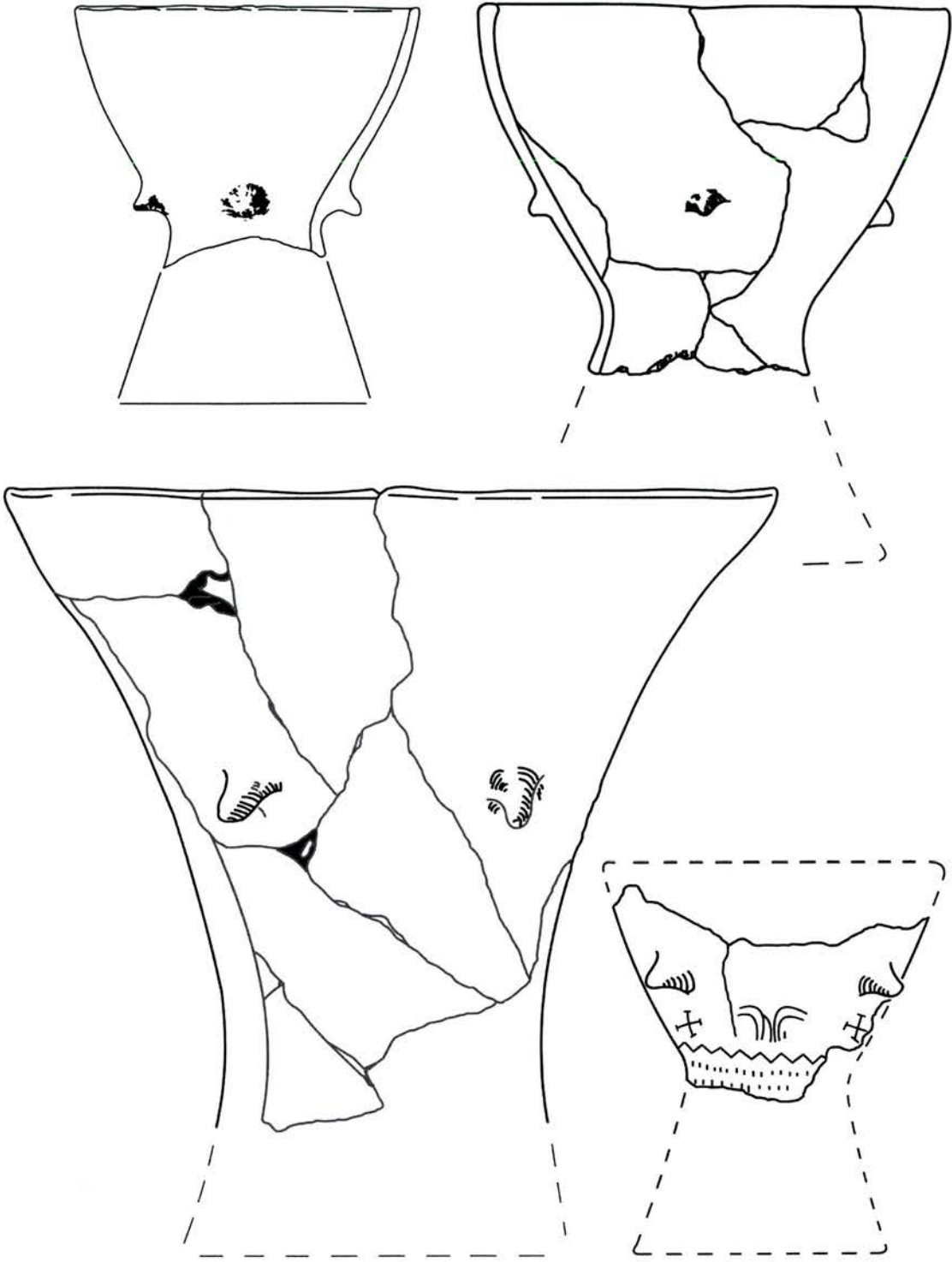


Fig. Cat. 8.4 Salzmünde Incomplete Settlement drums. Clockwise from the top right Merseburg, Leipzig-Eutritzsch 1, Oberwerschen, Wallendorf. All the same scale, dimensions given in catalogue entry.

edge. The diameter at the edge was 22 cm and below the lugs were the remains of two crude groove stroke lines. The other finds included an undecorated cup with a double conical profile and small ribbon handle. There was also the fragment of a pot with narrow handle and a series of vertical notches between the shoulder and the neck.

Literature: Behrens 1964.

Salzmünde Incomplete Drums: Settlement Context

21 LEIPZIG-EUTRITZSCH 1

The fragments of the upper part of a drum, 15.75 cm high, were discovered in a settlement site at Leipzig-Eutritzsch; these consisted of four large sherds of yellowish red clay. The upper part survives down to the waist, and has a funnel-shaped profile, with two lugs in the middle of the upper part. A decorative band of a double row of short, vertical strokes marks the waist, bordered by a zigzag line above and below it; this is similar to the waist decoration of Hohenthurm 1 and Spickendorf. Underneath the lugs are cross motifs and between them an anchor motif; all decoration and signs contain a white incrustation. The other sherds from the site consist of SBK, LBK and TRB. Fischer classified the drum as Salzmünde.

Müller (2001) does not give a specific chronological place for the Leipzig site but the remarkable similarities between this drum and the Hohenthurm examples warrants its grouping in the Salzmünde B style, TRB IV. Museum for Ethnology, Leipzig.

Literature: Seewald 1934, Fischer 1951.

22 LEIPZIG-EUTRITZSCH 2

A drum fragment from settlement find of the Salzmünde culture.

Literature: Kaufmann, Quietzsch and Spehr in Behrens 1980.

23 MERSEBURG,

The fragment of an undecorated drum, 26 cm high, was found in association with two copper spiral rings.

Literature: Fischer 1951.

24 OBERWERSCHENS, Weissenfels.

In the settlement at Oberwerschens a Salzmünde-style assemblage was associated with ceramics from the Walternienburg and Bernburg styles and the Globular Amphora Culture. The Salzmünde-style finds comprised an undecorated drum and a two handled amphora were discovered in a round pit. The amphora decoration consisted of two rows of notches and under this narrow ladder bands. The passage to the shoulder shows two rows of notches. The undecorated drum has a height of 45.5 cm and a diameter, at the mouth, of 37.5 cm. This is the largest Salzmünde drum yet found. Müller (2001) places this assemblage within his Salzmünde A style. LM. f. V. Halle.

Literature: Grimm 1938.

25 WALLENDORF, Merseburg.

A Salzmünde-style drum fragment, 18.8 cm high, was found in the settlement at Hutberg. Müller (2001, 122) gives a radiocarbon date range for the Hutberg, find-spot 44, assemblage as 2880-2620 BC cal, TRB V.

Literature: Benesch 1941, Müller 2001.

Salzmünde Incomplete Drum: Dubious Context

26 AMMENDORFS

A decorated sherd was classified as a drum by Toepfer, based on the "Anchor-Motif" which is found on several other Salzmünde-style drums. The fragment is 5.7 cm high. The "Anchor-motif" is clear on the fragment, as is the apex of a zigzag, possibly the standard Salzmünde waist design. However, it should be noted that this motif has been found on other

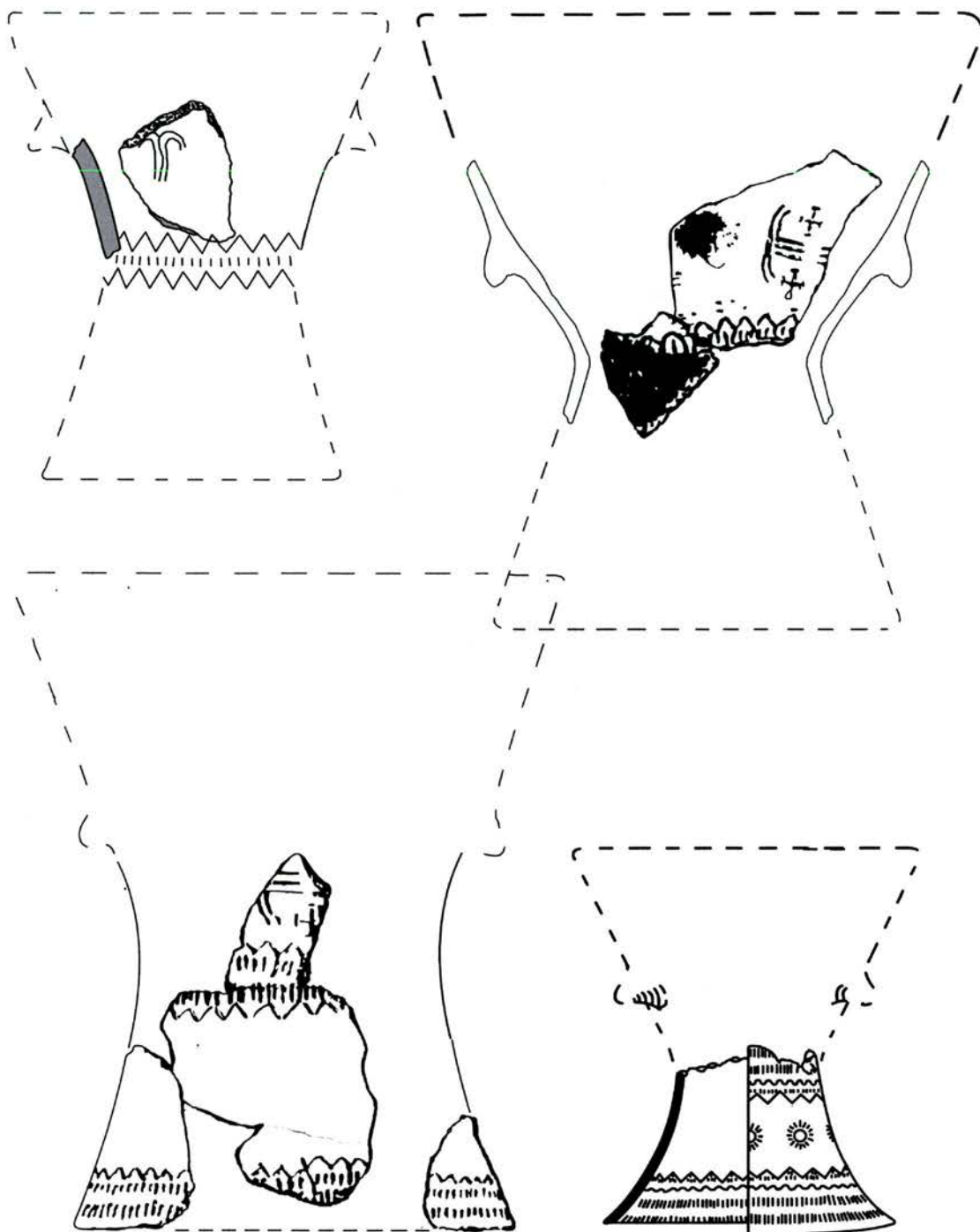


Fig. Cat. 8.5 Salzmünde Incomplete drums with unclear context. Clockwise from the top left Amendorf, Halle-Brandberge 1, Halle-Brandberg 2 and Halle-Klein Brandberge (see discussion). All the same scale, dimensions given in catalogue entry. Images redrawn after Toepfer (1961) and Beran (1993).

vessel forms, although this is rare. Fig Cat 8.5 provides a plausible reconstruction image, based on the fragment illustrated in Toepfer (1961).

Literature: Toepfer 1961

27 **BURGÖRNER**, Mansfield. No image

Numerous settlement and burial remains were uncovered in a vineyard, between Burgörner-Neudorf and Burgörner-Altdorf. The sherds consisted of LBK, Rössen, Walternienburg style, Bernburg style and Corded Ware pottery. An oval mound, measuring 18 m x 13 m with a height of 1.3 m, was also found. Sherds belonging to the Salzmünde group were found in some pits and also within the cultural layer. A fragment with ladder decoration suggests an age of Salzmünde A (Müller, 2001), while three fragments from three different Opperschöner jugs, were found in three separate find-spots. A drum fragment originating from the bottom part of a medium-sized drum, had decoration on both sides. No stratigraphy was recorded. LM. f. V. Halle.

Literature: Müller 1994.

28-30 **HALLE-BRANDBERGE 1 AND 2**, (also Halle-Krollwitz Klein Brandberge)

Grimm (1938, 96) discusses burial remains which were disturbed, observing that find places I and II were interpreted as hearths based on the irregular change of ground colour, find spot III consisted of a pocket of sherds beneath, and beside, a stone block (erratic). This association of drum fragments with a large stone also occurs at Rössen, Wandersleben and Hornsömmern. Cremated human remains were discovered between find spots I, II and III. The find consist of fragments of two drums, Opperschöners jugs and amphorae. Two sherds of Corded Ware pottery were also recorded. Müller (2001, 143: see also Fischer 1951, 98) has shown that specifically in this area, the lower Saale, amphorae were used as grave-goods.

The first drum fragment was 7.7 cm in height, and survived from just below the waist to above the one surviving lug; this is the sherd named Halle-Brandberge 1 (HB-1) in the illustration. The pattern on the waist was consisted of two zigzags running parallel round the waist and filled with two rows of small vertical lines. This waist-band separating the top from the bottom is a common feature of the Salzmünde drums and is found on the examples from Hohenthurm 1, Spickendorf, Leipzig-Eutritzsch 1 and Vippacheldelhausen. Further similarities, though not as close, are found on the examples from Rössen, and on the Storkau-Pettstadt 1 drum. The second drum fragment survives from the foot to the waist, a height of 8 cm. Again the waist is defined by decoration, yet in this case within the double zigzag running round the waist is also found a wavy line which is paralleled by a similar motif below the zigzag which surrounds the foot. This drum fragment is distinguished by the presence of the sun motif, placed half-way up the foot; this motif is found on only two other examples, Obermöllern and Hornsömmern. This is named Halle Brandberge 2 (HB-2) in the illustration above.

Beran (1993, Tab.67.1 and 69.15) illustrates two drums, both listed as Klein-Brandberge, his first illustration is clearly the first fragment (HB-1) described above and matches the illustration from Grimm (1938, Tab xxvi.1). However, Beran's second illustration is evidently not the second find described here and is not the fragment illustrated in Grimm (1938, Taf.xxvi.1). Toepfer (1961, fig. 18.2 and 18.3) also illustrates two drums listed as Halle-Brandberge 1 and 2, and Toepfer's first illustration (Fig. 18.2) corresponds with HB-2. However, while the top of the second illustration (Fig. 18.3) appears to correspond with the shape of Grimm's fragment, our HB-1, the remains of the illustration suggest it is based on several more fragments than Grimm recorded. Although it Beran's second drum bears a strikingly similar motif to our HB-1, it has no lugs and survives down to the foot. Additionally it has a more gentle curve at the waist than HB-1. Thus Beran's second drum fragment illustrated above and named Halle-Klein-Brandberge, may be interpreted as a third drum HB-3. Koch cites three drums. Müller (2001) placed these assemblages in the Salzmünde B style, TRB IV.

Literature: Seewald 1934, Grimm 1938, Schrickel 1956, Toepfer, 1961, Koch 1992, Beran 1993.

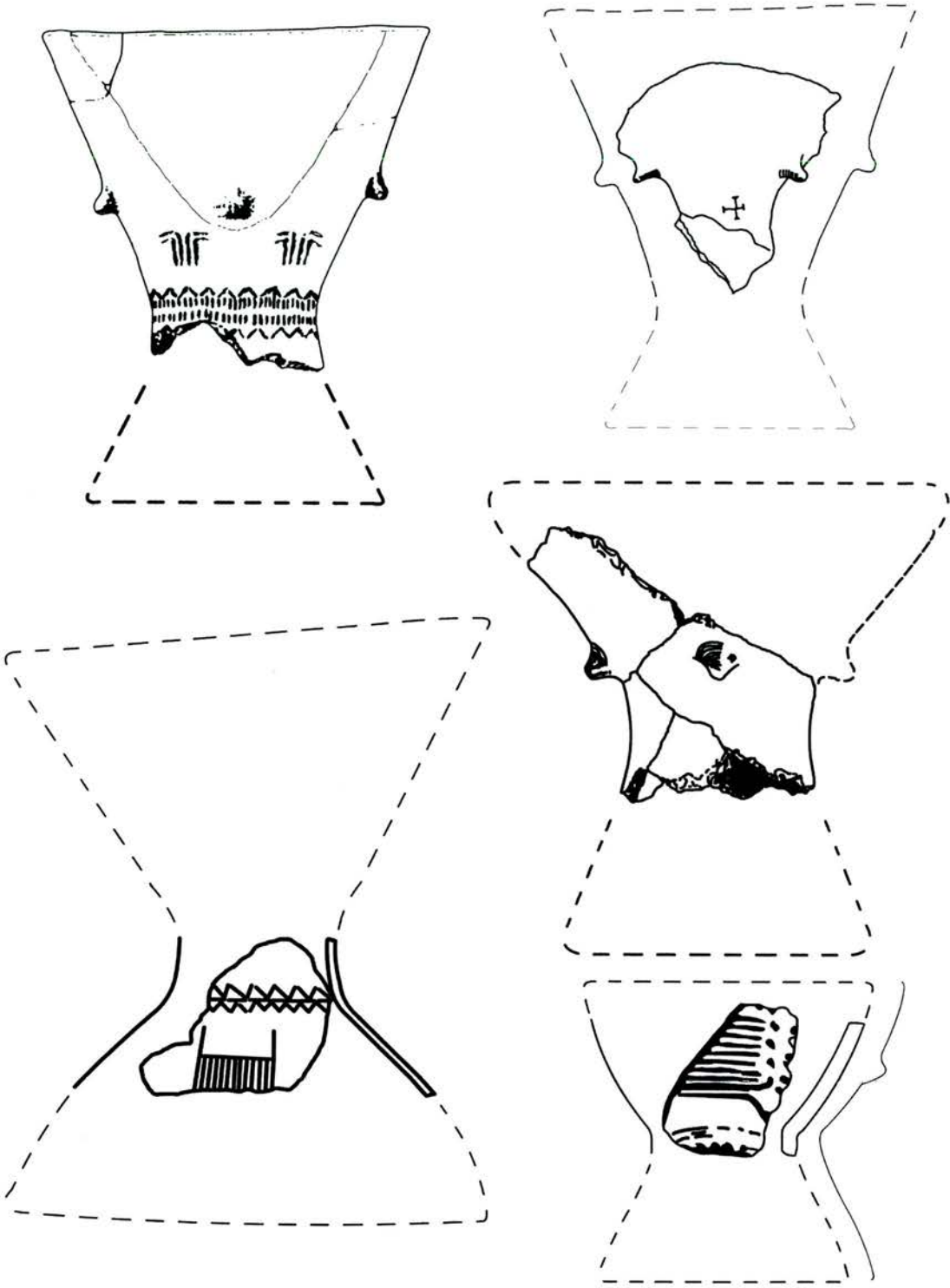


Fig. Cat. 8.6 Salzmünde Incomplete drums. Clockwise from the top right Hohenthurm 1, Hohenthurm 2, Hundisburg, Mucheln, Salzmünde-Scheipzig. The Mucheln drum form is based on the Halle-Weinburg instrument, based on similarity of form, and the Salzmünde-Scheipzig form on that from Zorbau, based on the similarity of the waist and visible decoration. All the same scale, dimensions given in catalogue entry. Images redrawn after Seewald (1934) and Beran (1993)

31-32 HOHENTHURM 1 AND 2, Saalkreis.

On the Husarenberg, at Hohenthurm east of Halle, the fragments of two drums were discovered associated with two further vessels. Further contextual information is missing.

From the larger drum the funnel-shaped upper part survives to just below the waist. It resembles both the Calbe 2 and Rössen examples. It is preserved to a height of 15 cm, with an upper diameter of about 16 cm, the diameter at the waist is about 7 cm. Approximately in the middle of the upper part are four inverted anchor motifs and at the waist a double circulating decorative band consisting of small vertical lines, bordered at the top and bottom by a zigzag; see the entry for Halle-Brandberge. The decoration has white incrustation.

The second, smaller drum, from which only the upper part is preserved, replicates the form of the first example. The second drum fragment has a height of 10 cm and diameter of measures 4.5 cm at the waist. Two lugs are preserved on the side with a cross between them. The pieces are found in the Provincial museum at Halle. Müller (2001) placed these assemblages in the Salzmünde B style, TRB IV.

Literature: Seewald 1934; Fischer 1951.

33 HUNDISBURG, Neuhaldenslebens.

A two-handled, decorated pot, one decorated fragment from a second pot, and two fragments of an undecorated drum, were discovered in a mound of sand “probably from a closed find”.

The central sherd of the drum, with curved shape, is similar to the Rössen example. The sherd has a height of 13cm and a diameter at the waist of 8 cm; two lugs survive just above the waist. Two additional small, undecorated sherds with lugs might belong to a similar drum.

Fischer classed this fragment as a Salzmünde style drum. Müller (2001) placed these assemblages in the Salzmünde B style, TRB IV. Provincial Museum of Halle.

Literature: Seewald 1934, Grimm 1938, Fischer 1951.

34 MUCHELN, Weissenfels.

A decorated fragment, 6.6 cm in height, was discovered in a disturbed pit; Beran lists this as a drum.

Literature: Beran 1993, map 10 and list.

35 SALZMÜNDE - SCHIEPZIG,

From the primary find-spot at Salzmünde-Schiezig a sherd, 6.9 cm in height was discovered. Beran (1993, list 10), identified it as part of a drum.

Literature: Beran 1993.

SALZMÜNDE/WALTERNIENBURG

The Salz/Walt drum

36 FELDENGEL, Sondershausen. Mbl. 2743/4731

In 1881 a *Mauerkammer* was discovered constructed from vertically-placed slabs forming a chamber with a stone paved floor. The grave had been covered with stone packing and a mound. The chamber contained the remains of numerous burials of different ages, some of which exhibited burning. The associated artefacts consisted of a bone point, two perforated dog-teeth, a flint point, a flint knife, a flint chisel and numerous decorated sherds, some belonging to a drum.

Based on the profiles and the decoration, the fragments are interpreted as a beaker-drum with cauldron shaped upper part, which is very similar to the Hornsömmern example.

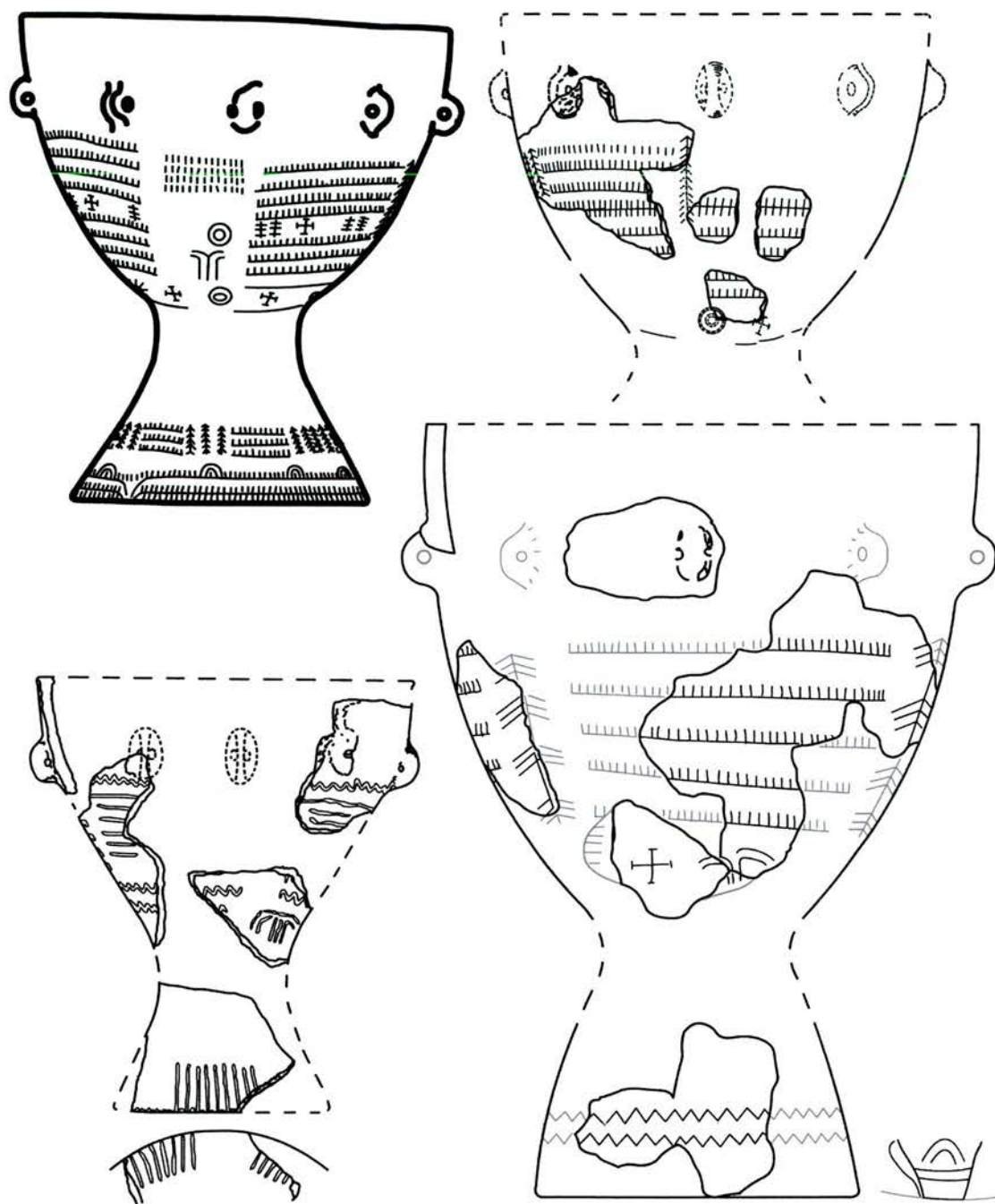


Fig. Cat. 8.7 Salzmünde/Walternienburg burial drums. Clockwise from the top right Grafentönnna, Feldengel, Holzussra and Hornsömmern. All the same scale, dimensions given in catalogue entry. Images redrawn after Müller (1994).

The upper part of the drum has hatched lines, level linear groups and pine-branch patterns, and also armed-cross and anchor motifs. At the edge of the foot two level zigzag lines were found outside while inside were two parallel lines topped by double semicircles. The drum as an estimated height of 39 cm. Seewald placed this example in Bernburg I, based on the similarity with the drum from Hornsömmern. Niklasson (1925 in Beier 1984) assigned this site to the Bernburg style, while Fischer proposed an affiliation to the Walternienburg style, based on the drum form. Beier states that the construction of the grave and the manner of burial supported the view of Niklasson. Here the drum is classified as Salz/Walt type based on drum dimensions

and decoration. The remaining assemblage is classified as Salz/Walt by Müller (2001). Museum Sonderhausen.

Literature: Seewald 1934, Fischer 1951, 1956, 1968, Beier 1984, Müller, D.W. 1994, Müller, J. 2001.

37 GRÄFENTONNA, Langensalza. Mbl. 2865/4929; N 9,5; 014,4.

In 1894 an east-west orientated drystone *Mauerkammer* was found in the centre of the Warthügels, a 3 m high mound with a 30 m diameter; it contained over 30 bodies. The badly-preserved skeletons had been placed with the skulls alternating, head-feet-head. A total of 79 canine teeth of dog and badger, lay in groups of 8-18 near 5 of the skulls. In the middle of the grave vessel-fragments were found, including the broken sherds of a drum. The decoration consists of groups of horizontal comb motifs separated by vertical branch motifs. Near the waist are a double concentric circle and an armed cross. The shape and the decoration resembles that on the Hornsömmern and Feldengel drums, the upper diameter measures an estimated 22 cm. Beier states that the grave construction and the pottery sherds both reflect the Bernburg tradition. This site has been referred to in past literature as Döllstedt. Müller (2001) classes the assemblage as undiagnostic Walternienburg. Mus. Gothas 1932

Literature: Fischer 1956, 1968, Beier 1984, Müller 1994, Müller 2001.

38 HOLZSUSSRA, Sondershausen, Thüringia. Mbl. 2742/4730: N 4,8; W 4,9.

Discovered in 1868 and excavated in 1870, the site at Holzussra consisted of an east-west orientated *Mauerkammergrab*, measuring 3.7 x 3.1 m, with a limestone slab floor. The grave area was covered by an irregular stone deposit, which probably represents the fallen stone cover from a wooden roof. Originally it was recorded as containing the remains of 40 skeletons. The skulls of the first group were found close together by the western side. The next group had their skulls in the east. This pattern was repeated in a further stratigraphic layer (Beier 1994 and Müller 1994; Müller list only 32 skeletons). The heads allegedly faced downward, and there were no traces of fire. Grave-goods consisted of a flint knife, a stone axe, a bone point and some sherds, some of which belonged to a drum, with an estimated height of 22.5 cm. The piece is similar in form to the Hornsömmern example. The bright red fragments have horizontal groups of zigzag lines, horizontal and vertical groups of lines, and the stick cross and the anchor motif. On one fragment a loop is found for the attachment of the skin. Additional vessels include the fragments of a cup of the Walternienburg style and a straight-walled, undecorated cup. Seewald placed it as Bernburg I, while Fischer called it Walternienburg. Müller (2001) classified the assemblage as Walternienburg I. The pieces are found in the Museum at Sondershausen.

Literature: Seewald 1934, Fischer 1951, Müller 1994.

39 HORNSÖMMERN 1, Langensalza. Fdpl. 1. Mbl. 2742/4730.

In 1886 a sunken *Mauerkammer* was uncovered at Hornsömmern, between Tennstedt and Greussen. The construction consisted of two stone cists sharing a common wall, which continued to form a stone circle, of about 7 m diameter. The smaller burial area, located within the stone circle had a depth of 1 m, and contained the bone remains of two mature individuals and a child; a preserved drum had been placed over the remains of the child. In addition it contained an irregular four-sided limestone panel, containing fossilized mussel-shells "Muschelkalk". We may presume that the presence of these shell fossils were a significant factor behind its use; see also the site of Obereichstädt. On the Muschelkalk panel lay the sherds of approximately twelve vessels, and beneath it the sherds of a second drum; this association of a drum with an apparently important piece of stone is a similar to the contexts of the drums from Böhlen, Halle-Brandberge and Wandersleben. Beier (1984) stresses that the ceramic finds predominantly belong to the Bernburg style. In the outer, larger cist were found the remains of about fifteen skeletons. Both inner and outer chambers showed evidence of

burning, while the charcoal traces were determined as oak. Near the graves were found several undecorated fragments similar to LBK pottery.

The preserved drum belongs to the beaker type with cauldron-shaped upper part and a relatively small foot. The clay is blueish with a high degree of burning. The height is 25 cm, the diameter of the upper edge 22 cm, and the lower edge 18 cm. 4.5 cm beneath the upper edge are eight loops. The decoration includes double circles interspersed with crosses, cross-lines, stick-crosses, sun and anchor motifs. On the foot edge two hatched, horizontal lines run round the outside with two breaks where the line runs to the edge. The lower line is hatched on both sides while the upper only hatched on the upper part; this pattern is repeated on the inside of the foot. Eight double semicircles sit on the upper line at equal distances on the outside of the foot. Over it five groups are placed consisting of three comb-lines, between which are placed two and four downward-directed branch motifs. The decorations are white-incrusted. The drum and the fragments are in the Reischel's collection in Hanover. Müller (2001) classifies the assemblage as Walternienburg II, but here the drum is defined as Salz/Walt.

Literature: Seewald 1934, Fischer 1951, 1956, Beier 1984, Müller 1994, Müller 2001.

Salzmünde/Walternienburg Incomplete Drums.

40 NIEDERBÖSA, Mbl. 2744/4732; N 4.8; W 1.2.

In 1959 Feustel excavated a collective burial which had been disturbed by ploughing the previous year. The burial was a sunken *Boblenkammergrab* (timber chamber grave) covering an area of 7.5 x 3.6 m with a depth of 0.3 m. The chamber was orientated East-west and contained a find-free area paved with limestone slabs and a 0.3 m area round the sides representing the negative outline of the timber superstructure. Two posts at the centre of the narrow sides have been interpreted as a the support for a roof-ridge. The former stone covering of the wooden roof was preserved as the top layer of stratigraphy, over the skeletal remains. The chamber contained the disorderly remains of over 93 individuals of all ages and both sexes; some were still recognizable as right and left crouched inhumations and one as a supine inhumation. No clear orientation was recorded. Ullrich (in Beier 1984) divided the burials into two rows running the length of the chamber, although Feustel proposed different positioning.

Grave-goods consisted of 38 perforated animal teeth, a perforated pig-tooth, 11 lower jaws of the fox, and the lower jaw of a squirrel. Additionally the bones of cattle, sheep/goat, red deer and field hare were discovered with a bone tube, a bone chisel, a disk of decorated bone, some flint artefacts, including one arrowhead and nine blades, and some sherds. All finds lay scattered in the chamber, while an Opperschöner jug is described as being "on a heap". In addition, in the western area a pit contained a parallel right-sided crouched inhumation without grave-goods and in the south-west a pit with an east-west orientated right-crouched inhumation again without grave-goods. The construction techniques and burial practice suggest a burial of the Bernburg style but the few ceramic remains show Salzmünde influences, which correspond to Müller's (2001) Salzmünde/Walternienburg group. It is based on this contextual identification that these very fragmentary remains of a drum are placed in this Salz/Walt group. Museum Weimar

Literature: Fischer 1968, Beier 1984, Müller 1994, Müller 2001.

WALTERNIENBURG

Walternienburg 1a: Subtly Curved Profile.

41 BIENDORF, Kothen. Mbl. 2385/4236; N 19: W 1.4.

West of Biendorf on a 90m-raised diluvial mountain range, known as the Trappenberg, a large pit was excavated. A Neolithic crouched inhumation had already been found on this ridge. Under a 60 cm thick humus layer was a layer of loess, and under this gravel, in which the grave was dug. The small grave with rounded corners was 1.80 m long, 1.3m broad and 1.1 m deep (measuring from the ground surface), and was orientated east-west.

The burial contained the skeletons of two cattle with the pelvises directed to east. One of the animal heads was placed downward and the spine twisted into a semi-circular shape. At the opposite side of the grave was a calf with stretched spine; the skull had been removed and the neck of the two animals crossed each other. A clay drum, several small trimmed cups and a straight walled-bowl were found close to the animal pelvises, but stratigraphically higher up. All vessels had been smashed outside the grave and not all the fragments were recovered despite the entire fill being sieved. A charred mass between the cattle remains contained animal bones and the lower jaw of a dog.

A 25-30-year-old woman was buried on top of the calf skeleton in the area of the stomach. Her head was facing downwards and her skull rested on the animal pelvis. The left arm was stretched, while the right was bent under the chest. The lower legs crossed over at the foot joint and had been placed under the left foreleg of the cow. The skull pointed to SE, the legs to NW. Under the spiny process of the dorsal vertebrae of the calf a crouched skeleton of a five-year-old child was found with the skull turned to the east. Grimm suggested that the crossed lower legs of the Biendorf woman's body appear to point to binding, while the drum served for defence against hostile demons.

The drum was completed from fragments and was coloured brown with a height of 16.9 cm, upper diameter 16.2 cm, lower diameter about 14.4 cm. The upper part is slightly curved, while the foot has a straight wall and the waist is sharp. 2 cm beneath the upper edge were six vertically bored eyelets; only 3 are preserved. A horizontally-placed eyelet was found 1.5 cm above the lower rim. The inside of the foot decorated with three horizontal series of impressed decorations surmounted by a series of circles. Further fragments of two cups were also found. The relative dating is given by these circle motifs and the associated vessels, placing the grave as Walternienburg I. Close to this burial a second grave was uncovered. It contained a female individual stretched in east-west direction in prone position, without a head. The finds are in the museum of local history, Kothen.

Literature: Götze 1936, Fischer 1951, 1956, Beier 1984.

42 HASSEL, Hoya.

On the top of the last terrace before the Weser valley, a gravel yard was explored by a teacher and school children in the spring of 1938. In the disturbed rubble they discovered numerous sherds. Some of these fragments were later reconstructed to form a drum with a height of 20.8 cm (estimate from figure. Other sherds included Tiefstich decorated fragments. There was no further contextual evidence.

Literature: Potratz 1939

43 MENZ, Burg.

The fragments of a drum were discovered with the remain of a "large burial house of the Walternienburg horizon", but are described as being from the settlement horizon. The area in question had been disturbed by Bronze Age stone rings and an early Bronze Age crouched inhumation, also an Iron Age stone pedestal grave.

45 drum fragments were discovered in the disturbed area at different depths, although 21 fragments were found undisturbed within the Walternienburg horizon. Since fragments of the upper edge, from the waist and also the foot of the drum were available, a reconstruction of the drum was attempted. Regrettably the lugs or loops are missing, and while 9 upper fragments are known no joins are possible which it is suggested means the lugs or loops were thrown elsewhere. The height is approximately 15.5 cm, the upper diameter about 18 cm and the lower 15.5 cm. The width at the waist is 8.5 cm. The waist is sharp, giving the instrument an hour-glass form, the upper part being 8 cm high. A four-rowed zigzag band in robust furrow-groove decorates the foot of the drum. The inside of the foot is decorated with a zigzag band with two parallel lines above it.

The settlement horizon contains predominantly material from the Walternienburg style. Comparative pieces are the Biendorf, and Schkopau. The associated ceramic forms are from the Walternienburg I style.

Literature: Lies 1955.

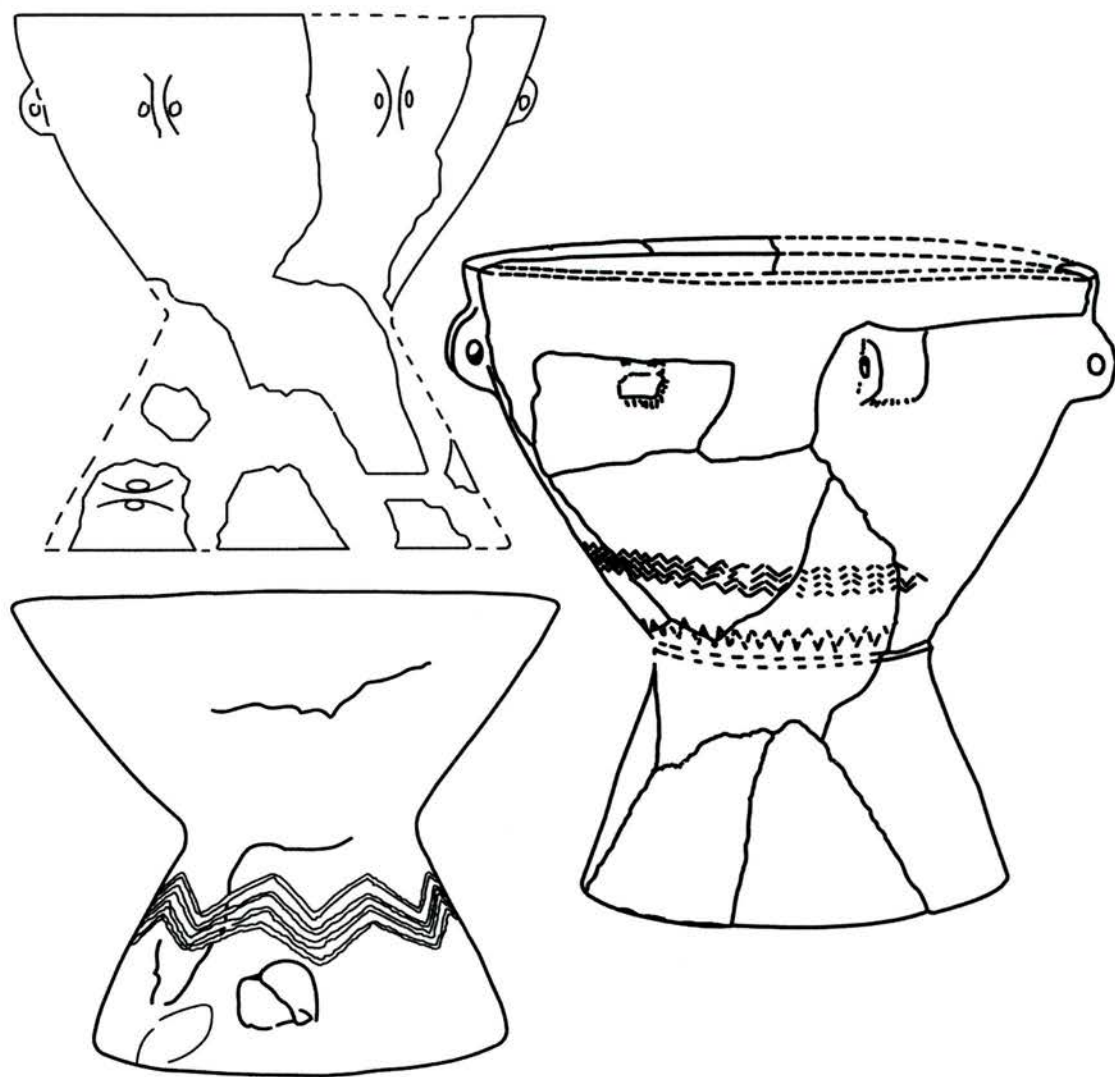


Fig. Cat. 8.8 Walternienburg Ia drum with a subtly curved Upper part. From the top, Biendorf, Hassel and Menz. All the same scale, dimensions given in catalogue entry. Images redrawn after Götze (1936), Lies (1955) and Potratz (1939).

Walternienburg 1b: Curved Profile: All Burial contexts

44 BÖRNECKE, Wernigerode-Saxony. Mbl. 2307/4132; 5,7,8; W 7,3.

In 1935 an area of flattened mounds was explored, revealing a large stone paved area measuring 18 x 24 m and the remains of a dry stone wall; further excavation in 1938, 1940 and 1941 revealed the remains of a *Mauerkammer*. Besides the very disturbed regular burials, seven confirmed individuals, in crouched and stretched positions, there were also bone deposits and two of the skulls showed evidence of trepanation.

Skull A, from the crouched inhumation, is a long skull of a mature person. The trepanation is found at the back of the head and shows an oval section of 7 x 6 cm. The trepanation edge is slightly sloping and jagged but supports the interpretation that the individual was living person and survived the operation. On Skull B the Trepanation is found in a similar position but the condition of the bone suggests that the operation was carried out on a dead body. From the remaining five skulls only fragments are preserved, under them is found also a child skull. Some skeletons were in pits under the level of the stone paving. Grave-goods consisted of two cups classed by Krone as Bernburg I, but by Beier (1984) as Walternienburg, one drum, four bored-through dog-teeth, one stone spindle-whorl, one bone awl, two flint blades with no retouch and one copper spiral; most likely the copper belongs to a headdress of one of the seated burials, for the skull shows the green colouring of verdigris on the back of the head. The tooth jewellery consisted of a badger's tooth, two wild dog-teeth and a wolf-tooth.

The drum has a cauldron shaped upper part that is exceptionally wide for a TRB drum. It is wider than it is high. The height is 24 cm, upper diameter 26 cm, foot diameter 12.5 cm, waist 7.5 cm. Three lacing loops and three lugs sit 4 cm under the upper edge. The only other example of alternating loops and lugs is from Dittfurt 2. The decoration is described as being executed in the Tiefstich style and it is composed of three zones of horizontal lines. This horizontal ornamentation consists of precise rows, the top and bottom zones being surmounted by vertical zones, which are interrupted again through horizontal areas. The internal foot also shows horizontal rows. Krone observed that this decoration reflects a southern influence. The vessel could be almost completely reconstructed since only a few parts were missing. Museum Braunschweigs.

Literature: Krone 1935, Fischer 1951, 1956, Beier 1984, Müller 1994.

45-6 EBENDORF 1-2, Kr. Wolmirstedt, Mbl. 2.100/3835; N 11,0; W 19,3.

A stone chamber-grave with a passage was excavated in 1836 and 1837. The grave had a parallelogram shape, measuring 9 x 1-1.25 m; the passage joined the chamber at an angle and measured 5 x 0.95 m). The chamber was covered by a long oval mound, 26 x 9 m. In the chamber many crumbly bones were mixed in the black earth. The mound may have had a stone kerb, no longer recognizable. The grave-goods consisted of 14 vessels including two drums. Further numerous sherds, two flint knives and two pieces of petrified wood were also recovered, note the presence of fossil wood, may have a similar significance to the fossil shells at Hornsömmern and Obereichstädt.

The complete drum belongs to the beaker-type with cauldron shaped upper part, gently curved at the waist. It has a height of 25.5 cm, diameter of the upper edge 17.5 cm and a diameter of the lower edge 13.7 cm. A little under the upper edge are seven loops. A circulating horizontal pine-branch pattern decorates the first third of the upper part, which has nine vertically short pine-branch twigs standing above it, equally spaced. At the waist there are seven parallel lines, which like the branch motifs are executed the groove stroke technique; a little above the foot-edge are found two series of small circles.

The fragment of the foot of the second drum is composed of reddish-yellow clay. The Diameter of the edge is about 17 cm. The piece carries decoration of a horizontal band of

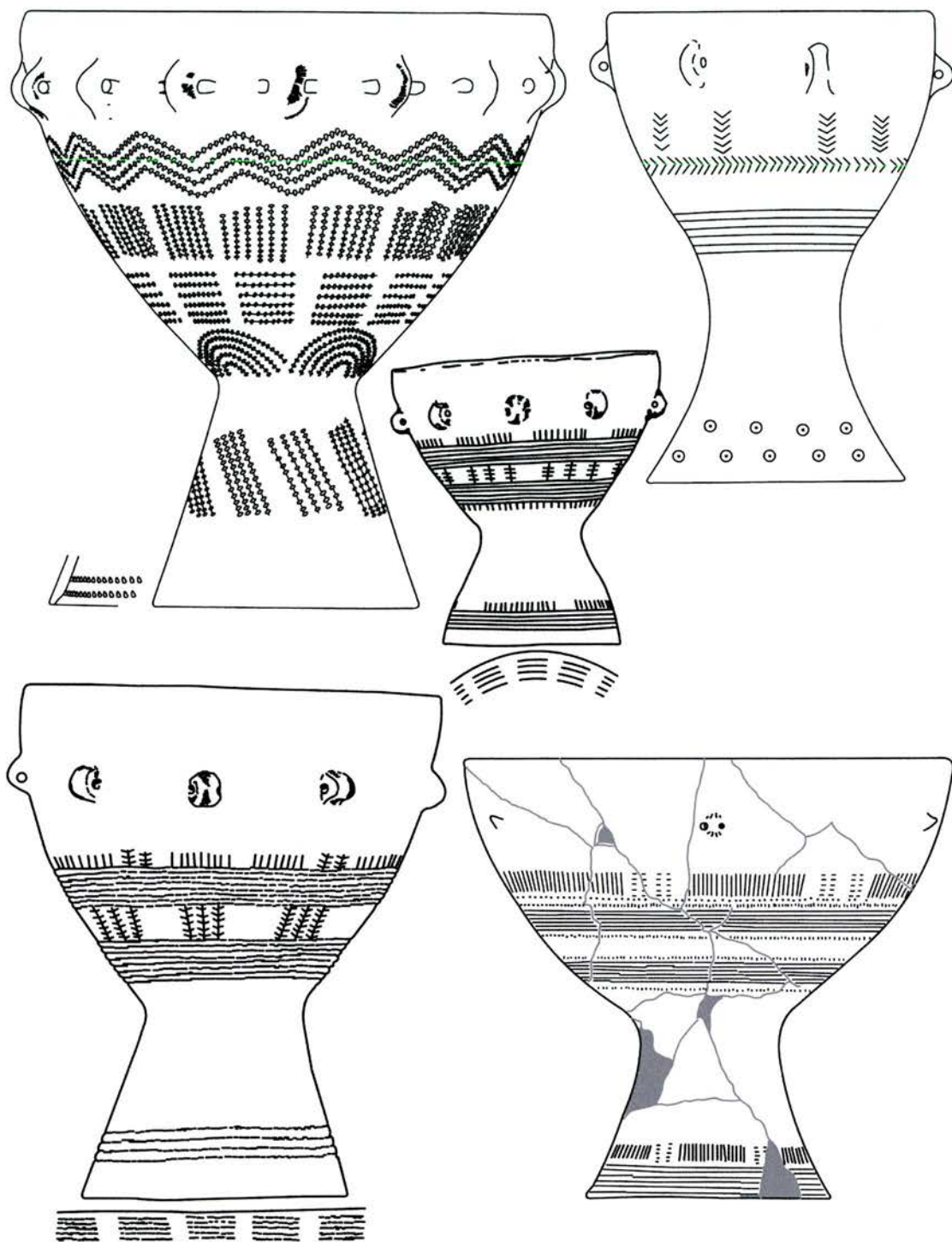


Fig. Cat. 8.9 Waltarnienburg Ib Curved drum from Burial Context. Clockwise from the top left: Grossiebstadt, Ebendorf, Börnecke and Nordhausen D1, the central image is Nordhausen D2. All the same scale, dimensions given in catalogue entry. Images redrawn after Fischer (1951), Krone (1935), Wamser (1983)

seven groove stroke lines and under it a four zigzag bands made from small of hook-shaped punctures.

The other vessels include 6 cups of early Bernburg style, 1 double cone-shaped vessel with angular line decoration, and one flint axe found with a skeleton in a stone chamber-grave. The complete drum resembles the Walternienburg style and has consistently been called that in the literature, although the settlement finds at Quenstedt and Döläuer Heide give adequate examples of Bernburg drums with loops. It is the decoration that may suggest Walternienburg influence. Museum for Ethnology in Berlin.

Literature: Seewald 1934, Fischer 1951, 1956, Beier 1984.

47 GROSSIEBSTADT, Thuringia.

In 1983 an excavation uncovered a collective grave measuring 4.0 x 3.1 m, dating to the end of the 4th Millennium B.C. It contained approximately two dozen bodies which had been partly cremated but partly buried. The structure was a partially-sunken rectangular burial-chamber, almost completely constructed in wood, with stone foundation for the wall but without recognizable passage. The floor was made of flagstone.

The associated finds were found together with calcified skeletal remains. They included a top of a flint knife blade (with gloss), a triangular arrow point and the only ceramic object one splendidly decorated, almost completely-preserved clay drum, in fragments. The drum is a 32.5 cm high egg-cup shaped vessel a wreath of 15 loops beneath the upper opening. The cauldron-shaped body is decorated from underneath the loops down to the waist, with four circulating patterns, from a fourfold zigzag band, two circulating square patterns, as well as a final frieze of five concentric-line semicircles each with small notches marked on them at right angles. The foot part of the drum is decorated outside by a circulating band of groups of four diagonal lines, again with small notches marked on them at right angles; in addition a double series of deep punctures is found at the inner edge of the foot.

Literature: Wamser 1983.

48-9 NORDHAUSENS 2, Nordhausen. Mbl. 2598/4530.

In 1926 a crouched burial was partly excavated by Stolberg, on Friedrich-Ebert Street in Nordhausen. The remains of a female skeleton were discovered in a simple flat grave. The body was in crouched position, with her head in the north facing east. It was accompanied by a male skull; the female skull had two holes, which anatomical examination suggests were inflicted during her lifetime, probably injuries which caused death. Stolberg states that the holes maybe corresponded to a type of hammer – they were not the result of trepanation. Beier (1984) calls it a plank chamber grave. The burial was accompanied by two drums, a two-handled amphora, a cup and a hanging vessel, in addition to an axe of Wiedaer slate, a flint whet-stone, four flint blades and the remains of a copper spiral.

The larger drum is 28 cm high, has an upper diameter at the mouth of 23 cm and the lower of 13 cm; about 4 cm under the upper edge are eight vertically placed loops. The decoration at the foot-edge consists of a band formed by four parallel, horizontal lines, which is repeated, with eight lines, above the curve and at the middle of the upper part. Between both upper bands there are seven groups of three vertical pine-branch-patterns. Corresponding to these, over the upper band, are short, vertical strokes and between them two pine-branch-twigs. The smaller drum has a height of 16 cm, an upper-edge diameter of 14.5 cm, a lower-edge diameter of 10 cm; the eight lacing loops are placed about 3.5 cm under the upper-edge. At the foot-edge there is a band of five horizontal lines, which is bordered above by a series of shorter vertical strokes; around the lower half of the upper part are six lines, whose small intervals are filled in by groups of three short tree-branch motifs. The assemblage was classed by Beier (1984) as Walternienburg II, Müller (2001) assigns the vessels to Walternienburg I and II. The finds are in the museum at Nordhausen.

Literature: Stolberg 1932, Seewald 1934, Beier 1984, Müller 2001.

50-55 ODAGSEN I.

The Mauerkammer at Odagsen I was excavated between 1981 and 1984. It was constructed from 40 cm thick dry stone walling with a tent like roof constructed from timber

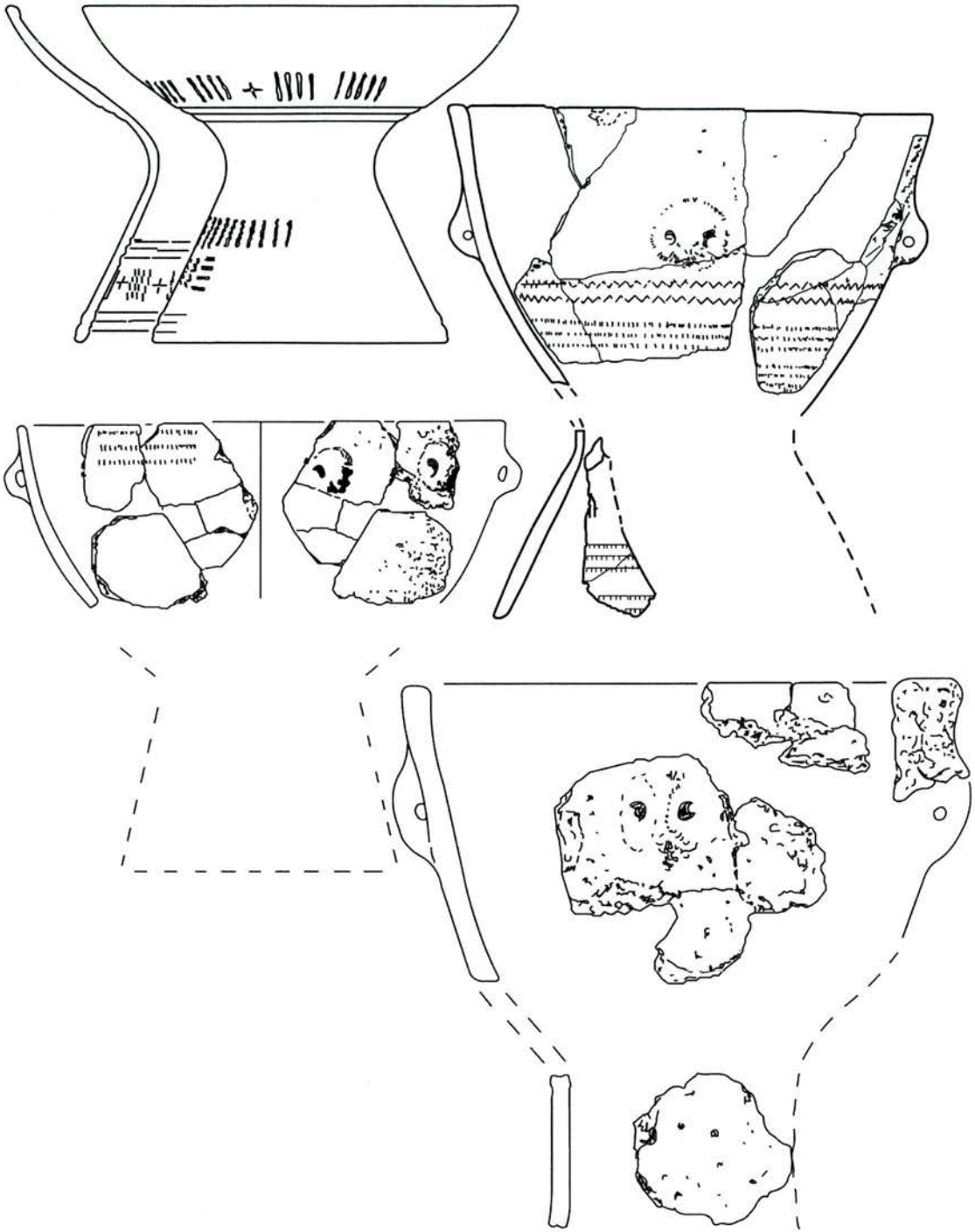


Fig. Cat. 8.10 Different styles of drum from Odagsen I. From the top Odagsen D1 early phase, Odagsen D2-D3 main phase, Odagsen D4 late phase. All images are at the same relative scale as is original publications, although no actual scale given. Images redrawn after Rinne (2002)

The chamber was orientated ese-wnw and measured 18.8 x 3.6-4 m, and the floor had been dug 70-80 cm into the Neolithic ground surface. The structure was constructed like a Mauerkammer, but was as long as a Megalithic chamber from North Germany or Hesse. The chamber had a paved floor largely of limestone, measuring 1.8 x 15.6 m, which had been re-laid twice. Bronze Age and Iron digging had disturbed the western area. In the original construction 8 cm thick posts had demarcated a northern entrance but this was removed during a secondary building phase.

The majority of the ceramics found associated with the chamber consist of the Haldensleben style pottery, the Walternienburg pottery style and the Drouwen C stage of the TRB West group. These early finds correspond with the radiocarbon dates KIA 6987: 4564±60 BP giving a calendar date of circa 3350 BC. The later ceramic types are associated with the Wartberg group, the Bernburg ceramic style and the Globular Amphora Culture, these finds are interpreted as related to the radiocarbon date KIA 6988: 4424±27 BP; calibration places this dates as roughly 3100-2920 BC cal. The remains of at least 103 individuals and a few cremations were discovered in the chamber, associated with over 287 artefacts, the majority of which were found in a pit in front of the burials. Walternienburg vessels were found east of the front of the chamber, the Salzmünde, Bernburg and Globular Amphora vessels predominate in the entrance area but the later TRB vessel and those of the Wartberg group were found within the chamber. Flint artefacts, animal-teeth and bones and copper jewellery were all found within the chamber.

At least five, drums were found in the entrance area of the site, here they shall be called Odagsen D1-D5. One of these vessels, Odagsen D1, was classed by Rinne as from the early phase of the site had no fixtures for skin attachment, at least based on the published illustration. This is possible as this style is paralleled at Obermöllern. This same drum has single horizontal division on the upper part, again on the foot and twice on the inside of the foot. It is also decorated with a series of rectangles consisting of vertical parallel lines interspersed with crosses. This motif is found on the drum from Heiligenthal Sommerberg, elsewhere the Grosseibstadt instrument has similar rectangular panels but each line has multiple small horizontal strokes. The drums from Nordhausen, Börnecke and Holzussra also have similar rectangular motifs.

Three of the other instruments had loops, Odagsen D2-D4, for the attachment of the skins, warranting their inclusion within the Walternienburg style of drum. One of these, Odagsen D2, resembled the Nordhausen drum in form and to some degree the decoration, what makes it stand apart is the use of a double zigzag band circulating the upper part of the instrument above the other horizontal bands. This is paralleled on the Holzussra instrument, and is reminiscent of the Salzmünde waist division. Another drum, Odagsen D3, although fragmentary can be estimated to have had 10 loops for skin attachment, but more importantly is the first example to have decoration on the inside. This consisted of three horizontal lines with small vertical strokes through them. Two other fragmentary drums were indefinable.

Literature: Rinne 2002

Walternienburg Drum incomplete: settlement Context

56 EDELN, Stassfurt.

Some excavated ceramic sherds from the settlement site at EgelN were reconstructed to complete a drum with a height of about 60 cm. The base of the vessel was incomplete, resulting in the lower part being reconstructed on a trial basis. The earthenware vessel, which Behrens classified as a Bernburg vessel, has four large ribbon shaped handles, which are situated on the shoulder, but beneath the rim are found 19 sausage shaped loop handles. Loop handles in large numbers such as these on the upper part of the vessel are previously only known on drums in the Central German Neolithic, particularly the Walternienburg and the Schönfeld types. These loop-handles served as fixtures for the drum-skin. This detail gives us a reason to

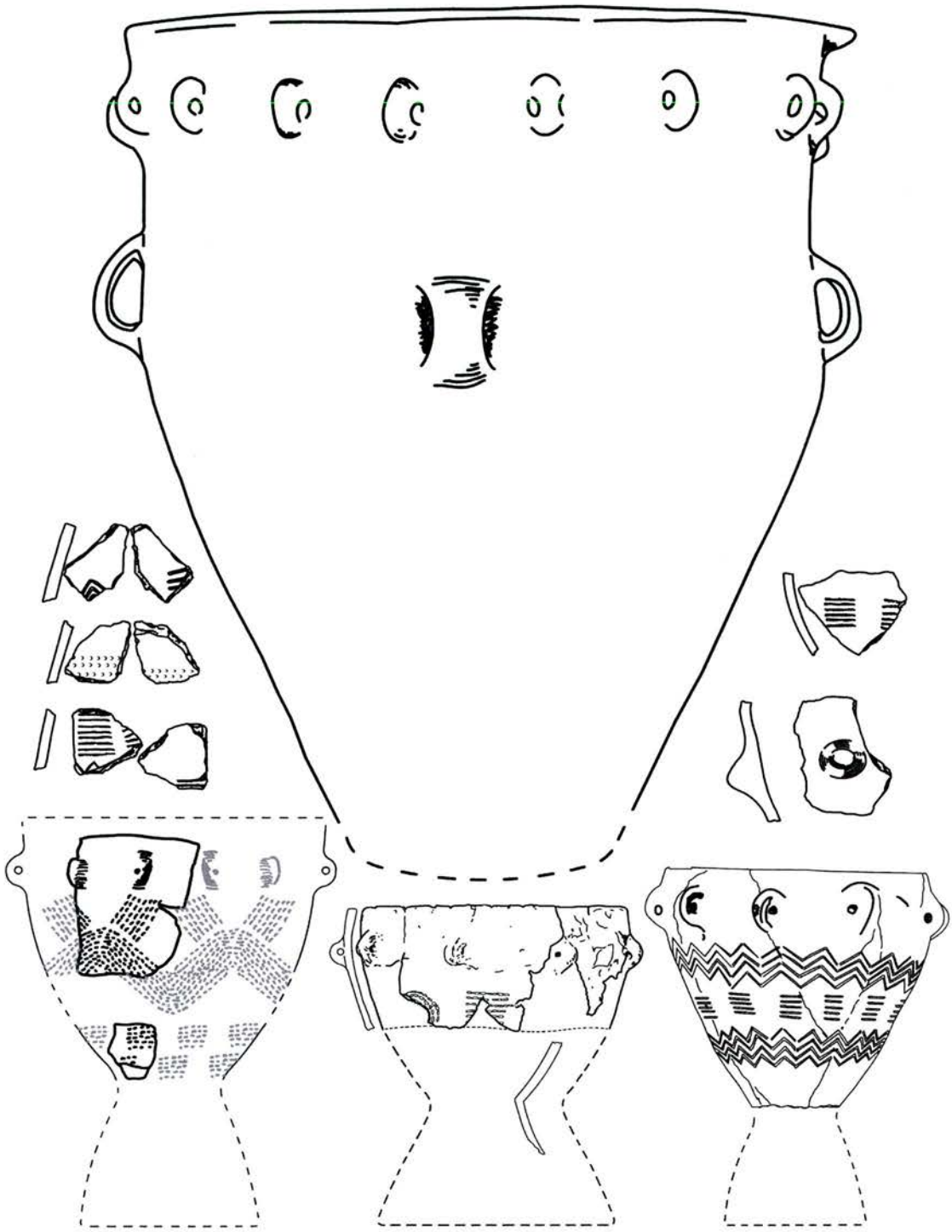


Fig. Cat. 8.11 Incomplete Walternienburg Drums from Settlement Contexts. Large drum from Egel, at the bottom from the left Nagelstedt, Erfurt and Wandersleben. Remaining sherds all from Wandersleben. All images to the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens (1980), Bucke (1986), Nestler (1984) and Wulf (1990)

suppose that this vessel may also have been a drum. Behrens (1963) suggests that the use of a normal earthenware vessel as drum, in this case with the diagnostic criteria being the eyelets, is not surprising, given the wealth of ethnographic evidence. More remarkable is the large bulge at the edge of the assumed pot-drum, for which no known parallels are known. L.M. f. V. Halle.

Literature: Behrens 1963, Megaw 1968.

57-58 ERFURT, Erfurt. Mbl. 5032, H 30569, R 51760

In an area known to have been inhabited by different Neolithic groups, a training excavation uncovered the sherds of a clay drum from the surface spoil removed by machinery. The mouth diameter is 18 cm, with 8 horizontally pierced eyelets, 6.5-7.5 cm apart, placed close to the rim. The wall of the drum is roughly 6 mm thick, consisting of a slightly rough spotted grey surface. Secondary burning had damaged the sherds. The decoration was impressed using a pointed tool, and consisted of seven horizontal *furchenstich* lines apparently arranged in groups with a triple concentric circle pattern. Concentric circles have been known but consisting of only two. Nestler (1984, 214) proposes the drum is Bernburg style, based on the decoration, and places it as Bernburg I, due to the eyelets and thus its similarities to the Langen Burg drums. A further double conical vessel was found associated with the drum sherds, which Nestler calls Walternienburg. It was proposed that the finds came from a settlement pit, the edges of which were no longer recognizable. Based on the vessel form and the presence of loops for the attachment of the skin and the fact that no Bernburg style drums are known from Thüringia, it is classified here as Walternienburg style.

Literature: Nestler 1984.

59 GATERSLEBEN 2, Kr. Quedlinburg.

A complete decorated loop drum from a settlement context, no image.

Literature: Fischer 1951.

60 NÄGELSTEDT, Langensalza.

In 1902, near Nägelstedt on a low elevation, a settlement site produced fragments of vessels of Bernburg I-II. These included fragments of collared flasks and two sherds of a drum other sherds possibly belonged to the Rössen Culture.

The sherds originate from the upper part of the drum, which has a beaker-drum form. Underneath the upper edge were the remains of two vertical loops. The first sherd is 9.7 cm high and is decorated with a broad band consisting of a curved zigzag, surmounted by two groups of near vertical lines; the decoration is constructed from small impressions, similar to the Erfurt example. The second fragment has a chess-board pattern, the chessboard design being characteristic of the Bernburg style drum, while overall the clearest comparison, in formal terms, would be the Grosseibstadt example. The Museum for Ethnology houses the drum sherds.

Literature: Seewald 1934, Fischer 1951, Bücke 1986.

61 STORKAU-PETTSTÄDT 2, Weissenfels.

From the same settlement as the Pettstädt 1 drum a small fragment of the upper part of a second drum was recovered. The position of the waist is just recognizable allowing the height of the upper part to be given as 9 cm. An estimate of the diameter of the mouth is 20 cm. The skin was fastened with small, horizontally-bored through loops, which are placed in the upper half of the upper part. No evidence of decoration survives.

Literature: Müller, H. H. 1960.

62-6 WANDERSLEBEN Gotha. Mbl. 5031 Neudietendorf, H 41800-900; R19020-180.

Five definite drums and 2 possible examples were found at the settlement site known as "Stangenweg"; unfortunately only one of these examples occurs from a recorded excavation. This example was found when a 2m x 2m large sondage was excavated at a place where drum fragments had been ploughed out. The black-earth level was reached at a depth of 35-40 cm and at this level a ground panel-fragment of sandstone was discovered, measuring 13.7 x 10.7 x 6.6 cm. Beside it were three large matching drum edge-sherds standing inverted in the earth. Several disturbed drum sherds lay to the south of the slab. The Rössen drum discovered in a pit was also associated with a large stone, described as "sofa cushion" piece of granite.

The remains consisted of a slightly curved beaker-shaped upper part, with a circulating wreath of 10 loops under the edge. The decoration consisted of three decorative bands, the top and bottom bands both consisting of 4 circulating deeply scored zigzags. These were divided by 13-14 small horizontal rectangles of five short lines. White incrustation is preserved within the decoration. The fragment has a height of 16.4 cm, a diameter at the waist of 5.7-6.0 cm, diameter at the mouth 16.4-17.3 cm. It is stored in the Weimar Museum.

Literature: Wulf 1990.

Walternienburg Drum incomplete: Burial Context

67 CALBE 1, Fdpl 6. (Zuckerfabrik,) Mbl. 2311/4136; N1.8; E16

The drum sherds from Calbe finds were discovered in 1904 without any archaeological excavation. The context is described as a settlement and flat-grave cemetery; and included the skeletal remains of at least four individuals. The vessels found included cups, a drum and a hanging container, numerous sherds and burned clay. Flint artefacts and animal bone were also found.

The ceramics provide a relative date of TRB IV based on ceramics of the Walternienburg style. Beier suggests that the site was probably a flat-grave cemetery next to a settlement. The drum is described as the beaker type with slender, funnel-shaped upper part; the relatively short foot passes over in a soft curve to the upper part. The piece is 15 cm high, with an upper-edge diameter of 14.5 cm, the lower 9 cm, and a diameter at the waist of 6 cm. Approximate 2 cm underneath the upper edge are four vertically standing loops. There is no comparable drum and it is placed here due to its context and the presence of loops. Seewald classified this drum as Bernburg style II-III, Fischer as Walternienburg style. Müller (2001) classifies the assemblage as Walternienburg I. The drum is found in Obenangeführten Museum.

Literature: Seewald 1934, Fischer 1951, Beier 1984, Müller 2001.

68-69 CALDEN II

In 1990 and 1992 a Gallery Grave was excavated, one hundred metres south of the Calden earthwork. The grave was orientated sw-ne with the entrance in the northeast. The construction was 11.9 m long and 3.8 m at the widest part. The roof of the chamber stood at a height of 1.4 m at the entrance and 1.05 m at the back of the chamber. The foundation trenches for the wall-stones and the floor of the chamber were dug into the limestone. The construction may have been placed beneath a mound, which had limestone and sandstone slabs round the base. The front of the chamber was constructed from dry stone walling. The burials were laid out in stretched positions running parallel with the axis of the tomb, with their heads towards the entrance; some cremations were also found. The excavation identified 78 bodies, but taking into account the disturbance of the grave, the excavators estimated a total of about 200.

The ceramic grave goods were clustered near the entrance, these include two bowls, the fragment of a collared flask, the remains of a drum, with embossed decoration of the foot and some other sherds. Also in the entrance area was a fragment of a large rectangular axe made from Wiedaer slate. The fragments of a second drum was found in the chamber. Additional

grave goods included perforated animal teeth of dog, fox, badger, wolf, horse, brown bear, and un-retouched flint knife, triangular and transverse flint arrowheads, an amber bead and a polished and perforated bone disc. A calibrated radiocarbon date places the burials around 3100 BC cal.

Literature: Raetzl-Fabian 1999

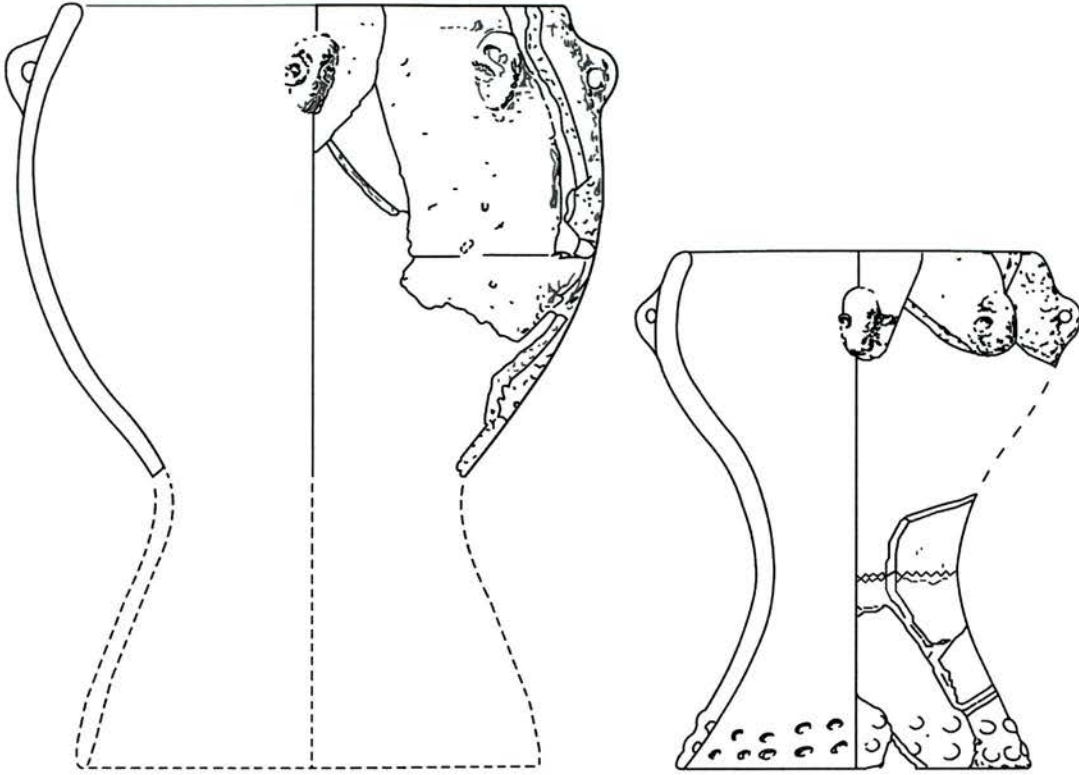


Fig. Cat. 8.12 Walternienburg style drums from Burial Context at Calden II. Calden II D1-D2. Images are at the same relative scale as is original publications, although no actual scale given. Images redrawn after and Raetzl-Fabian (1999)

70 HEILIGENTHAL (Sommerberg), Hettstedt. Mbl. 2530/4435; N 2.2; 0.50.

In 1908 an excavation explored an east-west orientated rectangular *Mauerkammer* with a cobble floor. It had a length of 3.5 m and width of 2.25 m width. The western and southern walls consisted of 0.3 m wide and 0.5 m high dry stone construction, while the eastern and northern walls were formed from 0.05 m thick, vertical slabs of sandstone. In the eastern half of the southern wall a small stone chamber (0.65 x 0.75 m) was discovered, covered with a flagstone; it contained 2 handled vessels, 1 goblet and the remains of a drum. In the Northwest corner the remains of a stretched burial lay in northeast-southwest orientation; the skull lay with bear-claws on a flagstone. In the north-east corner one handled vessel stood. It contained animal bones and was covered with a shell.

The fragments of a drum in the sealed small cist were incomplete, suggesting that it had been broken prior to deposition. The vessel is a dark brown colour and has a straight wall. It survives to a height of 14 cm, with a lower diameter of 12.5 cm. The decoration of the upper parts is composed of several rectangular panels which consist of zigzag lines, between some of these panels are vertical branch motifs. Below these motifs are eight rectangular groups of

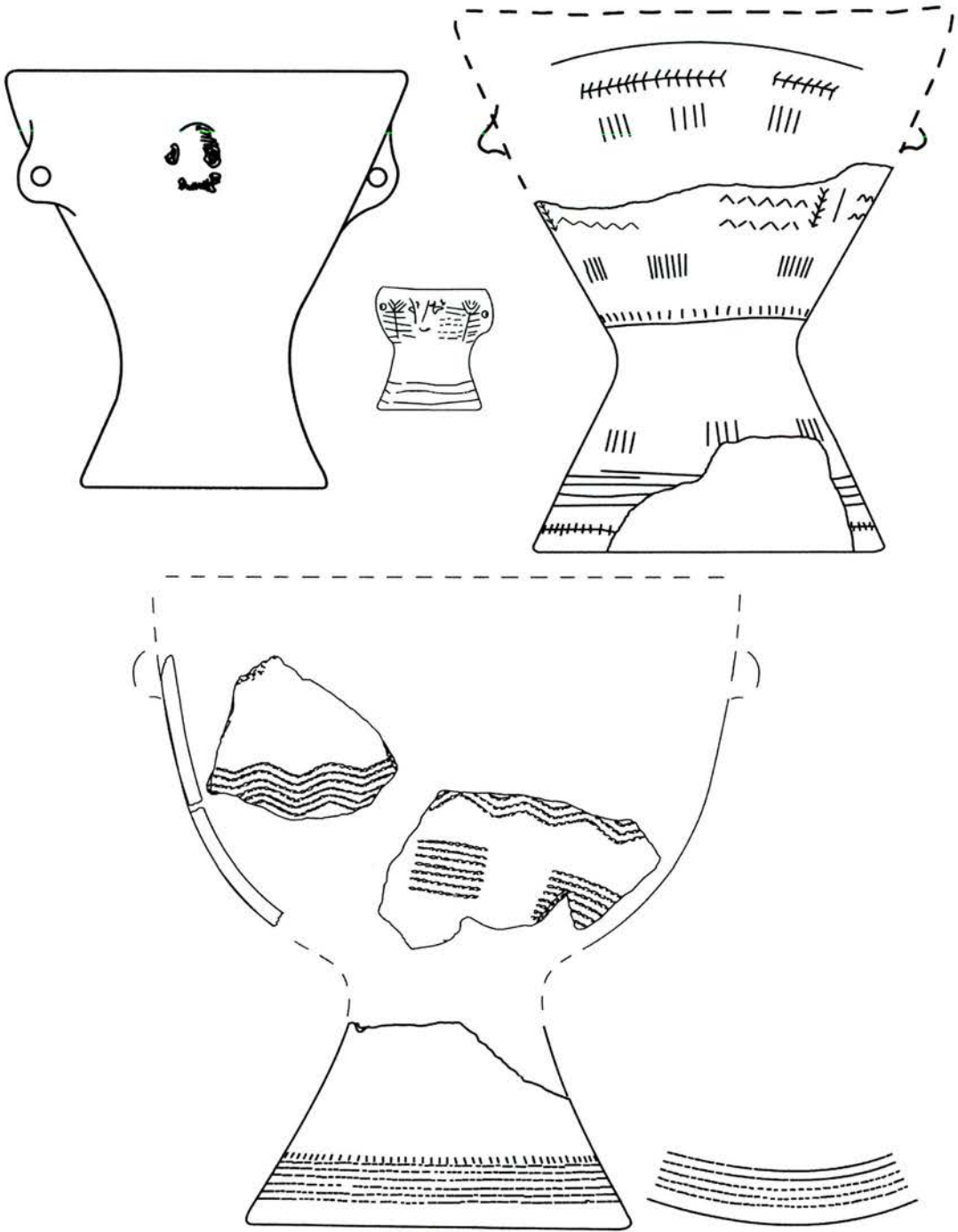


Fig. Cat. 8.13 Incomplete Walternienburg Drums from Burial Contexts. From the top left Calbe 1, Quenstedt-Lohberg and Heiligenthal-Sommerberg and Hornsömmern 2. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Fischer (1951) and Müller (1994)

between 4 and 7 vertical lines about one cm long; a similar pattern to this is repeated below the waist. Just above the waist there is a circulating horizontal line topped by a series of small vertical lines. Four parallel horizontal lines surround the foot above a single line which is marked above and below by short vertical strokes. Within the foot the rectangular panels of vertical lines are repeated, these sit above a repeated horizontal branch motif. Müller (2001)

classifies this assemblage as Walternienburg I, yet we may observe the similarities in the decoration with the Salz/Walt drums and also the lugless drum from Odagsen I. LM. f. V. Halle.

Literature: Seewald 1934, Fischer 1951, 1956, Beier 1984, Müller 1994, Müller 2001.

71 HORNSÖMMERN 2, Langensalza. Mbl. 2742/4730.

For information on the context see Hornsömmern 1, above. The second drum is very fragmentary but appears to have a similar form to the instrument described above, the foot survives to a height of 7.64 cm. The decoration of the upper part was composed of a six-rowed zigzag band of groove-stroke-lines and under it a series rectangular panels of horizontal groove-stroke-lines. On the outside of the foot edge six horizontal lines were surmounted by a series of small, vertical strokes, on the inner edge five rows were present. Seewald describe the decoration as beginning under the “lug”, and classified the instrument as Bernburg because of this “lug”. Fischer (1951) questioned this interpretation, and it is apparent from the illustration in Müller (1994) that no clear identification of loop or lug is possible. Rather than classify this drum based on the unclear method of skin attachment here it is classified based on the decoration and the accompanying assemblage. The decorations of these fragments closely resemble, not only, those of Nagelstedt and Wandersleben, both settlement finds, but also Grosseibstadt and to some degree Nordhausen. Thus, with further reference to Müller (2001) who classified this assemblage as Walternienburg II, the Hornsömmern 2 drum is assigned to the Walternienburg style.

Literature: Seewald 104; Fischer 1951.

72 QUENSTEDT, fdpl. 3. Lohberg. Mbl. 2456/4334: N 6.2: E 8.2

On the Lohberge, southeast Of Quenstedt, in a flattened stone mound a richly decorated amphora was discovered with three cups, a small drum, an Opperschöner jug and a flint knife. No skeletal remains were observed.

The drum is 4.5 cm high and has a roughly hour glass-form. Four vertical loops sit under the upper edge. In the space between them are tree-like motifs placed within a panel of horizontal lines, executed in stroke furrow technique. The foot is decorated outside with three horizontal lines.

The ceramics belong to the Walternienburg and Salzmünde style. Beier says “the group of containers beside the stone packing does not have to be the result of a secondary burial, but may be interpreted as an additional assemblage placed beside the burial” However the amphora was a separate find and cannot be linked to these vessel with complete assurance. LM Halle.

Literature: Grimm 1936; Fischer 1951; Behrens 1981; Beier 1984.

BERNBURG

Bernburg I Complete Settlement Drum

73-80 DERENBURG, Wernigerode. Mbl. 4131 [2306]; N 6,2; O 14,7.

In the upper part of a settlement pit some Bernburg style ceramic sherds were discovered. They were found with a clay-covered pottery fragment and some charred bone of ox and pig, and also a fragment of a small bone tool. Beneath the vessel fragment at the base of the pit was black-coloured earth, impressed with carbonized grains of Emmer (*Triticum dicoccum*), and a small quantity of Einkorn (*Triticum monococcum*). Some of these were baked together. The recovered sherds originate from at least 14 different vessels, which display the peculiar forms of the Bernburg style and decoration. Under these sherds were recovered a

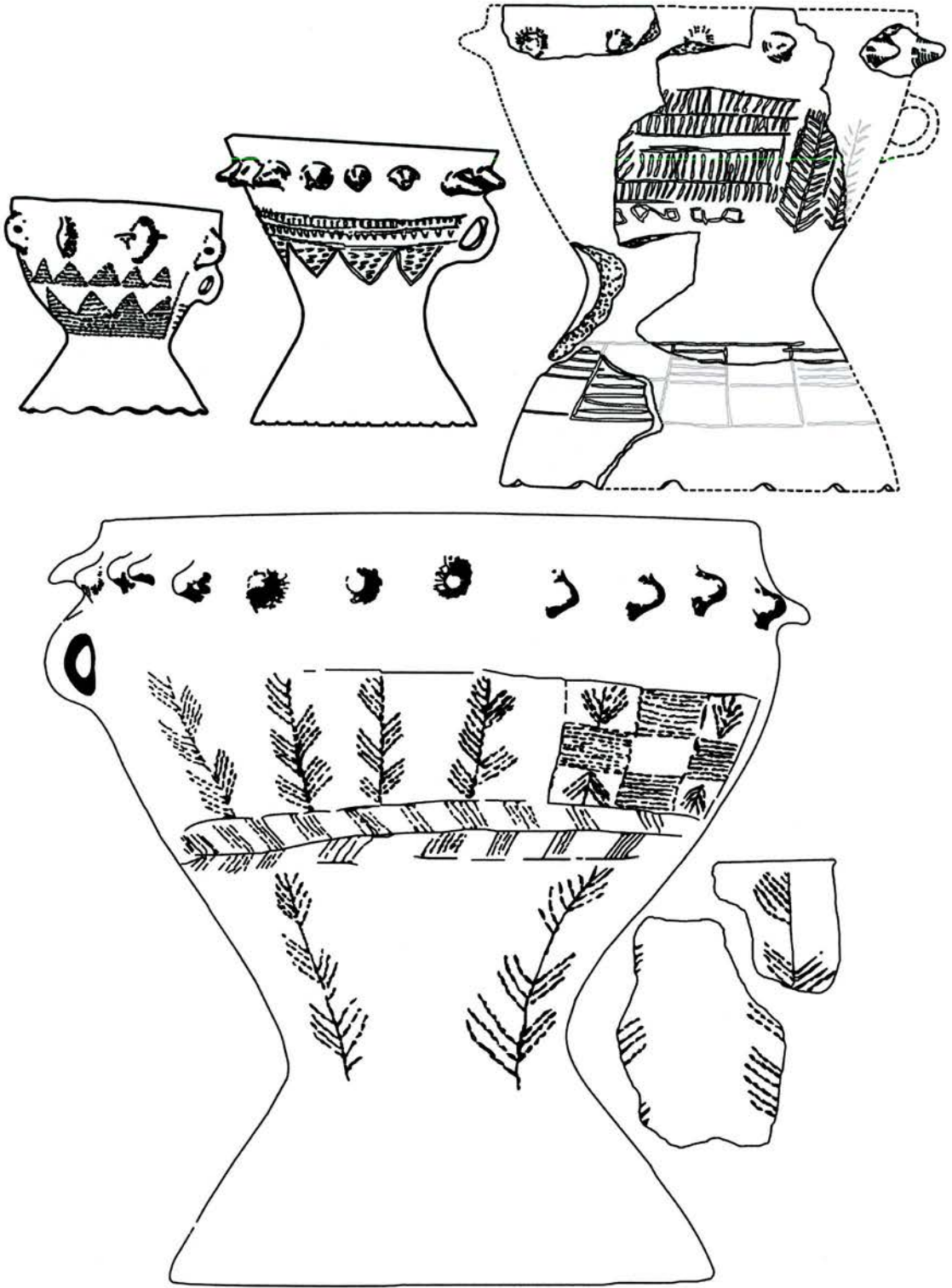


Fig. Cat. 8.14 Complete Bernburg Drums from Settlement Contexts. From the top left Langen Burg pit 86 and pit 95, Quantedt Schalkenburg pit 155 and Derenburg. All at the same relative scale, dimensions given in catalogue entry. Images redrawn from Behrens and Schröter (1980) and Römmer (1962)

beaker-shaped drum, 46 cm high. The cauldron-shaped upper part has a diameter of 38 cm and the foot a diameter of 33 cm. A wreath of downward-pointed lugs is found beneath the rim.

Close to the lugs is a 5 cm wide ribbon handle. Only the cauldron-shaped upper part displays decoration, which begins 9-10 cm beneath the upper edge. While the upper zone exists of relatively narrow standing, vertical fir tree branch motifs and chequered board panels, the lower zone contains broken branch motifs. Between both zones a horizontal tree-branch motif is placed like a waist-band. Koch (1992) lists eight drums from Derenburg. Literature: Römmer 1962.

81-82 LANGEN BURG, Dölauer Heide.

From the settlement at Langer Burg and Quenstedt-Schalkenburg the remains of numerous drums were discovered in pits. The example cited here are the only instruments complete enough to warrant an exact assignment to a specific type. The other examples from this site are found below, catalogued as incomplete settlement examples.

Settlement pit 86

An almost complete decorated drum with loops for the attachment of the skin and a handle. The decoration consists of two rows, one above the other of triangles applied with small impressions, the base has a wavy shape, traditionally associated with late Bernburg design. (12.9 cm high, upper diameter 12.6 cm, waist cm 6 and a lower foot diameter of 11,1 cm) Associated with a shallow bowl with a horizontal handle.

Settlement pit 95

A decorated drum, with a series of conical lugs under the rim. About three cm below the rim is a handle and also the decoration consisting of a single row of inverted infilled, triangles surmounted by parallel lines with small vertical strokes running below them. The base has the Late Bernburg wavy edge. The height is approximately 17.1 cm, the upper diameter 16.5 cm, the lower diameter 12.9 cm. The diameter at the waist is 7 cm and this is situated at about 6 cm above the base.

83 QUENSTEDT, Schalkenburg.

Settlement pit 155

A Bernburg style drum, 29 cm high, was discovered in a settlement pit. It was decorated internally and externally, with high lugs and the possible remains of a handle. It was associated with a polished axe.

Literature: Behrens and Schröter 1980.

Bernburg II Complete Burial Drum

84 EDESHEIM, Northheim, Mbl. 2375/4226.

In 1935 a flat grave was excavated in a gravel pit at the edge of the Leine valley.. The grave contain "skeletal material", a cup. A drum associated with skeletal remains was discovered in the same pit the previous year and Beier interprets this to mean the pit contained two flat graves.

The composition of the fragments a clay drum of about 34 cm high, and with a mouth diameter of 22.5 cm and 20 cm diameter of the foot. The drum is eggcup shaped, and has 17 lugs just beneath the upper rim. A little above the waist is a broad handle. The edges of the fragments clearly show the coil technique of manufacture. The upper part is decorated with by a chequer board design, which consists of wedge-shaped punctures and some carved lines

Jacob-Friesen states he attached a skin to a replica of the drum and "called forth the most beautiful drum sound on it". It fits neatly into the standard classification of the Bernburg style with high lugs and chequer board decoration.

Literature: Jacob-Friesen 1935, Fischer 1951, Beier 1984.

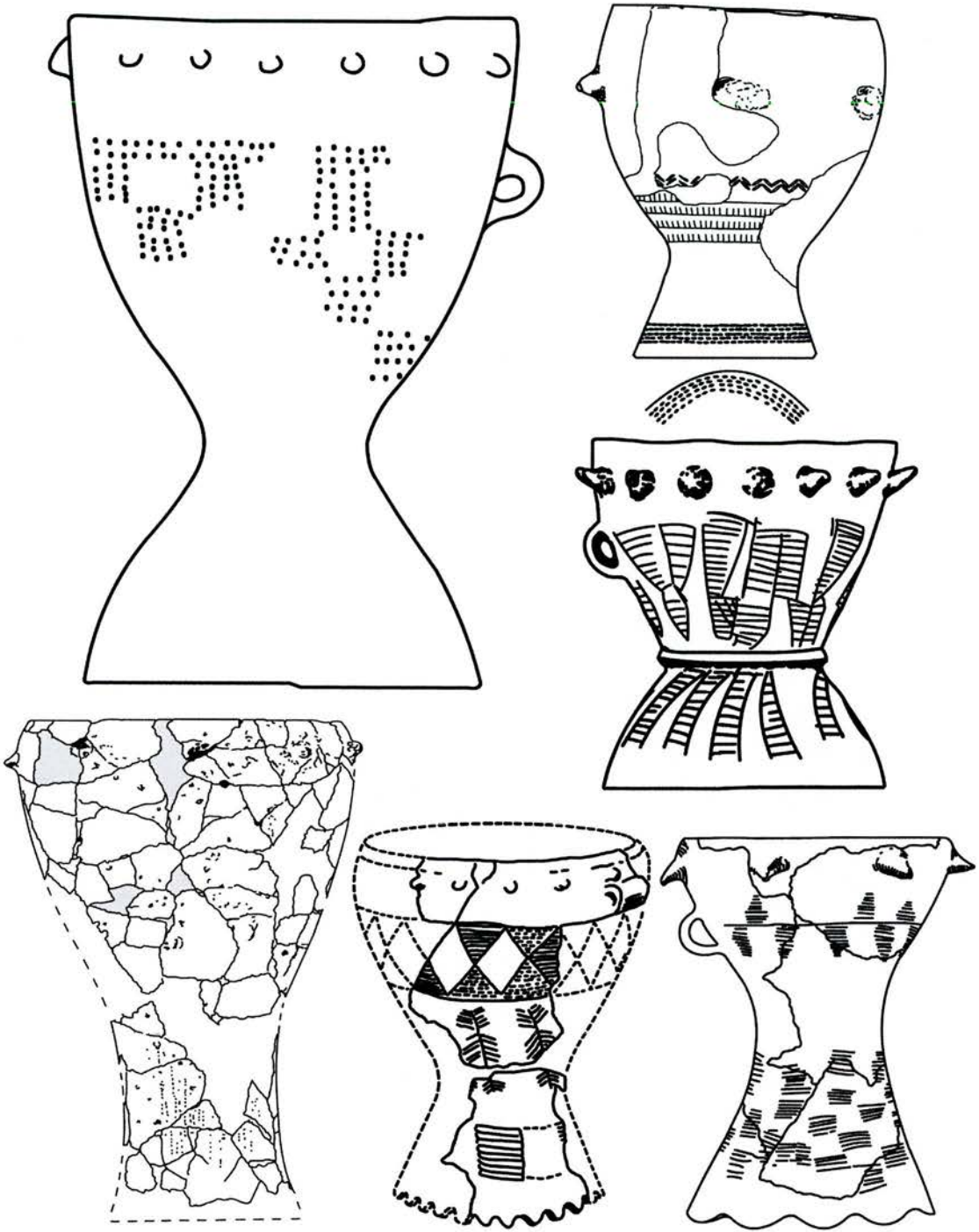


Fig. Cat. 8.15 Complete Bernburg Drums from Burial Contexts. Clockwise from the top left Edesheim, Fredrichsaue, Klein-Quentedt, Latdorf-Spitzes Hoch, Nietleben and Pevestorf-Hasenberg. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens and Schröter (1980) and Schrickel (1956), Voss (1965)

85 FRIEDRICHSAUE, Quedlinburg.

In 1930 two *Mauerkammern*, measuring 1:2.2 x 1.8 x 0.7 m and 2.5 x 1.9 x 0.7 m were discovered close together on the "Galgenberg". Grave 1 was orientated NNE-SSW, and situated directly on the ground surface beneath a covering mound. It contained a thick pile of stones and skeletal remains as well as the remains of a timber chamber. Excavation revealed 8-12 skeletons with the skulls in the SSW.

A broken drum, 18 cm high, with stroke-band decoration on the inner edge of the foot was classified by Fischer as Walternienburg, despite the presence of lugs for skin attachment. The drum has a height of approximately 18 cm. A stone pendant was also discovered. Although the lugs on this drum are relatively high-up on the vessel, we may remind ourselves that the Zorbau-Gerstewitz drum, classified as Salzmünde style had lugs positioned just below the rim. Furthermore, the decoration of the waist with a double zigzag band is reminiscent of Salzmünde decoration while the circulating comb motif found immediately above the waist is suggestive of the Salz/Walt tradition; this motif has parallels on the instruments from Hornsömmern, Grafentönnna and Feldengel. The nearest comparative example for the foot decoration is the Schkopau drum, which is also a Salzmünde style drum within a Bernburg burial context. Müller (2001) classifies the assemblage as Bernburg. Quedlingburg Museum.

Literature: Fischer 1951; Müller 1994.

86 KLEIN QUENSTEDT Fdpl. 3, Halberstadt. Mbl. 2234/4032; S 9.2; W 19.9.

The 1.5 m high "Windmühlhügel" was excavated in 1926, and revealed the remains of a north-north-west by south-south-east orientated construction, approximately 2.5 x 6 m, Beier states the size is unknown the measurements here are from Müller (1994). The mound with burnt timber chamber, over a buried floor of stone paving on which lay numerous burnt skeletal remains, both male and female. Associated with these burials were 20 vessels including a Bernburg style drum, animal teeth in ordered chains, flint knives, 1 perforated bone fragment and charcoal. The chamber may have had internal divisions. Over it was found a layer from burnt clay and limestone.

The drum has a height of 18 cm with a top diameter of 15 cm and bottom diameter of 14 cm. Thirteen pegs served as an attachment for the drum-skin and it also possessed the characteristic Bernburg handle. The drum has rich line decoration in long triangular panels. Some vessels contained remains of charcoal, bone, a perforated piece of bone and in two cases, flint knives. Halberstadt Museum.

Literature: Hemprich 1938, Beier 1984, Müller 1994.

87 LATDORF, Fdpl 2 Spitzes Hoch. Mbl. 2312/4137; S 1.5;W 0.2.

In 1880 partial excavation was carried out on the grave-mound known as the "Spitzes Hoch", which stood to a height of 6.6 m with an average diameter of 31 m. At a height of 0.8 m above the ground surface a collective grave, classed by Beier as a Mauerkammer, contained a large quantity of the burnt remains of adults and children. Grave goods consisted of fox- and dog-tooth perforated jewellery, two copper beads, two jet beads the fragments of a vessel.

Three stone constructions (cists?) were found in approximately the same layer and contained thirty vessels from Bernburg II and III, late TRB V. In the bottom of the mound lay some graves and a stone cist. The cist contained a crouched burial, a handled vessel with undulated edge, a stone hammer, two flint knives and a drum.

The drum was well preserved, having an almost hourglass form with six lugs beneath the rim and a broad ribbon handle. The height is 20 cm, the upper diameter about 14 cm, with the lower about 10 cm, at the waist the diameter is roughly 7 cm. The instrument is decorated on the upper part with a triangles consisting of horizontal lines; these alternate between pointing up and down. On the foot of the vessel the decoration consists of a chequered pattern; again the squares are formed from horizontal lines. The wavy base of the drum and the associated cup date the finds to the late Bernburg style. Bernburg Museum.

Literature: Fischer 1951, Schmidt und Schröter 1976, Beier 1984, Müller 1994.

88 NIETLEBEN, Saalkreis. Fdpl. unknown. Mbl. 2605/4537.

In 1826 the destruction of a mound in a gravel quarry at Nietleben revealed a *Rampencist* containing the fragments of a decorated drum. Two stones in the wall of the chamber were engraved. Beier described the structure as a 4 m long trapezoid sealed with clay. It had a ramp-like entrance at the southern narrow side. The burial area was separated from the paved passage by a partition; a stone slab sealed the entrance. The construction is divided into three parts, in the larger final area, defined by a low cross slab, lie two opposed skulls and cross bones, one in each of the end corners. In the centre of the chamber is a low wooden structure of two tabular planks separated by timbers, beside which stand three small pots. In the second smaller compartment is a single centrally-placed pot: a globular, one-handed Bernburg cup. An upright slab seals these two inner chambers from the entrance at the narrow end. The entrance was half filled with spoil, on top of which stood a centrally-placed pottery drum (Sherratt 1997, 421). Other grave goods included a flint knife, transverse flint arrowheads, bored through dog-teeth, a slate axe and fragments of some amber beads.

The fragments of the drum are composed of smooth, grey-brown clay and the decoration has a white incrustation. It has a height of 19 cm. The decoration on the upper part consists of lozenge shapes, created by the juxtaposition of two bands of triangles. Between this band of decoration and the waist are interrupted branch motifs, while below the waist a band of alternating squares and blank spaces.

Literature: Fischer 1951, Schrickel 1956, Beier 1984, Müller 1994, Sherratt 1997.

89-93 PEVESTORF. Lüchow-Dannenberg Mbl. 1467/2934; N 18.8; W 12.5.

In the 1960s, Voss systematically excavated a flat-grave cemetery situated on a terrace. A thin ceramic-rich surface layer revealed among other things a whole set of drum sherds. A series of 32 pits running east-west and up to 1 m deep, with no stone protection, contained supine inhumations. Grave-goods consisted of vessels, flint axes, transverse arrowheads, amber decoration and copper beads. Within five graves, bag-shaped secondary entrenching was observed, which contained vessel-sherds, charcoal fragments and ash. In addition excavation revealed a henge-like circular building of over 10 m diameter with a southern entrance; this was established from postholes, which were situated stratigraphically below graves 5 and 7. In its centre was a fire layer with cremated bones of pigs and birds. Three fragments of the drum remains were found inside the enclosure. Its height was 25.8 cm.

The ceramics belong to the Bernburg style and to the Globular Amphora culture. The secondary pits, which contained ceramics, the finds scattered on the old land surface and in the circular building, have all been interpreted as evidence of ritual customs. Its stratigraphic position proves it earlier than the graves 5 and 7, although Beier suggests it may be fairly contemporaneous with some of the burials. Koch (1992) lists five drums from this site. Hannover Museum.

Literature: Voss 1965, Behrens 1981, Beier 1984.

Bernburg drum (incomplete) Settlement Context

94-99 GROSSBRINGEN SPORTZPLATZ.

In 1962 the excavation at a large enclosure revealed the fragments of six drums, this site also contained a casting crucible (Müller 2001, 412).

Literature: Walter 1991, Müller 2001.

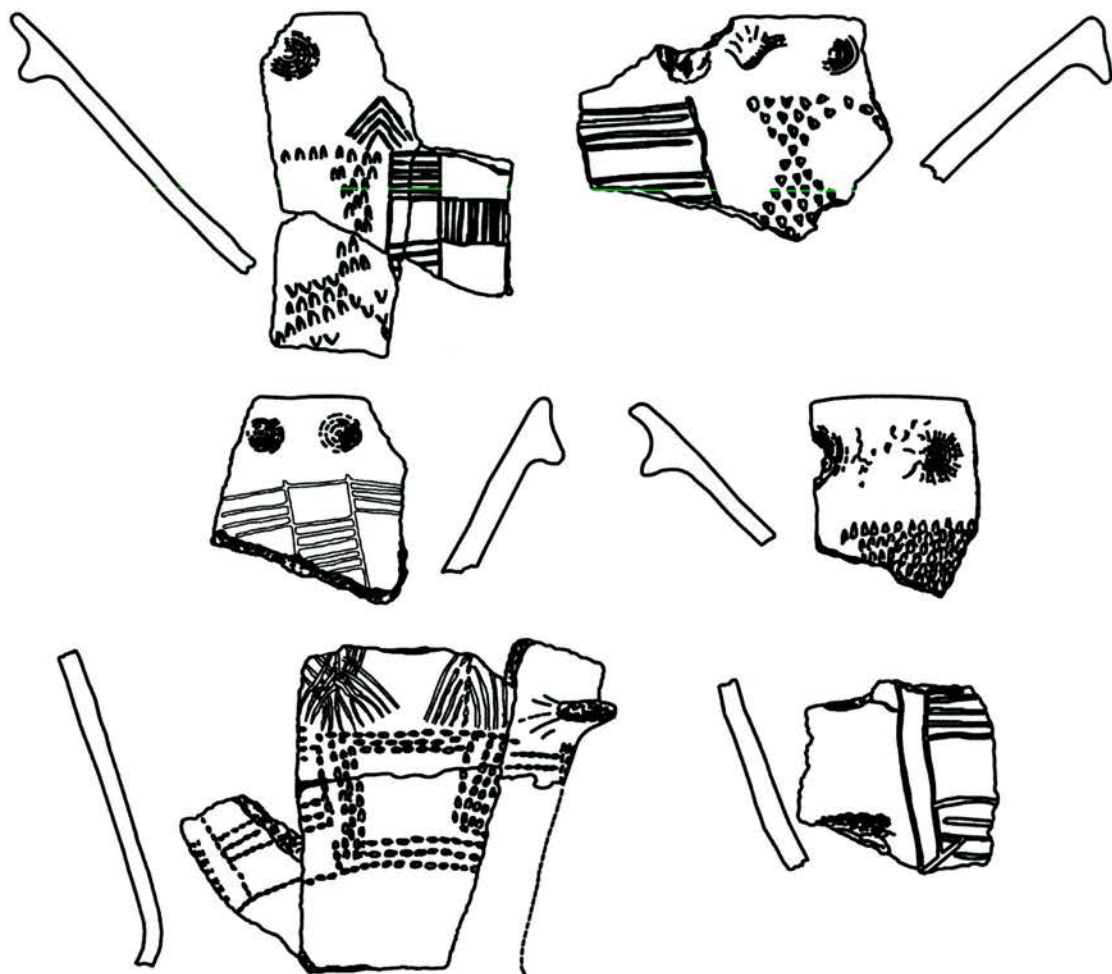


Fig. Cat. 8.16 Incomplete Bernburg Drums from Settlement Contexts. The drum fragments discovered at Grossobringen-Sportsplatz. All at the same relative scale. Images redrawn after Walter (1991)

100 HALLE-KRÖLLWITZ.

Sherds from the upper part of a drum were found in a settlement associated with Bernburg-style ceramics. The height of the fragment was 18.5 cm. The fragment has four circulating bands of upward pointing infilled triangles.

Literature: Toepfer 1961.

101 HAUSEINDORF, Aschersleben.

The upper part of a decorated drum of Bernburg type was found in a settlement pit with Walternienburg style ceramics. No image. LM. f. V. Halle.

Literature: Behrens 1980.

102 KÖTHEN-GÜTERSEE,

Settlement-grave with a Bernburg-style drum with chequered pattern on the foot.

Literature: Fischer 1951.

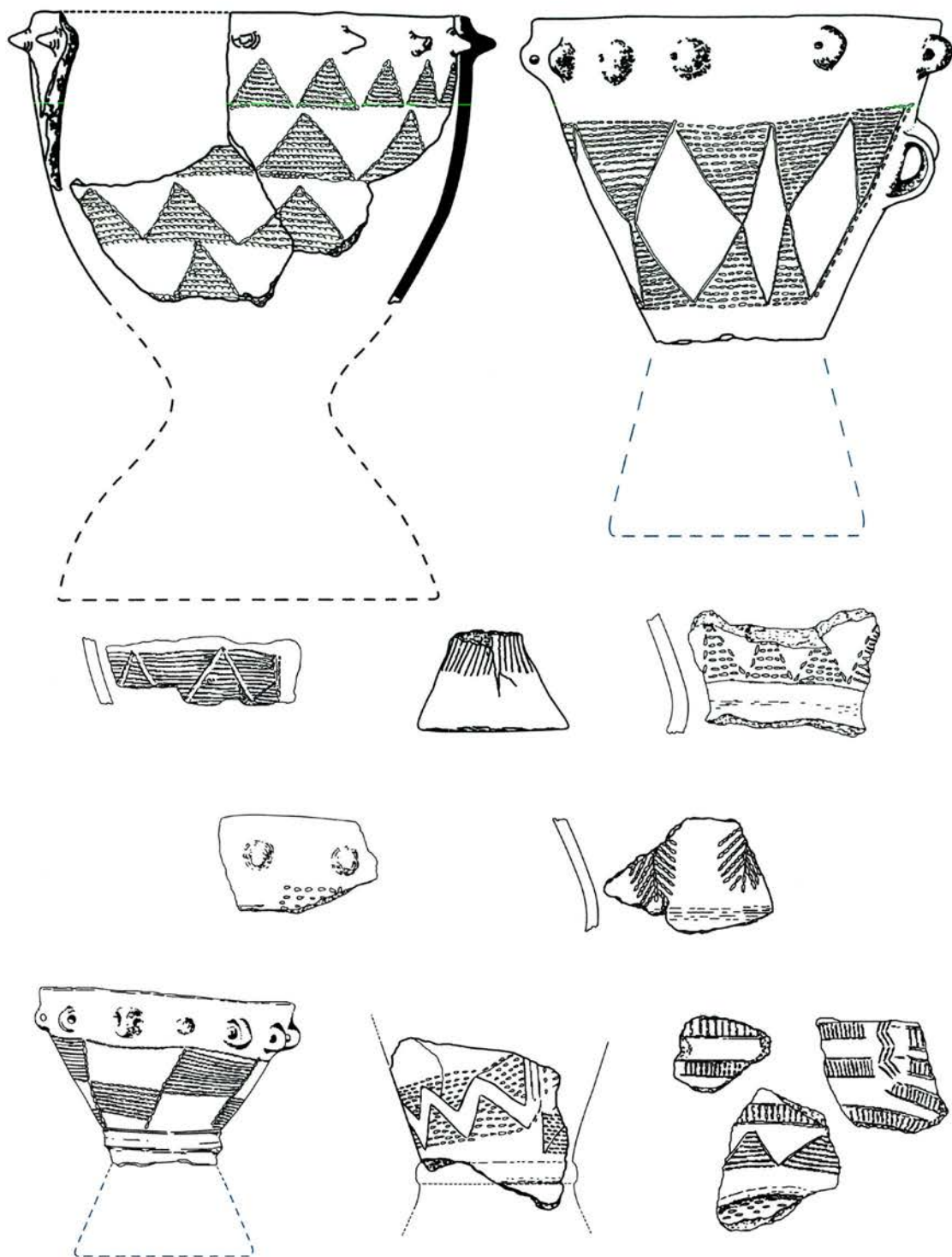


Fig. Cat. 8.17 Incomplete Bernburg Drums from Settlement Contexts. From the top, running left to right: Halle-Krollwitz, Langen Berg pits 2, 1, 14, 78, 81, 107, 122, 125, 156. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens and Schröter (1980) and Toepfer (1961)

103-130 LANGEN BURG, Döläuer Heide.

Including drums, with catalogue numbers, 79 and 80 a total of 15 drums are described in this catalogue originating from Langen Burg. Behrens and Schröter (1980) and Koch (1992) both list 30 examples, the catalogue numbers here include these vessels despite the fact that no description of find or context is given. (all discussed in Literature: Behrens and Schröter (1980).

Settlement pit 1

Fragment of a decorated drum with empty zigzag decoration, about 4.5 cm high;

Settlement pit 2

Upper fragment of a large decorated drum: it has an upper height from waist of 21 cm, and an upper diameter of 25.8 cm; where it is broken at the waist it has a diameter of 10.8 cm. The decoration consists of two rows of triangles meeting at their tips and so producing a boundary for the lozenge pattern thus created. Just under the rim are a series of loops for the attachment of the skin, and about 6 cm below the edge is a large ribbon-handle. This drum was found in association with a small barrel-shaped pot with two handles;

Settlement pit 14

Fragment of the waist of a decorated drum, 8cm high;

Settlement Pit 78

Drum fragment with characteristic Bernburg-style decoration of upward pointing triangles, 6.5 cm high;

Settlement pit 81

Decorated drum fragment with lugs for the attachment of the drum skin, 6.1 cm high;

Settlement pit 107

Drum fragment with two vertical branch motifs, just under 7.5 cm;

Settlement pit 122

Decorated upper fragment of a drum with Walternienburg style loop handles, a chess board pattern and a distinct ridge at the waist, where it is broken. This sherd is similar to the examples found at Schalkenburg pits 282 and 183. The waist is 6.3 cm in diameter and has a height, from the waist to the rim of 11.8 cm, the upper diameter is 15.6 cm;

Settlement pit 125

Fragment of the waist of a drum with empty zigzag motif running diagonally up the side, 11 cm high;

Settlement pit 156

Drum fragments decorated with triangles and horizontal ladder bands, 9.5cm high;

Settlement pit 180

Fragments of a drum with chess-board pattern associated with a broad conical dish and a small pot with upward-turned lugs, 4.5 cm high;

Settlement pits 214 and 229

The three fragments of this drum were actually found in two separate pits. It was decorated with two rows of downward-facing infilled triangles separated by a horizontal herringbone pattern. Just below the rim were a series of lugs, 16.6 cm high;

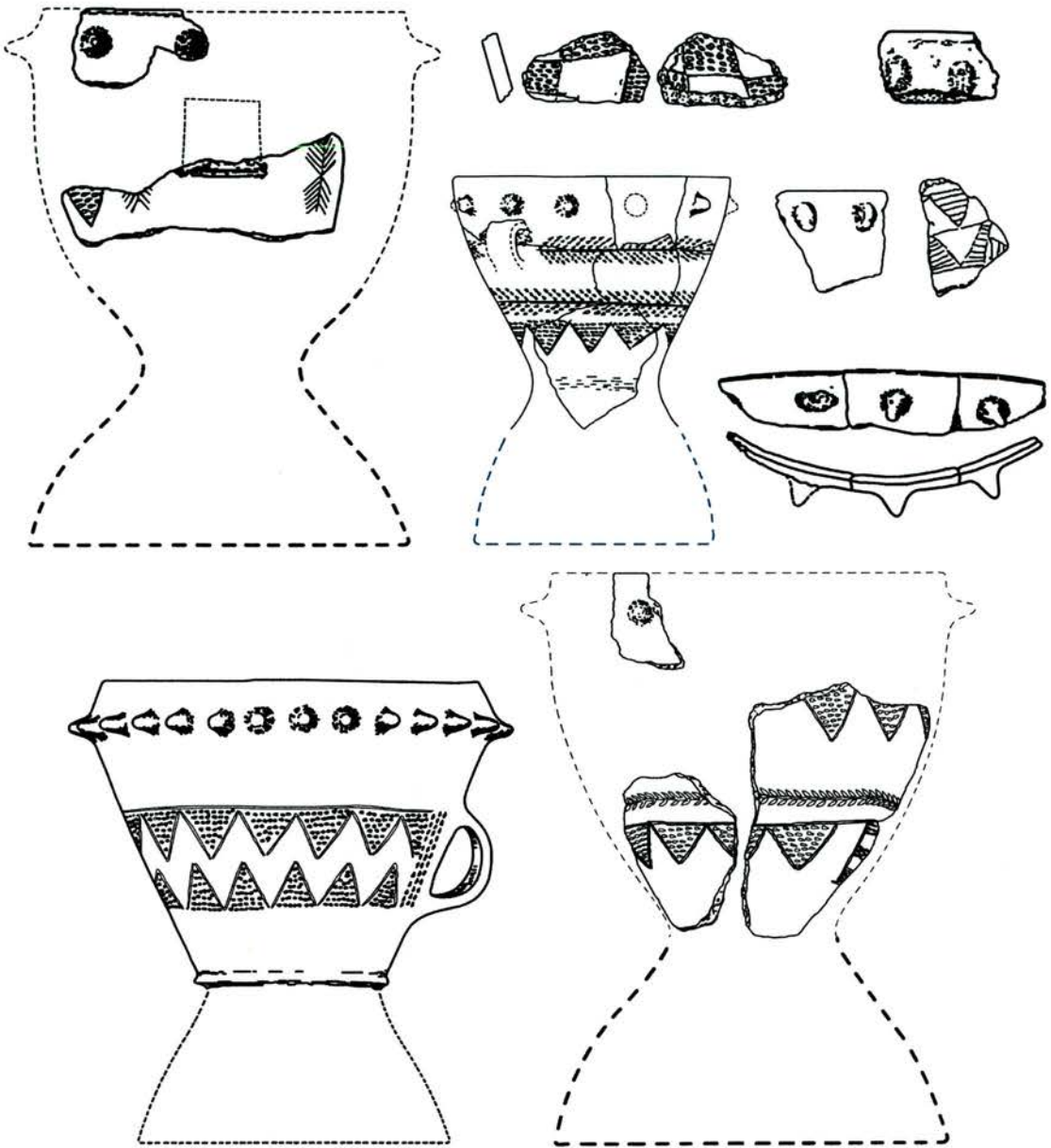


Fig. Cat. 8.18 Incomplete Bernburg Drums from Settlement Contexts. Four large fragments allowing the interpretation of part of the shape Langen Berg pit 165, single find with no context, pit 220, pits 214 and 229. Small sherds from top middle Langen Berg pit 180, pit 224, pit 228, pit 206. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens and Schröter (1980)

Settlement pit 220

A decorated fragment of the upper part of a drum. It has a lip at the waist similar to the drums from Schalkenburg pits 282 and 183, and a large number of lugs. The decoration consists of two opposing bands of triangles creating a zigzag pattern. The upper diameter is 24 cm at the edge although it does bulge slightly at the point of the lugs for the skin attachment; the diameter of the waist is roughly 12 cm, and it sits 20.1 cm below the upper edge;

Settlement pit 228

Two drum fragments, one undecorated and one undecorated with two layers of alternate infilled and empty triangles, associated with a barrel shape pot with two loop handles just above the waist, 5.6 cm.

Literature: Behrens and Schröter 1980

131 QUEDLINGBURG Quedlinburg.

On the so-called Radelberge, running between Quedlinburg and Badeborn, on the peak known as the "Seweckenberge", lies a settlement of the Bernburg culture. Excavation of the site has revealed the fragments of a drum. The surviving sherds include a large edge-piece from the upper part and a piece from the waist, which allows an interpretation of a straight-walled instrument with a distinctive angle at the waist, thus the vessel has an hour-glass form. The upper part has a height of about 9 cm, with an estimate of about 20 cm for the upper diameter. A little under the upper edge runs a wreath of pointed pegs; under this is a broad-ribbon handle. The sherds are undecorated. The associated assemblage belongs to late Bernburg level II and mainly at level III. The piece is found at Quedlinburg Mmuseum. Müller (2001) classifies the assemblage as the Bernburg style of TRB V.

Literature: Seewald 1934, Fischer 1951, Müller 2001.

132-3 QUEDLINGBURG, Quedlinburg.

A "Northern" hill settlement on the Schlossberg with the sherds of two Bernburg-style drums, the sherds of one of these have high lugs and chequer-board decoration. No image. A third drum from Quedlinburg is listed by Koch (1992).

Literature: Fischer 1951.

134-62 QUENSTEDT, Schalkenburg.

Including drum 83 a total of 14 drums are described in this catalogue originating from Quenstedt-Schalkenburg. Behrens and Schröter (1980) and Koch (1992) list 30 examples, the catalogue numbers here include these vessels despite the fact that no description of find or context is given. Koch (1992, 115) list 98 drums from Langen Burg and Schalkenburg, specifying 30 from Langenburg, this would leave 68 from Schalkenburg, although Behrens only discusses 30. It may be that Koch includes vessels with holes in the rim, discussed in chapter 3. Koch provides no description of illustrations and without further support these drums are not included in this catalogue. (The drums listed here are all discussed in Behrens and Schröter (1980).

Settlement pit 100

Decorated drum with lugs for skin-attachment, 4.9 cm high, was associated with two fragments of bone, three large pots two vessels with holes drilled through the rims, a necked jar, a spindle-whorl, a cup and a polished axe (Behrens and Schröter 1980, 116);

Settlement pit 114

A drum fragment, 5.9 cm high, with internal and external decoration associated with a cup (*idem*, 118);

Settlement pit 119

A fragment of a decorated Bernburg-style drum, 22.3 cm high, was associated with a spindle-whorl, a pot with holes drilled through the rim and two sherds with decoration. (*idem*, 118);

Settlement pit 183

A drum fragment, 16.8 cm high, associated with a sherd with a hole drilled through it and applied decoration. (*idem*, 120);

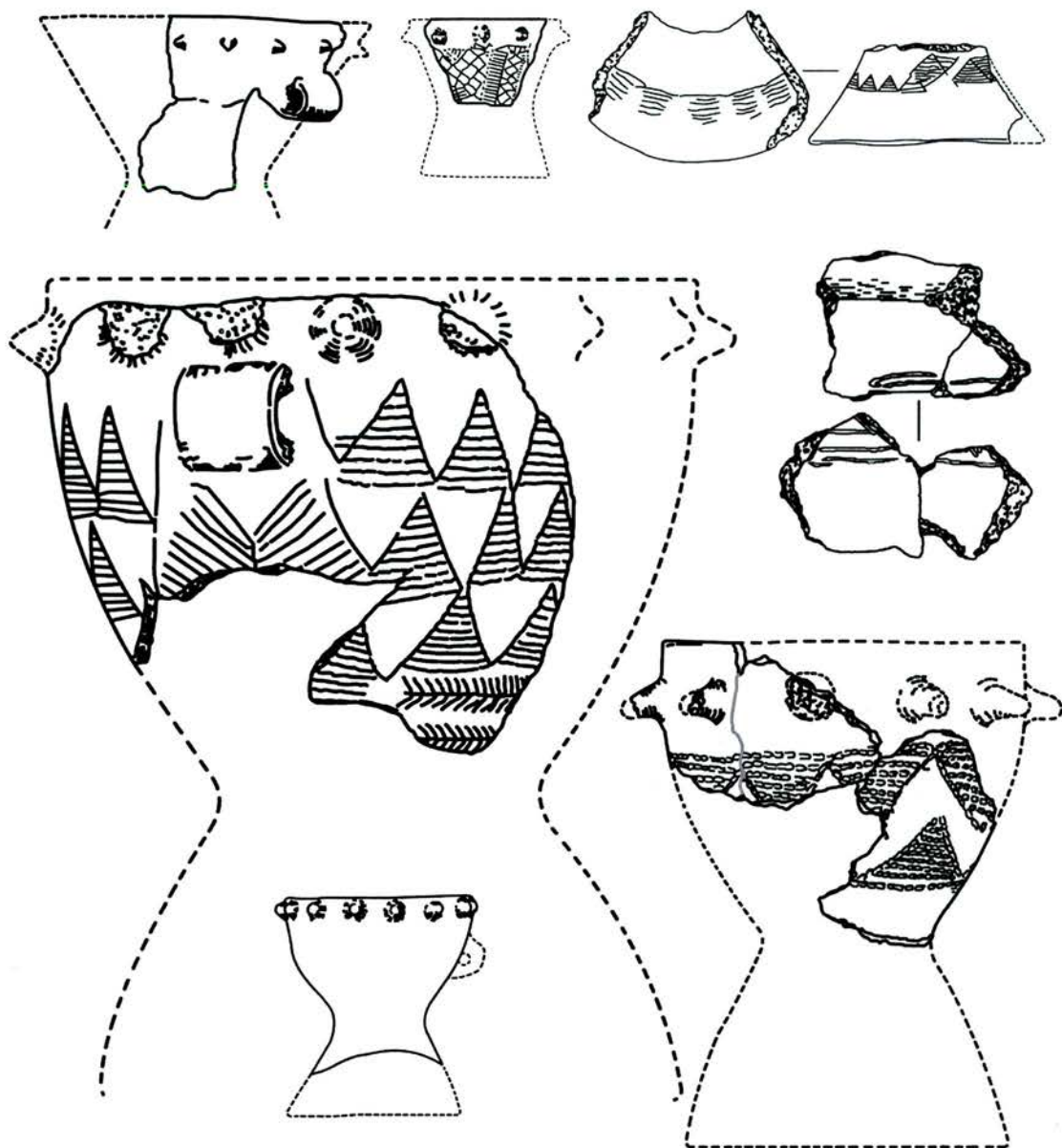


Fig. Cat. 8.19 Incomplete Bernburg Drums from Settlement Contexts. Clockwise from the top left Quedlingburg, Quenstedt-Schalkenburg Pit 100, Pit 114, Pit 155, Pit 184, Pit 197 and Pit 119. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens and Schröter (1980) and Fischer (1951)

Settlement pit 184

A fragment of a Bernburg style drum, approximately 17.6 cm high with decoration and lugs was found in a pit with a cup, three small vessels with upward-turned lugs, the sherd of another vessel, two vessels of the type with small holes bored through the edge, a polished axe, the sherd of a small collared-vessel and a bottomless conical vessel with a zigzag of holes bored through both the upper and lower openings. (*idem*, 119);

Settlement pit 197

An undecorated drum, the surviving fragment was 10.3 cm high, associated with the fragments of three other vessels and also three small bone tools (*idem*, 116);

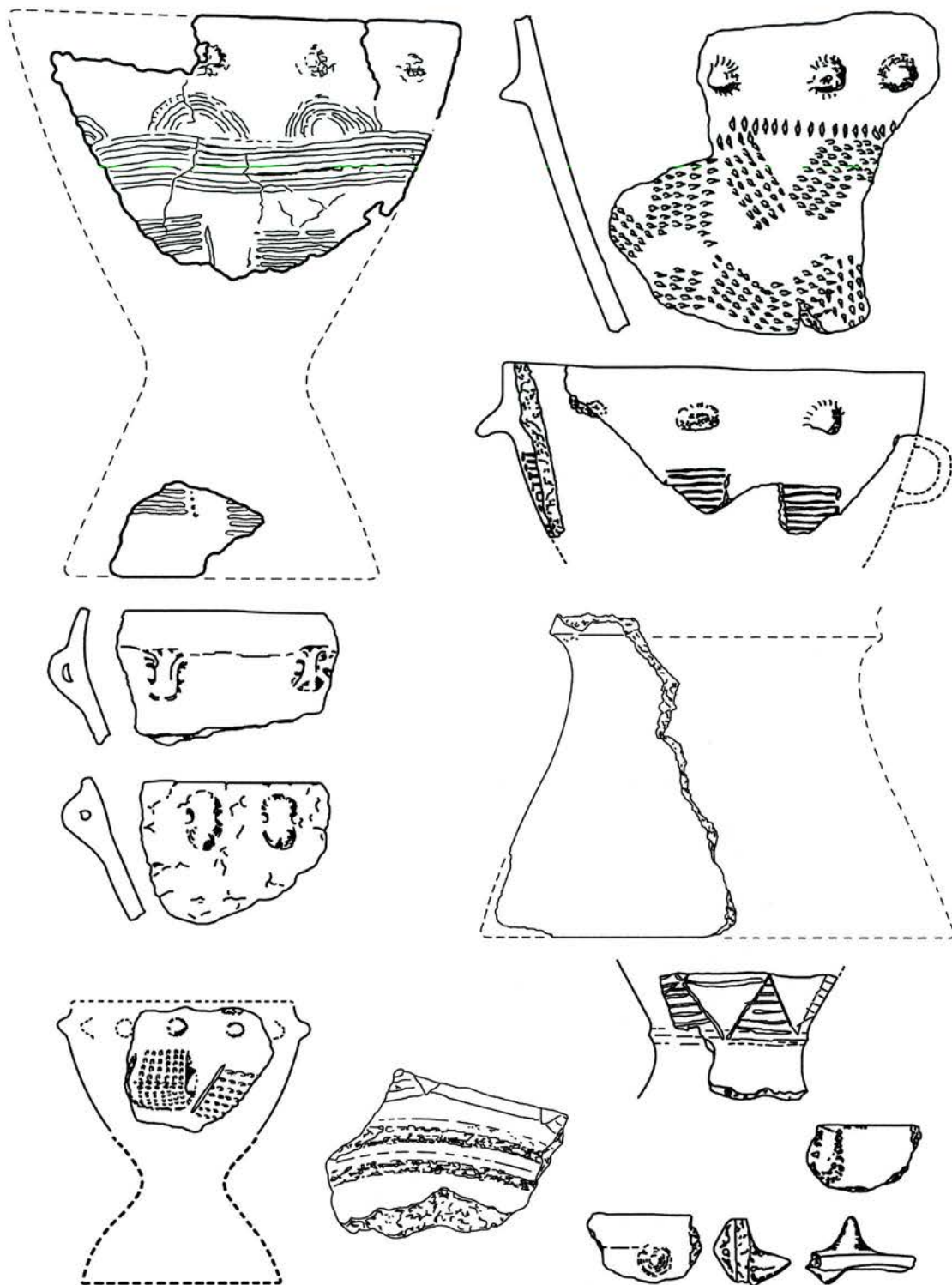


Fig. Cat. 8.20 Incomplete Bernburg Drums from Settlement Contexts. Clockwise from the top right Quenstedt-Schalkenburg Pits 241, Pit 241, Pit 183, Pit 282, single finds without context QS-SF 1-5 and Sangerhausen. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens and Schröter (1980) and Schrickel (1956)

Settlement pit 241

A decorated drum fragment, 16.45 cm high, with Bernburg style lugs (similar to the Nägelstedt example, Bücke (1986)) and a second drum fragment, 8.75 cm high, with decoration and similar lugs were associated with a polished axe, a spindle-whorl, what appears to be a bone with a hole bored through it (*idem*, 120);

Settlement pit 282

A decorated drum fragment, 6.75 cm high, with similar central lip to the example from pit 183, no fragment with lug or loop was preserved. It was associated with a bowl with the late Bernburg wavy edge, two large vessels and two spindle-whorls (*idem*, 117);

QS-SF 1

Lugged Drums fragments (QS-SF= Quenstedt-Schalkenburg-Single-Find);

QS-SF 2

Fragment of drum waist with applied and incised decoration;

QS-SF 3

Fragment of a drum from near the rim, the sherd has two lugs, a decorated handle and body decoration;

QS-SF 4

Fragment of drum rim with loops for attachment of the skin;

QS-SF 5

Fragment of drum rim with loops for attachment of the skin;

163 SANGERHAUSEN

Bernburg drum found in a settlement, estimated height 13.97 cm..

Literature: Schrickel 1956.

Bernburg drum (incomplete) Burial Context

164 BENNUNGENS, Sangerhausen Mdl. 2600/4332: N 16.7: W 9.0

A *Mauerkammergrab* was uncovered by gravel quarrying on the "Schanzenhügel", on the spur of the hill. The construction was 0.5 m deep and 3.5 x 3 m in length and breadth. It was orientated East-West. A 1.2 m long and narrow passage, in the east, is interpreted as the entrance. The walls were built of dry-stone except in the northeast area which was constructed with perpendicularly placed stone slabs. The grave-area had no floor and was overlain by a layer of small stones, which originate from the collapsed roof-structure. The remains of at least 20 individuals lay in disarray (including one with skull trepanation). In the Northeast corner lay a group of six or seven heads. In the centre of the chamber, on and beside some large sherds of an undecorated container, was a deposit of human cremated remains. Associated grave-goods consisted of 25 perforated dog "eye" teeth and one molar as well as one wolf tooth and one marten-tooth; two flint scrapers and some sherds were also found. The six vessels included cups and, based on recent more precise descriptions of the vessel, a drum (Müller 1994, 139). Some of the sherds exhibited Tiefstich decoration. Despite some sherds of the Walternienburg style the construction has been dated, by both Müller (1994) and Müller (2001), to the Bernburg period of TRB V, based on the building, the burials and the pottery. Halle Museum and Sangerhausen Museum.

Literature: Fischer 1956, Beier 1984, Müller, D.W. 1994, Müller, J. 2001.

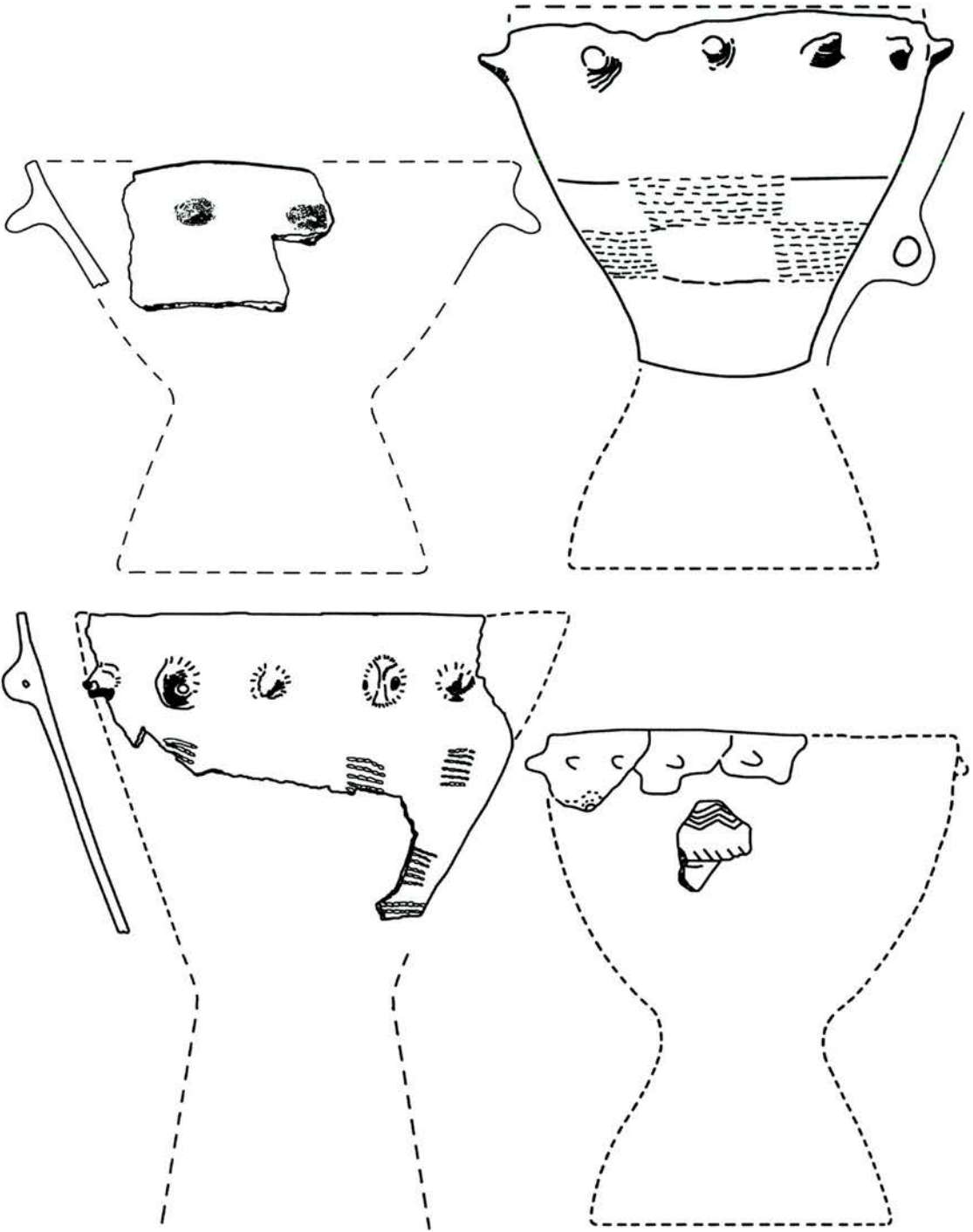


Fig. Cat. 8.21 Incomplete Bernburg Drums from Burial Contexts. Clockwise from the top right Calbe 3, Watenstedt and Ditfurt 2 drums D1 and D2. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Fischer (1951), Müller (1994) and Schrickel (1956)

165 CALBE 3, Saale. Mbl.2311/4136N 3.2;W 22.1.

In 1784 a mound was excavated at Calbe, on the the so-called Triftberg. It covered a large stone chamber 2 m long, 1.30 m broadly and 1.84 m high, which contained the upper part of a drum under about twenty other vessels situated "around a horse skeleton".

The instrument is a beaker-drum, preserved to a height of about 17 cm, largest diameter 20.5 cm, diameters at the break about 7.5 cm. Immediately underneath the edge sit thirteen small pegs, and below these a small handle. The upper part is decorated with a broad chequer-board pattern about 3 cm wide, whose rectangular fields are alternately empty or filled with lines of strokes. The chequer-board pattern also occurs on one of the vessels found with the drum.

The vessels belong, as far as they can be qualified, mainly to the Bernburg II style, and there are vessels originally classed as Bernburg I and III. Müller (2001) places the assemblage within the Bernburg style of TRB V. It is found in the Museum for Völkerkunde in Berlin.

Literature: Seewald 1934, Beier 1984.

166-67 DITFURTS 2, Quedlinburg. Mbl. 2308/4133.

An east-west orientated stone chamber was destroyed during the construction of the entrance to a quarry. It was broadly rectangular in shape 10.5 m long and 3.7-4.2 m wide and was constructed from sandstone and flat limestone slabs, to a height of 1 m. It had an inner stone-paved area and a charcoal layer, possibly the remains of the timber roof structure, under a layer of stone and earth. In the interior human skeletal remains were discovered with vessels and fragments, flint artefacts, dog-teeth and textile remains, randomly lying often showing traces of burning. Above the finds were the remains of a rubble mound. A large quantity of pottery was discovered in the entrance area; these included the remains of two drums.

The first sherd survives to a height of 14.4 cm and the second sherd to a height of 6.64 cm. Among the ceramic sherds were the remains a tripartite cup, but also two of globular form. This suggests Müller's (2001) association of tripartite vessel and the chamber 1B horizon, while the globular cup suggests a chamber 2 assemblage. There was evidence of disturbance associated with Corded Ware fragments. Müller (2001, 169) provides us with a radiocarbon date of 3380-3100 BC cal, placing the assemblage in TRB IV. Halle Museum.

Literature: Beier 1984, Müller, D.W. 1994, Müller, J. 2001.

168 WATENSTEDT, HELMSTEDT. Mbl. 2163/3931;

Beier (1984, 154) states that this grave was discovered in 1934. It was a flat grave, orientated SE-NW, with a pavement constructed from sherds, typical of the Salzmünde style, in it was a crouched burial with head in southeast, and a stone surround. Grave-goods consisted of a cup and a drum sherd, 4 cm high, with horizontal zigzag pattern and pine-branch motif. The cup and the sherds of the pavement are identified as Bernburg I. Müller (2001) classifies this as a Bernburg assemblage. Braunschweig Museum.

Literature: Krone 1935, Fischer 1956, Beier 1984, Müller 2001.

169 WESTERHAUSEN 2 Fdl. 8. Mbl. 2307/4132; N 4,7; W 11,0.

Around 1930 a *Mauerkammer* was discovered on the "Rosshöhe". The rectangular chamber was approximately 6 m long and was orientated East-West. Intensive cremation had carbonized the skeletal remains of eight to ten individuals. Many sherds of Walternienburg and Bernburg styles were discovered, including those belonging to a drum, with lugs under the rim. Müller (2001) places the assemblage in Walternienburg I, TRB IV. Quedlinburg Museum.

Literature: Fischer 1951, 1956, Beier 1984, Müller 2001.

Bernburg drum (incomplete) Unclear Context.

170 BÖLLBERGS,

During levelling work at an ice-rink the fragments of a decorated Bernburg-style drum were found. The fragments had a height of 20.2 cm.

Literature: Toepfer 1961.

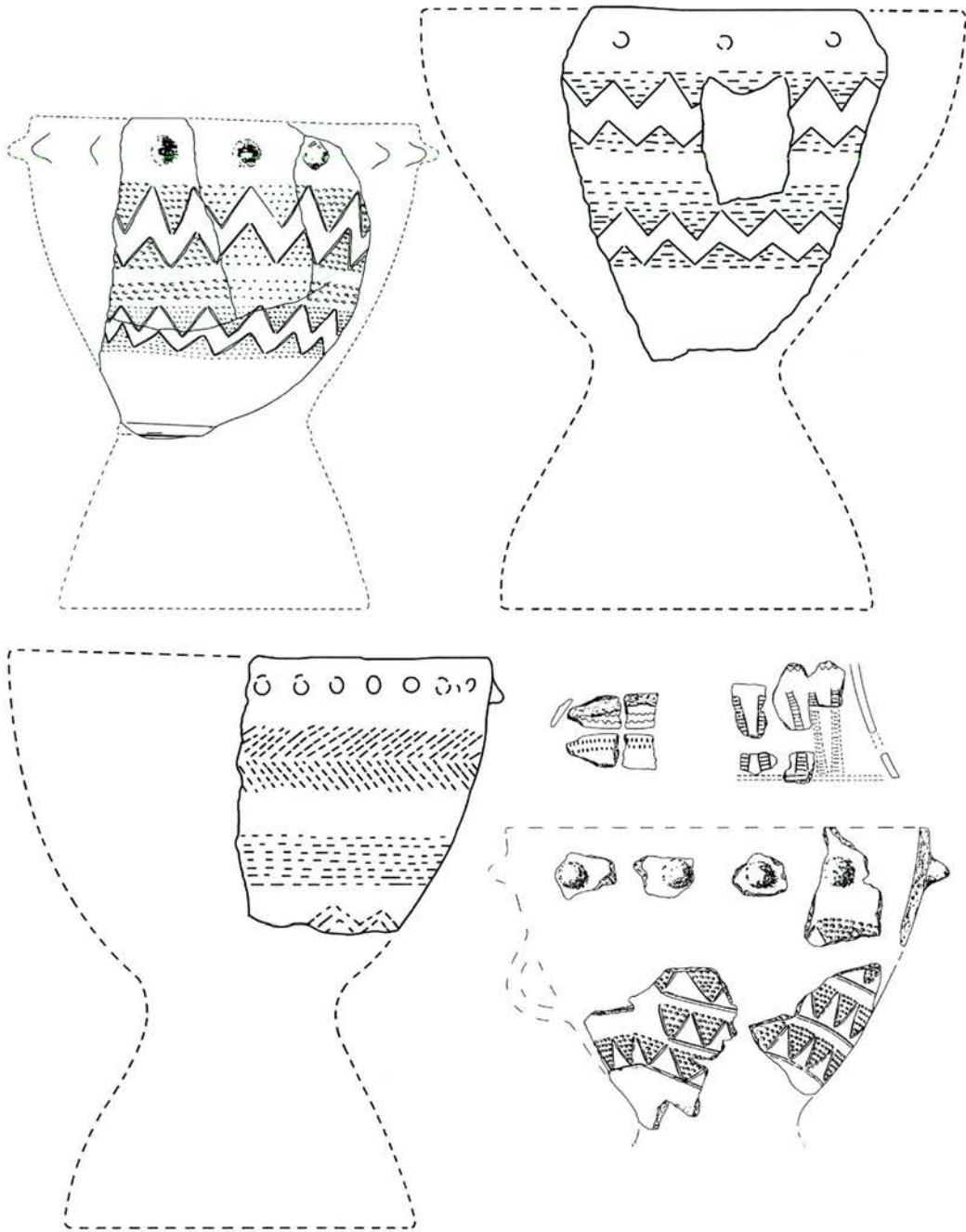


Fig. Cat. 8.22 Incomplete Bernburg Drums without context or sure association. Clockwise from the top left Böllberg, Halle-Krollwitz, Heiligenthal-Sehringsberg 1-3 and Gatersleben. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Fischer (1951), Müller (1994) and Toepfer (1961)

171 HALLE - Cröllwitz.

Several fragments of a drum, with a surviving height of about 22 cm, were found without context. The decoration consists of two empty zigzag bands surrounding the drum body. Provincial museum at Halle.

Literature: Seewald 1934.

172 KIRCHBERG, Fritziar-Homberg,

Drum from a Bernburg settlement. Drum style not specified; no image.
Literature: Müller-Karpe in Fischer 1951.

173 GATERSLEBEN 1, Quedlinburg.

A drum fragment, approximately 17 cm high, with no known context was discovered at Gatersleben. The fragment belonged to a beaker-drum with cauldron-shaped upper part. A little under the upper edge is a wreath of lugs. The decoration is composed of a horizontal pine-branch pattern, running underneath the pegs, a horizontal band of some parallel lines roughly in the middle and a ribbon stripe, formed from several angular stroke lines. The find is in the Provincial museum at Halle.

Literature: Seewald 1934, Fischer 1951.

174-6 HEILIGENTHAL, Sehringsberg. Mbl. 2530/4435; N 0.7-0.8: E 13.3-14.2.

On the "Sehringsberg", a mountain range south of the villages of Helmsdorf and Heiligenthal, a rubble area, which had been disturbed by quarrying, was excavated in 1909-10. It measured 70-75 cm deep and about 20 m length and 18 m width. The finds from this area included over 200 sherds of the Walternienburg and Bernburg style ceramics, a handle from an Opperschöner jug and at one spot two overlapping crouched burials with a flint blade. The sherds were scattered throughout the burial area. Under the sherds were found the fragments three drums. One of the burials was a right-crouched inhumation with head in the west, looking south, associated with a flint blade, two animal bones and some sherds. Over it a parallel-crouched inhumation with a flint blade had been placed. This double burial was on the eastern periphery of the stone packing and Beier proposes that it is earlier than the disturbed *Mauerkammer* which is represented by the large stone deposit. One of the sherds associated with the bodies is in Bernburg style.

The drum fragments, which appear to have been associated with the *Mauerkammer*, consist of two thin-walled, brick red fragments probably from the foot of a drum, which are decorated with vertical ladder patterns and a zigzag line; height 7.3 cm. The fragments of the rim have two zigzag lines outside and a series of small punctures on the inside, the sherds are 2 cm high. The other drum sherds are reddish brown-black with a series of hanging triangles as decoration, the large sherd at the rim has a height of 8 cm. About 2.5 cm below the straight-sided edges were small lugs. The base of a broad handle can also be recognized. Also discovered at this site were some copper remains. Müller (2001) classifies this context as Salz/Walt. The fragments are in the Provincial museum at Halle.

Literature: Seewald 1934, Fischer 1951, 1956, Beier 1984, Müller 1994, Müller 2001.

177 SIERSLEBEN, Mansfield Geb.

The remains of the upper part of a drum come from Siersleben but hve no context. The decoration consists of empty zigzags created by opposing triangles which are filled with furrow strokes. No image.

Literature: Fischer 1951

178 Swarmstedt

Bernburg drum, no image.

Literature: Koch (1992)

179 Werlabergdorf

Bernburg drum, no image.

Literature: Koch (1992)

DRUMS ASSOCIATED WITH ALTMÄRK TIEFSTICH POTTERY.

181-83 BARKAMP. Lüneberg.

Stone grave VII, measuring 9m x 1.6 m, had a passage on the SW side and was situated within a 16m trapeziform mound, with a paved floor. It was excavated in 1964 by Köster, revealing a collective burial. Six of the capstones were missing, but 7 wall-stones were preserved in the northeast. Three drums were discovered, along with a decorated shouldered vessel, one undecorated shouldered cup and a cup with cylindrical throat. Dating: Middle Neolithic Age.

Literature: Körner and Laux 1971.

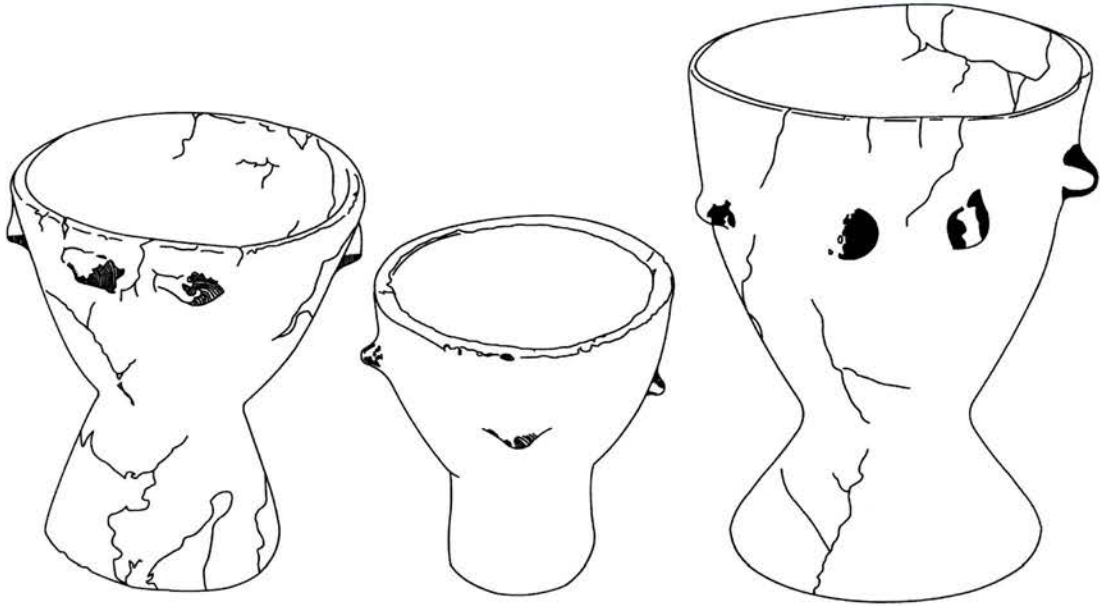


Fig. Cat. 8.23 Drums Associated with Altmärk Tiefstich Ceramics. From Barskamp. All at the same relative scale, redrawn from photograph scale not known. Images redrawn after Körner and Laux (1971)

184 GERWISCH, Burg.

A settlement of the Altmärk-Tiefstich Culture was excavated between 1941 and 1944. The sherds, both decorated and undecorated from one undisturbed large refuse pit, included the fragments of a possible drum.

The proposed drum fragments came from a slightly conical clay cylinder, with a height of 14 cm, an upper diameter of 9.3 cm and a lower diameter of 5,5 cm; no comparable vessels are known. Placed directly underneath the upper and lower mouth edges were closely-packed holes; 35 at the top and 22 at the bottom. These were made from the outside, prior to firing, and are conical in cross-section. The holes are reported to “show no sign of wear”. They are interpreted as the holes for the attachment of the drum skin with wooden pegs. About two thirds of the clay cylinder was recovered in sherds. Following Kupka, Lies classified the sherds as *Langgrabkeramic* stage II. This is equivalent to Niklasson’s Bernburg I, and following Müller (2001) this would be dated to *circa* 3050 BC. Museum of Magdeburg.

Literature: Lies 1954, Seewald 1962.

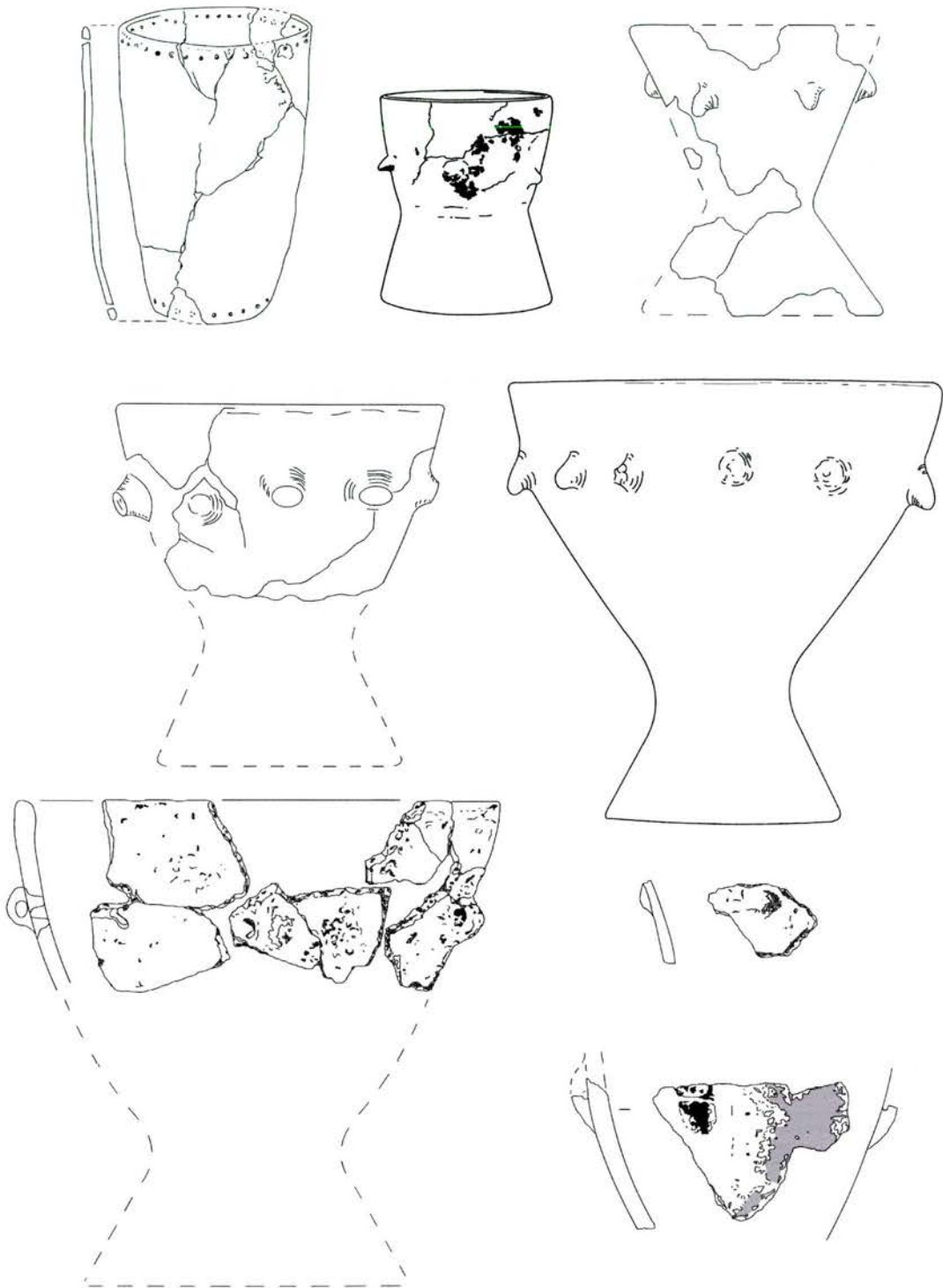


Fig. Cat. 8.24 Drums Associated with Altmärk Tiefstich Ceramics. From the top left Gerwisch, Leetze, Wenekath, Reddereitz, Oldendorf and Schnakenbek 1-3. All at the same relative scale, dimensions given in catalogue entry. Images redrawn after Fischer (1951): Lies (1954): Hoffmann and Schmidt. (1960): Behrens 1980: Schirren (1997).

185 **HOLZEN**, Lüneburg.

Drum fragment from a stone chamber of the Tiefstich pottery culture.
Literature: Behrens 1980.

186 **LEETZE**, Salzwedel. Find-place 1. Mbl. 3232 (1679), N 12.3; E 8.9

In 1938 Fischer investigated Megalith 1. The finds included the sherds and lugs of a drum. The estimated height of the reconstruction drawing is 10.8 cm. LM f. V. Halle.
Literature: Hoffmann and Schmidt. 1960, Behrens 1980.

187-90 **OLDENDORF**, Lüneburg.

In 1970 Giffens and Laux excavated Hunenbett IV at Lüneburg, it measured 75m x 7 m. The western capstone and many of the kerbstones had been disturbed. The entrance was placed on the southern side, between the first and second stones, at the eastern end. The chamber was of the Holstein type. The gaps between the wall stones were filled with dry-stone walling, which was covered with small-pounded granite rubble. Artefacts and skeletal remains were found at different stratigraphic levels and the chamber had been filled with yellow sand and the entrance blocked, after the last burial.

The finds included a vessel with "omphalos" base, a deep stroke-decorated vessel with sloping shoulder and the sherds of four undecorated clay drums, although in Bakker's *The Dutch Hunebedden* he only mentions three drums. The illustrated example has a height of about 22.5 cm. Further finds included two thin-butted flint axes, a hatchet, transverse arrowheads, a small flint knife, a globular-amphora, a sharpened thick-butted flint axe, three goblets of the single grave culture, three Jutish battle-axes and three thick butted flint axes. Further finds were unearthed from the entrance and in the area before it. The stone chamber was of Middle Neolithic construction, but use continued into the late Neolithic Age. Bakker places it in Laux C.

Literature: Körner and Laux 1971, Bakker 1979

191 **REDDEREITZ**, Luchow-Dannenburg.

A Megalithic grave associated with ceramics of the Altmärk Tiefstich style ceramics also contained a drum. A large number of the stones of the chamber were smashed in 1912. From the stone ring a single stone was preserved in its original situation. From the stones of the burial chamber two of the stones of the one long wall were found in their original position.

The floor of the burial chamber was formed from a 20 cm thick stone gravel layer. In the chamber the remains of a pedestalled vessel was discovered. During later excavation the remains of a drum were unearthed, 10 cm high, which had been placed in the grave upside-down. Many other vessels had been disturbed in the destruction of 1912. Fragments of flint blades and debitage were also found in the disturbed spoil. The width of the chamber totalled 1.50-1.60 m but due to the disturbance the length could no longer be determined.

Literature: Potratz 1939, Fischer 1951.

192-94 **SCHNAKENBEK** LA 123, Herzogtum Lauenburg

On a small crest above the Elbe, several burial mounds were discovered, including a round mound, number LA 123. Excavation only examined the southern part of the mound, since a road had already destroyed the other half. It had a height of 1.2 m and an approximate diameter of 30 m; although the original mound measured approximately 10m in diameter, it was expanded in the Bronze Age. The grave had a rectangular outline, and was aligned NNE-SSW. The entrance to the chamber has been interpreted as being in the southwest because of the "entrance stone", approx. 0.7 m high. The chamber covered an area of 3,0 x 2.5 m, and is identified by Shirren as an extended dolmen. Tiefstich decorated sherds were found on the floor of the chamber and also within the fill. The sherds of some vessels were found in both the chamber and in a pit with mediaeval ceramics. A few edge-sherds represented two funnel-shaped cups, the remains of three drums were also found.

One drum had 11 mm thick walls with an upper diameter of 24 cm, 5 cm below the edge were the remains of six eye-loops; the holes in the loops were 0.8-1 cm wide. From the fragments it appears that during construction the handle was built into the wall of the vessel rather than being simply applied to the surface of the wet clay. This is the first example where the break in the drum allowed the profile of the lug-vessel interface to be seen. The inclusions in the ceramic matrix consisted of ground granite. The vessels are fragmentary, with the result that the reconstruction drawings rely on a similarity to the Barskamp drum.

A further large side-section also belongs to a drum but has no edge (Schirren, 1997; Tab. 9, 2). The vessel has a funnel-shaped neck with a 15-16 cm diameter and it is possible to recognize that two handles sat 6 cm apart. The loops are 0.4 cm in diameter, the surface is smooth and the vessel wall is 0.7 cm thick. A final sherd with small lug, 2 cm in diameter, belonged to a steeply walled vessel, which may be a third drum.

Literature: Schirren 1997.

195 WENNEKATH 1, Lüneburg.

A drum was discovered in an "unearthed" stone grave and enough fragments survived to allow the reconstruction of the instrument. Three associated sherds, with the remains of a loop, may have belonged to a second drum. The drum is composed of grey-blue clay and has an hour-glass shape with straight sides and a sharp waist; it has no decoration. It has a height of 14 cm, the diameter of the upper edge is 12 cm, the lower diameter 11 cm and the diameter at the waist 6 cm. Five lugs sit 3.5-4 cm beneath the upper edge. The decoration of a third ceramic sherd provides relative dating to Walternienburg II, 3100-2900 BC. Hanover Museum (Inv. - No. 2349).

Literature: Seewald 1934.

DRUMS FOUND ASSOCIATED WITH HAVELLAND POTTERY

196 BRÜSSOW, Pasewalk

Fragment of a drum edge, almost 17 cm high, found in a grave of the Havelländ culture
Literature: Behrens 1980.

197 BUCHOW-KARPZOW, Nauen. Fpl. 8. Mbl. 3443 Wustermark; S 8.4: E 14.4 cm.

In the years 1975 and 1976 excavations were undertaken at a rectangular chamber grave, with an adjacent "place of sacrifice" to the east, where a post-hole contained a small undecorated drum, 10.5 cm high. The site was greatly disturbed but a chamber was recognized orientated E-W and measuring 5 m x 2.5 m; the grave wall was open on the east side, interpreted as the entrance. The original chamber floor was already destroyed by ploughing. The disturbed remains included a large quantity of human burnt bodies, the fragments of the Havelland culture, large unfinished flint blades, a transverse arrowhead and a decorated spindle-whorl. Additionally as well as over one hundred perforated dog-teeth, some bone beads and a double-axe there was also a large damaged amber bead. There were also the traces of charcoal and all bone ornaments as well as all flint pieces displayed traces of fire. The outside of the chamber was covered by a stone cist, although the nature of the roof structure was unclear. A few fragments with characteristic decoration suggest influence from the Walternienburg-style ceramics, as do the axes from Widaer slates. A radiocarbon date taken from charcoal from the grave wall of the burial chamber was about 2400 bc. (3400 BC cal.), thus making the Havelland culture contemporary with the Walternienburg style and the middle Neolithic level III of the TRB cultures of Mecklenberg.

Literature: Kirsch 1977.

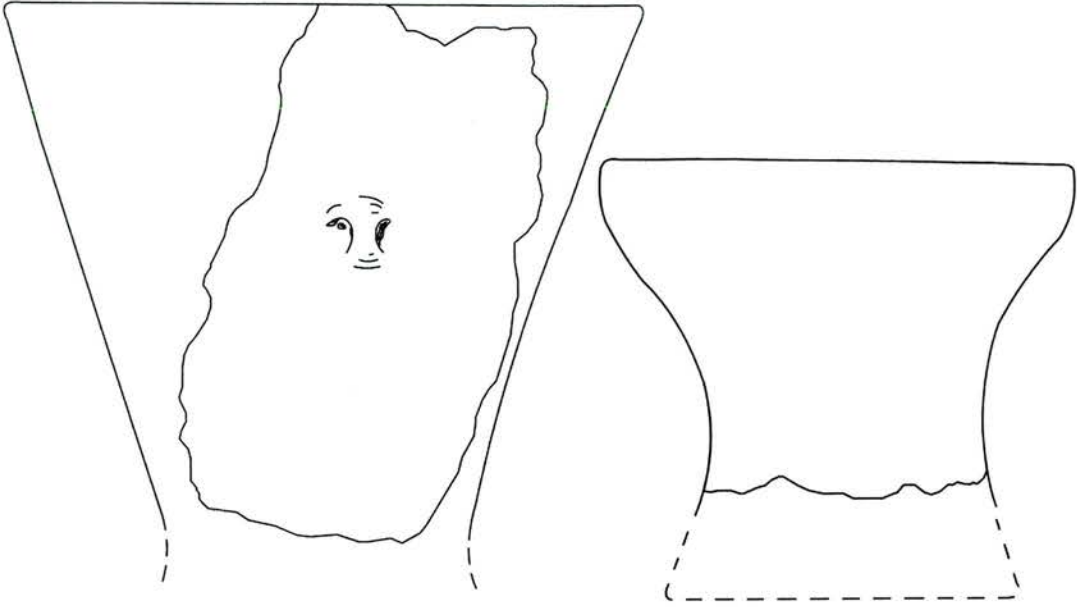


Fig. Cat. 8.25 Drums Associated with Havelländ Culture. Brüssow and Buchow-Karpzow. Both at the same relative scale, dimensions given in catalogue entry. Images redrawn after Behrens (1980).

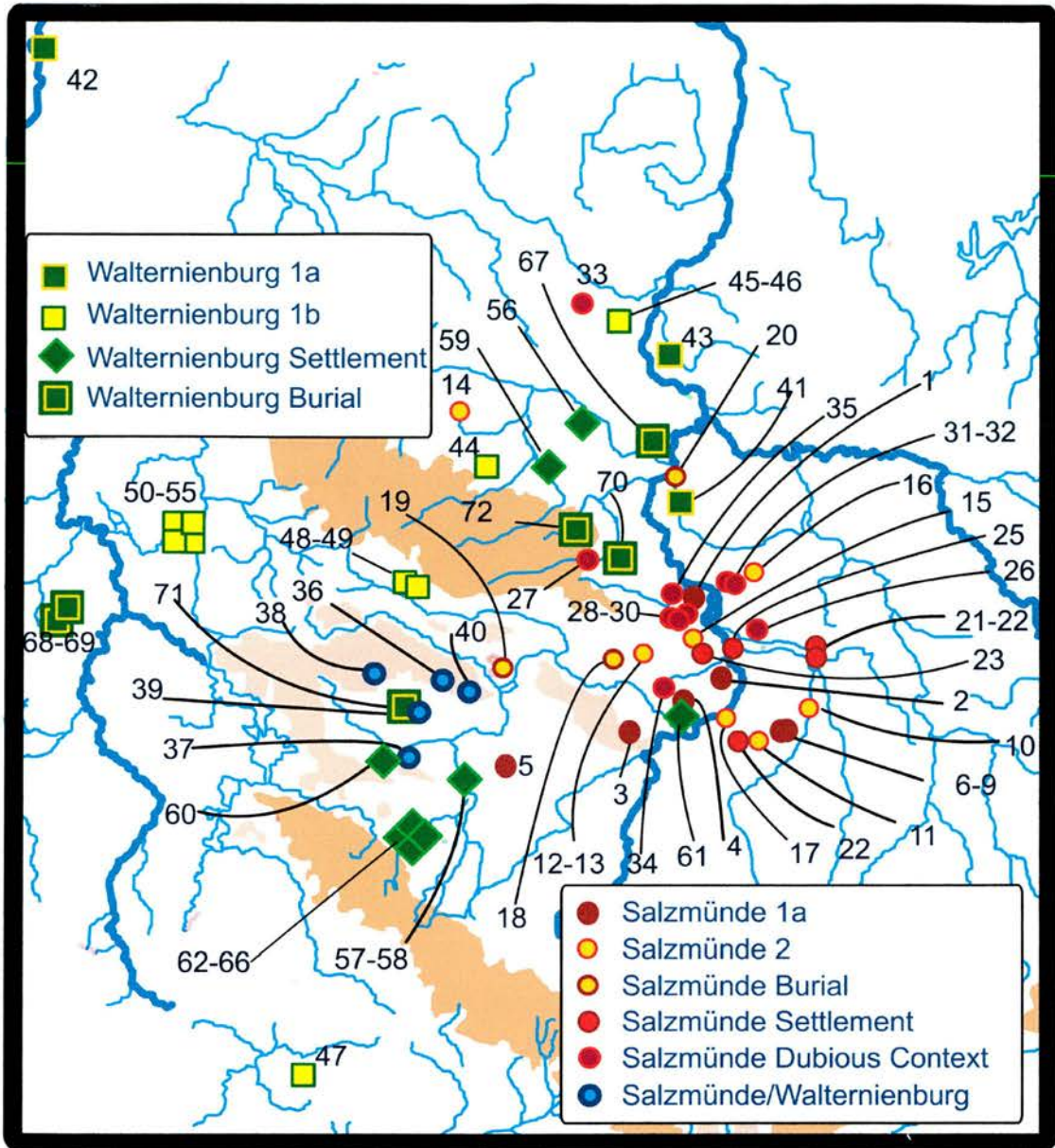


Fig. Cat. 8.26. Distribution map of Salzmünde, Salzmünde/Walternienburg and Walternienburg drums, as numbered in the catalogue.

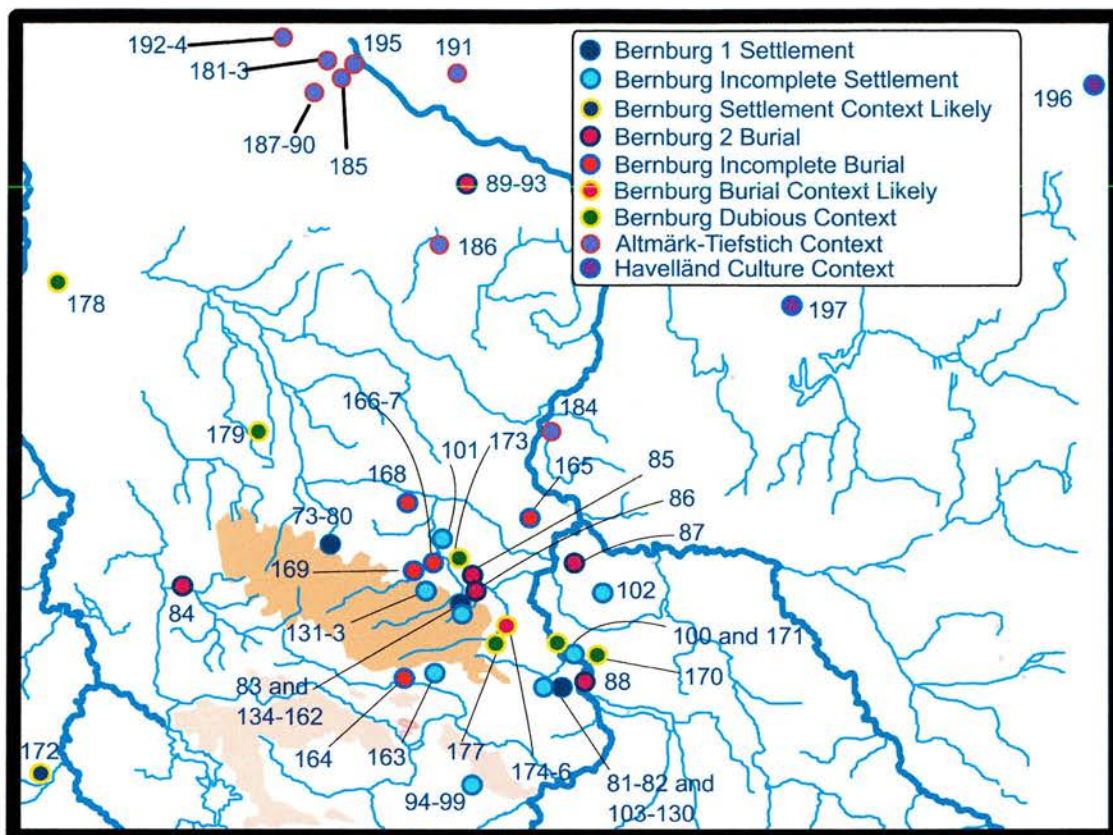


Fig. Cat. 8.27. Distribution map of Bernburg style, Altmärk Tiefstich Pottery Culture and Havelländ Culture drums, as numbered in the catalogue.

APPENDIX 2

Radiocarbon Dates From TRB III-V

Site name, C14 number and date.	Top BC calibration (accuracy as %)	Lower BC Calibration (accuracy as %)	Source
Hutberg dates			
Halle-Döläuer-Heide H209/579 4970±90 BP	3650 (54.8 %)	3930 (13.4 %)	Behrens/Schröter 1980, 18
Wallendorf-Hutberg Kn-4899: 4813±61 BP Kn-4902: 4841±58 BP	3610/3600 (43.3 %) 3700 (44.3 %)	3660 (23.4 %) 3620 /3580 (23.9 %)	Beran 1993, Taf. 84 Müller 2001, 119
Salzmünde A Dates			
Salzmünde Bln-1353: 4586±60 BP, Bln-1354: 4665±60bp, Bln-1553: 4746±60bp, Wallendorf -Hutberg Kn-4909: 4661±44bp	3520 (68.2 %) 3520 (68.2 %) 3640 (51,3 %) 3510 (57.3 %)	3500 /3420 (16.9 %)	Müller 2001, 119 Müller 2001, 119 Müller 2001, 119
Salzmünde B Dates			
Erfurt Gispersleben 11/37 Bln-3915: 4590+/_70 bp Bln-3949: 4690+/_50 bp	3500 BC cal (45.2%) 3620 BC cal (4.7 %)	3240 BC cal (32.1%) 3600/3520 (63.5%)	Müller 2001, 119
Wallendorf-Hutberg Kn-4900: 4458±45 BP,	3310 (24.1 %)	3230 /3190 (5.4 %)	Müller 2001, 120
Salz/Walt Dates			
Nordhausen 2. GrN-9150: 4520±35bp Niederbösa. GrN-9148: 4460±40bp	3340 (16.7 %) 3310 (26.9 %)	3290 /3240 (51.5 %) 3160 /3120 (32.0 %)	Müller 2001, 121 Müller 2001, 122
Salzmünde C			
Mücheln Galgenhügel Kn-4905: 4162±54bp Wallendorf-Hutberg 44 Kn-4901: 4170±45bp	2880 (7.9 %) 2880 BC cal (7,1 %)	2790 /2780 (5.18 %) 2790 /2780 (49.3 %)	Müller 2001, 120 Müller 2001, 120

Site name, C14 number and date.	Top BC calibration (accuracy as %)	Lower BC Calibration (accuracy as %)	Source
Mauerkammern Group 1B			
Ditfurt 2			
Bln-4209: 4570±60bp	3630 (8.8%)	3190/3160 (3.5%)	138
Nordhausen 2			
GrN-9150: 4520±35 bp	3340 (16.7%)	3290 /3240 (51.5%)	Müller 2001, 121
Niederbösa			
GrN-9148: 4460± 40 bp	3310 (26.9 %)	3030/2970 (3.3%)	Müller 2001, 122
Schönstedt			
GrN-9149: 4445±32 bp	3290 (0.9%)	3240/3110 (41.6%)	Müller 2001, 122
Schönstedt			
GrN-8255:4475±45 bp	3330 (33.2%)	3140 (25.6%)	Müller 2001, 122
Buchow Karpzow 2			
Bin-2667: 4320±50bp	3030-2880 BC cal		166
Zachow			
Bin-4005: 4390±50bp	3100-2920 BC cal		166
<hr/>			
Mauerkammern Group 2			
Wandersleben			
Bln-2371: 4220±70bp	2910 BC cal (16.4 %)	2850 /2820 (48.2 %)	166
<hr/>			
Flat grave 1A			
Biendorf Trappenberg			
Hd-18703: 4325±31bp	3020 (12.2 %)	2990 /2930 (56.0 %)	144
<hr/>			
Flat grave 2			
Aspenstedt -Grosser Berg-Grab			
Kia-3800: 4540±50 BP	3350 (20.1 %)	3290 /3240 (48.1 %)	142
<hr/>			
Settlement 1 Dates			
Magdeburg Salbke			
Hd-19181: 4477±20bp	3500 (41.8 %)	3420 /3380 (18,9 %)	150
Magdeburg Salbke			
Hd-19368: 4641±40bp	3510 (31,5 %)	3190 /3160 (5.3 %)	150
<hr/>			
Settlement 2 Dates			
Barleben Nord			
150			
Schweinemaesterei			
Hd-19347: 4406±26bp	3080 (7.9 %)	3010 /3000 (47.9 %)	
Hd-19045: 4305±25bp	2914 (68.2 %)		

RADIOCARBON DATES FROM DRUM CONTEXTS

Site name, C14 number and date.	Top BC calibration (accuracy as %)	Lower Calibration (accuracy as %)	Range BC cal after Müller (2001)
Erfurt Gispersleben 11/37			3500-3110
Bln-3915: 4590±70 bp	3500 BC cal (45.2%)	3240 BC cal (32.1%)	
Bln-3949: 4690±50 bp	3620 BC cal (4.7 %)	3600/3520 BC cal (63.5%)	
Bln-3950: 4480±80 bp	3340 BC cal (45.2%)	3150/3140 BC cal (23%)	
Bln-3917: 3930±70 bp	2550 BC cal (1.4 %)	2540/2500 BC cal (66.8%)	(Müller 2001, 119)
Ditfurt 2	Not clear Dit 2E or 2K		3380-3240
Bln 4209: 4570± 60 bp	3380 BC cal (26.1)	3290/3240 BC cal (42.1%)	165
Niederbösa			3310-3030
GrN-9148: 4460± 40 bp	3310 BC cal (26.9 %)	3030/2970 BC cal (3.3%)	(Müller 2001, 122)
Biendorf-Trappenberg			3020-2880
Hd-18703: 4325± 31 bp	3020 BC cal (12.2%)	2990/2930 BC cal (56%)	(Müller 2001, 144)
Langeneichstädt			2890-2830
No ref: 4180± 100 bp	2890 BC cal (10.6%)	2840/2830 (57.6%)	Müller 1994, 159; Müller 2001, 138
Wallendorf Hutberg pl. 44			2880-2620
Kn-4901: 4170±45 bp	2280 BC cal (7.1%)	2660/2640 BC cal (3.7%)	Müller 2001, 122
Grosseibstadt			
Ki-3810: 4550±45 bp	3360 (22%)	3180 /3170 (22.9%)	Müller 2001, 166

RADIOCARBON DATES FROM SOUTH-EASTERN EUROPE

Cultural Group, C14 number and date.	Top BC calibration (accuracy as %)	Lower Calibration (accuracy as %)	Source
Herpaly			
Bln-1934 5730±80	4720	4493	Gimbutas 1991, 452
Gumelnita			
Bln-338 5840±250	5047	4408	Gimbutas 1991, 456
Cucuteni			
GrN-1985 5330±80	4331	4009	Gimbutas 1991, 458
Tiszapolgar			
Deb-361 55350±190	4360	3990	Gimbutas 1991, 453

Appendix 3.

TABLES OF DRUM TYPE AND DECORATION: CHAPTER 3

This appendix contains the Tables 3.9 parts 1 and 2, Table 3.13 parts 1 and 2, and Table 3.15 parts 1-3. They are reproduced here since they were too large to place within the text. Condensed versions appear within chapter 3.

		Brandberge 1	Klein	Brandberge 2	Ammendorf	Leipzig	Hohenthurm 1	Schiepzig	Hohenthurm 2	Mucheln
A	conc. curve									
	tri-curve									
	expanded anchor									
	Dot pine grid with zigzag									
	Zigzag/Comb at foot									
invert anchor variant										
B	Zigzag in foot	•	•	•						
	Zigzag at foot	•	•	•						
	Zigzag on middle of foot									
	Parallel dot lines at foot	•								
C	Sun			•						
	Anchor	•	•		•	•	•			
	Zagzag waist	•	•	•		•	•	•		
	cross	•	•			•			•	
	Multiple parallel lines at waist									
	rectangle of dots									
D	tooth comb motif							•		
	Non-symmetrical vertical comb at foot									
	wavy line border			•						
	“bib” a curved “U-shape” with dots									
	tri-semicircle with nubble									
	Combination dot line grid									
E	rect. comb motifs									
	tooth comb curved arms									
	curved comb group									
	rect. of Lines									•
	rect of zigzag									
	Large layered chevron motif									
	Comb border in foot									
	Comb border at foot									
Circles										
F	Concentric semi circle									
	divided pine branch									
	Double zigzag on foot									
	Rectangular group of pine									
	concentric circle									
	pine branch									
	Rectangular groups of lines at foot									
G	chevrons horizontal in linear group									
	Upper part 1 band of multiple zigzags (x 2)									
	circles with central dot									
	chevrons vertical in linear group									
H	3 -4 arm cross									
	Rectangular groups of lines in foot									
	Upper part 2 bands multiple lines									
	Parallel lines at foot									
	tree									
	Parallel lines in foot									
	Parallel lines of dots in foot									
	Lower part multiple zigzag									

Table 3.13.part 1 Incomplete Drums of TRB IV. Context, drum type and motif groups.

		Niederschmon	Pohlsberg	Grafentonna	Nägelstedt	Erfurt	Wandersleben
A	conc. curve						
	tri-curve						
	expanded anchor						
	Dot pine grid with zigzag						
	Zigzag/Comb at foot						
	invert anchor variant						
B	Zigzag in foot						
	Zigzag at foot						
	Zigzag on middle of foot						
	Parallel dot lines at foot	•					
C	Sun						
	Anchor						
	Zagzag waist						
	cross			•			
	Multiple parallel lines at waist						
	rectangle of dots				•		
D	tooth comb motif						
	Non-symmetrical vertical comb at foot						
	wavy line border						
	“bib” a curved “U-shape” with dots						
	tri-semicircle with nubble						
	Combination dot line grid						
E	rect. comb motifs			•			
	tooth comb curved arms						
	curved comb group						
	rect. of lines		•			•	•
	rect of zigzag						
	Large layered chevron motif						
	Comb border in foot						
	Comb border at foot						
	Circles						
F	Concentric semi circle						
	divided pine branch						
	Double zigzag on foot						
	Rectangular group of pine			•			
	concentric circle			•		•	
	pine branch			•			
	Rectangular groups of lines at foot						
G	chevrons horizontal in linear group						
	Upper part 1 band of multiple zigzags (x 2)				•		•
	circles with central dot						
	chevrons vertical in linear group						
H	3 -4 arm cross						
	Rectangular groups of lines in foot						
	Upper part 2 bands multiple lines						
	Parallel lines at foot	•					
	tree						
	Parallel lines in foot						
	Parallel lines of dots in foot						
	Lower part multiple zigzag						

Table 3.13 part 2. Incomplete Drums of TRB IV. Context, drum type and motif groups.

	Lc-Pit-107	Sauerhausen	Lc-pit-78	OS-pit-241b	Lc-pit 1	Lc-pit 228	Lc-pit 125	Lc-pit 220	Krollwitz 1	Lc-pit 122	Lc-pit 180	Lc-pit 2	OS-pit-119	OS-pit-100
Rectangle of dots														
Upright and inverted triangles of multiple lines, on central line														
Rectangular groups of lines with alternating bordered space														
Multiple Comb border at waist														
Zigzag horizontal multiple														
Rectangular groups of lines														
Triangle hanging group with solid border and dotted fill														
Parallel lines of dots in foot														
Chess board with alternating shading of horizontal dot lines										•	•			
Parallel lines of dots at foot (round top below lugs)														
Parallel lines of dots in foot (upper part)														
Parallel lines at foot (near waist)														
Zigzag double broken band on upper part														
Zigzags upper part 1 band of multiple														
Lower part multiple zigzag (upper part)														
Chevrons vertical group														
Chevrons horizontal in linear group														
Circulating parallel horizontal lines														
Triangles standing and hanging, dot and line fill, line fill of diamond														
Pine divided branch														
Chess board with alternating shading of small hor lines														
Triangle Standing group with solid border and linear fill														
Parallel triple dot line														
Pine horizontal circulating multiple dot														
Rectangular/ square embossed area?														
Pine single wide													•	
Triangles multiple hanging circulating line fill (empty triangles)													•	
Pine horizontal circulating													•	
Ladder multiple Horizontal														
Zigzag vertical multiple														
Triangle Standing group with solid border and dotted fill														
Triangles circulating dotted fill, merging into single motif at base														
Triangles circulating hanging dotted fill														
Triangles standing and hanging, line fills (empty diamonds)												•		
Chess Diagonal Unfilled Board														•
Comb vertical motif														•
Chess board with alternating fill of horizontal lines no empty sq border													•	
Chess board with alternating fill of horizontal lines														
Chess board with alternating pine tips														
Zigzag double external dot fill (empty zigzag Band)									•	•	•			
Double zigzag external line fill (empty zigzag Band)									•	•				
Ladder double horizontal panel														
Ladder multiple vertical motifs														
Pine branch	•													
Pine rectangular group of divided														
Dot multiple lines angular arrangement, below horizontal dot line													•	
Comb double hanging circulating band														
Circulating parallel vertical lines													•	
Concentric semi circles													•	
Circulating multiple wavy parallel lines													•	
Linked squares														
Dividing multiple staggered chevron border														

Table 3.15. Part 1. Incomplete drums of TRB V.

	L-pit 14	OS-pit-241a	L-pit 156	OS-pit-282	Lanz-sinoh-1	L-pit 214	OS-pit-114	L-pit 165	Grossobrinneen1	Grossobrinneen2	Grossobrinneen3
Rectangle of dots											
Upright and inverted triangles of multiple lines, on central line											
Rectangular groups of lines with alternating bordered space											
Multiple Comb border at waist											
Zigzag horizontal multiple											
Rectangular groups of lines											
Triangle hanging group with solid border and dotted fill					•	•		•			
Parallel lines of dots in foot											
Chess board with alternating shading of horizontal dot lines											
Parallel lines of dots at foot (round top below lugs)											
Parallel lines of dots in foot (upper part)											
Parallel lines at foot (near waist)											
Zigzag double broken band on upper part											
Zigzags upper part 1 band of multiple											
Lower part multiple zigzag (upper part)											
Chevrons vertical group									•		
Chevrons horizontal in linear group											
Circulating parallel horizontal lines											
Triangles standing and hanging, dot and line fill, line fill of diamond											
Pine divided branch								•			
Chess board with alternating shading of small hor lines									•	•	
Triangle Standing group with solid border and linear fill							•				
Parallel triple dot line						•					
Pine horizontal circulating multiple dot					•						
Rectangular/ square embossed area?								•			
Pine single wide											
Triangles multiple hanging circulating line fill (empty triangles)											
Pine horizontal circulating						•					
Ladder multiple Horizontal			•								
Zigzag vertical multiple			•								
Triangle Standing group with solid border and dotted fill	•		•	•							
Triangles circulating dotted fill, merging into single motif at base										•	
Triangles circulating hanging dotted fill										•	
Triangles standing and hanging, line fills (empty diamonds)											
Chess Diagonal Unfilled Board											
Comb vertical motif											
Chess board with alternating fill of horizontal lines no empty sq border		•									
Chess board with alternating fill of horizontal lines											•
Chess board with alternating pine tips											
Zigzag double external dot fill (empty zigzag Band)											
Double zigzag external line fill (empty zigzag Band)											
Ladder double horizontal panel											
Ladder multiple vertical motifs											
Pine branch											
Pine rectangular group of divided											
Dot multiple lines angular arrangement, below horizontal dot line											
Comb double hanging circulating band											
Circulating parallel vertical lines											
Concentric semi circles											
Circulating multiple wavy parallel lines											
Linked squares											
Dividing multiple staggered chevron border											

Table 3.15. Part 2. Incomplete drums of TRB V

	Bollberg	Gatersleben	Crollwitz 2	Calbe	Heiligenthal-Se	Warenstedt	Ditfurt 2
Rectangle of dots							
Upright and inverted triangles of multiple lines, on central line							
Rectangular groups of lines with alternating bordered space							
Multiple Comb border at waist							
Zigzag horizontal multiple		•				•	
Rectangular groups of lines							•
Triangle hanging group with solid border and dotted fill					•		•
Parallel lines of dots in foot							
Chess board with alternating shading of horizontal dot lines				•			
Parallel lines of dots at foot (round top below lugs)		•					
Parallel lines of dots in foot (upper part)							
Parallel lines at foot (near waist)							
Zigzag double broken band on upper part							
Zigzags upper part 1 band of multiple							
Lower part multiple zigzag (upper part)							
Chevrons vertical group							
Chevrons horizontal in linear group		•					
Circulating parallel horizontal lines							
Triangles standing and hanging, dot and line fill, line fill of diamond							
Pine divided branch							
Chess board with alternating shading of small hor lines							
Triangle Standing group with solid border and linear fill							
Parallel triple dot line							
Pine horizontal circulating multiple dot							
Rectangular/ square embossed area?							
Pine single wide							
Triangles multiple hanging circulating line fill (empty triangles)							
Pine horizontal circulating							
Ladder multiple Horizontal							
Zigzag vertical multiple							
Triangle Standing group with solid border and dotted fill			•				
Triangles circulating dotted fill, merging into single motif at base							
Triangles circulating hanging dotted fill							
Triangles standing and hanging, line fills (empty diamonds)							
Chess Diagonal Unfilled Board							
Comb vertical motif							
Chess board with alternating fill of horizontal lines no empty sq border							
Chess board with alternating fill of horizontal lines							
Chess board with alternating pine tips							
Zigzag double external dot fill (empty zigzag Band)		•					
Double zigzag external line fill (empty zigzag Band)							
Ladder double horizontal panel							
Ladder multiple vertical motifs							
Pine branch							
Pine rectangular group of divided							
Dot multiple lines angular arrangement, below horizontal dot line							
Comb double hanging circulating band							
Circulating parallel vertical lines							
Concentric semi circles							
Circulating multiple wavy parallel lines							
Linked squares							
Dividing multiple staggered chevron border							

Table 3.15. Part 3. Incomplete drums of TRB V.

APPENDIX 4

Observations based of Drum Reconstructions

MAKING AND PLAYING THE DRUMS

Replica instruments based on TRB clay drums have been reconstructed in the past (Jacob-Friesen 1935: Megaw, pers. comm.). As a part of this project, five clay drums were constructed, with the aim of understanding the manufacturing process and methods used to attach an animal skin to the different style of drum. The manufactured drums were based on the Neolithic examples from Hornsömmern, Klein-Quenstedt, Gerwisch and Böhlen. The final model was based on a combination of two fragmentary drums, Leipzig-Eutritzsch 1 and Halle-Brandberge 1. All drums were built using the coil construction method.



Fig. A4.1. Top left Klein-Quenstedt (form), top right Böhlen, centre Hornsömmern, bottom left Brandberge/Leipzig blend bottom right Gerwisch.

The construction of the first drum began a steep learning curve. The experience led me to believe that, at least in the case of the larger drums, the vessels were manufactured in two parts. The Hornsömmern replica was made very quickly and the two parts were not allowed to dry thoroughly; thus when the two parts of the drum were joined the weight of the upper part caused sagging, creating a slightly lop-sided appearance. The implication is that the top and bottom parts of the drums must have been constructed and then allowed to dry to a leathery consistency prior to joining the

parts. The Hornsömmern example has loops for the attachment of the skin, and the attachment of the skin was repeated three times before a satisfactory tone was achieved. The skin was cut into a “sun” shape, that is circular with radiating segments; this was then soaked until it had an exceptionally supple consistency, then the cord was tied to these rays, see Figs A4.1-3. The skin was then allowed to dry, and subsequently the cord was rigidly fixed to the hard skin, then the central area of the skin was soaked, again until very pliable and at this point was stretched over the opening and the cord tied through the loops. The skin was subsequently re-soaked to allow further tightening by the winding of more cord through the gaps in the original binding. The sound ranged from a relatively deep base note in the centre, to a higher pitch metallic tone at the rim.

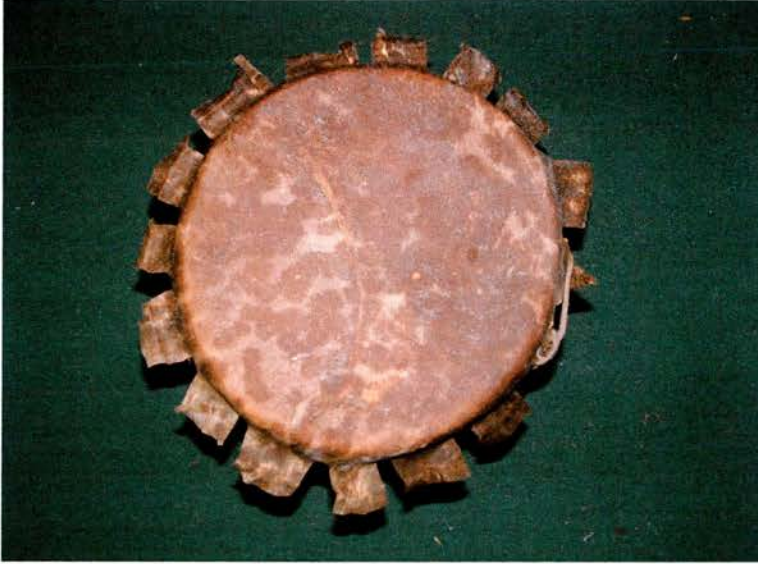


Fig. A4.2. Hornsömmern drum skin



Fig. A4.3. Attaching the Hornsömmern drum skin

The second drum made was the combination model, of the Salzmünde style; Figs. A4.1 and A4.6. This time a longer period was left between the construction of the two parts and their joining. However, drying the parts by a fire, or even in the sun

could no doubt speed up this process. This example was smaller than the first, and also, being in the Salzmünde style had only four lugs for skin attachment rather than the eight loops of the Salz/Walt style. It proved far easier to attach a skin to this style of drum than to the style with loops. However, in this case, once the cord had been attached to the skin, the skin was placed over the opening; then the drum was inverted and placed in a pool of water, water was then poured into the drum to ensure the skin was thoroughly soaked. Since this drum had lugs rather than loops the cord could be pulled up (remembering that the drum is upside down) over the lugs, rather than having to be tied through the loops. Practically this was a far easier way of skinning the drum and it also produced a very satisfactory sound.

The replica of the Gerwisch drum, Fig. A4.1, produced unexpected results and these have been discussed in chapter 3. Lies (1954), who proposed the interpretation of the artefact as a drum, was himself doubtful as to its validity, and Behrens (1980) believed it an unconvincing argument. However, the replica was not only the easiest to attach a skin to, but because of this also produced the tightest skin and thus the crispest tone.

In the publication discussing the drum from Edesheim, Jacob-Friessen (1935) presented a photograph of a replica, which had been attached by a cord, tying the skin to the lugs. This drum constructed for this project in the Bernburg style, has a ring of lugs just beneath the rim. It was hypothesized here that attachment with cord would be an ineffective way to attach the skin. The reasoning is that because the lugs are so close to the rim in the Bernburg style drums, it would make it relatively difficult to use additional cord to tighten the skin after the initial attachment process. With this in mind and with the Gerwisch example as a lead, it was hypothesized that if a circular skin had holes cut in it at positions smaller than the actual distance between the lugs and was soaked, it could then be stretched over the lugs and once dry would produce a good tone. When this process was attempted, it proved to be a relatively easy method and also produced a good sound: see Fig A 4.4.



Fig. A4.4. Klein-Quenstedt drum form



Fig. A4.5. Böhlen drum form

It seems then that the removal of the intermediate stage, that is the string binding, and the direct attachment of the skin to the clay lugs, made the attachment easier, the tone better and may be understood to be an advancement in the manufacturing process.

Figure A4.5 illustrates the final and unique drum form, found only in the burial from Böhlen. The four lugs have vertical holes and despite this similarity with the Hornsömmern example this made the attachment of the skin easier. So the large number of horizontal loops on Walternienburg and Salz/Walt drum styles made the attachment of the skin more complicated and produced less satisfactory results. The picture, above, illustrates the use of willow to provide additional tension for the skin.

Once the drums had been constructed they were played in various positions to establish how they might have been played. I found that due to their relatively small size the playing of the drums positioned between the knees while sitting produced unfavourable results. The small size of the drums did not allow the sound to resonate off the ground, thus resulting in a muffled tone. Playing the instrument under the arm in the style of the North African Darabukka produced a reasonable tone.

However, it is hypothesized here that the best position for the playing of the TRB drums was resting on the shoulder. This allowed the left palm to secure the instrument and allowed both hands to play the drum. This is compatible for each of the reconstructed drums except the small Gerwisch example. This method of playing also produced the best tone, and furthermore placed the complex harmonics of the drum skin close to the ear of the musician. This is an appealing observation for two reasons. Firstly it increased the affect of the rhythm and harmonics of the drum directly on the player's ear, which would allow it to cut out other distractions during drum use. Secondly it means that the internal decoration of the foot of the drum would be visible at head height to any body standing directly behind the player. Additionally, participants

standing behind the drum were also presented with a particularly wide range of harmonics. This is interesting for several reasons, including the comparison proposed above for the vortex like appearance of the drum foot with its internal decoration. This idea was originally suggested by Lewis-Williams and Dowson (1993, 60: cf. Richard 1992, 73), for the megalithic tombs like Gavrinis. Also many drums found within *Mauerkammern* burial contexts were situated within the entrances of the tombs and have conventionally been interpreted as being associated with burial ceremonies. It may be that the positioning of the drum, producing exceptional tone and harmonics, combined with the view



Fig. A4.6. Inside the foot of the Brandberge/Leipzig blend

of vortex-like imagery in front of individuals would serve to enhance the effects produced by auditory driving. Specifically when we recall that Hunchak (1980 cited in Hodgson 2000, 872) observed that “a hypnotic trance can be induced by having the subject focus intently focusing on entoptic phenomena”.

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