

FORTIDEN I TRONDHEIM BYGRUNN:
FOLKEBIBLIOTEKSTOMTEN

MEDDELELSER NR. 24



CHRISTOPHER McLEES

GAMES PEOPLE PLAYED

GAMING-PIECES, BOARDS AND DICE FROM
EXCAVATIONS IN THE MEDIEVAL TOWN
OF TRONDHEIM, NORWAY.

aMIm 25d
For

MEDDELELSER NR 24

from the research project:
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Christopher McLees

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Gaming-pieces, boards and dice from
excavations in the medieval town of Trondheim, Norway

Riksantikvaren, Utgravningskontoret for Trondheim

Trondheim 1990

FORTIDEN I TRONDHEIM BYGRUNN:

A research project by the Central Office of Historic Monuments and Sites,
Norway, in cooperation with the University of Trondheim/Institute of History
and Trondheim Council.

ISBN 82-90652-25-9

200 eks.

Cover illustration: Collection of gaming-pieces from the Library Site.

Published by: Riksantikvaren,
Utgravingskontoret for Trondheim,
Kongens gate 85,
N-7012 TRONDHEIM

Printed by: Trondheim Kommunes representant.

Volumes in this series are available from the address above.
Price Meddelelser vol. 24 NOK. 100,-

FOREWORD

The corpus of artefacts from the archaeological excavations on Folkebiblioteks-
tomta (the Library Site) in Trondheim comprises something in the region of
300,000 individual finds. For obvious reasons it has therefore been necessary to
introduce strict and systematic prioritization of the categories chosen for
analysis by the research project "Trondheim's fortid i bygrunnen: Folkebiblio-
tekstomta". As a main guiding principle the choice between categories has been
made by assessment of the material's potential for providing information on
those problem areas which the project has chosen to work with. In this
respect gaming-pieces were not prioritized.

Items connected with games nonetheless constitute a large group which
displays considerable variation in terms of both the materials and methods used
in their manufacture. It was therefore with great pleasure and satisfaction that
we welcomed Chris M^cLees's request to work with this body of material. Chris
M^cLees's analysis of gaming-pieces and gaming-boards has without doubt added
new aspects to our somewhat sparse knowledge of the "non-economic" sides of
urban life in the medieval period and Trondheim's early cultural connections
with the Continent.

The work was conducted during a 9-month scholarship period, and was
submitted as a thesis to The Queen's University of Belfast for consideration
for the degree of Master of Arts in May 1990.

Trondheim, June 1990

Axel Christophersen
Project Leader



Man and woman playing at tables. From Olaus Magnus, History of the Nordic Peoples (16th century).

TABLE OF CONTENTS.

ABSTRACT	7
ACKNOWLEDGEMENTS	8
1. INTRODUCTION	9
1.1 Aims and Structure of the Study	9
1.2 Methods	12
1.2.1 The Typological Survey	12
1.2.1 The Catalogue	13
1.2.3 The Distributional Analysis	14
1.2.4 The Case-study	15
1.3 Source Criticism: Problems and Limitations	17
1.4 Topography and Settlement: An Introduction to the Library Site (FBK)	22
2. A HISTORY OF GAMES AND THEIR ARTEFACTS IN SCANDINAVIA	25
2.1 Early Nordic "tafl" Games	25
2.2 Chess	28
2.3 The Medieval Games of Tables: "Kvatrutafll"	34
2.4 Merels and Alquerque	36
2.5 Dice-play	36
3. THE GAMING ARTEFACTS: A TYPOLOGICAL SURVEY	38
3.1 The Categories: An Introduction	38
3.2 Class 1: Gaming-pieces	40
3.2.1 Hemispherical pieces, of bone and jet (Category A)	40
3.2.2 Piriform pieces, of ivory, bone and jet (Category B)	43
3.2.3 Abstract and naturalistic carved pieces, of wood (Category C)	49
3.2.4 Discs of skeletal materials (Category D)	61
3.2.5 Discs of stone (Category E)	67
3.2.6 Discs of wood (Category F)	70
3.2.7 Miscellaneous forms, of various materials (Category G)	73
3.3 Class 2: Dice	77
3.3.1 Cubic dice, of skeletal materials, jet and stone (Category H)	77
3.4 Class 3: Gaming-boards	80
3.4.1 Single-panel boards (double- and single-sided), of wood (Category I)	80
4. THE FINDS IN CONTEXT: THEIR SPATIAL AND CHRONOLOGICAL DISTRIBUTIONS	84
4.1 Introduction	84
4.2 Phase 1	85
4.3 Phase 2	86
4.4 Phase 3	90
4.5 Phase 4	93
4.6 Phase 5	95

4.7	Phase 6	98
4.8	Phase 7	101
4.9	Phase 8	106
4.10	Phase 8/9 interface	114
4.11	Phase 9	118
4.12	Phase 9/10 interface	124
4.13	Phase 10	126
4.14	Phase 11 and 12	129
5.	TREND ANALYSIS: TYPOLOGIES AND DISTRIBUTIONS IN SPACE AND TIME	132
5.1	Introduction	132
5.2	Typological trends	132
5.2.1	Representative Forms: A comparative review of the characteristics of the gaming artefacts found on the Library Site (FBK)	132
5.2.2	Materials used in the manufacture of gaming equipment	138
5.2.3	Techniques of Manufacture and Decoration	140
5.3	Distributions: Spatial and Chronological Patterns within a Structural Environment	143
5.3.1	Density of Finds and the "Core Zone"	143
5.3.2	Range of Finds	143
5.3.3	Volume of Finds	145
5.3.4	Distribution Breakdown: The phase-related densities for the individual areas	147
5.3.5	The Individual Categories of Finds: Their Spatial and Chronological Distributions	149
5.3.6	The Finds' Contexts: Characterization and a model for the interpretation of finds dispersal	153
5.3.7	The Case-study Area: The finds/context relationship in microcosm	158
6.	CONCLUSIONS: WHAT CAN THESE FINDS TELL US ABOUT LIFE IN A NORWEGIAN MEDIEVAL TOWN?	165
6.1	The Repertoire of Games	165
6.2	Manufacture and Materials	170
6.3	Game-playing in the Urban Milieu: The historical evolution of games within a developing urban community	172
6.4	Summary of Conclusions	182
APPENDIX:	Catalogue of Gaming Artefacts	185
	Plates	245
BIBLIOGRAPHY		255

ABSTRACT

This is a descriptive and analytical study of items used in the playing of board-games and the like. The range of artefacts forming the basis of the study derive from major excavations on a site of some 3,200m² situated in the heart of the medieval town, an extensive area bearing stratified deposits and structures dating from c. AD 1000 to the post-medieval period. The artefacts have been classified according to form, material, and function, and the various types have been plotted spatially and chronologically within the site. The aim has been to build up a typological profile of the forms of pieces used, most of which can be associated with historical games, and to map the development of game-playing within the town quarter represented by this site. The resultant patterns in the spatial and chronological distribution of gaming equipment were analysed and discussed in terms of the historical development of the town. However, such an analysis requires assurances that the ultimate distribution of the material within the site reflects activities (other than simply the redistribution of material) which took place in antiquity, and to this end this study includes a close examination, by means of a case study, of the areal dispersal of finds. This showed that, while the majority of items have clearly been redistributed within the site, this redistribution seems to have been mainly limited in time and space to the "depositional units" formed by the finds' host properties. In other words, although finds could only rarely be associated with the interiors of buildings, where one might reasonably have expected them to have been used, it can be argued that in most cases their final resting places are not too far removed in time and space from their point of use. Consequently, these finds have something to contribute (though with equal measures of caution and confidence) to the construction of historical models of social and cultural development within the town. The main conclusions in this regard are summarized at the end of the final chapter. A principal trend which could be defined was that prior to the early-mid 12th century the local repertoire of games was restricted to traditional Viking forms, such as hnefetafl and merels; however, during the course of that century there was evidently a radical changeover to games which derived from Europe, such as tables and chess, and the old games quite quickly disappear from the record. This century appears to form a watershed in the microcosm of games as it does in much else in the social, economic and cultural development of Trondheim.

ACKNOWLEDGEMENTS

Since this study was made possible only by the provision of a 9-month Norwegian Government Scholarship, it is with much gratitude that I thank the members of the NGS selection committee in London and the Norwegian Government for the opportunity afforded me.

My thanks also go to Brian Hodkinson, a former member of Riksantikvaren's team here in Trondheim, from whose original idea this study grew. My supervisor, Dr. Axel Christophersen, leader of the Folkebibliotekstomta research project, deserves gratitude for his astute guidance, his patience and perseverance, and, ultimately, his considerable powers of compulsion, all of which were required during the process of getting this into print. All my colleagues and friends at Riksantikvaren's Excavation Office in Trondheim receive my warmest thanks for providing a stimulating and relaxed environment in which to work, and of these Ian Reed provided much grain amidst the chaff of his general conversation. Marit Longva and Liv Renolen did sterling work in preparing the manuscript, and Anne Gaarden produced the fine finished plans and tables from my crude originals. Runi Langum's splendid drawings of the finds ornament the text.

Finally, my thanks go to my wife Jorun, for her forbearance during the seemingly interminable time it took to reach "endgame" in this study which is affectionately dedicated to her.

Christopher Mclees

Trondheim 1990.

1. INTRODUCTION

1.1. Aims and Structure of the Study.

This is a detailed study of a particular group of artefacts; namely, objects used in the playing of board-games and similar games of skill and chance. The group is analysed typologically and contextually.

The former approach presents the range of types of gaming artefacts found on Folkebibliotekstomten (hereafter referred to as **FBK** or the Library Site- see Figs. 1 and 2) and assesses their various characteristic traits - form, decoration, raw material, manufacturing techniques etc. - and their functional roles. They are also discussed in relation to their Scandinavian and European counterparts. A Catalogue (see Appendix) has been compiled, and a detailed typological survey is set out in Chapter 3.

The contextual, or distributional, study views the artefacts, individually and collectively, within their spatial and chronological settings, with the intention of drawing out inherent trends in the material itself and in its relationship to the structural environment within a developing and increasingly complex urban community. This is conducted on both **macro- and micro-scales**. The former presents the finds' spatial and temporal locations within the broad framework of the site as a whole, sub-divided according to the successive dated FBK site phases. The latter minutely details the physical contexts in which they occur, an experiment designed to elucidate whether or not it is possible, within such an environment so susceptible to unquantifiable forces of deposition and disturbance, to use these finds (and others) to estimate the character of occupation within a particular town quarter over some 4-600 years of intensive occupation.

The raw distributional analysis is presented in Chapter 4, and the two final chapters attempt to synthesize observable traits and trends within this range of (generally) functionally classifiable, broadly datable and physically locatable items. Forming as they do a functionally distinctive finds group, their value as a means of registering both the concrete problems of archaeological retrieval of information and the more abstract aspects of interpretation, as well as illustrating the diffusion and use of such items among dimly-perceived generations of urban inhabitants, was deemed worthy of such an intensive survey (see Fig. 3).

Various individual and interrelated aspects which, it was hoped, would emerge from such an analysis include:

- a. The typological and historical development of a variety of identifiable gaming practises, establishing and highlighting, for example, aspects of their introduction, fashion, popularity, continuity and change, via analysis of the patterns of use of raw materials, decorative and stylistic techniques, distinctive forms etc., with regard to the pieces themselves, and in relation to the particular gaming "families" represented on FBK. Such aspects might be called intrinsic, relating to the objects' innate characteristics.

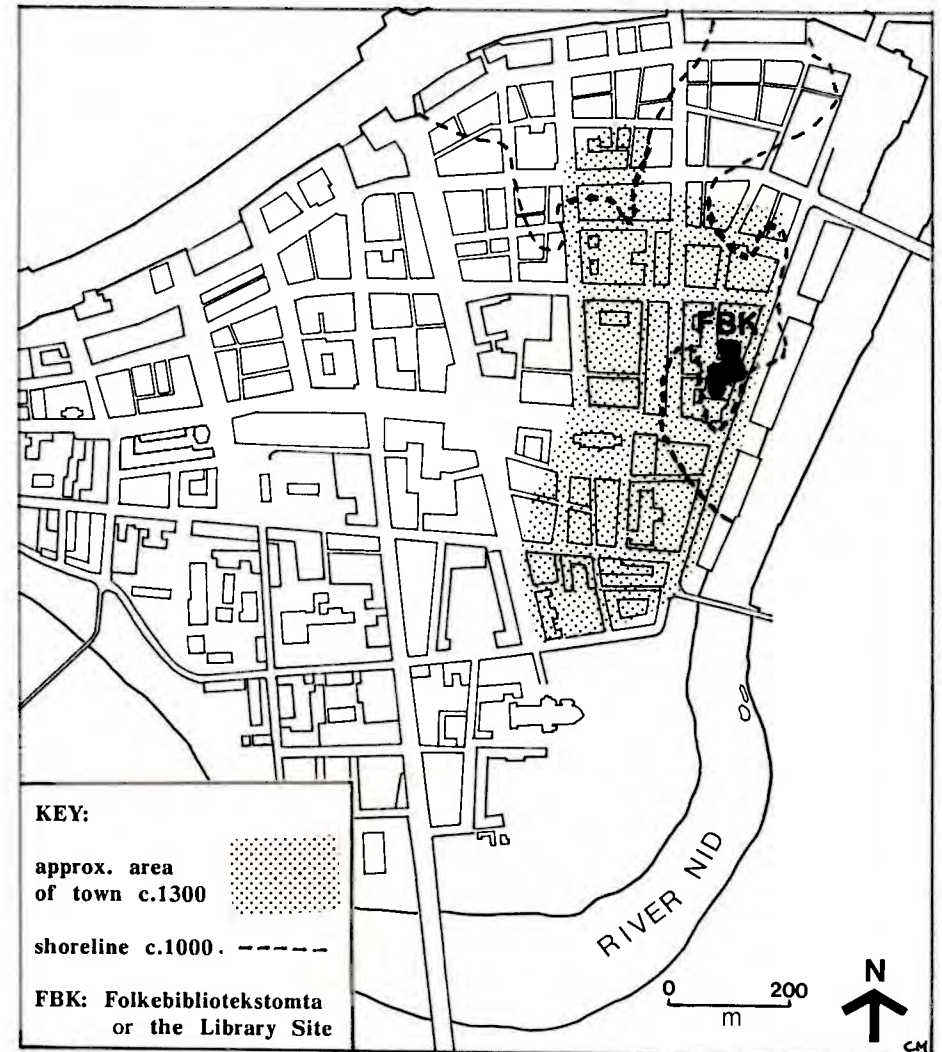
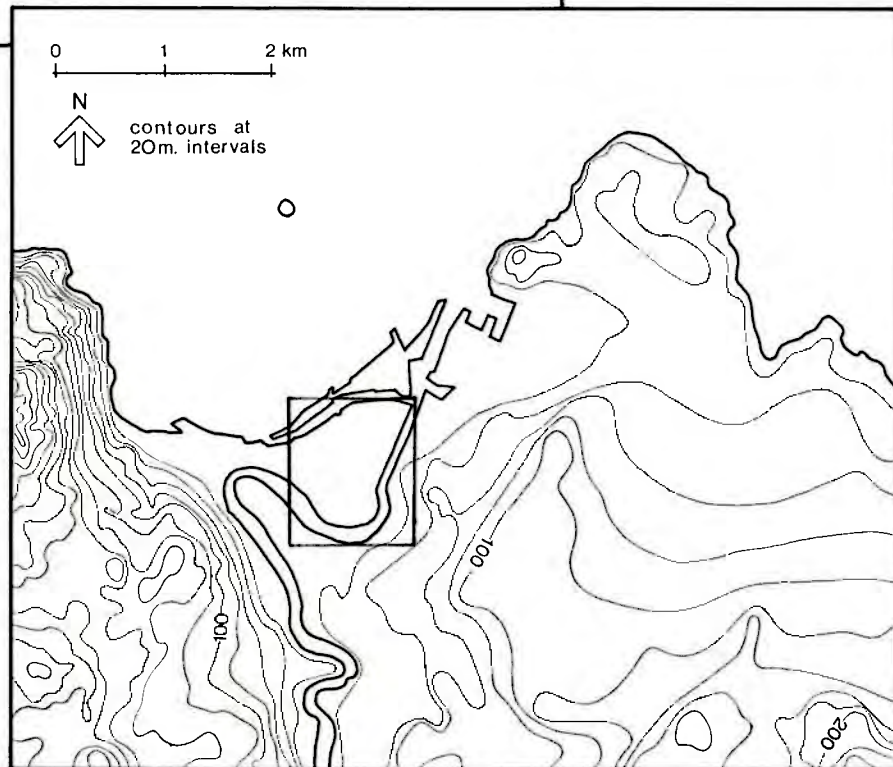
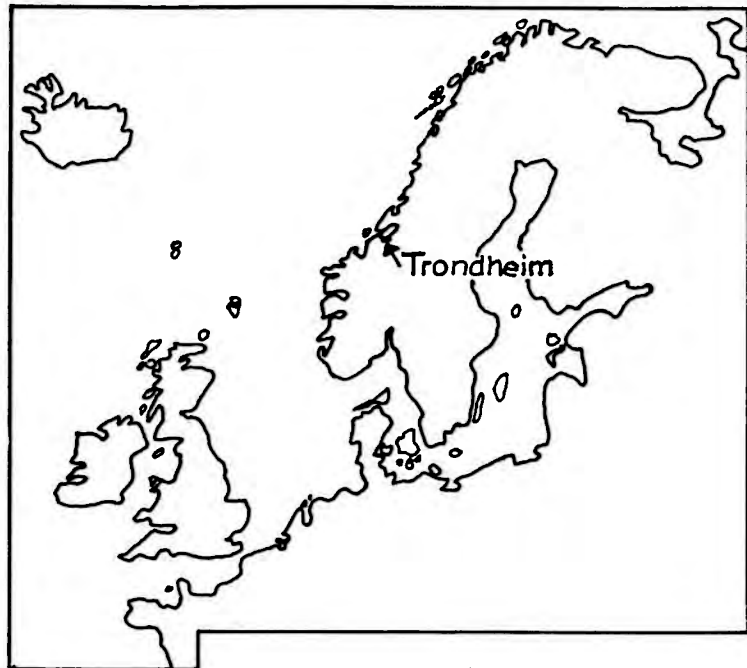


Fig. 1

Trondheim and the Library Site (FBK): location.

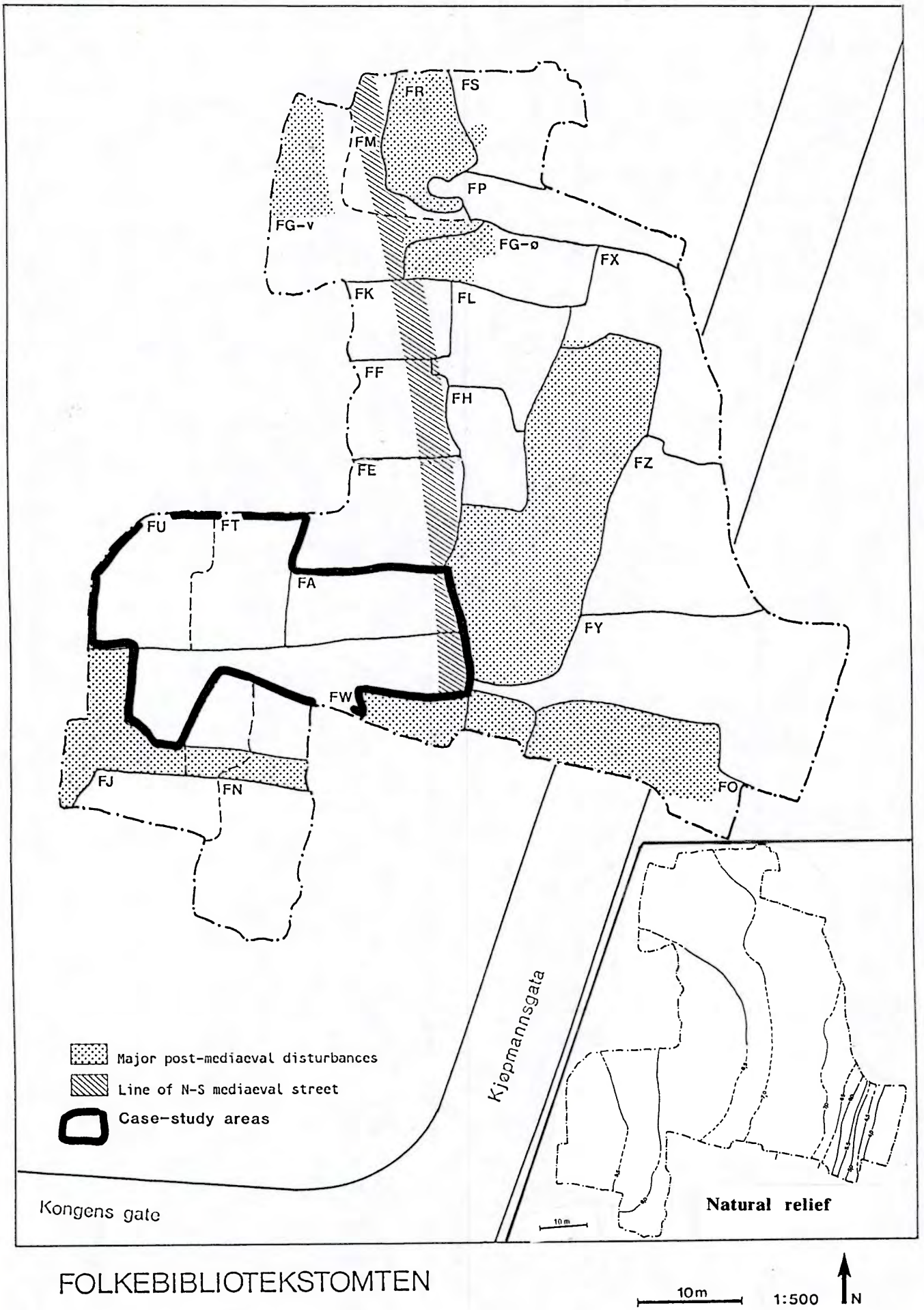


Fig. 2

The Library Site (FBK): individual excavated areas. Case-study areas outlined boldly. Inset: Natural topography.

- b. The collective role of these objects as a potential barometer registering developments in the social, economic and cultural life of the town, or at least this particular part of it; that is to say, their circumstantial or situational characteristics. For example, through the distribution analyses and plotting of their physical locations the interpretation of the nature and function of a particular locality might be enhanced, and, by extension, the social character and activities of the local inhabitants might be guessed at. Aspects of manufacture - the use of materials, application of techniques etc. - might offer insight into the character and status of both producer and consumer: i.e. are these craftsmen's products, or home-made; are they mass-produced utilitarian objects or finely-made one-off products, perhaps personally-commissioned forms for sophisticated games etc.?
- c. From the analysis of these specific patterns of occurrence some wider implications, relating to the town's cultural development, might be discerned. The provincial and international trends evident within recognised gaming practises may ultimately allow comparative conclusions to be drawn, wherein the nature of gaming in medieval Trondheim may be seen in the light of mainstream cultural developments, both within Norway itself and in relation to the wider medieval world. Such evidence relating to cultural development naturally allows speculation on other interrelated aspects of the dynamic evolution of this particular urban community.

The material may not, of course, bear the weight of such a conglomerate of analysis, though the potential of such a finds group, closely-definable in functional and stratigraphical terms, is clear, although many procedural problems adhere (see 1.3.).

These finds can be seen collectively as one component within an "urban mechanism", in that their functions and the activities they denote are linked closely to a dynamic process, namely the evolution of an urbanised community composed of a complex of interdependent social, economic and cultural parts. Consequently, this study cannot operate alone if the full system is to be reconstructed in any valid sense, although the definition and interpretation of demonstrable patterns noted along the way is deemed justified. To this end it stands as a necessarily detailed source for future comparative work involving the assembling and correlation of data relating to the character of life in medieval Trondheim, while at the same time offering its own developmental model of the social evolution of this particular medieval town.

1.2. Methods.

As stated above, the two main avenues of research comprise a **typological survey** and a **distribution analysis**. The data relating thereto have been compiled, and correlated, by a number of means (see Fig. 3).

1.2.1. The Typological Survey.

This is essentially an interpretative appraisal of the range of gaming artefacts present in the FBK finds material, elicited by means of a number of diagnostic criteria relating essentially to form and function (for the most comprehensive guide to bone items see MacGregor, 1985 pp. 132-141). (For the categories

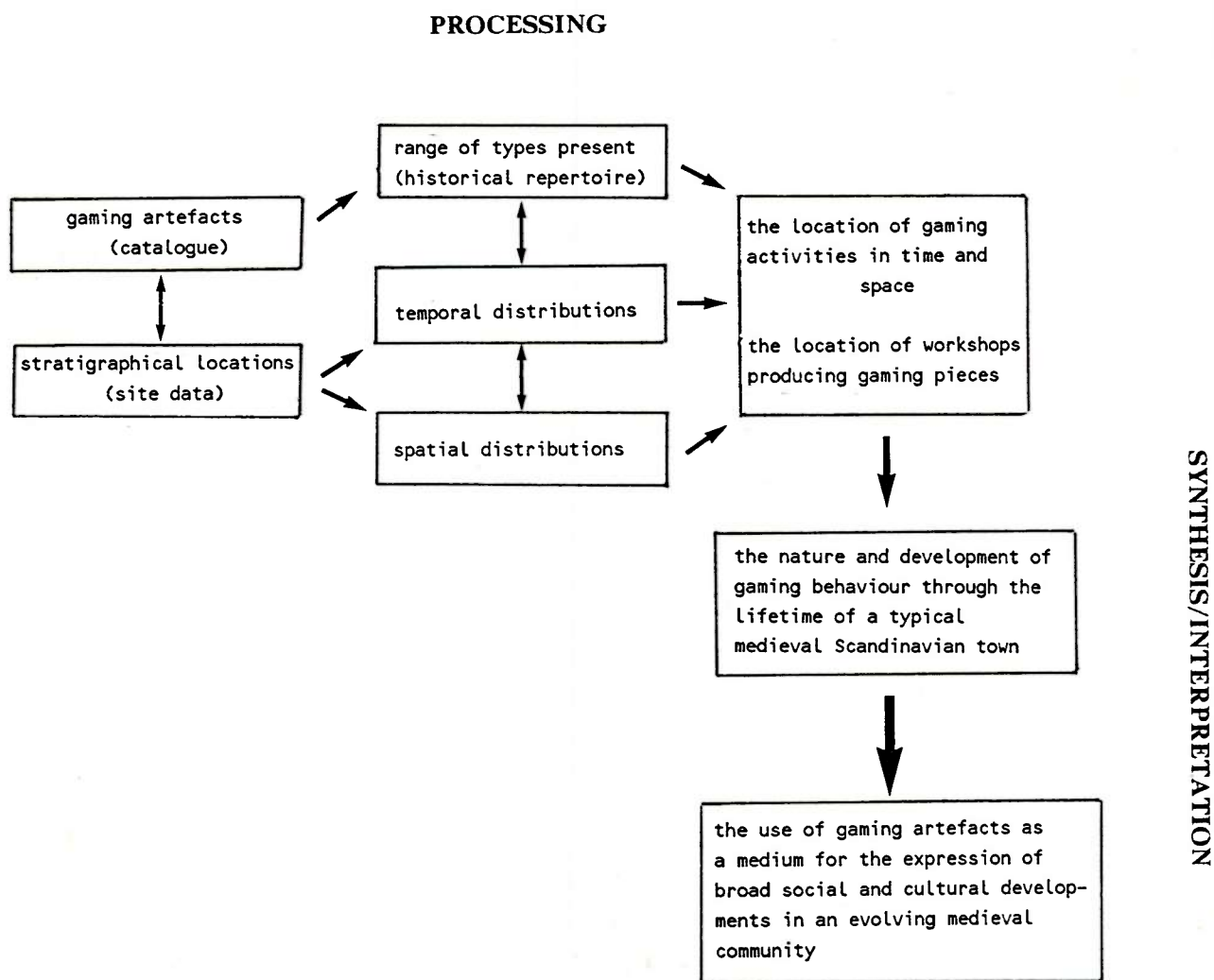


Fig. 3 Diagram showing the research procedure and aims.

compiled in the course of this survey, see 3.1.) This survey has been based on the data compiled and set out in the Catalogue (Appendix).

The survey comprises a systematic review, by class and category, of the various criteria relating to aspects of form, use of materials, modes of manufacture and decoration, and the probable function inherent to distinctive objects relating to a number of game "families". Contemporary parallels from other medieval contexts are discussed. Quantities per category are assessed and tabulated.

1.2.2 The Catalogue.

As stated, the raw data specific to the finds themselves is set out in the Catalogue, and this was the primary means of data compilation, conducted via first-hand assessment of the range and quantity of material relevant to the study stored in the storerooms of the University of Trondheim Museum. All categories of worked materials were comprehensively searched, the end result

being a detailed descriptive catalogue containing items initially classified according to raw materials: namely, stone, wood, bone, antler, ivory and jet. This formed the "core" of the research, establishing the full range of relevant categories of artefacts from which the typological and distributional analyses spring. As a result of the analysis of specific formal and functional traits, the Catalogue was restructured and the forms classified according to function. Of the items listed in the Catalogue some 470 "certain" and "probable" artefacts have been extracted for use in the various analyses. All items are described briefly, and all of the more individualistic items are illustrated; the most important examples have been included in figures placed within the main text.

1.2.3 The Distributional Analysis.

By this means the patterns of dispersal of the gaming artefacts are observable in "structured" time and space. The material is first arranged and examined empirically within the structural/settlement context by means of a general pan-site survey (the macro-analysis) and a more specific survey related to a particular chosen area within FBK (the case-study, or micro-analysis), with the aim of producing an internally consistent series of comparable patterns within strict stratigraphical, structural and chronological limits.

These analyses required the construction of what might be termed a "filtering" process whereby each relevant component (layers, constructions, individual types of artefact etc.) could be ultimately correlated, the information thus retrieved being presented in a series of plans and tables by which the observation of trends could be facilitated.

Having identified the relevant finds and the layer in which each was found (few finds were closely located three-dimensionally), the stratigraphical lists and matrices pertaining to each excavated area (see Meddelelser nos 3-5, 7, 9-11) were consulted in order to place each layer (and hence its finds content) within its allotted site phase. (Information regarding the physical nature of each context was also looked for, though few had been precisely interpreted or correlated to structures etc. - see Source Criticism below). After some painstaking searching a number of working tables were compiled on which each find could be located in time and space, and working scattergrams gave the first insight into general trends in the correlated typological, spatial and chronological data. The emergence of certain phase-related clusterings and concentrations of types was encouraging, and the next step was to place this data onto a series of general site plans (Fig. 41 a-1) relating to the sequence of phases in the newly-established Main Phasing of FBK (see Christophersen et al., 1988 and 1989, and Figs. 4 and 5).

A short introduction to the development of settlement on the Library Site (FBK) and the phasing thereof is set out in 1.4 below for the reader's orientation.

Fig. 41 a-1 represents the sequence of dated stages through FBK's stratigraphy. Each of these plans expresses the range and number of gaming artefacts pertaining to each excavated area in each relevant site phase. These comprise objects of definable function, though some artefacts of somewhat less secure functional status, and a few gaming artefacts which have clearly been re-used, have been included for the purposes of discussion. For the contemporary structural formation of settlement for each phase see the sequence of phase plans presented in connection with 1.4. (Fig. 5).

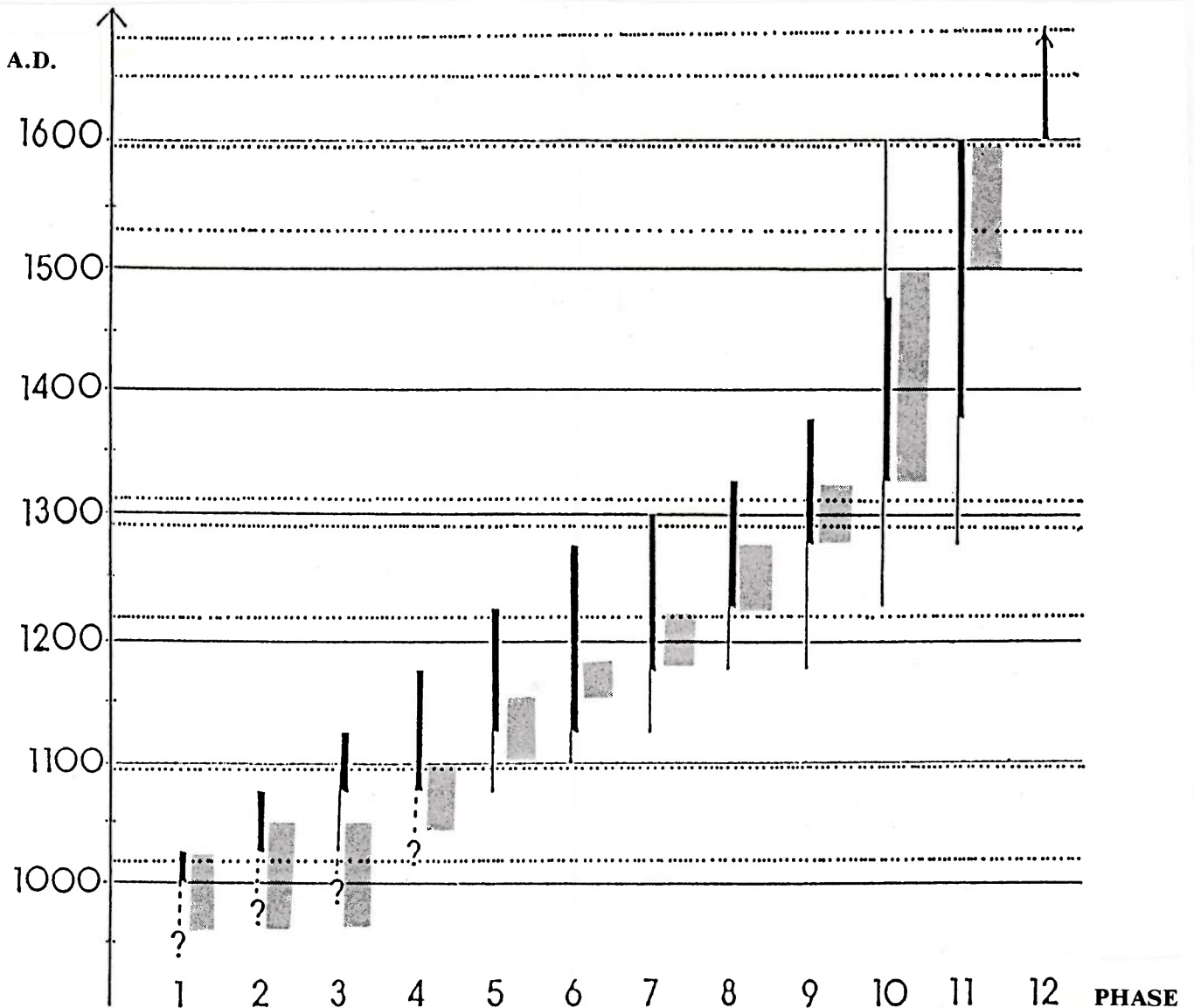


Fig. 4 Provisional table showing the dating of FBK's phases. The preliminary datings are shown by the dark vertical lines; the revised datings, based on closer analysis of pottery and coin evidence, are shown by the broader lighter vertical columns. Documented fires are represented by dotted horizontal lines. (After Nordeide 1988).

1.2.4 The Case-study.

Unfortunately, in the time available, it was not possible to produce a "high-precision" detailed study of every excavated area's distribution of finds, the extraction of complex information from the primary source material being far too time-consuming. It was therefore decided to concentrate such effort within a representative sample area, or distributional case-study, in order to establish closer definition of the finds in their specific structural contexts. A group of areas was chosen for intensive scrutiny: areas FA - FT - FU - FW (see Fig. 2). This combination of areas was selected for the following reasons:

- a. The sites in question collectively incorporated structural evidence relating to two of the most areally extensive properties surviving on FBK, that to the N. (Property 3; see Chapters 4 and 5) being the longest and most complete property excavated (see Fig. 5).
- b. These properties have a relatively well preserved and well dated sequence of largely undisturbed layers and structures within which it was hoped to locate each find closely.
- c. The properties, and the structures therein, appear to have been amongst the earliest established on FBK (Chapter 1.4.) and offered a series of consistent, near-conservative, alignments and arrangements of structures within long-established and long-lived boundaries.
- d. Well preserved structural evidence and the associated finds material offered potential for the assessment of the occupants' activities within the various house areas (a number of buildings occur in one elongated property), passages, courtyards, open areas and the neighbouring N-S-running street.
- e. The finds from this locality appeared to offer, in terms of quantity (i.e. 40% of the total site corpus) and range, an analysable group which typified the generally observable trends across the site as a whole, as well as including some of the earliest finds retrieved from FBK.

Through scrutiny of the primary documentary archive, each layer (and find) was placed in association with an individual structure, and the character of each context was noted i.e. the physical composition of the layer and its possible depositional status (i.e. whether related to episodes of construction, occupation, dereliction or destruction). This layer status was generally not easy to determine, and numerous problems deriving from the potentially intrusive or residual nature of the contexts and their finds content were encountered (see Source Criticism, Chapter 1.3.).

Despite these problems, a composite picture of the dispersal of the finds in spatially- and chronologically-mapped sequences was produced (see Fig. 42 a-p) and Chapter 4 and 5, micro-distributions). The case-study plans were intentionally simplified to avoid too much detail, or "background noise", in which the finds may have been swamped. Each finds category is plotted under its own symbol and its relationship to the structural features denoted symbolically (see key on each plan).

The data compiled in the case-study area are assembled under "micro-distributions" in Chapter 4 and synthesised with other data in the interpretative trend analysis of Chapter 5.

1.3 Source Criticism: Problems and Limitations.

The problems relating to, and arising from, the compilation of such a finds analysis within an urban context are numerous and complex. These are well aired by various researchers who are well aware of the particular complexities and limitations involved in utilizing finds from urban excavations as tools for the extraction of information (see, for example, Vince 1987, Moorhouse 1988 and Keene 1982).

The particular problems encountered in this study relate to the following areas:

Methodology - the procedural problems of compiling and arranging data.

Typology - problems specific to defining and identifying particular artefacts functionally and otherwise.

Context - the limitations inherent to the characterization of find contexts and the questionable representativity of their finds content.

Methodology.

The main problem in compiling the data lay in garnering the detailed contextual information needed for placing each find closely within its stratigraphical/structural position. The series of published Meddelelser, presenting stratigraphical analyses for the various individual areas, provides an adequate starting-point for general intra-site location of contexts; however, supplementary work is needed to establish the precise physical position of the contexts, their correlation with structures, and the interpretation of the depositional process by which each individual layer and its finds content arose in such an environment. Some interpretation of context (i.e. whether related to episodes of construction/occupation/destruction) is attempted in the stratigraphical reports: however, the problem lies essentially in inadequate on-site and post-excavation description of layers and a lack of systematic finds-plotting, and this naturally results in inadequacies further down the line. As a consequence, it is frequently necessary to spend much time searching through the primary site documentation for information essential to the precise location and characterization of a particular find's context, and even then the close location of a particular find is not guaranteed.

Typology.

The criteria by which particular gaming artefacts are recognized as such are derived from historically attested repertoires and recognizable variants and derivatives thereof. The repertoire is of course incompletely represented, and various associations of pieces and games are of necessity purely circumstantial.

Archaeological data in effect complements, and extends, the range of historically or ethnographically known forms. Certain grey areas inevitably occur where an individual item's precise functional character is not wholly demonstrable. A particular form may have a number of possible roles (e.g. plain unperforated discs in bone, stone and wood have certain similarities to their perforated counterparts which are usually interpreted as spindle-whorls). In addition, where a gaming function is confidently inferrable from the shape and

character of the piece (no other function being likely to give rise to such a
 arise in determining precisely to which, if any, of a
 "families" these may belong. For instance, the hemi-
 pieces described below may be attributable to a number
 geographically and historically as Viking and early
 pastimes. However, while the actual physical correlation
 stic boards and pieces does not occur, the historical
 restricted, and informed guesses are possible. The
 course, that some forms belong to unknown games, not

materials and techniques of manufacture and ornament-
 parcel of any typological appraisal. One area of some
 survey relates to the taxonomic classification of the
 materials utilised. No facilities for scientific identification
 consequently I had to rely on my own, limited, powers
 result I have had to classify various ivory pieces as
morse (walrus) ivory, and various bone pieces as
bone. I have utilized the various visual criteria known to
 me - however, my interpretation may subsequently be modified.

Context characterization and finds representativity

Vince (1987) and Moorhouse (1986), in their critical assessments of the role of
 pottery as an interpretative tool, present, in cogent form, the whole set of
 interrelated problems associated with finds from complex archaeological
 contexts. These are, most particularly, problems relating to identifying asso-
ciated groups/in situ finds, residuality, and intrusion.

This discussion is pertinent to such a site as FBK where intensive long-term
 occupation, with all the multifarious impacts of human agency, has resulted in
 a bewildering amount of depositional and post-depositional variables. Some
 particular points should be noted:

Gaming artefacts, being usually of organic materials, are not as durable as
 pottery i.e. they are more prone to suffer in poor conditions of preservation,
 and are likely to reflect the vagaries of localized environmental conditions etc.
 Consequently, variable preservation potential across a site (such as occurs on
 FBK - see 1.4.) may influence the spatial and temporal distribution patterns,
 causing them to reflect post-depositional developments.

However, unlike much excavated pottery, gaming artefacts should not, it may
 be argued, be regarded as rubbish *per se*. Some items may be demonstrably
 broken and of no practical use and thus may be seen as possibly discarded
 objects; however, the bulk of gaming artefacts must be regarded as being items
 which have been accidentally lost or mislaid rather than deliberately thrown
 away. That they were rarely consciously (unless in a fit of temper, an emotion
 not unconnected with gaming!) thrown away, perhaps allows for the operation
 of different primary mechanisms of deposition than those pertaining to items
 undoubtedly regarded as refuse. One might thus be tempted automatically to
 assume that they lie where they were lost. This would be dangerous, as the
 nature of the deposit in which they lie must be taken into account, and the
 potential complexity of soil movement within an urban environment must be
 appreciated. This said, a case is made (see 5.3.6. below) for only limited post-
 depositional movement of these finds.

Siles
 18-19
 Sawnes

character of the piece (no other function being likely to give rise to such a form), problems may arise in determining precisely to which, if any, of a number of known game "families" these may belong. For instance, the hemispherical and piriform pieces described below may be attributable to a number of board-games definable geographically and historically as Viking and early medieval Scandinavian pastimes. However, while the actual physical correlation of undoubtedly diagnostic boards and pieces does not occur, the historical options are nonetheless restricted, and informed guesses are possible. The possibility exists, of course, that some forms belong to unknown games, not mentioned in sagas.

Aspects relating to raw materials and techniques of manufacture and ornamentation etc. are part-and-parcel of any typological appraisal. One area of some uncertainty within this survey relates to the taxonomic classification of the particular skeletal materials utilised. No facilities for scientific identification exist in Trondheim and consequently I had to rely on my own, limited, powers of recognition. As a result I have had to classify various ivory pieces as "probably" comprising morse (walrus) ivory, and various bone pieces as "possibly" being whalebone. I have utilized the various visual criteria known to me - however, my interpretation may subsequently be modified.

Context characterization and finds representativity.

Vince (1987) and Moorhouse (1986), in their critical assessments of the role of pottery as an interpretative tool, present, in cogent form, the whole set of interrelated problems associated with finds from complex archaeological contexts. These are, most particularly, problems relating to identifying associated groups/in situ finds, residuality, and intrusion.

This discussion is pertinent to such a site as FBK where intensive long-term occupation, with all the multifarious impacts of human agency, has resulted in a bewildering amount of depositional and post-depositional variables. Some particular points should be noted:

Gaming artefacts, being usually of organic materials, are not as durable as pottery i.e. they are more prone to suffer in poor conditions of preservation, and are likely to reflect the vagaries of localized environmental conditions etc. Consequently, variable preservation potential across a site (such as occurs on FBK - see 1.4.) may influence the spatial and temporal distribution patterns, causing them to reflect post-depositional developments.

However, unlike much excavated pottery, gaming artefacts should not, it may be argued, be regarded as rubbish *per se*. Some items may be demonstrably broken and of no practical use and thus may be seen as possibly discarded objects; however, the bulk of gaming artefacts must be regarded as being items which have been accidentally lost or mislaid rather than deliberately thrown away. That they were rarely consciously (unless in a fit of temper, an emotion not unconnected with gaming!) thrown away, perhaps allows for the operation of different primary mechanisms of deposition than those pertaining to items undoubtedly regarded as refuse. One might thus be tempted automatically to assume that they lie where they were lost. This would be dangerous, as the nature of the deposit in which they lie must be taken into account, and the potential complexity of soil movement within an urban environment must be appreciated. This said, a case is made (see 5.3.6.below) for only limited post-depositional movement of these finds.

In situ contexts comprise only 11% of those noted for FBK as a whole (see Fig. 50a in Chapter 5 below). These are contexts which are, predominantly, related to the destruction, by fire, of a building or street, and which contain finds which are themselves burnt, or which can be confidently shown to have derived in some way from the use of a particular structure. Otherwise, 52% derive generally from house areas, 25% from streets/passages, and 10.5% from open areas (the remaining 12.5% are from uncertain contexts). Over half of these derive from "wood-chip" or "earthy wood chip" layers, the bulk of which have not been more closely defined. The transportation in and out of deposits, as make-up, or in reorganization/rubbish disposal activities, cannot be ruled out, and a large number of finds may as a result be residual, or redeposited. Likewise, the digging of the numerous post-holes here may well have cast up items deposited by previous generations of inhabitants, while their fills and those of various other intrusive features add another dimension. A large number of gaming artefacts are found "between" floor-levels: as small transportable objects they may well have rolled down between the floor-boards. However, the flooring in most FBK buildings appears to have been tightly-laid. A number of buildings stood above ground on posts, and the space thereunder may well have been the destination of much swept-aside debris which originated from various sources of contemporary activity in the vicinity (see 5.3.6 and 5.3.7).

To summarize: Gaming-pieces are, potentially, less likely (than, for example, pottery) to be removed intentionally from the location of their primary use (as items relating to the playing of games), and moved around and redistributed, unless through the agency of secondary activities (e.g. re-use in another role) or post-depositional disturbance, such as floor-sweeping, or more drastically, pit-digging. Until better characterization of the deposits within which relevant finds lie is achieved, the correlation of finds with structures and episodes of occupation remains generalized.

This said, some factors may, at least for the purposes of giving this study some footing in the sequence of physical remains, allow some suggestions to be made regarding the contexts of these finds: Gaming-pieces are not as intrinsically datable as pottery, though certain games do have historically-determined chronologies and diffusions. As such, therefore, a broad correlation of archaeological and historical trends should ensure the identification of probable anomalies (e.g. the occurrence of a Lewis-type chess figure in an 11th-century Scandinavian context), and the conformity of types to recognized patterns of temporal distribution may, with appropriate caution, allow a broad confidence in the chronological occurrence of identifiable forms within areas where no such anomalies occur.

As already pointed out, the re-use of items is another factor in the equation, though secondarily-used gaming items are usually readily identifiable (e.g. piriform gaming-pieces re-used as spindle-whorls - see Category B).

In pottery analysis the principle of "joining sherds" may be used to identify contemporary layers, residuality, and differential developments across large areas (as well as patterns of rubbish disposal). Gaming-pieces are, when in use, usually gathered collectively in sets, each item (from at least one of the differentiated sides) having some common characteristic. The bulk of finds from FBK are single items - only a very few associated groups occur. Also, very few directly comparable or similar items exist within or across stratigraphical boundaries, and so a formula seeking to cross-correlate "related pieces"

has little value in this instance. Interestingly, this perhaps also helps to demonstrate the arbitrary and casual nature of their actual loss, resulting in a preponderance of single items. It also points to the potential number of individual sets used during the occupation of FBK, though as with pottery, the proportion surviving today does not necessarily reflect the total amount of original material (i.e. gaming-pieces and sets thereof) in use at any particular time, nor does the surviving range necessarily reflect the full contemporary variety of forms.

Differential preservation, redeposition, redistribution, disturbance, the arbitrary nature of loss, hoarding of antiquated forms, varying impacts of destructive and constructive episodes etc. - all distort the true pattern of game-playing within such a complex urban site as this. Nonetheless, it is the contention of this study, as set out in chapters 5 and 6, that the specific typological information and the broad patterns of dispersal in time and space do conform, generally, to patterns determined in antiquity, and which are not too greatly divorced, spatially and chronologically, from the people who actually used, and lost, these varieties of recreational accessories.

1.4 Topography and Settlement: An Introduction to the Library Site (FBK).

In order to outline the physical context into which the ensuing analyses will be integrated, a short description of the topography and development of settlement on FBK is presented here. (For a more detailed discussion of all the aspects noted below, see Christophersen et al., 1988 and 1989).

Location

Fig. 1 shows the location of FBK on the Nidarnes peninsula at the mouth of the River Nid as it enters Trondheim Fjord. The medieval town grew up on the low plateau lying immediately to the west of the river. A presumed rate of land-rise since the year A.D. 1000 of c. 3.8 metres means that the river frontage has moved progressively eastwards while the actual area of the peninsula has expanded. At A.D. 1000 the high-water mark is estimated to have lain at, or near, the present 5.8 metre mark.

Subsoil and natural topography

There is a slight north-south running ridge lying roughly centrally, along the crest of which the street has been laid (Fig. 2). The natural topography slopes away gradually to the west, and rather more steeply to the east and the river. The geological character of natural ground also differs to either side of this ridge; to the west it comprises alluvial clays, while to the east it consists of alluvial sands and gravels.

It is clear that a shallow inlet existed formerly to the south-west of FBK, a feature which is now detectible only in the dip in natural and the presence of silted deposits, accumulated naturally and through the action of man, as well as the presence in the microscopic record of brackish-water algae and the pollen of marsh and water vegetation.

Settlement development and topography

As regards the evidence of occupation: It is apparent that there is some correlation between the nature of the archaeological deposits and the character and configuration of the underlying geology, both in respect of the lay-out of the settlement in antiquity and in the action of a number of environmental variables upon the developmental pattern and its differential survival down to the present day. See Fig. 5 for the developmental sequence in the structural lay-out.

Lay-out

The N-S street is clearly aligned along the slight ridge. To either side of it the nature of the deposits and the lay-out of the structures they contain are of discernibly differing character: to the west lie deeper and more moist deposits (up to 4 metres deep), whereas to the east the deposits are rather shallower (c. 1.5 metres deep). The preservation of organic materials is generally better to the west. Here also the surviving structural lay-out is comparatively denser in contrast to the less consolidated nature of the eastern half of FBK. This apparent division may be a product of differential survival due to the inherently dissimilar qualities of the subsoil and terrain, or a reflection of true patterns of intensity determined in antiquity, or perhaps a combination of both. This variation in the potential for the preservation of organic materials has a central bearing on analysis of artefact distribution. Any distributional patterns must be weighed against the potential for differential survival.

The phases of settlement

N.B. The temporal subdivision of the site into relatively dated phases is presented in accordance with the scheme worked out by the Folkebibliotekstomten Research Project and presented in Christophersen et al 1988 and 1989 (see Figs. 4 and 5). However, more recent "fine-tuning" of these somewhat broad and overlapping phases has since been done, based on closer analysis of pottery and coins (Reed, forthcoming), although this is, at the time of writing, still provisional and is not universal to the site. However, where relevant, it is deemed worth presenting the revised relative dates in addition to the primary phasing, since future work will have to take this revision into account. In the meantime, the unrevised phases form the basis on which this study was based, the revised dates being appended where some refinement is called for.

In the first phase of settlement (late 10th century to A.D. 1025), the whole area bears traces of activity in the form of ditches and post-/stake-holes etc. though the only surviving evidence for actual building activity borders on the former shallow inlet to the south-west (properties 2 and 3). From the start the orientation of the properties and buildings here is approximately east-west, a consistent feature over the area to the west of the street throughout the medieval occupation. In the early phases (1 and 2 - to ca. A.D. 1075) the structural elements within the elongated east-west properties are concentrated towards their western ends (at least as indicated in Property 3) with open back-yard areas towards the east and the street (or track, as it is in the two earliest phases). In Phase 2 the westernmost parts of the properties bordering the shallow inlet bear wattle-retained terraces of sand which seem to have functioned as landing stages. From Phase 3 (i.e. A.D. 1075+), the aforementioned internal structural arrangement is reversed, although the generally central position of the domestic buildings within these properties remains relatively

consistent. The inlet has apparently now silted up. Although the track/street also operated as the eastern boundary to the back-yard areas noted above, from now on it forms the limit of the structural activities within the western properties, of which there are at least seven neighbouring examples on FBK, lying east-west, each containing a row of buildings. The street has a number of smaller, private passages leading off it, serving the range of domestic buildings lying centrally behind what appear to be raised storehouses or workshops which stand against the street, although they apparently do not have direct access thereto, this being via the tributary passages. The domestic buildings have hearths and lie with their greatest length east-west, whereas the stores etc. lie parallel to the street on a north-south axis.

To the east of the street the pattern is rather more obscured by later disturbances, and although there is evidence for regulated structures and properties here from the first phase, their character (at least prior to c. AD 1075) is not as decipherable as that of the contemporary structures to the west. However, the arrangements here are broadly similar to those in the west, though there is an impression that they are somewhat less consolidated. Also, the properties here bend, so that in their westernmost extension they relate, in their orientation, to the street, while to the east they are at right-angles to the line of the river. The structural remains excavated where these eastern properties border the street do mirror (from Phase 2) those to the west, with probable stores/workshops aligned along the street frontage, although even here there is evidence to suggest that these westernmost parts of the properties form the backyard component (with middens, pits, latrines etc.), the domestic structures lying further east, surviving partially only in FP and FX to the north-east, the other excavated areas being greatly disturbed. FY and FO (10A-C) appear to comprise an area of former waterfront activity. To the south of the area the establishment of a graveyard in the early 12th century (Phase 5) has naturally rendered that part of FBK relatively uninformative from the point of view of this study.

To summarize: The principal structural lines are defined and established from Phase 1. The north-south street divides two complexes of parallel properties. To the west there are at least seven of these (though with some fluctuation in numbers through time); however, the FA - FT - FU property (Property 3) is the only one to have been excavated along the greater part of its length, those to the north being represented only by their easternmost elements (N.B. this forms part of the case-study area). Consequently, we have only a restricted insight into most of these properties, the full range of domestic buildings to the west remaining as yet unexcavated. To the east of the street, excavation has encompassed a greater proportion of the (partially) differently aligned properties, but here there are problems of preservation due to large areas of disturbance and less favourable soil conditions. Traces of at most nine parallel properties emerge from the fragmented remains here; FP bears the greatest undisturbed length, while FH and FL in particular afford insight into the building activities to the west of the properties' lengths, the evidence to the east being vestigial.

Generally, therefore, our appreciation of the character and diversity of settlement activity on these properties is partial, the exception being the FA-FT - FU property (property 3). There is consequently an innate bias locked into the dispersal of finds, and their distribution within this fragmented context must be closely related to, and qualified by, considerations based on a recognition of the incompleteness of the evidence and the corresponding limitations attached to interpretation.

2. A HISTORY OF GAMES AND THEIR ARTEFACTS IN SCANDINAVIA.

2.1. Early Nordic "tafl" Games.

Hnefetafl

This old North European and Scandinavian game may well go back to the 4th century at least, and is possibly a derivative of the Roman game ludus latruncolorum. Murray (1913 pp. 445-6 and 1952 pp. 55-64) has established the form of the game through analogy with a Lappish derivative recorded by Carl von Linnè (Linnaeus) in 1732 which in turn conforms to arrangements and fragmentary rules known from a 15th-century Welsh MS, 13th century Norse sagas, and a 10th-century Anglo-Saxon MS. Berglund (1970, p. 90) makes the tentative suggestion that hnefetafl is the result of a marrying of the principles of ludus latruncolorum and the north European game of fox-and-geese/halatafl.

Hnefetafl is essentially a battle-game, and a game of skill not requiring the use of dice. On a board ("tafl") bearing an uneven number of cells stand two opposing sides: a small force defending a single specially-empowered piece - the "hnefi"- starts from a central position and seeks to reach the edge of the playing area, while a larger surrounding attacking force attempts to hinder and capture the "hnefi". Moves are made alternately, the attackers aiming to enclose the "hnefi", usually at the edges of the board. Pieces are taken by the custodian method, wherein the attackers must occupy two squares adjacent to the victim.

"Tafl" and "hnefetafl" are familiar references in Scandinavian poems and sagas, including the earliest examples, such as Voluspá. It is a noble pursuit, worthy even of the gods, and is classed, for example by Earl Rognwald of Orkney in c. 1125, as one of the necessary accomplishments of a superior life, and King Øystein (1103-1123) boasted his prowess at the game. The game form was also known among the Saxons and Celts of Britain and Ireland. For a fuller appreciation of the game's known development and characteristics see Murray (1952), Berglund (1970) and Bell (1960).

Petersen (1914) describes the range of objects normally identified as gaming-pieces found in Scandinavian burial sites from the Roman Iron Age and throughout the Viking Period. These include large amounts of hemispherical pieces in bone, glass, clay and amber. He constructs a sequential typology of three diagnostic forms (op.cit. pp. 86-7). Murray (1952, pp. 57-8) makes a case for the use of such pieces, and other contemporary forms, in hnefetafl, noting the occasional presence in such assemblages of a single differentiated piece (in the form of a "crowned" piece or an animal or a human figure - see also J. Graham Campbell 1980, pp. 23-5, and Fig. 23 here) as concurring with the rules as described above. Berglund (1970) makes a good case for the use of the differentiated glass pieces from Birka in the game of hnefetafl.

It seems that there were contemporary variants - the total number of pieces comprising a set could vary, though the balance of the opposing sides remained 2:1 (excluding the "hnefi"). Although it has occasionally been stated that dice were used in association, Berglund (1970, pp. 87-88) reasserts the view apparently held by Murray that this is essentially a game of skill, not of chance. According to Murray, the game could be played on the points of a lattice of 18 x 18 cells, or on the cells of boards of 13 x 13, 11 x 11, 9 x 9

or 7 x 7 cells (1952, p. 55). Wooden boards displaying such patterns have been found throughout Scandinavia in a variety of contexts. The Vimose (Denmark) fragments, of c. A.D. 400 date, exemplify the 18 x 18 variety, from an early grave context. The Gokstad ship burial of c.900 produced a fragment of a gaming-board (Nicolaysen, 1882, pl. VIII), a finely-made example of the 13 x 13 form, while the boards from various Norwegian excavations in the medieval towns of Oslo, Bergen and Trondheim (Plate 11) have produced examples (respectively) of 15 x 15, 13 x 13 and 9 x 9 forms. A so far unique board, the perforated Ballinderry example (from a lake-dwelling in Co. Westmeath, Ireland) is of probable 10th-century date, and of Viking manufacture (either in Dublin or the Isle of Man - see J. Graham Campbell 1980, p. 23 and Hencken 1933, pp. 85-104). Murray (1952, pp. 59-60) asserts the possibility of its use for hnefetafl, though Hencken originally interpreted it as being possibly a board for fox-and-geese (halatafl - see below). This board displays a 7 x 7 pattern, as do the 9th-century stone boards from the Viking-Age farmstead at Buckquoy, Orkney (Ritchie 1977, 187), also interpreted as hnefetafl boards. This shows the variation characteristic to the game and its boards: variation in format, use of materials, degree of sophistication in manufacture, find context (from graves, farms and towns), and chronological and geographical distribution. Doubtless the pieces placed on these boards varied in accordance, from simple stones to carefully-manufactured items in a range of workable materials.

As stated, Berglund (1970) establishes the Birka glass pieces (on the evident conformity with the 2:1 formula and the identification of a distinctive "hnefi") as members of the hnefetafl family. However, not all grave-find assemblages, or typologically similar individual finds from other Viking and early medieval contexts, can be so confidently identified as such. To be certain, an assemblage conforming to the prescribed formula, or as near possible, should exist, though this is often not the case, and where boards and pieces occur together, the playing surfaces of the boards are not decipherable, the wood having usually disintegrated (see various examples from Birka II in H. Arbman, 1943, where only the metal fittings survive). Often, also, dice (of the oblong variety) occur in association. As noted above, hnefetafl does not seem to require their use, and whether these dice reflect another function for their associated gaming-pieces, or are used simply in pure dice-games of no connection to the pieces, is not certain. (Though see 2.5. Dice-play, below, where a case is made for the possible association, in Viking contexts, of such dice with the game of merels, also known from such contexts). These pieces, and boards such as the Ballinderry and Buckquoy forms, may well have been used for a game such as halatafl, or in some other, unrecorded, game form. That some such pieces (and boards) were used in the practice of both hnefetafl and halatafl, is, on the basis of their broad similarity in rules and format, yet another possibility to be taken into account.

The basally-perforated hemispherical and piriform pieces of the Viking and early medieval periods are particularly enigmatic, when one notes the fact that the perforated Ballinderry board is, as yet, a unique find - if these pieces held a peg, as is sometimes suggested, where are the boards to hold them? And what pieces, evidently not requiring pegs, were used on the unperforated wooden boards? Are the basal holes on some pieces manufacturing or functional traits (or both?). These problems are discussed in relation to the relevant artefacts (see Chapter 3).

The disappearance of hnefetafl from the Scandinavian gaming repertoire is postulated (at least in the case of Iceland, and so by extension presumably its Nordic neighbours also?) as being "soon after the introduction of chess,

probably before the end of the 13th century" (Murray, 1913, p. 455) i.e. a new gaming fashion makes the old one redundant. Eales (1985, pp. 49-50) concurs, placing the change in gaming practices within the broad cultural context of changes associated with the introduction of Christianity to Scandinavia: "chess succeeded by displacing the existing range of games because it was inherently more complex and interesting or because it was introduced as one aspect of a new dominant culture. This second process might involve actual conquest, as in the Norman invasion of England, or just conversion and imitation, as in Scandinavia.... . Hnefetafl was no longer played in noble society, because it drops out of the literary sources, but it may have survived among lower-status groups."

Indeed, hnefetafl, for a long time probably the only intellectually demanding board-game played in the Nordic lands, still exerted a strong symbolic influence in the minds of the saga writers of the 13th century, and its innate qualities and cultural associations may arguably have given it a certain resilience in the popular mind, though by later medieval and post-medieval times the game is visible only dimly in "peripheral" cultures (tawlbredd in 15th-century Wales and tablut in 18th-century Lapland).

The degree to which material evidence of this character derived from urban excavations manifests specific trends and broader aspects of innovation and change in cultural identity, is one interesting aspect of this study. Did towns act as a primary medium for the transmission and adoption of new ideas and activities, as exemplified by chess? Might they have acted as conservative pools retaining, amongst their multifarious inhabitants, old and perhaps outmoded customs, such as hnefetafl, for example?

Halatafl and hnettafl (fox-and-geese).

The saga-game halatafl (Murray, 1952, pp. 101-3) is probably to be equated with the game known more familiarly today as fox-and-geese. It was a simple hunt game played (in the old Icelandic form) with one principal piece, the "fox", and thirteen "geese" in opposition, the latter trying to hem the single piece in to any of the corners. There is an obvious similarity to hnefetafl, though halatafl was a less sophisticated form, where the odds were weighted heavily against the single piece.

According to Murray (1913, p. 167) the oldest form (a modern variant is played in places today - Swed. rävspel) was played on the points of a board comprised of five smaller merels boards put together in cruciform arrangement. Hencken (1933, pp. 100-4) however, maintains that the game played on the perforated Ballinderry board (7 x 7 arrangement) may have been fox-and-geese, since the board's corner and centre holes, important points in the game (the fox starts in the centre, and the geese try to trap it in the corners), have been specially marked.

This game probably has a long history in Scandinavia, and Berglund (1970, p. 90) postulates the combination of the rules of the Roman game ludus latrunculorum and early fox-and-geese/halatafl in the creation of the more sophisticated hnefetafl.

The antiquated form of fox-and-geese was known in Iceland as "refskák" in the 18th century. The Grettis saga of the 13th century refers to both "halatafl" and "hnettafl", and both names have been equated with the fox-and-geese

game. That hnettafl corresponds to this game was initially proposed by an Icelandic scholar Gudmundsson (see KLNLM, Rävspel) and adopted by Hildebrand (1884-1898 pp. 502-3). The latter notes that the game may have been originally played with nuts, but that it came to consist of a special carved piece ("huni") and twelve other pieces identical to each other. He also quotes an episode in *Grettis saga* (Chap. 70) where a piece - a large "halatafl" with a "hali" (tail or pointed end) is thrown by a woman at one of a group playing at a board, thereby prising out his eye! (see also *Terningen er kastet*, p. 13). This is often quoted as evidence for pegged gaming-pieces, though one might also note the pointed forms of some near-contemporary gaming-pieces (see the piriform pieces, 3.2.2. below). Murray (1952, p. 101-2) refers to halatafl as being the "fox-game" mentioned in *Grettis saga*, though, as with Gudmundsson's claim for hnettafl, there is no further evidence to clarify the situation.

There is likewise uncertainty in ascribing particular surviving pieces to the fox-and-geese game, whether it be halatafl, hnettafl or neither, and Murray (1952, p. 59) would prefer that the Ballinderry board, seen by Hencken as usable for fox-and-geese, should be assigned to hnefetafl. The inference to be drawn from the saga reference quoted above regarding the pointed shape of the game's pieces has already been noted.

2.2 Chess.

Historically, chess may well have been known in Scandinavia by the early 11th century. Snorri Sturluson's Olaf's Saga, written c. 1230, describes a game of chess ("skaktafl") between King Knut and Jarl Ulf at the Danish capital of Roskilde in 1027. There are two other independent references to Knut as a chess player, and although all were written later than his reign, Murray (1913, p. 443) states that the possibility exists that they are accurate, though adds the warning that in his account Snorri may have "modernised the details and substituted chess for the older Norse game of hnefetafl". There are further references in the sagas of the 13th and 14th centuries to contemporary and historical associations with chess play (see Murray, 1913, pp. 443-444). Fiske (1905, pp. 7-9) suggests that chess reached Iceland in the second half of the 12th century, probably from England by way of contacts with the cathedral or conventual schools. Murray (1913, pp. 444-5) contends this on etymological grounds, and suggests that "there seems no valid reason for supposing that chess arrived in Iceland by any different route from that taken by other adoptions of European customs" (presumably via N. Germany and neighbouring Nordic lands), and suggests a late 13th-century date for its adoption there.

In this context, it might be relevant to point to the evidence for close cultural and commercial contacts between Iceland and Norway, and Trondheim (Nidaros) in particular, from early in the medieval period, expressed particularly in the law-code of North Norway - the Frostatingslov - and in excavated evidence for commercial interaction. Fiske (1905, p. 331) notes that the oldest surviving MS of the law-code, from 1235, probably incorporates laws of earlier origin, which had a formative influence in Icelandic law. Concurrent commercial links are attested from documentary sources and, particularly eloquently, in the finds, from the Library Site (FBK), of rune-inscribed mercantile identification tags of wood. Hagland (1986, pp. 29-37) cites these as evidence of vigorous trading activity between Trondheim, Iceland and Greenland throughout the 12th and 13th centuries at least. Consequently Murray may be correct concerning the route of introduction, though contacts are clearly already well established by the 12th century.

Eales (1985, pp. 39-70 and 1986, pp. 12-34) provides the most recent assessment of chess in medieval Europe and Scandinavia. The game entered Europe from the Islamic world via Spain and Italy at some point in the late 10th century. He discounts any possibility that it may have entered Christian Europe by way of heathen Scandinavia and the Varangian trade routes to the East. In fact, he maintains that Scandinavia received chess via N. Germany, as evidenced by the similarity in chess nomenclatures here, and that chess reached Scandinavia as an inherent part of the process of Christianization, in effect exemplifying one aspect of the impact of fresh modes of thought and behaviour in a new dominant culture. Thus it displaced native games, such as hnefetafl, at least from the historical record (i.e. the record of the lives of the dominant social groups), though such "demoted" games may have survived among the lower social orders.

Eales goes on to note (1985, p. 51) that, as eloquently testified by the Isle of Lewis chess pieces (see further below), the game "was familiar in Scandinavia and on the main Viking trade routes by 1150. By this date at the latest therefore, chess was played right across Europe from the Mediterranean to the far north. It had displaced earlier pursuits at a time when the dominant groups in western society, the lay aristocracy and the higher clergy, were becoming much more culturally homogeneous and inclined to follow common codes of behaviour. This was very important. Economic growth, greater political security, more readily available education; all of these developments, however tentatively at first, helped to promote chess as one element among many in a new leisured way of life. This way of life was more sophisticated, more affluent, and above all more widely available, than ever before in medieval times."

Although a game favoured by the leisured classes in feudal medieval Europe, the ostensible near-exclusivity of chess to the aristocratic milieu may well result from the historical bias of contemporary romantic literature and official itineraries. The numerous inclusions of chess paraphernalia in medieval inventories etc., and the various luxurious chess pieces in European museums attest the value and status it attained. To quote Murray (1913, p. 428): "...especially from the 13th century to the 15th century, chess attained a popularity in W. Europe which has never been excelled.... By 1250 the early prejudice of the Church against chess had begun to weaken in view of the royal and noble patronage of the game, and the monastic orders freely accepted chess as a welcome alleviation of the monotony of convent life, while a knowledge of chess had spread ... to the wealthier burgesses and merchants of the towns". Thus the game, at least in Europe, is seen as the preserve of those with an education, time, money and considerations of status, with little downward filtering to the labouring classes. Interestingly enough, Murray (1913, p. 442) cites Iceland as being something of an exception, where the game was particularly popular in an environment "where the long winter nights deprived all orders of the possibility of outdoor occupations". Certainly, chess is normally identified, in its enthusiastic adoption there, as being responsible for the decline of the native game of hnefetafl.

That Norwegian merchants were acquainted with chess by around 1200 is implicit in von Strassburg's poem Tristan written c.1210 (quoted in Eales, 1986 p.26). In this Tristan "... is abducted by Norwegian merchants who not only have a richly-decorated board and an ivory chess set on their ship, but are also able to play. 'Don't tell me you play chess?' asks Tristan, and is told, 'Yes, quite a few of us here are versed in the game. You can easily put it to

the test if you like." That Scandinavian traders, and especially those as well-travelled as the Norwegians are likely to have been, were well-acquainted with the game by at least the second half of the 12th century should not be surprising when viewed in the context of the finding, right in the midst of their trade routes, of such "state-of-the-art" contemporary pieces as those making up the Lewis sets, and perhaps even more persuasively, the recent rediscovery of a chess queen from St Olav's Church, Trondheim, a piece which was clearly made in the same workshop as the Lewis pieces (Fig. 22 and see footnote in 3.2.3., and M^cLees, forthcoming).

Due to the innate bias of much of the evidence, as suggested above in relation to contemporary documents, evidence for the true extent of chess playing among the population generally must inevitably be obscured. However, the only real prerequisites for the playing of chess are time and a reasonable intellect, which, as is implicit even in Murray's remarks about the game in Iceland, were not the preserve of the literate or leisured classes. Furthermore, the presence of such an enthusiastically-indulged pastime in society must have been an attractive addition to an aspiring individual's (male and female) social repertoire. And of course the mania for gambling knows no social bounds. Chess was, in the medieval period, an essentially sociable game, frequently played in the presence of a lively audience, perhaps in a tavern, and often with stakes riding on the outcome. As a result, and in common with other popular games, chess was subjected (at least in its early days) to legal and ecclesiastical strictures designed to constrain its overindulgence and any disturbance of the peace resulting from its evidently enthusiastic pursuit, Scandinavia being no exception.

Likewise, the archaeological evidence is susceptible to innate bias and the accusation of not being fully representative. The often elaborate and expensive chess items in museums are clearly the products of monied patronage. Even the increasing number of humbler items are largely derived from contexts which represent the activities of the limited range of practitioners envisaged by Murray i.e. from the excavations of ecclesiastical and aristocratic sites (a Norwegian example being the Trondenes chess king). The finds from urban contexts may also derive from players of the calibre cited by Murray, though they also represent a largely atypical sample (in demographic and societal terms), and also a less rigorously definable one, the composition of an urban population being rather more socially mixed and fluid, the interaction of social, cultural and economic traits producing a dynamic and unique compound in which it may be difficult to distinguish the individual elements which go to make up the whole. In other words, an attempt at identifying the possessor of a particular chess piece from an urban site is clearly not as restricted in alternatives as similar attempts in the context of a castle or monastery. In both historical and archaeological terms the rural population, its traces more obscure, remains under-represented in the range of its known activities.

This said, however, Eales (1986, p. 57) sounds a salutary note of caution, stating that "... the social appeal of chess should not be exaggerated." The game, by virtue of its innate complexity and status associations, seems in reality to have been the preserve of a numerically small proportion of the European population, confined to the aristocracy and gentry (and perhaps their servants and retainers), and the clergy (though probably not the poorer parish priests). He adds: "Nor should the extension of the game's appeal to the towns, though real enough, be used as the basis for airy generalizations about the rise of middle class culture." There is no definite evidence to suggest that the urban artisans and craftsmen took to the playing of the game in any signific-

ant sense. He points out (1985 p. 58) that while the wills and inventories of the wealthy and noble frequently mention chess items, those of artisans and yeoman farmers invariably do not. "People of this class may have possessed sets too cheap to be worth recording, and there does seem to have been a revival in the manufacture of simpler non-representational pieces in the fourteenth and fifteenth centuries, but many wills are so detailed as to rule out even this possibility. Not all chess pieces were elaborately carved or made out of expensive materials, but they were often regarded as luxury items."

Eales envisages a developmental process in the spread of chess within European society, wherein the initial adoption of chess by an increasingly complex and sophisticated noble culture within European feudal society between 1000 and 1200 is succeeded in the following centuries by the assimilation of this component of cultural life by those "who had enough leisure, means and education to imitate aspects of the noble life style. This kind of emulation, by leading townsmen and others, implied a blurring of some distinctions in the upper ranks of society, but hardly a radical upheaval." The enduring exclusive appeal and prestige of chess lay in its being "essentially and originally aristocratic."

As Helle (1974, p. 205) points out, there were actually only limited feudal tendencies in Norwegian high medieval society, and those tendencies were confined largely to the king and his retinue. However, given the inherent limitations upon the game's social dissemination as envisaged by Eales, and the presence in Norway of such elements (with all their attendant aspirations), there is no reason to disassociate the processes of the game's adoption and practice within Norway from the general pattern and character of the game's evolution within European society.

Chess pieces, in a variety of forms and materials, have been found in medieval urban contexts throughout Scandinavia, as well as from aristocratic and ecclesiastical sites. There is some (very ambivalent) evidence from late 12th-century levels from excavations in Lund in Sweden (see Persson, J. 1976, p. 379-80). In Norway, the earliest chess piece so far known to the author is the newly-rediscovered chess queen from St Olav's Church, Trondheim, which on analogy with the art-historical dating of its sister pieces from Lewis, probably dates from the third quarter of the 12th century; its archaeological context is insecure, however (McLees, forthcoming). Other than this, there are no pieces yet recorded (to the author's knowledge) from contexts earlier than the first half of the 13th century, though excavations throughout Norway have produced evidence demonstrating the wide spatial dissemination of the game here at least by the end of the 13th century. The range of forms and materials utilised in their production in Scandinavia during this century emphasises the wide currency and awareness of the details peculiar to the game among manufacturers and players; indeed, some of the pieces (the carved wooden figures in particular) are so similar to each other stylistically that the presence of a school, or at least an established tradition of representational gaming-piece carving, may possibly be discernible (see 3.2.3. below).

Medieval European and Scandinavian chess pieces display a range of recognisable types which may be divided broadly into two categories on the basis of their stylistic origins and forms:

abstract, or non-representational, forms, arising from the Arabic-Islamic non-naturalistic tradition, the result of religious proscription of naturalistic representation in carvings etc. (see Fig. 15, for example);

various naturalistic, or representational, forms, anthropomorphic and/or zoomorphic in design, and of European inspiration (see Fig. 21, for example).

(In addition, from at least the 13th century, and perhaps from the 12th century, on, renewed abstraction, or conventionalization, of chess pieces, in non-Arabic forms (the pawn possibly being the earliest), gradually modified the figures in the European chess repertoire, resulting in innumerable stylized varieties.

The Arabic-derived abstract forms comprise the earliest repertoire used on the introduction of chess into Europe from the Islamic world in the 10th century. They achieved wide dissemination, being manufactured in all workable materials and to greatly varying degrees of craftsmanship all over Europe by the 12th century, and, as evidence from Trondheim confirms, are used in Scandinavia by the late 13th century at least. In fact, by this time these forms seem to have been elsewhere supplanted in popularity by the various naturalistic pieces, though their use ran concurrently in 11th- and 12th-century Europe, and some essentially conventionalized examples clearly display a transitional character, responding to more elaborate European taste with representational carving in false relief (see MacGregor, 1985, pp. 137-41, Murray, 1913, Ch. 10 and Eales, 1986, p. 19, Wichmann and Wichmann, 1964, pp. 16-45).

Fig. 6 portrays, in simplified form, the main developments in chess-piece manufacture (predominantly the fine ivory pieces), in Scandinavia and Europe. The earliest pieces used in Europe on the game's introduction in the 10th century, were those conforming to the abstract forms used in Arabic-Islamic contexts. These forms persisted, with greater or lesser degrees of modification, through to the 13th century in Europe and Scandinavia. Minor modifications included the provision of a head-like projection from the top of the piece (as in the Trondheim examples), a weak attempt to provide some slight anthropomorphic quality. (Occasional examples where more care in forming this head do occur, as in a wooden king from medieval Schleswig - H. Lüdtkke, 1989, illustrated opposite). The more major modifications taking place concurrently during the 11th, 12th and 13th centuries reworked these essentially alien and somewhat spartan stylizations into pieces more expressive of contemporary European taste, with all its exuberance and increasing complexity, initially via the application of pictorial carving in relief, and eventually through the transmutation of the basic forms into sculpted naturalistic figures. Indeed, the most significant development is the gradual freeing of the figure into an entity independent of the formal restraints of background and block-like rigidity imposed by adherence to the Arabic prototypes. A primary step in 11th-century Europe was the incorporation of finely-sculpted figures within architectural backgrounds, and in the 12th century free-standing figures appeared in Europe and Scandinavia, including those from the Isle of Lewis and St Olav's, Trondheim. There is still perceptible in such pieces a muted echo of the Arabic prototypes, in their compactness and formal rigidity. Nevertheless, the innate liveliness of the Lewis figures and contemporary pieces which emerged from Scandinavian workshops perhaps derives from a degree of cross-fertilization of the older, indigenous traditions of Viking miniature carving with the new pan-European movement towards naturalism in gaming-piece manufacture (see further below). Gradually the figures emerged, by the moulding of limbs with greater definition and pronouncedly separating individual shapes, eventually becoming wholly independent and sculpted in the round. As stated, this tradition was particularly active in Scandinavia, and it is here that the next major development really took off in the course of the 13th and 14th centur-

ies; namely the production of individual pieces in the form of composite carved groups i.e. a dominant single figure surrounded by various subordinate figures in relief. By the 14th century these came to predominate over the single figures. In the 13th century, renewed abstraction, or conventionalization, of pieces took place in Scandinavia and Europe, with roots in the Arabic prototypes, though radically altered and corrupted. These presumably co-existed with the naturalistic pieces, as their forebears had done in the previous century. By the 15th century, abstract forms were in the ascendancy. Generally speaking, there seems to have been parallel development of Scandinavian and European chess pieces. There is no evidence to suggest that these developments occurred independently of each other - indeed these pieces were part of a mutual and reciprocal process of intercommunication within the brotherhood, or "consciousness", of chess. The occurrence of regional variants is natural, especially where craftsmen have drawn on a familiar cultural and disciplinary reservoir of forms, techniques and raw materials, as in Scandinavia, and Norway in particular.

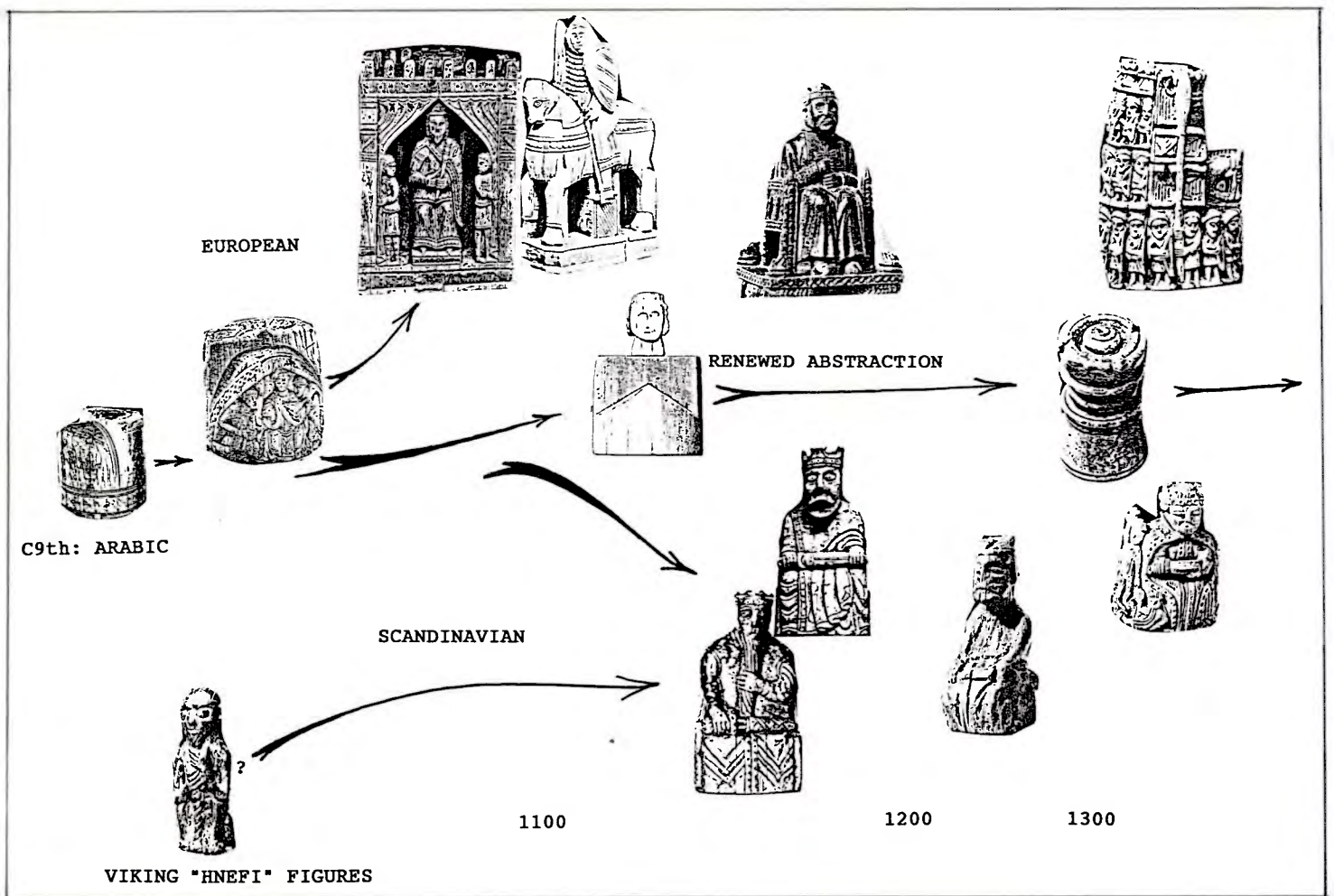


Fig. 6 Diagram showing the development of the main characteristic forms of chess pieces in medieval Europe and Scandinavia.

The European and Scandinavian naturalistic pieces are often extremely accomplished and elaborate in execution, though simpler forms occur (e.g. the Trondheim chess king, Fig. 21). The 78 pieces found on the Isle of Lewis, intricately carved in walrus (morse) ivory, are among the most accomplished and are clearly representative of a particular Nordic strand in representational chess piece manufacture. The motifs on the panels of the thrones of the principal figures are stylistically similar to a number of Romanesque carvings centred on mid 12th-century Scandinavia (Taylor, 1986, pp. 9-15), and a case can be made for their production in Norway, and even possibly in Trondheim, some time in the second half of the 12th century (M^cLees, forthcoming).

In 3.2.3. below various comparisons are drawn between the probable merchant's hoard of luxurious pieces from Lewis, their sister piece from St Olav's, Trondheim, the humbler Norwegian "king" pieces in wood, the possible "hnefi" figures from Viking contexts in Iceland and Sweden, and a possible "transitional" form from the Louvres museum, which all, it is postulated, anchor this particular application of lively naturalism to the carving of small gaming-pieces within a Scandinavian tradition with roots extending back into the Viking Age.

Characteristic 8 x 8 chess boards rarely survive from the medieval period. Chequered squares first make their appearance in Europe during the 11th century. Boards were of wood or metal, though in Kroka-Refs saga (second half of the 13th century) the 11th-century king Harald Hardråde is given a combined chess and hnefetafl board of walrus ivory as a present from Greenland (Murray, 1913, p. 757). The double-sided single panel format is a characteristic feature of boards from Viking and early medieval Scandinavian contexts (though the fashion was also enthusiastically adopted in medieval Europe), and this particular reference is also interesting in demonstrating the association, in the 13th-century writer's mind, of chess and hnefetafl - the new game and the old. As stated above, Murray suggests the displacement of hnefetafl by chess in Iceland during the 13th century, though in this saga at least there seems to be both a familiarity with the ancient game and the implication of a harmonious assimilation with the new imported game, though the reference to them is admittedly in historical terms.

On balance, it seems probable that chess came to Scandinavia during the course of the 12th century; certainly someone well aware of Scandinavian, and in fact, Norwegian artistic motifs, as well as the specific requirements of a chess set, sat down and made the Lewis and Trondheim ivory pieces around the middle of that century. These were probably highly-valued articles. Humbler examples occur widely in Scandinavian contexts, including towns, in the 13th century, reflecting perhaps a wide dissemination and appreciation of the game here by that time, though probably restricted to the social groupings noted above.

2.3 The Medieval Games of Tables: "Kvatrutafll".

Tables is the generic name for a range of games played with sets of counters, or "tablemen", on a board similar to that used for modern backgammon, the moves being determined by the throwing of two or sometimes three dice (see frontispiece). Murray (1941) has identified at least 25 medieval varieties of the form.

In Scandinavia the term "tafl" was adopted very early, and refers to any game played on a board; in written sources compound words occur when a particular game is referred to, examples being "hnefetafl" or "skaktafl" (chess), though the earlier references to "tafl" probably relate to the early North European board-game hnefetafl (see Murray, 1941, pp. 57-69, and 1952, pp. 117-29).

A variant of tables known in Iceland in the 12th and 13th centuries is kotra or kvatruatafl, and it is to this period that the earliest appearance of the genus is documented in Scandinavia (Murray, 1952, p. 117), the form having been known in medieval Europe from the 11th century (as a derivative of earlier Roman board games). Fiske (1905, pp. 328-9) postulates its introduction into Iceland either from Germany via Sweden, or from France via Scotland or, more feasibly, via Norway, though there is little or no direct evidence for any of these possible routes (though see Chess section for an account of the cultural and commercial links between Norway - and Trondheim in particular - and Iceland). There are a number of saga references from the 13th century onwards, including a slightly ambivalent reference in the Sturlunga saga to a game of kvatruatafl played in 1198 (see Fiske, 1905, pp. 336-47 for numerous examples). The Norwegian merchant in Kongspegelen (The King's Mirror), a moral treatise written c. 1250, asserts that: "It is good breeding to shun table-games ('tafl') and the throwing of dice", though the broad application of the word "tafl", as occurs here, has been noted above. The rich merchant further advises his son to avoid "... drink and games, whores, quarrels, and dicing for money, for on these foundations are built the greatest misfortunes....".

Discs of skeletal materials, wood and stone comprise frequent and ubiquitous finds from medieval excavations, and they are particularly common on urban sites (see examples in 3.2.4-6 below). The bulk of these can probably be associated with tables, most particularly the decorated varieties in ivory and bone (see MacGregor, 1985, pp. 135-7 for the characteristics of the range). These are not to be confused with draughts (Nor. damspill) pieces, which they resemble, as draughts occurs widely only after ca. 1500. However, other medieval games possibly used discs, notably the line-games merels and alquerque (see 2.4.), though the crudity of some of the extant boards may argue for the corresponding use of playing pieces such as stones or even, perhaps, the simple stone and wooden discs, of which there are large numbers on urban sites like Trondheim. No characteristic tables boards have been recovered from medieval Scandinavian contexts, although a unique and remarkable example, complete with the requisite 30 carved red deer skull and antler discs, was recently recovered from an 11th-century rubbish pit in Gloucester, England (Stewart and Watkins, 1984 and 1988).

Tables had an enduring popularity, as a chamber game and in more public contexts such as taverns, throughout the medieval period, and indeed it remains popular (as backgammon) today. Despite the impact of chess, which in Scandinavia may have usurped older native games such as hnefetafl from the gaming repertoire of the higher echelons of society at least, tables continued to be played, and was very popular "if only because it was so much better adapted for gambling" (Eales, 1985, p. 50). The quote from Kongspegelen above, as well as the evidence of contemporary legal constraints, illustrates the degree to which dicing and playing games for stakes preoccupied the medieval mind.

2.4 Merels and Alquerque.

Merels (Nor. møllespill), a simple line-game still played today, has a long ancestry, and is known worldwide. The Viking ship-burials at Gokstad and Årby produced examples, the former comprising one half of a finely-made double-sided single panel of wood, with a hnefetafl lattice carved on the other side. The best-preserved Library Site hnefetafl/merels board (Plate 11) is of much cruder execution, though the double-sided format is clearly traditional and here is seen to persist into the 12th century.

In the design of the playing-area, or lattice, the known Scandinavian version comprises the so-called larger merels (popularly known in Britain as "nine men's morris") in its original form (later forms in the medieval period added diagonals from each corner). Although essentially a simple game with the aim of putting three pieces into alignment, the game was a source of a number of very complex written "problems" (an intellectual fashion relating to chess too), widely circulated in the medieval period, and it could also be played with dice (see discussion under 2.5). The game, of course, could also be played by children and the uneducated, and in fact it gradually came to be regarded, by the self-conscious inhabitants of the increasingly cultivated medieval world, as rather too simple and unsophisticated, its status in Europe ultimately diminishing to that of a child's game.

There is no explicit evidence regarding the forms of the pieces used on these Viking and medieval boards; each player required nine, each set differentiated, perhaps by form, decoration, colour, or a combination of all three. The simplicity of some of the boards from urban sites in Norway suggests the use of correspondingly simple playing pieces - in the Trondheim sample this might conceivably encompass the various bone, stone and wooden discs (perhaps the use of different materials constituted another means of differentiating between opposing sides?).

A related game, though essentially a simple war game, which utilizes four adjoining smaller merels boards, is alquerque. This has its European roots in Spain, which in turn received the form from the Moorish invaders. It was known throughout S. and W. medieval Europe, although until the unique find of such a board in Trondheim in the early 1970's, its presence in Scandinavia was undetermined. This find came from a 16th-century context, though not from the Library Site, unfortunately.

Alquerque and chess are the games from which the later simple battle game draughts (damspill) derives, although this latter did not become widely popular until the 16th century.

2.5 Dice-play.

Dice (Nor. terninger), in a variety of forms and materials, are among the earliest entertainment equipment known to man (see Bell, 1960, Ch. 5).

Dice are recorded from Scandinavian sites from the 5th century on, and the oblong Viking form is a frequent find in grave assemblages (see Petersen, 1914). In such contexts dice are frequently found in association with numbers of hemispherical gaming pieces. The Viking game hnefetafl did not require the use of dice, so this association is problematical, as is the whole question of correlating the various enigmatic surviving pieces from Viking and early

medieval Scandinavian contexts with games whose names and rules may be known, but which are incompletely represented in terms of directly attributable items (the rare exception being the characteristically designed boards which are demonstrably equatable with hnefetafl). That the dice may not relate functionally to the pieces found in association, but rather constitute items used exclusively for dice-play, is of course one explanation for this enigmatic and apparently contradictory association, as is the possibility that dice and pieces together (or even independently) formed components in another board-game, perhaps one that was never mentioned in the sagas and which has been lost to us.

However, it might also be noted that the game of merels was known to the Vikings, and, as exemplified by the double-sided board found in the 9th-/10th-century Gokstad ship-burial, was often actually physically combined with hnefetafl. Such clear evidence as represented by such composite boards is rare in archaeological contexts, especially graves, where usually all but the metal bindings of the boards have decomposed. Nevertheless, it is known that, at least in the medieval period, the use of dice in merels was not uncommon (Murray, 1913 p. 615). Might not the association of dice and playing pieces in Viking contexts be explained thus? Their association with possible hnefetafl pieces is therefore less perplexing in view of their possible use in relation to a different game played on the back of the same board?

As with other known games, the use of dice is frequently mentioned in the poems and sagas, and their use is proscribed in medieval moral treatises (such as Kongsspegelen - see Tables, above) and in law tracts such as the Frostatingslov where dice-players are condemned to minor degree outlawry (Fiske, 1905, p. 331). King Magnus Lagabøte's Town Laws of 1276 contain a particularly stringent clause: "If one plays dice games for money then the king's officer may confiscate all that which lies upon the table and each of the players shall pay the king a fine of half a mark in silver...". It is clear that gambling was seen by the authorities as a major social ill, and dice the prime instruments of that evil. In this context it is perhaps ironic to note Snorri's 13th-century account of the dice-throwing between the sainted King Olav and his Swedish counterpart which decided the sovereignty of a contended district in 1020 (St. Olav's Saga).

Again, on etymological grounds, Fiske (op.cit. 336-7) notes the strong cultural links between Iceland and Norway, this time in the diffusion of the dicing tradition.

There were numerous pure dice-games (e.g. "dobbel", "hazard") in the medieval period, though dice were used also in the various games of tables, occasionally in merels, and, unusually, in connection with chess in some early instances (Murray, 1913, p. 431). The medieval mania for using both games of chance and skill as means for gambling is well known from contemporary sources.

Cubic dice comprise another ubiquitous class of find on medieval excavations. The majority are crude and functional, though some are manufactured with care in materials rather more exotic than the usual bone or antler, and FBK has produced some particularly fine jet examples (see 3.3., Fig. 40, Plate 10).

3. THE GAMING ARTEFACTS: A TYPOLOGICAL SURVEY.

3.1 The Categories: An Introduction.

In all, 470 individual items are included in the total corpus of relevant finds.

These may be placed within **three** functional classes:

Class 1: Gaming-pieces - a broad variety of items, individually shaped and fashioned, used in the playing of games of chance or skill, usually on a specially designed board; these are the "men" or counters used to compose differentiated sides which may include pieces of specialized function. The range includes naturalistic or abstract/conventionalized free-standing 3-dimensional carved objects, and flat-lying unperforated discoid counters.

Class 2: Dice - numbered cubes used in games of chance, either independently or in conjunction with board-games.

Class 3: Gaming-boards - the specially designed portable surfaces on which playing pieces are moved in the practise of various games of skill or chance. The individually distinguishable forms of playing surface make these some of the most readily interpretable and attributable of gaming artefacts in terms of function.

Within these functional classes lies a wide range of individualized forms, or categories of gaming artefact. There are **nine** such categories particular to the FBK material (see Fig. 7):

- Class 1:
- Category A: Hemispherical pieces, of bone and jet.
 - Category B: Piriform pieces, of ivory and jet.
 - Category C: Various abstract and naturalistic carved pieces, of wood.
 - Category D: Discs of skeletal materials.
 - Category E: Discs of stone.
 - Category F: Discs of wood.
 - Category G: Miscellaneous forms, of various materials.
- Class 2: Category H: Cubic dice, of skeletal materials and jet.
- Class 3: Category I: Single-panel boards, double- and single-sided, of wood.

As can be seen, these categories are differentiated not only on the basis of form, but also on the basis of raw material (the discs being divided into three in this way). This has rendered the material more susceptible to quantification and interpretation. Some of the categories may be said to exclusively represent individual or related game types (e.g. Category C includes only chess pieces), though in the case of the discs (Categories D,E and F) the categorization differentiates between items whose functions as gaming-pieces *per se* are to a greater or lesser degree in doubt (i.e. the stone and wooden discs), as well as those whose functions are more demonstrable (skeletal discs).

As regards Categories A and B: These items' functional role as gaming-pieces within a geographically, culturally and chronologically defined area is determinable, though the items' precise association with specific known (or indeed, unknown) games, or "families" of games, is often not conclusively demonstrable. These forms, however, are discussed in relation to the known potential range of games with which they may well be associated - namely, hnefetafl and halatafl.

	CAT.	%	No.	
	I	0,5	3	
	H	4	20	
	G	3,5	15	
	F	22,5	106	
	E	49	229	
	D	15	70	
	C	2	8	
	B	3	15	
	A	0,5	3	
	9	100	470	TOTALS

Fig. 7

Table presenting the range of categories with their individual percentages and totals.

As stated, Category C comprises types related to the two major formal traditions recognizable as belonging to one particular game, namely chess.

The various discs, Categories D, E and F, have been differentiated according to the raw materials used in their manufacture. However, this distinction (allied with other criteria) may also reflect different functional roles: the skeletal discs, predominantly decorated, are likely to be associated with the tables genus; the wooden discs are somewhat less categorically definable as gaming-pieces, though it is very probable that the decorated wooden discs bear the same functional role as their skeletal counterparts; the stone discs, almost exclusively plain, are the most ambiguous in terms of function, their role as gaming-pieces dubious, there being too many formal similarities with items such as spindle-whorls.

Category G includes pieces which have certain affinities with all the former categories, though which do not conform totally to their formal or functional criteria, as well as items of rather more uncertain association and/or formal singularity, which, although probable gaming-pieces, are not readily attributable to any particular form of game.

Categories H and I are self-evident in terms of form and function, though even here there are some internal distinctions to be drawn in terms of the materials used in their manufacture, and in the potential variety of their functional application (i.e. dice may be used in a number of gaming associations), as well as in the actual physical form of the boards and the varieties of game types and combinations thereof represented on them.

3.2 Class 1: Gaming-pieces.

3.2.1 Hemispherical pieces, of bone and jet (Category A) (Plates 1, 2 and 3).

There are 3 such objects - 0.5% of the total sample. Two are made in bone, one in jet. These may be compared to certain recognized types known from Viking-Age or early medieval contexts, and may relate to the playing of native games such as hnefetafl or halatafl.

The finest piece is FG 686 N78392 (Fig. 8), a well made onion-shaped hemispherical form, with a squat rotund body surmounted by a flattened knob, ornamented with a single circumferential line at its neck and perforated by a basal hole. This piece conforms well with the third (Type C) of the three forms set out by Petersen (1914, pp. 86-7) in his serial typology of hemispherical gaming-pieces. This is a classic form, closely related to known Viking examples, though Petersen notes an apparent late Viking/early medieval provenance for most of these Type C forms (Petersen, 1914, p. 87). The piece is burnt white and is of bone of uncertain origin. Its basal perforation is pointed, near-centrally placed, a product of the manufacturing process (turning on a lathe?) and/or a functional facility, perhaps for holding a peg? (see discussion under 3.2.2. below). This find is from a mid 12th-century context (early Phase 6).

A piece of similar form, though with a less developed and well-made character, is FU 512 N96502 (Fig. 9). It is a less rotund hemispherical type, and although not strictly in conformity, may be regarded as a variant of the Petersen Type

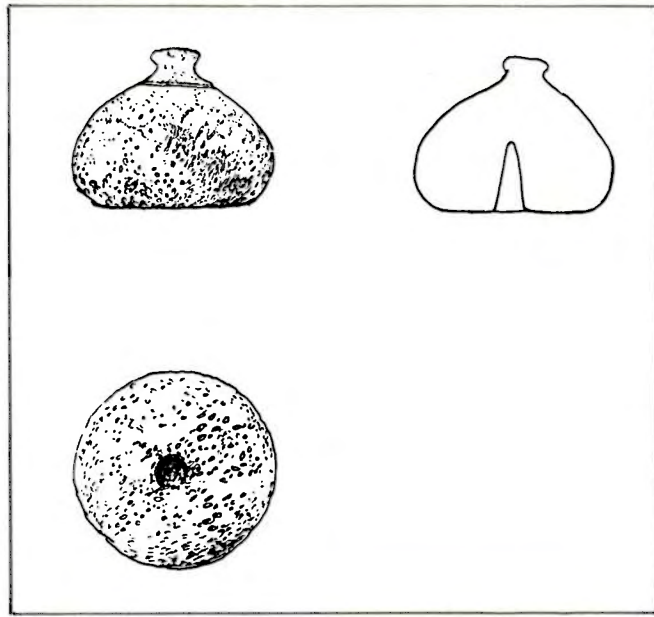


Fig. 8

FG 686 N78392: hemispherical piece (early 12th century). 1:1.
Drawing: Runi Langum

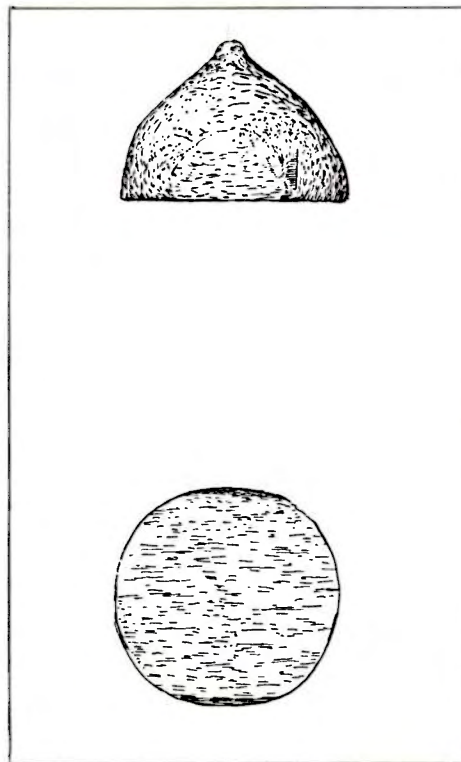


Fig. 9

FU 512 N96502: hemispherical piece (mid 11th century). 1:1.
Drawing: Runi Langum

C form, or a cross/transition between the similarly hemispherical but unknopped Type A and the bulbous and knopped Type C. This particular piece bears a small nipple-like projection rather than an emphatic knob. Parallels of broadly comparable form do occur: See the Goltho, Lincolnshire example (MacGregor 1985, fig. 71, p. 130), the bone piece from Jarlshof (in Shetelig, 1954, p. 21), and the finely-made horn piece from the Gokstad ship. The Gokstad and Goltho examples bear a central perforation (the Jarlshof one has not been fully described) while the FBK piece is notable by its lack of one, whatever that may imply as regards mode of production and function (see discussion in 3.2.2.). It is also distinguished by its slightly irregular form, in that it bears, to a greater or lesser degree, localized flattening at diametrically opposed points on its body. It is not certain whether this is deliberate or a product of the natural configuration of the bone (which is dense, and possibly whalebone), an in-built design associated with its primary gaming function, wear associated therewith, or the product of some secondary usage. A personal guess is that these flattened sides are either natural to the bone, or reflect deliberate refining of a piece which may have been too large to fit on the squares of its associated board, if it is indeed to be associated with a board similar to the FBK examples (3.4.1.) (where the individual cells can only accommodate pieces with a maximum diameter of 3 cm, and compare this piece). Note, in comparison, similar flattening on a plain whalebone(?) disc, FU 264 N58277.

As noted, the dense structural mass of this piece appears to be consistent with whalebone, and MacGregor (1985, p. 135) points to the frequent use of whalebone in the manufacture of such pieces, a material to which Scandinavia, and particularly Norway, "had greater ease of access".

This piece's characteristic form should allow its classification as a gaming-piece, a variant of the late Viking - early medieval forms, probably relating to a native game such as hnefetafl. It derives from a mid 11th-century context, and is thus one of the earliest gaming-pieces from the site.

The third piece in this category is made of jet: FL 521 N33332 (Fig. 10). It is a squat bulbous hemispherical piece closely resembling Petersen's Type A form (1914, p. 85), though it may also be favourably compared to the Type C variety, though without a knob. It is not certain whether this is a finished object, and it may well have been split during fabrication. Its body is generally unsmoothed and knife pare-marks are clearly visible. The piece is bored through completely and centrally (though at a slight angle) by a narrow groove (0.2 cm diam.), though the hole's original diameter may have been larger. Its very presence, however, is disconcerting, as complete perforations of such objects are suggestive of primary or secondary use as spindle-whorls, though it seems rather unlikely that such a light object, made of a prized material, should be used thus.

If this piece can be categorized, on the basis of form, with the hemispherical gaming-pieces, then it constitutes a possibly unique example of the use of jet in their manufacture. In addition, its presence on FBK, in possibly half-fabricated form, implies that there is working of jet, an imported raw material, within a local context. This item was found in a late 11th - early 12th-century context.

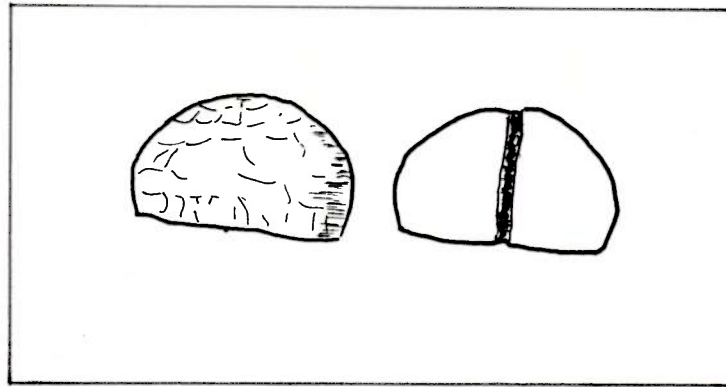


Fig. 10 FL 521 N33332: hemispherical piece (jet) (late 11th - early 12th century). 1:1

These particular forms survive in contexts between FBK Phases 2 to 6, though apparently strictly no later than the early 12th century, and they clearly owe more to practises rooted in native Viking traditions than in imported customs. Their local manufacture in familiar materials and for familiar games might reasonably be implied.

3.2.2 Piriform pieces, of ivory, bone and jet (Category B) (Plates 2, 3 and 4).

This small but distinctive group, comprising some 15 individual items, or about 3% of the total sample, occurs in morse (walrus) ivory (13), bone/antler (1), and jet (1). As with the former category, these pieces have strong Nordic associations, and may relate to hnefetafl or halatafl etc.

By definition these are pear-shaped, with a flat base and squat bulbous body surmounted by a thinner flanged and conical projection, or knob (see Fig. 11a). There are three examples of unfinished pieces (e.g. Fig. 12). Similarly, there are pieces which appear to have been re-used for secondary functions, probably as spindle-whorls (three examples), and of the rest only two are complete and seven are damaged/fragmentary pieces. All pieces, excluding two of the unfinished examples, bear a characteristic basal perforation (complete and enlarged in the re-used items), placed approximately centrally (though with deviations) and bored axially. (For the range of such types, see the illustrated examples in the Catalogue).

The structural mass of most of the pieces (which vary in size from 1.5 cm diam. to 3.5 cm diam.) is distinctive and consistent with the morphology of morse ivory (see MacGregor, 1985, p. 18), and colouration varies from dark brown to light yellowish brown to, in some cases, reddish brown. The better-preserved ivory examples portray the care involved in their manufacture and are near-symmetric and regular, often smoothed or burnished. The reddish brown colouration on some items may hint at former artificial colouration of the surface (by application of purpurin of the madder root perhaps?).

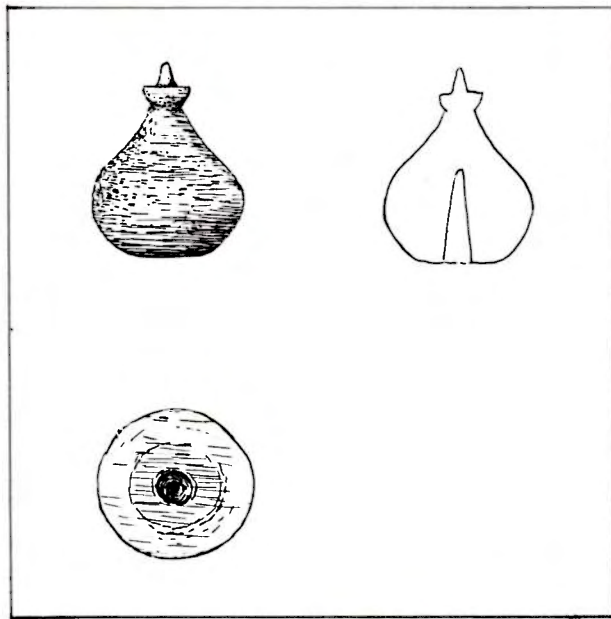


Fig. 11a *FA 700 N39594: piriform piece (11th century) 1:1.*
Drawing: Runi Langum

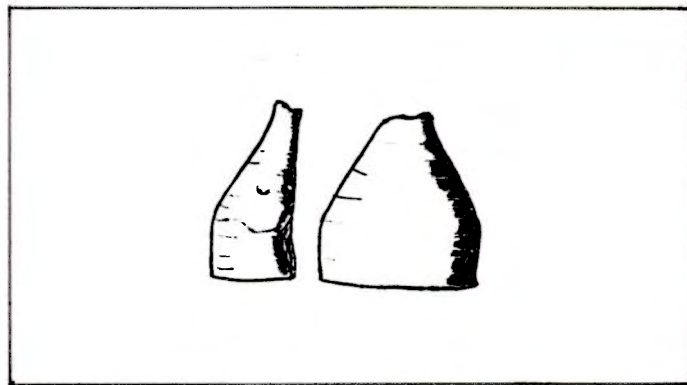


Fig. 11b *FE 1088 N37509: piriform piece of jet (11th century). 1:1.*

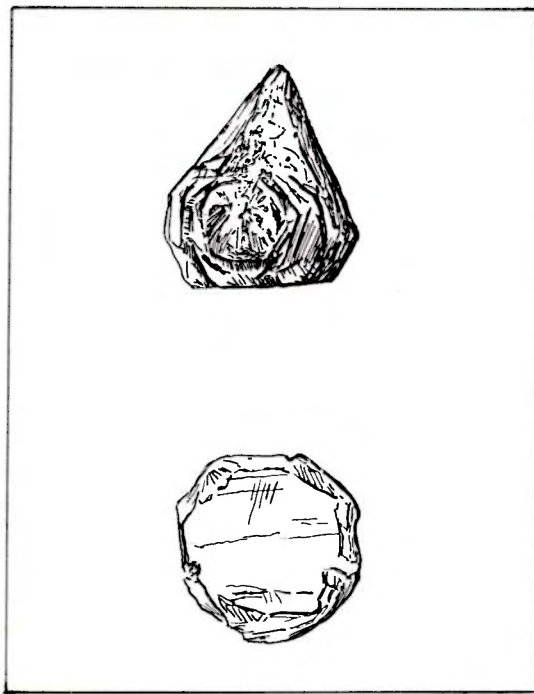


Fig. 12 FA 686 N39919: piriform piece, half-fabricated (mid-late 11th century). 1:1. Drawing: Runi Langum

The regular and near-symmetrical forms displayed by this group argue for the use of a lathe (bow or pedal) in their fabrication. Some bear faint circumferential grooves which may result from such a process. Whether or not the deep basal perforations common to the finished pieces are by-products of lathe-turning (i.e. formerly housing the lathe-bit) is open to debate, and in fact their raison d'être is not conclusively determined. A number of aspects should be examined:

The table (Fig. 13) shows the range of diameters and depths of these holes in relation to the size of object. The majority (1-8) display a broad similarity in their respective holes' diameters and depths, factors which consequently seem to be independent of the actual size of the object i.e. a larger object does not necessarily have a wider or deeper hole and a smaller object a smaller hole. (The secondarily used objects, being also among the larger of the objects, have had their holes enlarged, clearly in order to accommodate a spindle).

The standard proportions of the holes in these variably sized objects implies the presence of some consistent factor in their manufacture. The holes may constitute by-products of a specific manufacturing process common to all (i.e. the use of a standard tool in a standard procedure, for example a lathe-bit?), or a prescribed in-built aspect of their design determined by the requirements of a specified function, where the size of hole (again possibly determined by a standard tool?) is consistent despite the size of object. Perhaps the hole was designed to house a peg by which the object could fit into the holes in a perforated board? Object 9 bears a very shallow hole, though its diameter is

consistent with its fellows. However, this piece (FU 403 N91266) is most probably half-fabricated and is of a different material, antler. A half-made piece in morse ivory FA 686 N39919 (Fig. 12) possesses no such hole, and clearly bears marks resulting from the use of a knife, at least at this stage in its manufacture (as does FU 403). If these are typical examples of stages in the manufacturing process, they imply that if a lathe was used at all, it was used in the finishing process.

	HOLES		OBJECTS	COMMENTS
	Diam. (cm)	Depth (cm)	Max. diam. (cm)	
1	0,4	1,2	2,0	
2	0,4	1,5	3,5	
3	0,5	1,5	3,3	
4	0,5	1,2	2,0	
5	0,5	1,3	2,6	
6	0,4	1,5	1,7	
7	0,4	1,3	2,1	
8	0,4	1,0	1,9	
9	0,4	0,3	1,5	unfinished
10	0,8	2,2 (complete)	3,1	re-used
11	1,0	2,5 (")	3,0	"
12	0,8	1,7 (")	2,5	"

Fig. 13 Table showing range of dimensions of holes in 12 perforated piriform pieces of various sizes.

Another mode of manufacture might be considered for which the FBK examples might offer some evidence. The holes in 1-8 extend for no less than 1 cm, and usually no more than 1.5 cm into the body of the pieces. All have a gently pointed terminus, implying their formation with a pointed boring tool. Furthermore they are usually cleanly-cut and rounded or sub-rounded, displaying a near standard diameter of 0.4-0.5 cm. On close examination a number of these holes displayed, at their mouths, lightly incised vertically-running grooves extending a short way into them, usually one or two or four in number the latter opposed diametrically at regular intervals (see FF 983 N33186). These may be linked either to their formative process or the insertion of something into the pre-existing hole. Ambrosiani (1981, p. 134) suggests that a small object, such as a gaming-piece intended for fine fashioning, could well have been accommodated on a hand-held(?) tool to allow stability during the process. She interprets a small subsquare antler block found in Ribe as such a tool. It has three iron pins, though only the central one projects. It is pointed, but, notably, has a square basal cross-section. Thus the pin could be bored into the object, while the square base, when lodged in the hole, prohibited rotation while the craftsman fashioned the object. A number of bone and antler objects from sites such as Birka and Ribe display these holes and Ambrosiani notes that the raw pieces of antler tine are not perforated, while the gaming-pieces which are decorated and further along in the manufacturing process bear one, or two, holes, thereby suggesting that these holes are indeed part of the manufacturing process. (The provision of two such pins, resulting in two holes, would of course increase stability in the use of such a block).

When one notes the characteristic grooves on the interiors of some of the FBK piriform pieces, their correspondence with a pattern consistent with the use of such a square-based pin may hint at their manufacture, or at least their finishing, by such a method.

Some factors may, tentatively, mitigate against these holes being a direct by-product of turning on a lathe: The holes are frequently eccentrically placed and askew (though in this instance note the exaggeratedly off-centre position of the hole on even such a clearly lathe-turned item such as the later medieval gaming-piece FJ 86 N82619, Fig. 36); a number of pieces are ovoid in cross-section and some are lop-sided when viewed from the side (though an off-centre lathe bit might lead to this?). The hand-prepared pieces described above show that at least some of the fabrication was conducted without mechanical aid, while the lack of a hole on the hemispherical piece FU 512 N96502 (Fig. 9) shows that the provision of a hole is not universal to the range of such objects made from skeletal materials. In addition, it may be important to note that such holes are not universal to the whole range of hemispherical and piriform pieces, as the versions manufactured in other materials such as glass, amber and clay (and possibly jet - see FE 1088, Fig. 11b) do not appear to possess them. This apparently exclusive association of pieces manufactured in organic materials and the provision of holes may suggest that the holes are a) linked to a manufacturing process (turning?) specific to the working of such items in organic raw materials which has no relationship with the end product's use, say as pegged pieces used on a perforated board, or b) denotes some active process of selection determined by material **and** function, in fact reflecting the innate receptiveness of resilient organic materials to perforation, while materials such as amber, glass and jet, being more fragile, are less suited to perforation; the hole is therefore an essentially functional feature rather than a by-product of the manufacturing process. That this function involving the use of a basal hole was an optional rather than a universal feature of the game, or games, for which hemispherical and piriform pieces, of whatever material, were destined, is suggested by the fact that not all such pieces bear holes, and perhaps points to differing contemporary circumstances surrounding the playing of the same game (see further below).

It should perhaps be noted also that the Ballinderry board is unique in possessing perforations; other gaming-boards broadly contemporary with many such perforated pieces lack holes. However, an interesting correlation might be pointed out - the holes on the Ballinderry board are 0.5 cm in diameter - Hencken 1933, p. 85 - note the comparable diameters of the FBK hemispherical and piriform pieces!

Of course, the forms of pieces and boards might vary even within the same type of game, and the variety of materials used, and forms adopted, might just as well reflect variants within the games, or other game forms unknown to us.

The FBK jet example (FE 1088 N37569, Fig. 11b) does not appear to possess a basal perforation. It is a fragment, however, and its interpretation as a piriform gaming-piece is not fully assertable, and it may not be a finished object. The form is distinctive and familiar, however, and if accepted as a fragmented piriform gaming-piece, it comprises, like its hemispherical jet counterpart (see above, 3.2.1.) a possibly unique item, and, if indeed half-fabricated, is suggestive of the working, in early medieval Trondheim, of a prized imported raw material. In lacking a hole, it provides further evidence for the possibly exclusive correlation of holes with pieces made in organic

materials noted already. (That holes occur also in items of organic material other than skeletal materials is evidenced by a basally perforated wooden hemispherical piece - illustrated in Blomquist/Mårtensson 1961, p. 206).

In the context of the discussion of the possible correlation of basal holes and function, it should be noted that some of the wooden chess pieces (3.2.3.) have crude, shallow, basal perforations. This may perhaps hint further at their being by-products of methods of fabrication particular to organic materials. Alternatively, an idea of Sir Mortimer Wheeler's may provide a more attractive explanation for this enigmatic phenomenon of basal holes: Although chess pieces are not normally pegged, it is not wholly unknown; a pegged bishop is described and illustrated by Wheeler (1927, pp. 46-49), and he suggests that such pegged pieces were perhaps used aboard ship - in other words, they might be respectively described as pieces making up "travel hnefetafl" or "travel chess" sets! Such an explanation takes on a particular resonance in the case of the perforated hemispherical and piriform pieces used in Scandinavian and Viking contexts, when one bears in mind these peoples' special relationship with the sea. Such pieces sitting in perforated boards would have been perfectly suited for whiling away long hours in heaving boats on the open sea. Perhaps this is why we find both perforated and unperforated pieces - not all were destined for use on board ship; after all, didn't the women, who also played hnefetafl, stay at home? An explanation for the absence of pegs in the perforated pieces may perhaps lie in their having been designed to be used on both perforated and unperforated boards, the pegs simply being added when a sea-journey was undertaken; since these pieces are found on land, they are naturally not usually provided with pegs! And regarding these boards: the perforated Ballinderry board, found in the west of Ireland, might have been the possession of a roving Viking, and formed part of his transportable ship-board equipment; the Trondheim boards, however, may have formed part of someone's household equipment, or at least were not designed for use at sea (though how does one explain the unperforated board from the Gokstad ship-burial - perhaps the voyage to the afterlife was expected to be smooth?! - see below, 3.4.1.). Such explanations have a certain cultural validity; however, until pegged pieces are found stuck into a perforated board we will never be quite certain about such questions of function.

Although placed in Category G (miscellanea), a probable variant of the piriform type occurs on FBK. It is FE 838 N28811 (Fig. 35), a "double" (or composite) piriform piece, incorporating two pear-shaped forms, a larger lower body supporting a copy, re-worked in diminutive form, with a pointed tip. It has been well made, and bears (proportionate to its size) a large basal perforation, of c. 0.4 cm diam. (though of 0.5 cm depth). This compares favourably with the dimensions, notably the diameter, quoted for the "single" piriform pieces. This piece's affinity with the larger single piriform objects is clear, though it may be a developed, later medieval variant, and is, consequently, placed under "miscellanea", as in functional terms it cannot be confidently associated with the main group. Note that two broadly similar pieces were found in late medieval contexts in Lund, Sweden (Martensson and Wahlöö, 1970 p.84).

N.B. The classic "single" piriform pieces come from FBK contexts from Phase 3 to Phase 9 (i.e. A.D. 1075-1375; revised c. 1025-1325). However, if the re-used objects and those of clearly residual character are discounted, their chronological spread is confined to phases 3 to 5, and strictly from contexts earlier than the mid 12th century; their function as pieces exclusive to late Viking/early medieval indigenous gaming customs is therefore compatible in terms of their temporal distribution.

As a footnote to the piriform variety: It is interesting to note that this distinctive form occurs in metal also, such pieces being normally interpreted as weights (see Grieg 1933, pp. 371-2 for example). On FBK three such finds occur: FL 679 from Phase 5 (A.D. 1125-1225), FM 32 N4982 and FM 76 N56184 from Phase 10 or 11 (A.D. 1325-1600). The FBK examples correspond to the chronological range for such items quoted by Grieg. The utilization of an antiquated form in another functional context gives an interesting insight into the reapplication of ideas in the community of craftsmen and consumers.

3.2.3 Abstract and naturalistic carved pieces, of wood (Category C) (Plates 5 and 6).

This category is constituted exclusively of chess pieces from FBK and comprises some 8 objects, or 1.7% of the total sample. These may be placed into two broad stylistic groups on the basis of distinctive analogous traits: abstract (or non-representational) and naturalistic (or representational) - see 2.2 above. All are carved in wood. All are from Phase 8 (A.D. 1225-1325; revised 1225-1275), though only from mid-late 13th-century contexts.

The abstract group is the largest, with 7 of the items. However, these should be subdivided into classic Arabic-/Islamic-derived and European-inspired conventionalized forms, while the single naturalistic piece is typical of the mainstream repertoire of representational forms of Scandinavian origin known from the mid 12th century (viz. the Isle of Lewis pieces) (see Chapter 2.2 for discussion of stylistic developments of chess pieces). As stylistic traditions, they overlap in time, the Arabic derivatives persisting (in classic, modified and transitional forms) into the 12th and 13th centuries, the Nordic and European strands of naturalistic forms possibly originating in the 12th century or earlier and popular until the late medieval period, when a revival of conventionalization, though in mainly European-inspired forms, occurs.

FBK has three Arabic-derived abstract forms, including one probable bishop (FH 171 N25557 - Fig. 14) and two principal figures (FK 275 N27285 and N27115, Figs. 15 and 16).

The bishop is a very simply carved item, but it incorporates the diagnostic pair of protruberances characteristic of the Arabic form (see MacGregor, 1985, p. 138 and Murray, 1913, p. 767 for examples). It bears a crude basal perforation which is hard to explain (though see below). A similar item, wrongly interpreted as a "hnefi", comes from Bergen (Terningen er kastet, p. 11).

The two Trondheim pieces interpreted here as principal chess figures both derive from the same archaeological context and are of broadly similar stylistic type, though they differ significantly in size and in specific aspects of form and decoration. In effect, they represent two variations on a theme: Classical Arabic-derived principal pieces (i.e. the king and queen) are essentially of similar design, the only distinction between them being that the queen figure is smaller in size. However, there appears to have been some modification of the classic form in European contexts, with the provision of a protruding knop, unelaborated, as in the case of FBK's smaller piece, or carved with the form and features of a head. While the possibility does exist that these two pieces derive from the same chess set, and that the larger is the king-piece, the smaller the queen, it seems more likely, on the basis of distinct variations

in their design (see below), that they derive from two different chess sets. Their co-survival under the floor-boards of a house (K 39) on sub-site FK may indicate that classic and modified abstract forms (FBK's larger piece is more stylistically "pure", the smaller more "Europeanised") may have been in use contemporaneously, and well into the 13th century.

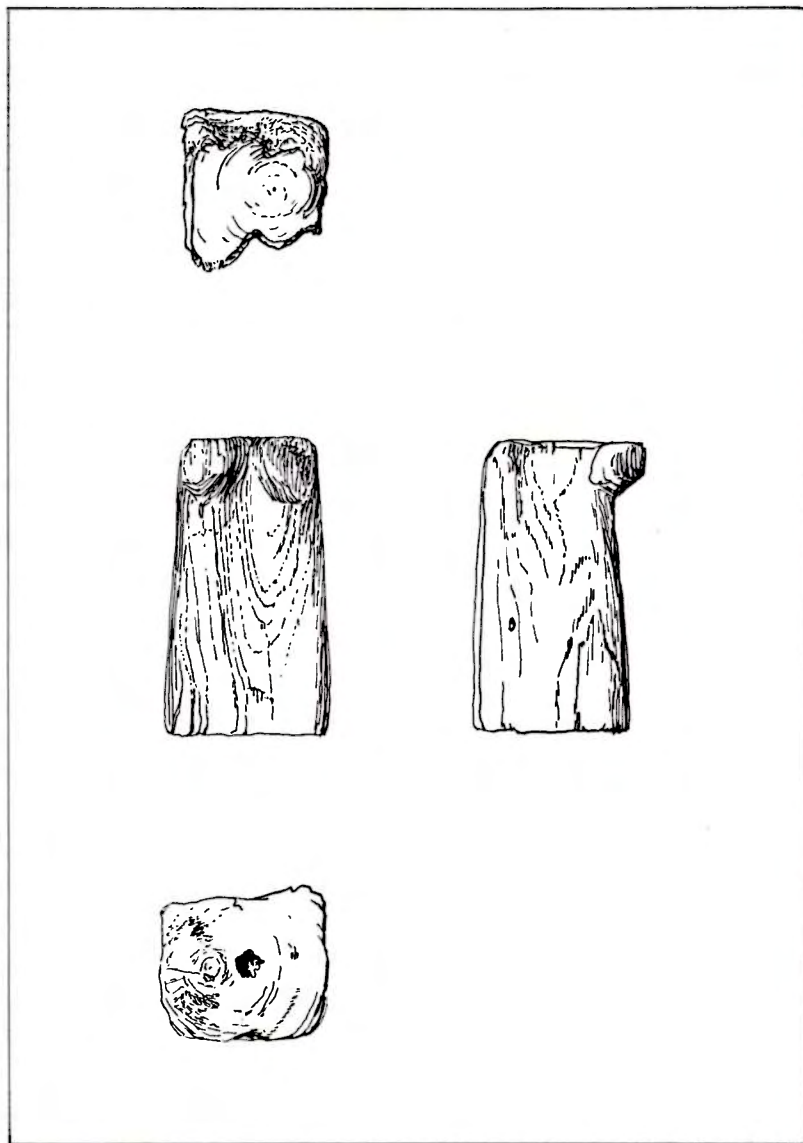


Fig. 14

*FH 171 N25537: chess piece; bishop (mid-late 13th century?).
1:1. Drawing: Runi Langum*

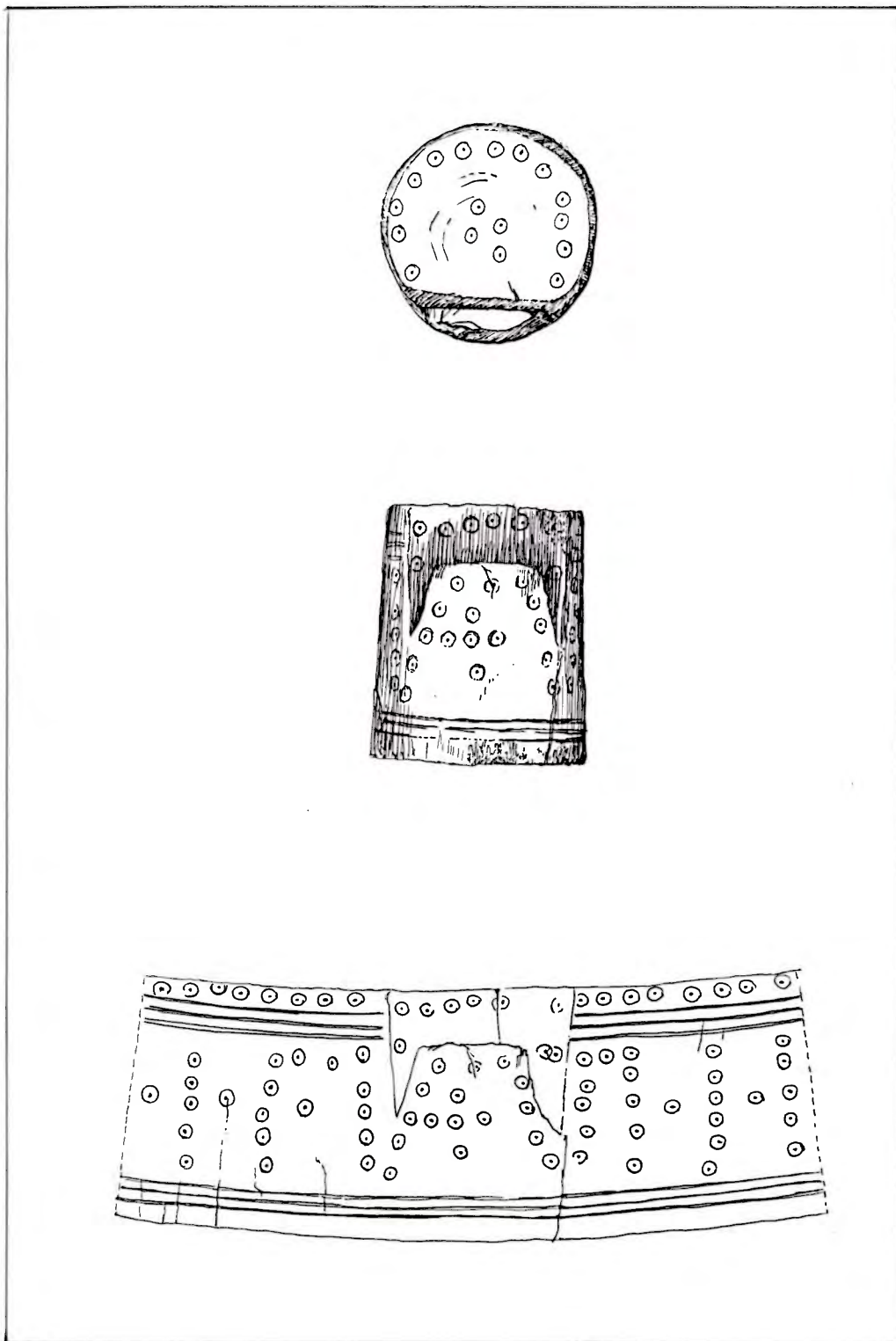


Fig. 15

FK 275 N27285: chess piece; king (mid-late 13th century?).
1:1. Drawing: Runi Langum

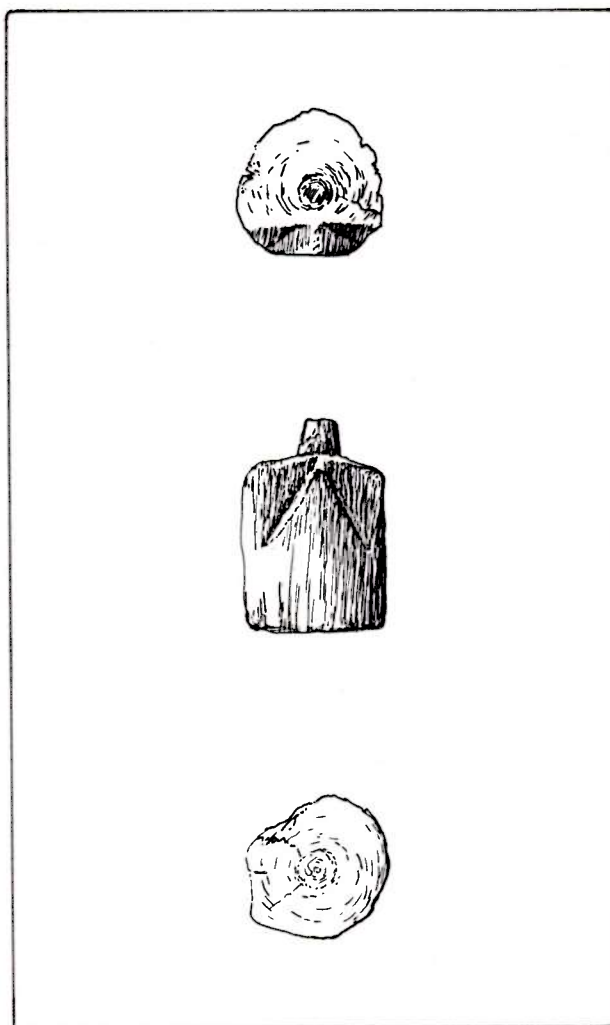


Fig. 16 FK 275 N27115: chess piece; king/queen (mid-late 13th century?). 1:1. Drawing: Runi Langum

The largest piece, N27285 (Fig. 15), conforms to the classic cylindrical form and possesses the upper rebate and paired pointed notches, as well as the dot-and-circle ornamentation common on such forms (MacGregor, 1985, p. 138 and Murray, 1913, p. 767). The smaller piece, N27115 (Fig. 16), as stated already, bears a small knob projecting from the centre of its top surface; it also bears two parallel notches but no intervening rebate, no dot-and-circle decoration, and is significantly smaller. They represent an interesting pair, as they form part of a tradition, developed in most workable raw materials, which occurs in finds from medieval contexts across Europe. A broadly similar Scandinavian example comes from Lund in Sweden (Mårtensson and Wahlöö, 1970, p. 84). The multitude of small variations on the basic stylistic theme, and the use of a variety of raw materials in their manufacture, evidenced in the range of European finds of this type, may well argue for localized production of pieces, the Trondheim examples being no exception in portraying idiosyncratic reproduction of an established design (see below).

As stated by Liddell (1938, p. 29), every chess set demonstrates aspects of conventionalization. The earliest "geometric" conventionalization of chess pieces, in a European context, lies in these Arabic-inspired forms. Of the forms arising independently as a result of medieval European innovation, the earliest member of the chess set to be conventionalized appears to have been the pawn (see for example the "gravestone" and "bullet" forms of some of the Isle of Lewis pawns). The next examples of chess pieces from FBK, though conventionalized, are essentially pawns relating to the non-Arabic, naturalistic chess sets, the Arabic-derived pawns being usually represented by simple cylindrical, thimble-like objects. It must be stated that there is a fair amount of subjective interpretation in the following discussion as the range of the medieval examples of such simple forms is incomplete.

The piece FT 105 55310 (Fig. 17) is a bullet-shaped object with a fluted body (12 alternate ridges and grooves), flat-based, with, like the bishop figure described above, an enigmatic crude shallow basal perforation, centrally-placed (a by-product of turning?). This piece displays certain stylistic parallels with some of the morse ivory Isle of Lewis pawns (Murray, 1913, p. 763 illust.) and although most of the latter have octagonal cross-sections, the bullet-shape and vertical faceting is strikingly similar. (Dalton (1927, p. 80) suggests that such faceted pawn forms are a northern feature and quotes the Lewis analogues).

Another possible variation on this faceted theme is the piece FA 371 N25556 (Fig. 18), although this is essentially cruciform in cross-section. Again it bears one of these centrally-placed axial perforations, although in this case the hole appears to extend throughout the length of the piece (although this is hard to check due to the presence of conserving resin within the hole(s); the conserving process may likewise account for the very dark brown, near-black, colouration of the piece, though deliberate colouration of gaming-pieces through the application of flame is known - see Dalton, 1927).

Further to this phenomenon of basal holes which occasionally occur on these, and other, gaming-pieces: Wheeler (1927, pp. 46-9) illustrates a bone Arabic-style bishop which has a peg, or projection sticking out beneath it, which he suggests was "for insertion into a mortice in the table - possibly, though not necessarily, for use on shipboard". This particular explanation is a tempting one, and has particular relevance in connection with the perforated piriform pieces used in Viking contexts when one bears in mind the Scandinavians' close relationship with the sea (see 3.2.2 above).

The next two pieces, FA 242 N18832 and FA 316 N23030 (Figs. 19 and 20) are more problematical, though of great interest, as they portray, in their forms, broad similarities to both the later European chess pawn forms and the earlier Viking gaming-pieces, notably the piriform pieces (see 3.2.2.). These are small carved wooden objects, simply executed, possibly lathe-turned, though knife-/pare-marks are visible. Of the two, the FA 242 object is rather more crudely manufactured. Neither are perforated basally, unlike the chess pieces noted before, or the piriform ivory pieces.

It is perhaps possible to detect in these pawn-like forms, a stylistic echo of the classic piriform pieces of the late Viking/early medieval period. Although these are not bulbous as such, the provision of a thick base and a body tapering to a worked knop is a formula which, as demonstrable on the FA 316 piece in particular with its slightly bevelled basal profile and the repetition of the body design in diminutive form on the knop, clearly has close affinities with forms such as the "double" piriform piece (Fig. 35) or the classic piriform

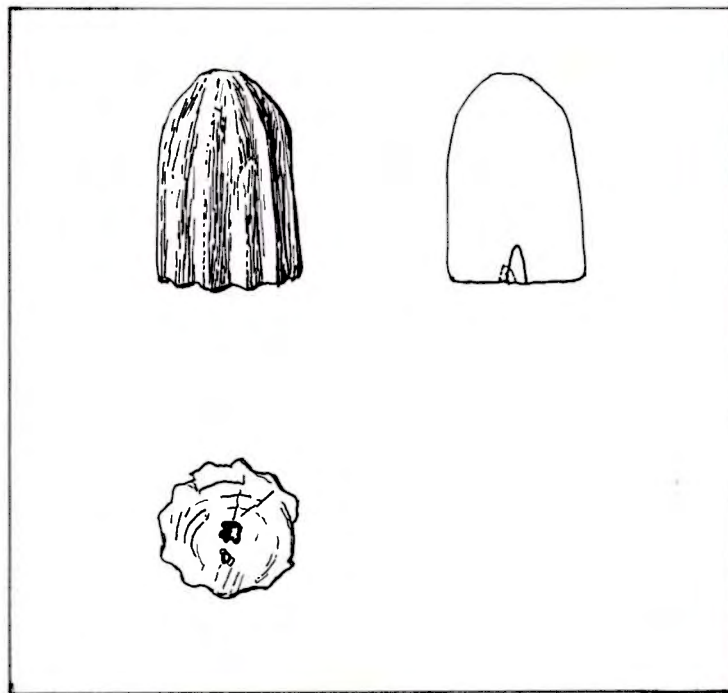


Fig. 17 FT 105 N55310: ?chess piece; pawn (mid-late 13th century).
1:1. Drawing: Runi Langum

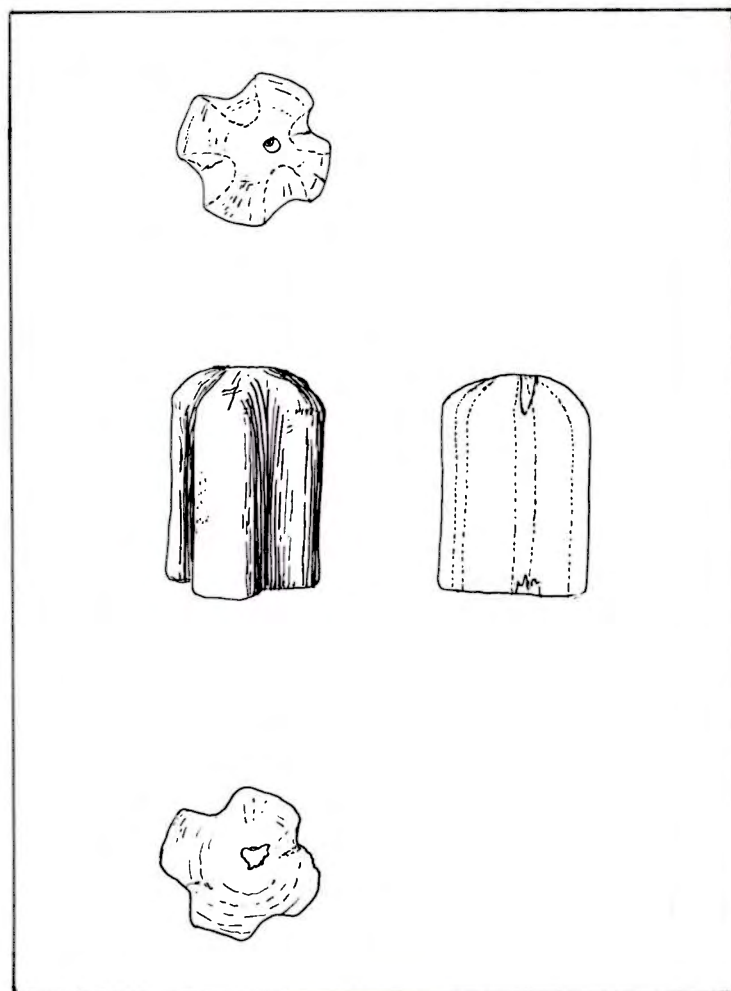


Fig. 18 FA 371 N25556: ?chess piece; pawn (mid-early 13th century?).
1:1. Drawing: Runi Langum

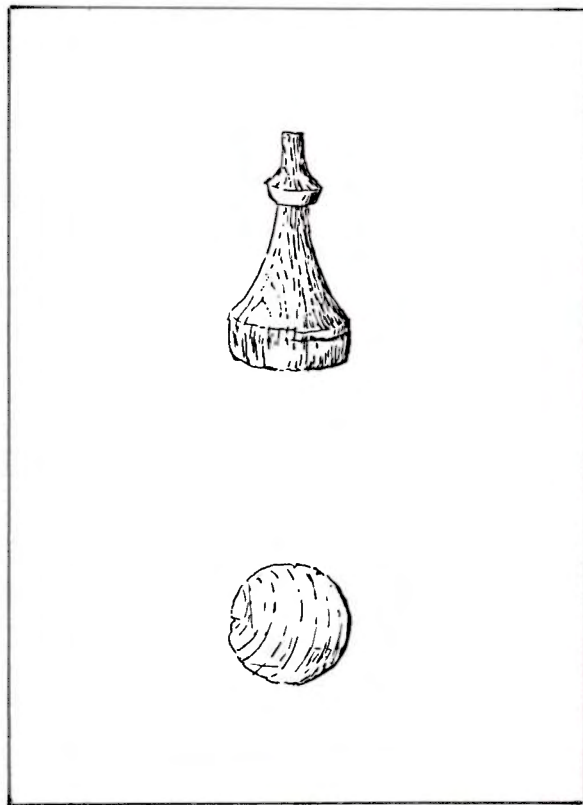


Fig. 19

*FA 242 N18832: ?chess piece; pawn (mid-late 13th century).
1:1. Drawing: Runi Langum*

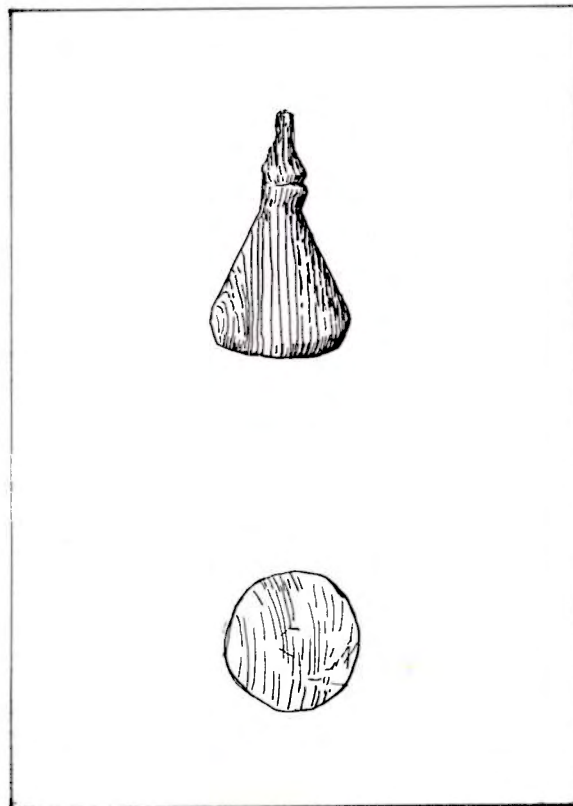


Fig. 20

*FA 316 N23030: ?chess piece; pawn (mid-late 13th century).
1:1). Drawing: Runi Langum*

design (Fig. 11a). There are possible hints at stylistic cross-fertilization here, which may suggest the reapplication and partial reworking of old forms in new, though not too greatly differing, functional contexts i.e. a repertoire of designs known from Viking games is reutilized in, and adapted to, the requirements of the new medieval game. In the case of these chess pawns, functional and formal models lie demonstrably within the range of pieces already familiar within the pre-existing Nordic gaming repertoire. This possibility of the reapplication of familiar forms in different gaming contexts will also be referred to again in discussion of the parallels to the FBK chess king (see below), where certain ancestral Viking echoes are perceptible. The central point here is that, where functional similarity exists (i.e. between hnefetafl "hunn" and chess pawns, or between the "hnefi" and the king, for example), the reapplication of traditional forms to new fashions is a natural progression and may be demonstrable in the comparison of forms with distinctive functions. (In this context compare the pawn of almost classic piriform shape which forms part of a set of abstract chess pieces, classified as 14th-century Nordic, in Wichmann and Wichmann, 1964, pl. 74).

The two latterly discussed pawns may well provide a link (in locally manufactured examples?) between old and new traditions. This is of course dependent on their being accepted as chess pieces rather than later examples of pieces relating to surviving Nordic game-forms, such as hnefetafl and hnettafl. The latter is unlikely, however.

The last piece to be discussed here is the seated anthropomorphic figure in wood, the chess king FH 221 N25647 (Fig. 21). This is a classic naturalistic representation, with numerous analogues, in ivory and wood, simple and ornate. The piece is damaged but nonetheless portrays a familiar image of kingship in the shape of a dignified robed and enthroned figure with a four-pointed crown, holding what appears to be a sword across his knees. It is executed simply, but competently.

In posture and formal arrangement, this king bears a striking resemblance to the world's most famous chess kings, those from the Isle of Lewis sets (see Taylor, 1986). The provision of a square-based throne, the figure's erect seated posture, the positioning of the arms and the sword across the knees, the bold execution of the facial features (in particular the eyes and the upper contouring of the beard on the cheeks), and the four-pointed crown - all these are strikingly analogous features. However, this must be counterbalanced by noting the lack of ornamental design on the back panel of the throne on the Trondheim piece, the absence of any attempt to portray details or folding in the figure's clothing, the shorter beard, curled moustache, and shorter wavy hairstyle of the Trondheim king (in contrast to the long twisted locks of the Lewis kings). Some of this disparity in the comparative details may well be explained, of course, by the differing potentials for ornamentation between morse ivory and wood, as well as the competence of the respective carvers and the differing dictates of contemporary fashions and convention (the Isle of Lewis chess kings themselves are each unique and display variety in details, such as in the provision, or lack, of beards). However, the Lewis pieces probably date from the third quarter of the 12th century, while the Trondheim king, although from a mid - late 13th-century context, has been dated, on stylistic grounds, to the first half, and possibly the beginning, of the 13th century (Martin Blindheim, letters to Riksantikvaren, 8.7.75 and 12.8.85).



*Fig. 21 FH 221 N25647: chess piece; king (mid-late 13th century).
1:1. Drawing: Runi Langum*

The Lewis pieces bear Romanesque ornamental motifs familiar from the mid 12th-century Norwegian artistic milieu, while the wooden king has a more Gothic tone. That the formal (rather than decorative) character of the Lewis pieces should be retained in the Trondheim king may be the result of a natural diminution and variation imparted by time to a long-established tradition of gaming-piece carving; that said, what is remarkable is the strength of the thread of formal continuity which unites this simple wooden chess king with its ivory antecedents of the previous century. Other Norwegian chess kings from the 13th century, manufactured in wood and displaying the same basic attributes of design, though each with individualistic renderings of details, have been recorded from excavations in Bergen (*Terningen er kastet*, p. 15)

and Trondenes, N. Norway (Reyment, P.K., 1977, pp. 36-8). A tradition of carving accomplished chess figures in wood (see also the knight figure from Bergen - Terningen er kastet, p. 16) is certainly an established phenomenon in Norway by the 13th century.

Chess figures of probable Scandinavian origin, in ivory and bone, are to be found in city museums such as Copenhagen, Stockholm, Rome, Paris etc. (see Liddell, 1938, pp. 18-19; Goldschmidt, 1975, various), rather than in archaeological contexts¹. The seated figures (on thrones or horseback) in the Isle of Lewis manner have contemporary parallels, now in museums across Europe, which "bear sufficient resemblance to show that it was not an isolated phenomenon", while later figurative examples are more often ornate "virtuoso carvings" with a number of themes and compositions (MacGregor 1985, p. 139).

In addition to the new Trondheim queen, at least two other pieces, in the Bargello, Florence and the National Museum of Antiquities, Stockholm, derive from the same workshop as the Lewis pieces (Taylor, 1986 p. 14). The humbler excavated wooden examples, such as the Trondheim king, are therefore arguably part of the mainstream repertoire of an early-established medieval Nordic tradition of gaming-piece production, supremely exemplified by the mid 12th-century Lewis pieces and their analogues, and extending (in terms of numbers, contexts and variety) into the 13th century. That this tradition is of Scandinavian origin, possibly with its basis in even earlier representational forms and game-playing contexts, is perhaps detectible through comparison with a number of similar items.

The Viking figures (Fig. 23), usually identified as principal figures ("hnefi") from Nordic game sets (see J. Graham-Campbell, 1980, pp. 24-5), while much simpler in their execution, are, in terms of function, form, raw material and geographical incidence, not greatly divorced from, for example, the Lewis chess kings. As argued already for the pawn-like forms above, continuity in the tradition of gaming-piece production is possibly implicit in both the composition and function of even such individualistic pieces, and the reworking of antique forms by 12th-century, and later, craftsmen in items of closely equatable function, is implicit in their formal similarities.

With particular regard to such formal "echoes": the characteristic two-handed gripping of the beard by these older figures (and particularly the twisted beard of the ivory figure) is mirrored in a medieval chess king (unfortunately unprovenanced and undated) shown in Goldschmidt (1975, Fig. 243) - see Fig.

¹Though at the time of writing an important find from excavations in the ruins of St. Olav's Church during the last century has come to light (Fig. 22). This is the drawing of a fragment (head and shoulders) of a chess queen, finely carved in ivory (walrus?). It is strikingly analogous with the Isle of Lewis chess queens, the hand placed against the cheek, and with the characteristic arrangement and ornamentation of the head apparel. Unfortunately, the lower body and throne had not survived, so comparisons with the complex motifs on the thrones of the Isle of Lewis pieces are not possible. A detailed account of this illustrated item will be published in the near future (M^cLees and Ekroll forthcoming), though all attempts to find the piece itself have so far failed. Nonetheless, this comprises an important find, providing further evidence for a) the introduction of chess into Scandinavia in the 12th century, and b) an assertion that the Isle of Lewis pieces themselves have a close association with 12th century Norway, probably in fact produced in a contemporary Norwegian workshop, perhaps even in Trondheim itself.

24 here. This ivory figure is reminiscent also of the Lewis chess kings in its composition and execution. However, the most striking aspect of the figure lies in its holding a half-sheathed sword in one hand while gripping a long, partially twisted beard in the other, a depiction which, it is suggested here, elegantly combines elements characteristic of the Viking pieces and the early medieval ivories in one compositional unit reminiscent of both.

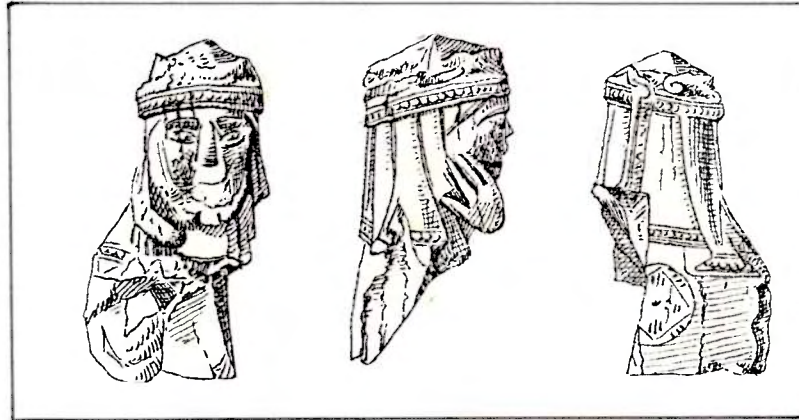


Fig. 22 *Krefting's drawing of a "Madonna figure": actually a chess queen (of ivory?), of Isle of Lewis type. Found in ruin of St. Olav's Church, Trondheim. 1:1*

Fuglesang (1981, p. 25) notes that, in 11th-century Trondheim, some wooden carved objects "illustrate the stylistic purity as well as the high artistic and technical quality of the professional carvers". The presence of much accomplished Urnes work, produced locally it seems, attests the range and quality to be found in local workshops, where established traditions are followed. It also seems that certain standard forms and styles were reproduced by talented local amateur wood carvers, which Fuglesang recognises as being an imitative "folk art". It is clear from this therefore, that the popular reproduction of items within mainstream carving traditions is an established and possibly widely disseminated phenomenon already in late Viking and early medieval Norway.

The painting of wooden sculptures was a feature of contemporary medieval art. Although there is absolutely no evidence to support such a hypothesis, it is possible that even the diminutive Trondheim chess king had its features picked out in different colours, a factor which would have enhanced its worth and character as a status-related luxury item. Even if this was not so, it would still have been necessary to differentiate this piece (and its fellows) from the opposing side in the chess set; there is evidence that some of the Isle of Lewis pieces were formerly coloured red, so perhaps the Trondheim king was distinguished in some similar manner?



Fig. 23 *Left: ivory gaming-piece (?); 11th century. From Lund, Sweden.*
Right: bone gaming-piece (?); 10th century. From Baldursheimur, Iceland.



Fig. 24 *Ivory chess king (12th-13th century); in the Louvre Museum, Paris.*

The diminutive Norwegian wooden chess figures of the 13th century evince the persistence of one strand of a long-established carving tradition which links items of varying sophistication, as glimpsed particularly in the 12th-century Isle of Lewis ivories and in the Viking "hnefi". They portray also the continued popularity of gaming and the strong Nordic association of anthropomorphic pieces therewith. Such pieces, and their numerous conventionalized counterparts, were traditionally combined with the representation of strength and power in the microcosmic gaming world. The new game, chess, itself came increasingly to be seen as a natural and pertinent metaphor for the medieval power structure. As royal and ecclesiastical power crystallized and grew more pre-eminent in 12th- and 13th-century Scandinavia as in Europe, so the panoply of chess figures became, in their strongly naturalistic representation, more concretely related to, and expressive of, the form and character of the developing social order.

3.2.4 Discs of skeletal materials (Category D) (Plates 7 and 8).

FBK has 70 such items, 15% of the total artefact sample. These can be divided into decorated gaming-pieces (57, or 81.5%) and plain gaming-pieces (13, or 18.5%).

As can be seen these are fairly well represented on FBK, though in relation to other discoid forms (see below) in wood and stone, they form a comparatively small group. They do not derive from FBK contexts prior to Phase 5 (i.e. not before A.D. 1075/1100, and in fact probably not until well into the 12th century). Figs. 25, and 28-30 show typical examples of form and decoration. They range from regularly rounded to ovoid, thick and thin. The average diameter is c. 4 cm (range 1.3 cm to 6.0 cm), the average thickness c. 0.8 cm (range 0.2 cm to 1.8 cm).

As regards raw material: The following proportions are based on my own taxonomic identifications, and are consequently open to revision.

Discs manufactured in <u>bone</u> :	69.5%
Discs manufactured in <u>antler</u> :	19.5%
Discs manufactured in <u>ivory</u> (morse?):	5.5%
Discs of uncertain taxonomy:	5.5%

The most popular raw material is bone, and while the bulk is unspecified, my observations suggests that 38% of the bone discs are made of whalebone, typified by dense (and heavy) grey or grey-brown grainy morphology. Items of bone generally appear to have been cut from the donor bone longitudinally i.e. they display a denser structure on one face which merges gradually into a more "spongy" reverse face, this being the surviving cancellous element of the bone. The face of denser morphology (and of greater workable potential) is the one that is decorated (when applied). As can be deduced from the average dimensions quoted above, it is evident that large and thick bones were utilized, and the largest discs usually appear to be of whalebone.

Antler discs form the next largest group and they generally display characteristics analogous to those in bone. However, one distinguishable characteristic is that the cancellous tissue is situated approximately centrally and axially within

them, implying that they comprise sections cut transversely through the antler beam. Most antler discs are of this nature.

A problem of definition arises in this context. Ambrosiani (1984, p. 124) suggests, in connection with Viking finds from Ribe and Birka, that "round gaming pieces with a hole through the middle.....had a porous core no larger than the hole and that it was removed because it could not be decorated like the rest of the piece". However, a number of decorated antler discs from FBK (see Fig. 25 for examples) retain their cancellous cores. Indeed, the problem in distinguishing such so-called perforated gaming-pieces (in all materials) from spindle-whorls of identical nature is such that all perforated forms are excluded from the FBK analysis proper (though some are included in the Catalogue for purposes of comparison). That the bulk of perforated discs are not gaming-pieces *per se* is most likely (and the retention of the cancellous core as described above may well add even more weight to this), although it is possible that some at least are gaming-pieces re-used as spindle-whorls. (This is particularly probable in the case of some of the decorated examples where the motif has been partly removed or defaced by the application of the central hole - see FL 65 N23174, Fig. 26, for example).

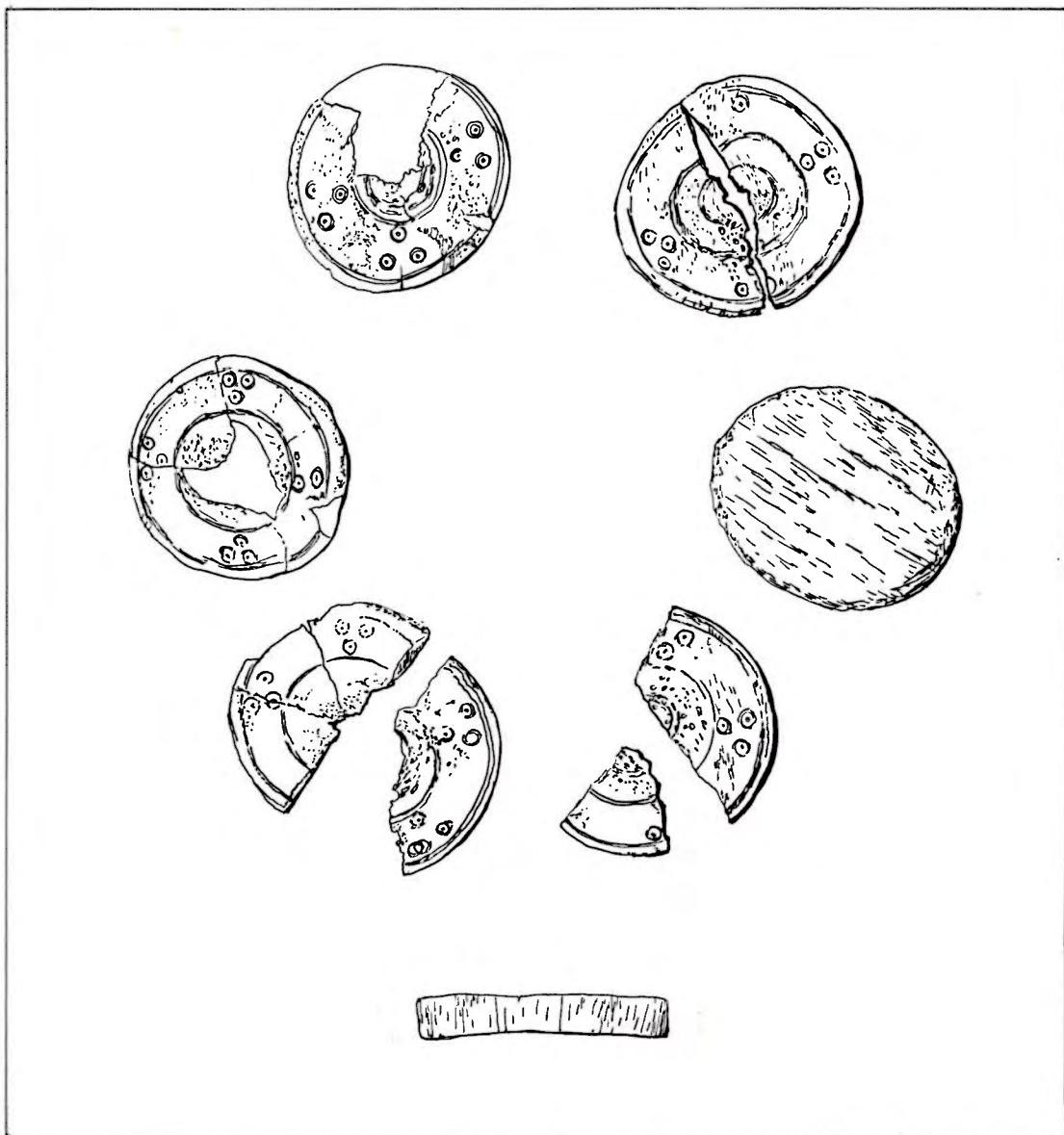


Fig. 25

FA 358 N26416: set of five antler discs, and one bone disc; tables pieces (late 12th - early 13th century). 1:1.

Drawing: Runi Langum



Fig. 26 FL 65 N23174. The Urnes-style decorated antler disc. 1:1.

Ivory discs comprise the smallest proportion. Most have a very dense structure, marbled, and of creamy yellow-brown colouration. The largest is 4 cm in diameter and 0.6 cm thick.

Generally within this category of discs, ornamentation is confined to one face with various arrangements/patterns of incised dot-and-circle motifs and/or incised single or concentric rings, some geometric designs or haphazard grooves and slashes, and only the occasional zoomorphic design. For applying such decorative forms, only simple scribing tools were required (a compass or a fixed-radius scribing tool or a punch, for example), and a knife has been used on many (pare-marks visible on the perimeter surfaces, and some decoration). The use of a saw, and possibly a trepanning saw (MacGregor 1985, pp. 60-1), in the winning of bone discs from the parent mass, is probable. Such tools and techniques were the province of producers of various bone, antler and ivory objects, and it is likely that all such discs in skeletal materials were by-products of specialists in particular fields (combmakers for example?). However, if so, they certainly did not lavish much care and attention on these products, and they are clearly modest functional items from rudimentary sets, rather than items gracing an "exhibition" set. Indeed, some may well have been home-made, they are so poorly-finished. Even the great potential of some raw materials, notably ivory and whalebone, for facilitating deep-relief carving has not been appreciated, at least on the evidence of the surviving examples (FE 727, FU 318, FF 1017, FK 345 and others).

Two possible workshop waste assemblages occur which may derive from the manufacture of gaming items: FH 328 N29379 (bone, possibly whalebone), and FK 259 N26605 (antler). Some half-fabricated discs in various materials exist also (FK 498, FG 426, FG 539, FU 264).

An observation perhaps worth making is that there is only one surviving assemblage of similar items, part of a possible set (FA 358 N26416, Fig. 25), the rest being single items, each of unique character. If, as is implicit in the group noted here, sets could comprise a number of similarly decorated discs, then the large number of items of singular character represented in this category might hint at a comparable proportion of individual sets (though one should allow for two differentiated sides within a set).

The FA 358 assemblage of five decorated antler and one plain bone piece may comprise components of two differentiated sides in one set. The bone piece, however, may have nothing to do with the antler pieces, though all have been burnt, apparently *in situ*, within a building, K 17 (see further in Chap. 4). These pieces are perhaps typical of the rather better-prepared discs, though they are far from sophisticated, and there are many of inferior design and execution.

Some items portraying some artistic endeavour have been found. These are the "Urnes disc" FL 65 N23174 (Fig. 26), and the "bird disc" FG 521 N77422 (Fig. 27).

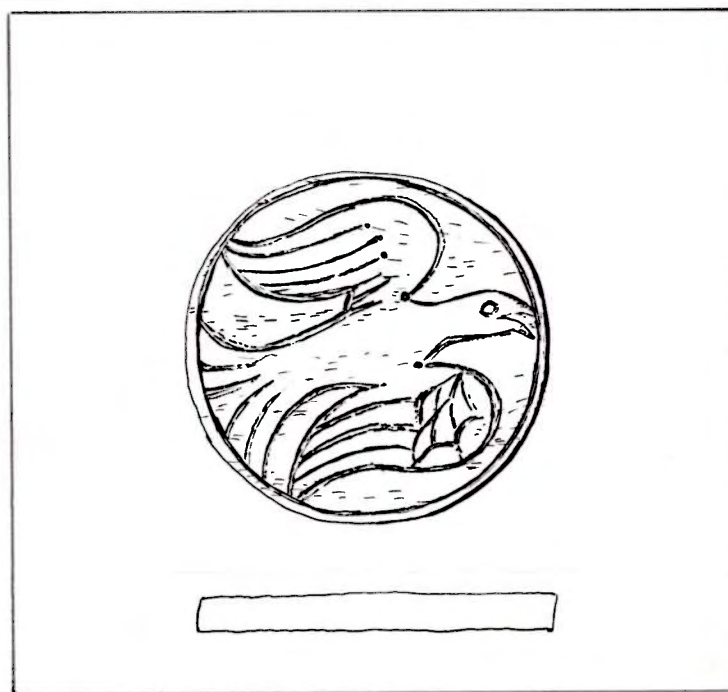


Fig. 27

FG 521 N77422. The "bird" disc, bone (late 12th - early 13th century). 1:1. Drawing: Runi Langum

The former is of antler and bears a lightly-inscribed motif of a classic Urnes-Romanesque striding, backward-looking beast on a cross-hatched background. It has clearly been re-used as a spindle-whorl (although, as noted above, such antler discs may have had their unsightly spongy interiors deliberately removed on aesthetic grounds alone). The piece can be placed in the mid 12th century on art historical grounds, although it was found in a 13th-century (Phase 9) context on FBK.

The faithful representation of the motif clearly demonstrates the manufacturer's acquaintanceship with an established artistic tradition and his competence in reproducing a lively form. While the unelaborated nature of the background and figure lend the piece a certain unrefined air, it is nonetheless a stylistically pure reproduction of an art form known from minor and monumental sculptural contexts within and beyond the local region of Trøndelag. It should be noted that the similar soft-toed lion motif seems to be developed locally, on stave church portals and masonry reliefs, and furthermore, was employed on the backs of two Lewis chess queens, items which are likely to have been produced at about the same time as this minor but nonetheless eloquent example of the wide dissemination of contemporary art forms within the local community of craftsmen in mid 12th-century Trondheim (M^cLees, forthcoming).

It may be interesting to note the reproduction of a similar backward-looking animal motif in at least one of the mid 12th-century English morse ivory gaming pieces illustrated in Beckwith (1972, p. 157, ill. 256), though here the treatment of the figure and background is highly sophisticated, with deep relief carving and conventionalized foliage border, in contrast to the Trondheim example. In fact, this general type of animal motif is not uncommon in connection with continental gaming discs, often very finely carved (see Goldschmidt, 1975, various), although their treatment differs from the locally developed Norwegian soft-toed lion motifs in particular.

The "bird disc" (Fig. 27), of bone (possibly whalebone), bears a subtly expressive, well-executed piece of representational carving, eloquent in its simplicity. The execution is competent, and the form of a soaring bird is confidently conveyed, the simple arrangement of lines fluent and harmonious. The subtle addition of a few curved lines on one wing convey succinctly the downy softness of feathering. The craftsman, working with a knife, was clearly acquainted with subtle aspects of form and arrangement. It is from a late 12th- to early 13th-century context in Phase 7.

These last two pieces stand out in the FBK corpus in that they portray naturalistic motifs, simply but competently executed by carvers with artistic ability. This particular range of items offered greater scope and potential to the craftsman than would appear to have been generally appreciated. Decorative techniques within this group are for the most part impoverished (e.g. Figs. 28, 29, 30). Fuglesang (1985, p.106) refers to Ambrosiani's (1981) observations on the simplicity of motifs commonly employed on Viking and medieval combs and discs, and reiterates the likelihood that the latter originated in the comb makers' workshops. She further points out the contrast between this simplistic ornamentation and numerous examples where the potential of antler and bone as "an artistic medium" has been competently exploited: "In bone, as in metalwork, then, two separate traditions appear to co-exist. One is that of a craftsman whose ornament runs partly independent of artistic innovations in other types of object or medium. The other tradition is that of artist-crafts

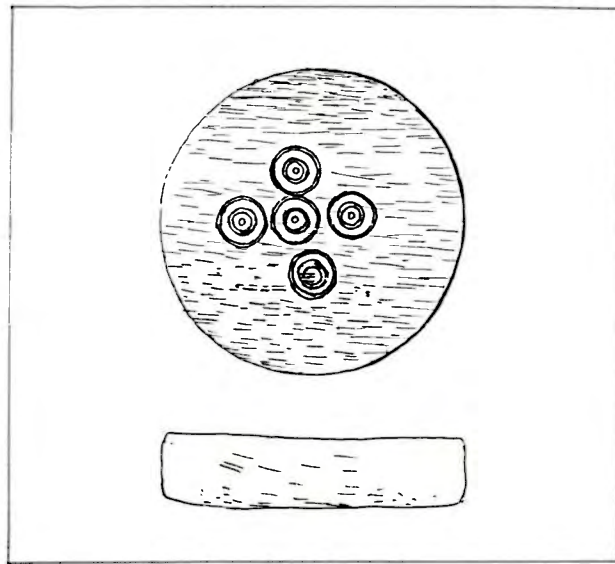


Fig. 28 *FA 309 N21224. Bone disc (late 12th-early 13th century?). 1:1.
Drawing: Runi Langum*

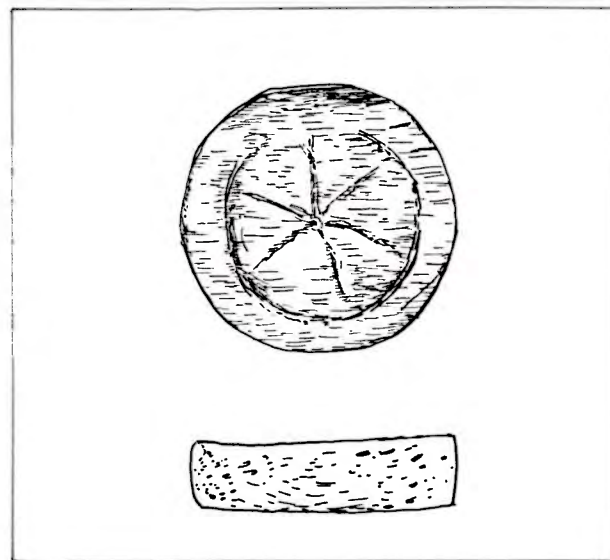


Fig. 29 *FE 648 N25744. Bone disc (13th century). 1:1.
Drawing: Runi Langum*

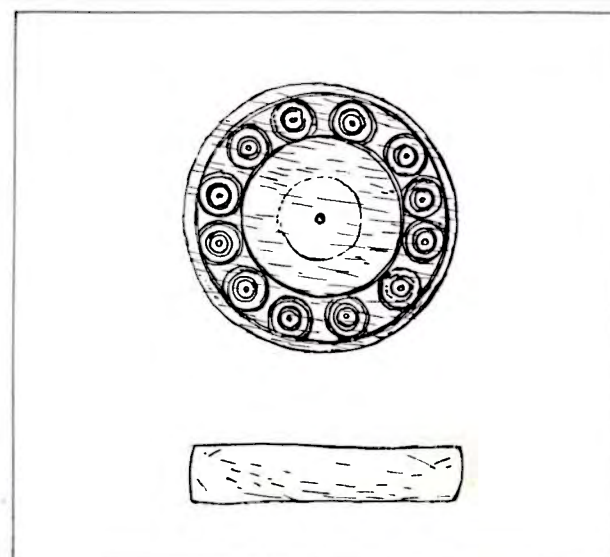


Fig. 30 *FE 715 N26815. Bone disc (13th century). 1:1.
Drawing: Runi Langum*

man who may have belonged to the small group of stylistic innovators or inventors, but who more often reproduced or adapted designs which were currently fashionable." Clearly, this appraisal is of particular relevance in this instance.

The association of such finds with the various medieval games of tables seems well-established (MacGregor, 1985, p. 137), and they form one of the most common categories of artefact from medieval excavations throughout Europe and Scandinavia. The FBK examples compare favourably, in their dimensions and simplistic motifs, with the more mundane examples in the general corpus of forms noted by MacGregor (1985, pp. 135-7).

3.2.5 Discs of stone (Category E) (Plate 9).

These number some 229 examples, 49% of the total artefact sample (i.e. the largest single category). Of these the vast majority are plain, undecorated discs; only 8 bear some attempt at ornamentation. None are perforated.

The majority are circular or ovoid, though there are a few polygonal forms. The average diameter is about 3 cm (the range being 1.3 cm to 7.7 cm), while the average thickness is 0.7 cm (lying between 0.2 and 2.5 cm).

Steatite (Nor. kleberstein) is the material used overwhelmingly in their manufacture (some few examples occur in a micaceous stone unfamiliar to the author). Generally, the discs have two flat smoothed rounded faces with a smoothed straight edge. Occasionally the perimeter has been rounded off and made convex. Some few examples have been worked into polygonal forms. Most are worn (scratched and chipped) and, although adequately smoothed and finished, are simple, anonymous, functional items. Where decoration occurs, the motifs are usually limited to crudely-incised lines, predominantly in the form of crosses or circles (e.g. FM 241, FC 93, FJ 135, FA 172) (Fig. 31).

This category's inclusion within the repertoire of gaming artefacts is problematical. It is possible that these stone discs represent finished items designed for some other function, or that the majority were blanks destined to become perforated, and perhaps decorated, spindle-whorls.

An alternative function might be as components in some sort of rudimentary system for weights and measures, or (as suggested by Ian Reed) tokens relating to counting or tallying, perhaps a rudimentary precursor of post-medieval "counting money".

Some anticipation of later discussion is necessary to provide some insight into this problem:

If these discs are blanks or rough-outs for spindle-whorls, some correlation might possibly be expected to occur between the comparative proportions of finished and unfinished objects. Of course this is a dangerous comparison to make as a rise in the number of plain stone discs in one phase may, for example, simply reflect the establishment of a workshop within the site area where there was none before (quite apart from all the numerous problems associated with representativity).

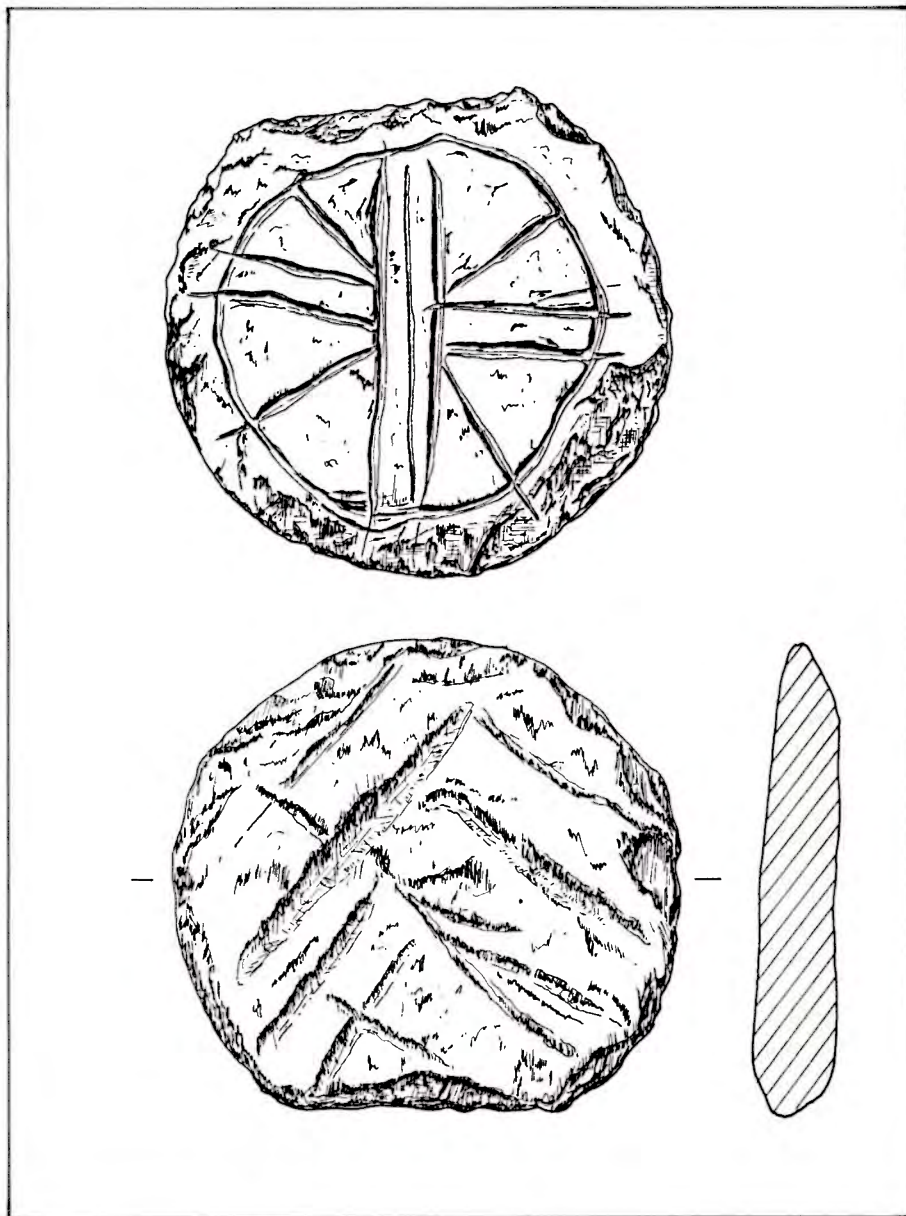


Fig. 31 FM 241 N59064. Stone disc (13th century). 1:1.

Fig. 32 sets out the comparative proportions of perforated stone spindle-whorls and unperforated discs (blanks?) occurring over FBK in all phases. The gradual rise in numbers of spindle-whorls to a peak in Phase 8 is a noticeable trend. However, very few blanks occur prior to Phase 8, when there is a notable explosion in numbers which persists into Phase 9, although at this time the proportion of spindle-whorls drops considerably. As stated this may reflect factors such as the periodical presence or absence of workshops within the site area, and/or differentiated patterns of on-site use of articles: For example, an off-site workshop supplies the FBK inhabitants with spindle-whorls in Phases 1-6. Subsequently, a workshop is established on-site in Phase 7 or 8, resulting in a boom in unfinished articles and a perpetuation of the upward

trend in consumption, though continued expansion in blanks in Phase 9 is, for some reason (the radical local abandonment of spinning activities?), not reflected in the amount of finished articles occurring on-site. A related model of activity which postulates a change in the social and economic character of this town quarter may explain the significant boom in plain discs in Phases 8 and 9 and the corresponding slump in spindle-whorls in Phase 9: If, for example, these plain discs are commercially-linked (as weights or counters), their dramatic increase in numbers may correspond to the expansion of commercial activities in medieval Trondheim at this very time (i.e. A.D. 1225-1325), and the demographic character of the locality may well have changed in accordance i.e. more traders and less spinners. This is all highly speculative and insupportable at this stage, though it demonstrates the uncertainty pertaining to the role of these plain stone discs. Further aspects of distribution and incidence will be included in following discussions, and the dramatic concentration in numbers as noted will be related to contemporary game forms.

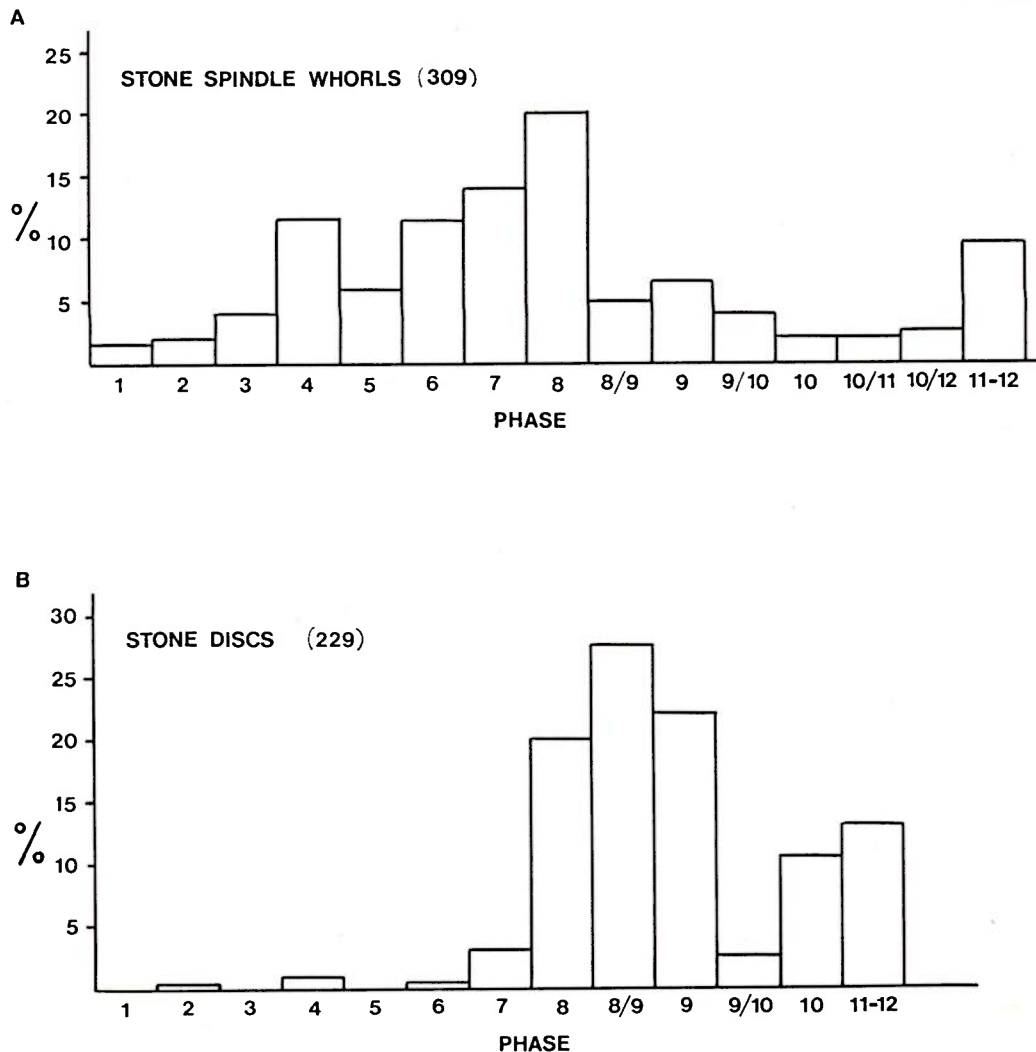


Fig. 32

Table comparing the temporal distributions of stone spindle-whorls and plain stone discs on FBK.

It should be noted that, for whatever purpose these pieces were made, little advantage was taken of the raw material's decorative potential. Some competently-decorated spindle-whorls exist. Also, while most are single items there occur occasional groups, or assemblages, usually found in the same context, which, when arranged together, form a series of discs of regularly diminishing diameters, so that they can, for example, be stacked into a small tower: There are 7 or 8 such assemblages (see Catalogue - for example FA 237, Plate 9). Such groups may well be related to some sort of measuring process, as proposed above (although, on the basis of a cursory survey, there appears to be no perceptible weight-related system to them), or represent components in an unidentified game form.

Another factor relating to function is that, as all tables games and most line-games (such as merels) require differentiated groups of pieces, unless these stone discs were in some way marked or coloured, simply using these pieces alone would be untenable for most known games. No evidence survives of any means of differentiating between them. However, one method by which these discs could be incorporated within a set of gaming-pieces may have been to compose each opposing side of simple discs of different raw materials. Many plain wooden discs occur in the FBK material (see below). Furthermore, if such discs are to be related to, for example merels, a simple game with a wide popularity, the simplicity of these playing counters might be expected to match that of some excavated boards: note the simplicity of the wooden boards from FBK (see 3.4.).

3.2.6 Discs of wood (Category F) (Plate 8).

There are 106 wooden discs - 22.5% of the gaming sample. This is the second largest single category of items. Of these most (86, or 81%) are plain, undecorated discs.

The distorting effects of compression, drying, and conserving renders systematic quantification of relevant dimensions somewhat tenuous. Nonetheless, diameters and thicknesses were measured: The average diameter is 4.3 cm (range 2.1 cm to 7.1 cm) and the average thickness 1.6 cm (range 0.2 cm to 3.5 cm). Although exhibiting as erratic a variation in size as the stone discs, these wooden discs are, on average, somewhat larger than their stone counterparts.

All exhibit a characteristic structure wherein the grain of the wood runs diagonally across the faces, suggesting that they have been cut from a flat piece of wood rather than a sectioned branch or log, for example.

19% of this category comprises decorated items (only a handful of stone discs are crudely decorated), including a number of finely-carved discs, though also examples where, as on the stone discs, simple crude slashes and crosses suffice (e.g. FE 325, FH 263). Some have knife-carved concentric lines, and one example (FH 301) reveals that the carver has enhanced the natural qualities of the wood by scoring it with a knife.

Examples where a deal of care and expertise are exhibited are few, though these are worthy pieces in themselves:

FT 139 N56950 (Fig. 33) bears a circular band incised in chevron patterning. However, this piece bears incomplete central perforations on top and bottom, perhaps relating to the manufacturing process, or suggesting that it was destined, either primarily or secondarily, for use as a spindle-whorl.

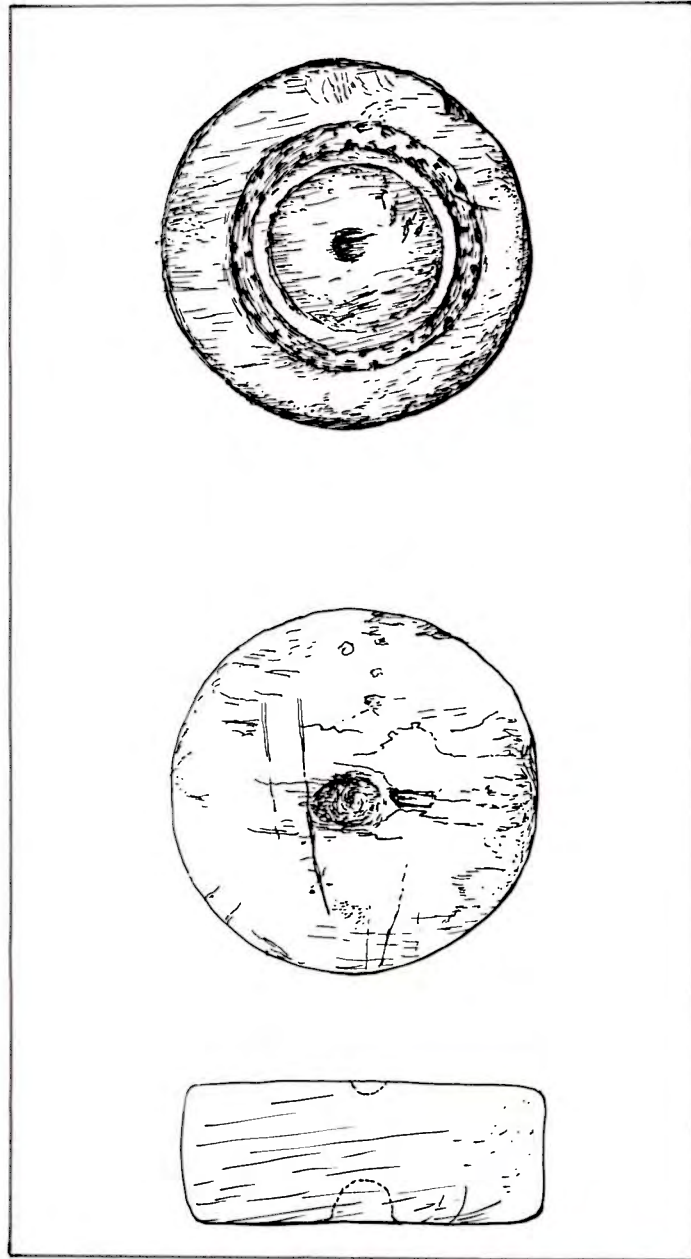


Fig. 33

*FT 139 N56950: decorated wooden disc; tables piece? 1:1.
Drawing: Runi Langum*

FW 695A N93497 (Fig. 34) has a band of knife-incised double-thread interlace patterning, a competent, but comparatively crude, rendering of a familiar motif.

FF 810 N29871 and FF 927 N32959 bear crude and simple motifs.

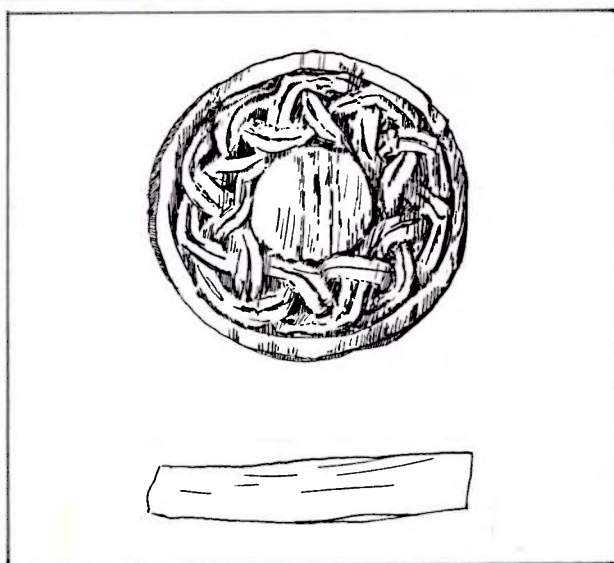


Fig. 34 *FW 695 N93497: decorated wooden disc; tables piece? (late 11th - early 12th century). 1:1. Drawing: Runi Langum*

As in the case of stone discs, doubts as to the use of these pieces arise, and the same pros and cons pertain to their assessment. FF 799 N29743 comprises two adhered discs: One is a plain disc, the other is also plain, but is perforated centrally by a hole which is of proportions adequate enough to house a spindle. This pair eloquently expresses the problems in determining function, and many, and maybe all, unperforated plain discs are nascent spindle-whorls.

The characteristic assemblages of discs exhibiting a series of gradually diminishing diameters noted in the stone category have at least two counterparts in the wooden discs. These are FA 342 N23176, a group of 11 "stackable" plain discs, and FL 179 N28791, a collection of 7 such discs.

The former assemblage was definitely found grouped together, though apparently in "construction" levels under a building, K 26. If such assemblages, as postulated in the case of their stone equivalents, were perhaps used in the commercial sphere, their function as a primitive form of tallying system (or "counting money") would be rather more probable than their use as some form of clearly unregulatable weights. Although a comparative distributional table could not, at this stage, be assembled (comparing distributions of plain wooden discs with the perforated spindle whorls), it may be noted (Fig. 49) that the wooden discs' temporal distribution generally matches that of the stone discs in the early phases, with very few examples in phases 1 to 6, an increase in Phase 7, and a significant "boom" in Phase 8, though this is not maintained in Phase 9, unlike the stone items. Again, some catalyst appears to be at work in Phase 8.

That these wooden discs generally may have comprised parts of simple gaming sets composed of both stone and wooden components has been suggested above. It may also be noted, with reference to the general incidence on FBK (see Fig. 43) - and again this is anticipating future discussion - that the first unequivocal occurrence of decorated wooden discs appears to coincide with that of decorated bone discs, a category whose gaming function is perhaps rather more ascertainable. This coincidence may arise directly as a result of the use of both these particularly workable raw materials in the production of distinctive decorated items conducive to differentiation within and between gaming sets incorporating discs. A new game, or family of games, may perhaps be identifiable from Phase 5.

3.2.7 Miscellaneous forms, of various materials (Category G).

This comprises pieces which are without clear functional parallels, or items which, although in form and execution reminiscent of forms included in the survey proper, cannot be assigned unequivocally to any of the designated functional categories.

Some of these objects have been included on the distribution maps and in the various discussions since they comprise "possible" gaming items. Others, of more doubtful function, have only been included in the Catalogue: i.e. the peg-figures, the carved wooden "plugs", stone hemispherical objects, the fragments of tusks, a carved antler piece, and a jet disc fragment.

The items included under "miscellanea" are as follows (those included within the survey being 15 in total, or 3.5% of the total artefact sample).

Bone/antler/ivory carved pieces.

These comprise 5 objects: FE 838 N28811 (Fig. 35) is the so-called "double piriform" piece discussed already under 3.2.2. It is possibly a derivative form, found in a mid 13th century context, and may constitute a later variant of the classic piriform pieces, or constitutes a developed form, adopted and applied to a later game (perhaps chess?).

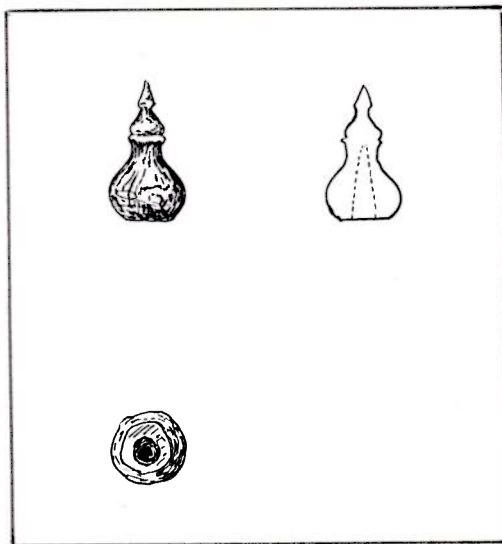


Fig. 35

FE 838 N28811: bone "double" piriform piece; for chess?? (mid 13th century?). 1:1. Drawing: Runi Langum

There are three diminutive "tower-like" carved (probably lathe-turned) pieces which have a certain similarity to the piriform pieces in that they bear basal perforations and, although not bulbous in form, they taper from a squat base to a pointed tip. As such they may be developed, derivative forms having their ancestral roots in the simpler, earlier, piriform pieces. These "developed" forms derive from later medieval contexts, and as likely gaming-pieces demonstrate the longevity of a certain utilitarian form, modified through time and applied, in all probability, to various later games (e.g. chess?). These pieces are: FM 2 N51077, FJ 86 N82619 (Fig. 36), FW 537 N88174.

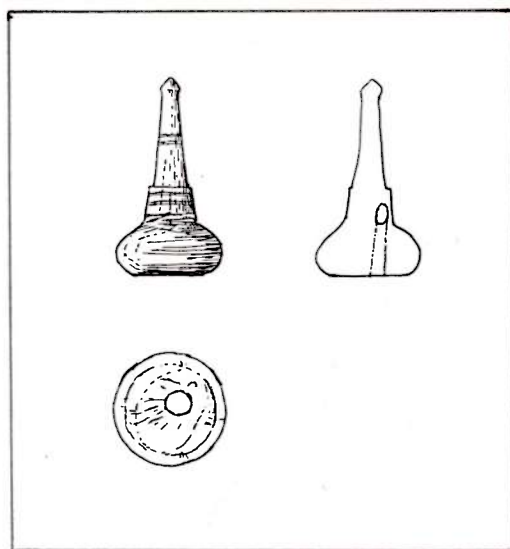


Fig. 36 *FJ 86 N82619: bone piece; for chess?? (14th - 15th century?).
1:1. Drawing: Runi Langum*

One further piece, possibly of whalebone, is FT 20 N52159, a simple tapering cylinder with a squat carved top. This is from a late context (i.e. A.D. 1600+), though it may be a residual item. It compares favourably with a bone gaming-piece (of medieval date?) found at Novgorod and classified there as a chess pawn.

Wooden carved pieces.

There are 2 such items. The first is a hemispherical-shaped piece FA 342 N23251. It is a crude item, but nonetheless very reminiscent of, in form and size, the classic hemispherical pieces in bone (see 3.2.1.). As such it may qualify as a crude imitation of a familiar form, and may have been used for hnefetafl. It is from a late 12th/early 13th century context.

The second item is a tapered, obelisk-shaped piece FA 633 N38168. It is difficult to see this object as being anything other than a gaming-piece, though in what role it functioned is not certain. That it derives from an early 12th century context may be suggestive of a role in a Nordic game: perhaps a "hnefi" in hnefetafl or the "fox" in halatafl/fox-and-geese? Its context is almost certainly too early to allow its classification as a chess piece.

Bone/antler decorated squares.

There are 9 such items; FW 249 N66223 and N66082. Eight derive from one "set" and are competently executed square or subsquare items, of varying size, though with consistent ornamentation of diagonal grouped lines (Fig. 37). These derive from a Phase 9 context (i.e. A.D. 1275-1325) and were apparently found *in situ* in a possible bone workshop. They compare well with a metal example, cited as a gaming token, from a Dutch excavation (Opgravingen in Amsterdam, 1977, p. 460), though it should be noted that some other function (as counting tokens, small decorative panels for inlaying etc.) is conceivable.

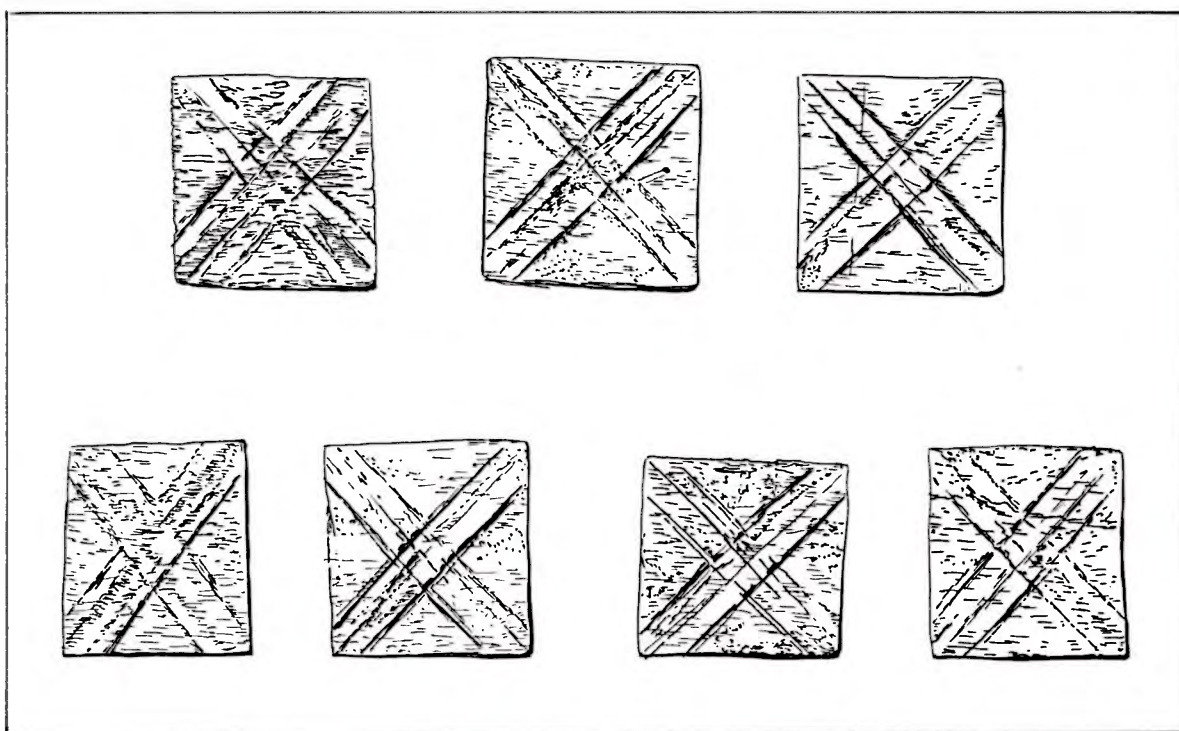


Fig. 37 *FW 249 N66082. Decorated bone squares; (c. 1300?). 1:1.
Drawing: Runi Langum*

Another similar, though more ornate, square FX 32 N61640, possibly a residual find in a post-medieval context, may be of comparable function (Fig. 38).

All the aforementioned have been included within the survey proper. The following items were deemed too insecurely attributable to include in the survey.

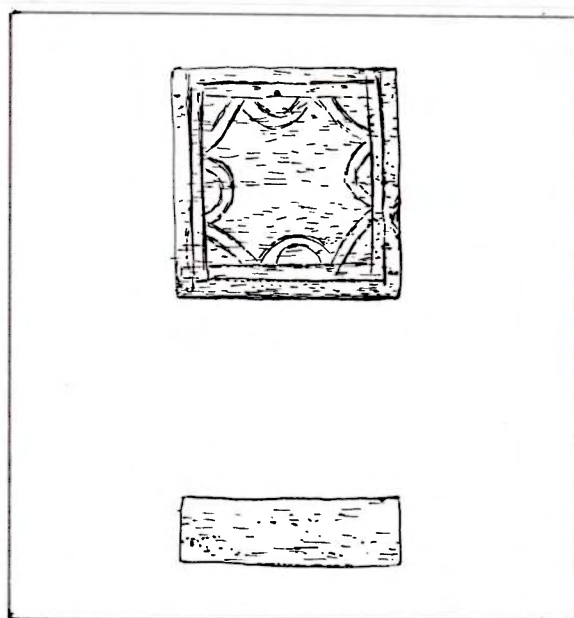


Fig. 38 *FX 32 N61640. Decorated bone square. 1:1.*
Drawing: Runi Langum

Various anthropomorphic "pegs" in wood.

These may just as well be children's toys or decorative additions to handles etc. They have been included here as highly dubious "outdoor" gaming-pieces. MacGregor (1985, pp. 139-40) notes that excavated late medieval bone anthropomorphic figures with pointed bases have recent parallels which were used as chess pieces for outdoor play, stuck in the ground where the playing grid had been drawn out. Perhaps some of these FBK forms had similar roles? Examples are: FF 948 N34174, FF 942 N32415, FL 178 N29385, FL 661 N37566.

Note also a so-called "king-pin" gaming-piece in wood from Dublin (Lang, 1988, p. 50).

Carved wooden "plugs".

These comprise simple short lengths of wood with rounded cross-section and one flat end and one pointed end. They are crude and simple items, though as free-standing worked objects their use as simple pieces in a rough-and-ready gaming context (note for example the crude merels board) cannot be ruled out. One example, FE 616 N23253, has a rebated pointed top with a flat base perforated by a large hole, a feature already noted as a characteristic of some gaming pieces.

Stone hemispherical forms.

These are predominantly of "mudstone" and are of uncertain function - FH 260 N29791 and, with slight basal perforations FL 525 N33656 and FP 125 N54524.

Carved antler piece.

This is a fragment of a carefully carved 3-dimensional free-standing object decorated with small dot-and-circle motifs on its base (FF 665 N27171). It is too fragmentary to allow firm classification, though it would appear to have been intended as a small decorated object for use on a flat surface. Its context, mid 12th century (Phase 8), would place it in the company of the various wooden chess pieces, and perhaps it may have performed a similar function?

Tips of tusks (walrus, bear etc?).

These are generally unworked items, being simple off-cuts. However, they are frequently capable of standing independently, with flat bases, and may well have been suitable for use as gaming-pieces - examples are: FA 370 N25354 and FF 114 N16243.

Jet disc.

This is a unique item (in terms of material), possibly a gaming-piece re-used as a spindle-whorl: FE 43 N15671 (Plate 8). Its competently-executed design-petal, or maltese-cross within concentric circles, cleanly cut - has no apparent parallels in the other disc material. It comprises one of only a small group of jet items found on FBK, most of which can be classified as gaming-pieces (see 5.2.2).

3.3 Class 2: Dice.

3.3.1 Cubic dice, of skeletal materials, jet and stone (Category H) (Plates 8 and 10).

There are 20 dice in the FBK collection, some 4% of the total artefact sample.

Dice form a fairly common class of artefact, though apparently most derive from FBK contexts of the mid 13th century (phases 7 and 8), although one, on the basis of the revised dating, may derive from a late 12th-century context in Phase 6.

The form represented here is cubic, and while the majority (16) are fabricated in bone, ivory or antler, examples also occur in jet (3) and stone (1). The quality of manufacture varies from crude (a large number of those in skeletal materials), to accomplished (the jet dice in particular). The facial numbering is commonly executed in dot-and-circle motifs, the majority conforming to the correct configuration (opposite sides adding up to 7), though examples of incorrect numbering occur (FF 492 N21741, FF 771 N28171 and FW 406 N67152). Generally, little care has been taken in arranging the "eyes". Although many are simple sharp-edged cubes, a fair number of examples occur where the edges have been bevelled to form multifaceted cubes (see Fig. 39). Many have been burnished and smoothed, some evidently through frequent use, and a number show signs of wear and tear. One possible half-fabricated example exists (FL 179 N28943), although this might just as well be the product of casual whittling, so crude is its form and execution. Some small cubes of skeletal material occur occasionally, and these are probably blanks for dice.

The size range of completed dice is from c. 0.7 cm³ to 1.2 cm³, though the vast majority are of 1 cm³, and evidently some standardization is involved in their production.

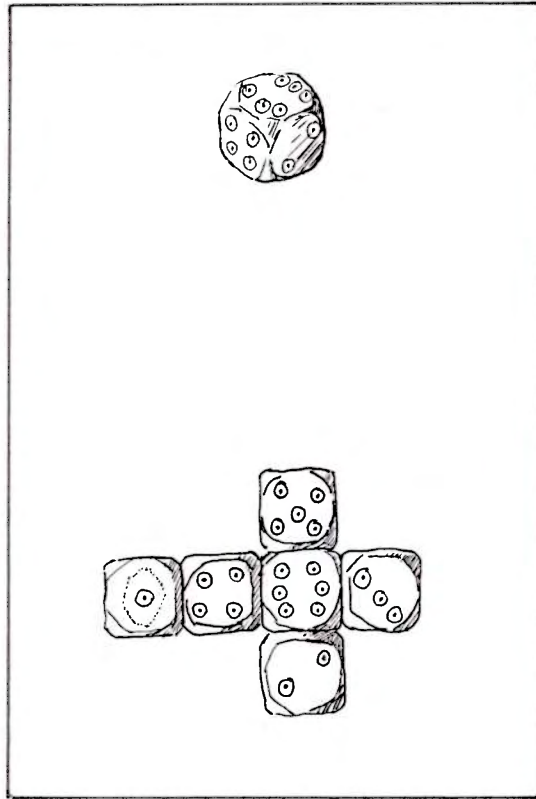


Fig. 39

FE 732 N26814. Ivory die (13th century). 1:1.
Drawing: Runi Langum

Of the objects made in skeletal materials those of ivory (bear/walrus?) exhibit better workmanship, with bevelled edges and polished facets. However two such dice, from widely different contexts (FE 648 and FW 504), display a curious common characteristic - their "one" face is convex, which, as the "six" face is directly opposed, makes that number harder to get. Whether this is deliberate or accidental is uncertain, though since there are two there is a chance that this is not fortuitous. False dice are known elsewhere, often very sophisticated (see those filled with mercury, and those numbered high and low, from 15th-century London - Spencer, 1985) and, like some of the London examples, these FBK dice may have been designed to produce low numbers, though this may simply be the result of a manufacturing error (as in the case of the occasional wrongly-placed numbering on some examples).

The three jet dice form a particularly interesting group. All derive from mid 13th-century contexts in Phase 8. These are FH 70 N19201, FK 402 N28107 (see Fig. 40) and FT 104 N53192.

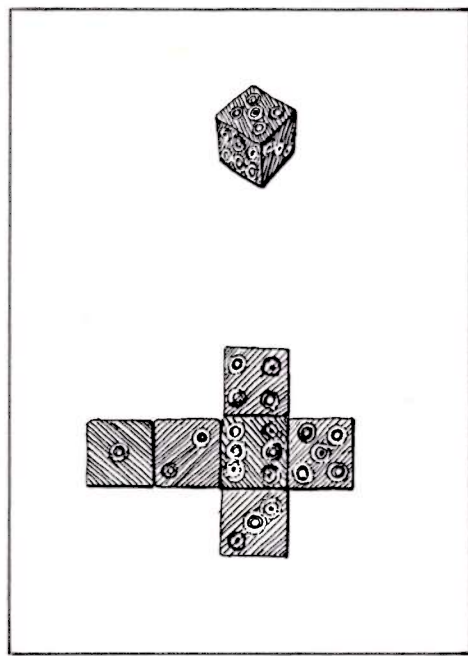


Fig. 40 FK 402 N28107. Jet die, with silver inlay (mid 13th century).
1:1. Drawing: Runi Langum

Apart from varying slightly in size, and the fact that the last example has slightly bevelled edges while the others have sharp edges, these form a closely related group. All have dot-and-circle numbering (though again some carelessness in their alignment is apparent), with the notable presence therein of some silvery inlaid material which serves to highlight the "eyes" against the black background. This inlaid material has been analysed in one case, and was found to be silver. Tin is also known to have been used for this purpose (see below). As dice of jet, the FBK examples are possibly unique in Scandinavia, and the application of such characteristic silver ornamentation in connection with any jet object from Scandinavia is also unique (at least to the author's knowledge). Some few parallels (dice and other similarly decorated objects, including gaming-pieces) do occur in England, most notably in York (see examples in Hall, 1984, p. 114 and MacGregor, 1978, pp. 40-41 and in *Interim 1*, 1 p. 29). MacGregor (1978) notes that the inlaying of silver within engraved ornament on the York jet objects is "a technique which seems otherwise to have been noted only at Winchester where two dice, both apparently residual, were similarly embellished with tin". To this small corpus may be added the FBK examples. Not all the English objects have been securely dated, though some do occur in 11th- and 12th-century contexts, while some may be earlier. Hall (1985, pp. 76 & 87) notes the presence of 10th century jewellers' workshops in York where working of materials such as jet and amber clearly took place. York is situated close to the only major source of jet, at Whitby on the Yorkshire coast. It is clear from Viking finds (Shetelig, 1944, 1-14) in Norway, that jet, often finely worked, was a prized import. It is likely that the three dice from Trondheim comprise evidence for continued trading (or other forms of exchange) in this commodity well into the medieval period, and, on the basis of the parallels noted above, they are probably products of a York workshop.

Astragali comprise a form of dice: None were found on FBK, though some were recorded elsewhere in the town, on V-site (Televerkstomta).

The wide range of popular games utilising dice is noted above (2.5.). It is likely that such simple items, for which workable materials and simple carving and scribing tools were all that were needed, could be produced easily and in large numbers to suit demand, either by the players themselves or as a spin-off by local craftsmen working in bone, who could thus utilize their various off-cuts (viz. the waste pieces in the FBK material). That even such ordinary items as dice appear in imported exotic materials, the products of foreign workshops, and possibly also in morse ivory (locally worked ?), is an interesting phenomenon, and will be discussed further (see 5.2.2.).

3.4 Class 3: Gaming-boards.

3.4.1 Single-panel boards (double- and single-sided), of wood (Category I) (Plates 11, 12 and 13).

See Chapter 2 for the characteristics of the games to which these boards belong.

There is at least one, and probably in fact two, surviving examples of double-sided² single-panel wooden boards in the FBK material, though one is only a burnt fragment, and its status as a double-sided example is based on analogy with its more complete counterpart and on the presence of some slight vestigial markings.

Both FBK examples derive from late 11th- to mid 12th-century contexts (in Phase 5). There is also one example of a crude single-sided board, from a mid 13th century context in Phase 8.

FH 414 N29723 (Plate 11) is the best-preserved example, comprising about 2/3 of a broken hnefetafl board. It conforms to the prescribed formula of odd-numbered cell arrangement: in this case 9 x 9 (see below), as inferred from the intact upper row. The intact side has been rebated to form a raised edge, while on the other two sides this raised border is represented by two detachable fragmented strips, formerly held in place by wooden pegs. The cells are crudely incised by knife, and some have been specially-marked by application of an "x", and in the case of the (formerly) central cell, a double "x".

The merels frame on the reverse side is of equally poor execution, again crudely knife-cut. However, the board itself has been broken, and subsequently repaired, in antiquity, and despite its indifferent quality it was evidently deemed worth going to the trouble of putting it back together again.

²The term "double-sided" denotes that both sides of the wooden panel bear carved patterns, used as playing surfaces for two different board-games. Later in the medieval period two panels were often hinged together to form composite folding boards.

Although the board consists of a grid or lattice of cells in 11 x 11 arrangement it is apparent from closer examination that in fact the peripheral squares were probably not intended for use as part of the actual playing area. They are, in most cases, partially concealed or covered by the applied wooden framing strips, and the solid carved end's squares are themselves not fully developed. Also, the pairs of specially-marked squares give another clue: these, if analogy with the Tablut MS (see Berglund, 1970, p. 92 for example) is anything to go by, should themselves be placed towards the edges of the playing grid, the outermost of the two itself in fact comprising one of the peripheral cells at the absolute extremity of the playing surface. Consequently, it is suggested that, in functional terms, this Trondheim example is essentially a 9 x 9 grid, the peripheral squares being redundant. In fact, this board is remarkably similar, in its 9 x 9 grid and arrangement of specially-marked squares, to the Lappish Tablut example (see 2.1.) and on that basis it may not be unreasonable to suggest that, like its 18th-century descendant, the FBK board utilized 25 pieces (16 attackers, 8 defenders and 1 "hnefi"), and was used for playing the old Nordic game of hnefetafl (see also 3.2.1. and 3.2.2.).

The carved merels frame on the back of this board is of classic "larger merels" form, a type known in Scandinavia from the Viking period at least (2.4.). The combination of hnefetafl and merels on two sides of the one board is a feature of Viking-Age and early medieval boards (in fact the Vikings seem to have been the first to combine different games on one board), the most famous, and ornate, example being that from the 9th-/10th-century Gokstad ship burial. The longevity of tradition and format is exemplified by this FBK example, though in terms of quality of craftsmanship it bears no comparison with the Gokstad fragment.

The FW 737 N94068 fragment (Plate 12) bears a portion of raised edge, and a surviving 3 x 10 lay-out of crudely carved squares. The nature of carving is exactly like that of the FH board, in form and quality, though this fragment does not bear any remnant crossed squares, so it is unfortunately difficult to assess the former grid's format. It is possible to say that it was at least a 9 x 9 board, though it may of course have been larger (11 x 11 or 13 x 13 for example). There is some fragmentary evidence on this board's reverse side for the probable presence of a second game form thereon, and by a tentative reconstruction from the faint incisions on its rear side, and on analogy with its FH counterpart, it is likely to have been a merels frame.

The Vikings may well have innovated this double-sided format (Murray, 1913, p. 757). A saga reference, from the later 13th century, is of interest here in that it illustrates the saga writer's acquaintanceship with hnefetafl, the royal connection therewith, the late association of an antiquated game with a new variety, their combination in physical form on one board, and the evident luxuriousness of the board and the use of morse ivory in its manufacture. It is from Kroka-Refs saga and describes, as one of the presents sent from Greenland to Harald Hardråde, a "tanntafl" - a board of morse ivory - "both a hnefa-board and a chessboard" (quoted in Murray, 1913, p. 444). Later composite medieval boards, usually of chess and merels or some other form, tended to be hinged double-panels, often very ornate.

As to the pieces used on these boards, both in hnefetafl and merels: If, as is usually suggested, the basally-perforated hemispherical and piriform pieces

frequently found in Viking and early medieval contexts bore pegs (see 3.2.1. and 3.2.2.), then this disqualifies such forms from use on this type of unperforated board. The provision of a hole is not universal among such pieces,

however, and some other explanation, related to their manufacture, may account for these holes. Alternatively, perforated boards, such as the as yet unique Ballinderry board, may have formed part of the transportable equipment of a roving Viking, perhaps suggesting that some boards were perforated to house pegged pieces thereby facilitating their use on board ship, while others, such as those from the towns, formed part of peoples' household equipment. Some pieces may have been made to allow their adaptation for use on both such surfaces, the pegs being perhaps purposefully removable (see further above, 2.3.3.). The occurrence, in the Gokstad ship, of a single perforated piece, without an *in situ* peg, found in association with an unperforated board may therefore not seem too anachronistic, though it rather undermines the "travel hnefetafl" argument presented above (unless this was, like many of the articles found in the burial, an item of household equipment?).

Of course, neither of the contemporary gaming-piece forms discussed here may have been used in the historical games, the survival of the complete repertoire of contemporary games being by no means certain. Nonetheless, the explanation for the evident commonalities and correspondences in formal, spatial and locational terms of such gaming items as do survive, probably lies in their close cultural and functional associations.

The dimensions of the hnefetafl cells and the merels frame on the FBK boards suggest that, in the case of the former, only pieces with a diameter of 3 cm and less could be used, while on the latter 5 cm diameter is the upper limit. In the case of the former, this allows all but the largest of the surviving piriform and hemispherical pieces, perforated and unperforated, to be used thereon, and all could be comfortably employed on the merels board. Although the chronological distributions do not point to any exclusive association (see below, Ch. 5), the various discs from earlier and contemporary contexts (i.e. Phase 5 and earlier) could have been comfortably accommodated on either playing surface.

As to whether a hnefetafl set could be used as pieces in merels (and vice versa): the latter requires 18 men - two differentiated sets of 9; the former, if the Trondheim (and Birka) numbers are correct, requires 25 men, with two sets of differentiated men of 8 and 16 respectively, plus one specially-empowered "hnefi". As can be seen, the formulae are not automatically interchangeable, and supplementation of pieces would have had to occur. Consequently, each double-sided board of this type may well have had two separate sets, plus the possible addition of a die used in association with the merels game (thus going some way in explaining the enigmatic presence of dice in association with hemispherical gaming pieces in Viking contexts? - see above, 2.5. Dice-play).

The quality of such pieces, if the craftsmanship of the FBK board is anything to go by, may not have been other than amateurish. In contrast, the effort expended and the materials used in the production of the FBK piriform pieces in particular is hard to square with these simple near-contemporary boards.

The final board from FBK - FA 367 N25218 (Plate 13) - illustrates the ease and casualness with which a familiar form can be reproduced in materials ready-to-hand, and executed in a rough-and-ready manner, possibly for use on only one occasion. It is a crudely knife-scored "larger merels" design on one side of a thick board used at some stage as part of a seat of some sort. The design, or "frame", is of small format, and would have required small playing pieces of a maximum of 2 cm diameter. That these were perhaps pebbles and nuts or some other combination of natural objects would match the character of the board, perhaps carved in passing by a child or a bored adult.

4. THE FINDS IN CONTEXT: THEIR SPATIAL AND CHRONOLOGICAL DISTRIBUTIONS.

4.1 Introduction.

In order that the detailed data relating to both the horizontal (spatial) and vertical (chronological) distributions of recognized artefact categories may be discussed lucidly, the information has been structured in the following manner:

Macro- and micro-distributions.

The distributions of the particular types of artefacts defined in the preceding chapter are related strictly to each phase of settlement on FBK. Within each phase the raw data is presented in both "macro-scale" and "micro-scale", the former comprising the general distribution across FBK as a whole, the latter the closely-defined dispersal of finds in the chosen sample, or case-study, area. Both are aimed at establishing a spatially and temporally fixed and defined synthesis of typological data in which certain trends may hopefully be detected and correlated to produce a survey closely tied to the historical and structural development of settlement on FBK.

In the **macro-distribution**, the forms of items which occur are individually plotted, and their locations briefly characterized. In the **micro-distribution** the information is rather more detailed as it places each individual find in its stratigraphically associated structural context within the two properties under review, and provides a sequential survey of internal structural developments to which the finds may be closely related. The properties under scrutiny in the case-study area are referred to as "Property 2B" and "Property 3", to correspond with Christophersen's scheme (Christophersen et al, 1988, Ch. 4 and see the phase plans, Fig. 5). Property 3 is dealt with first in the text, as it comprises the largest and most complete property.

It is the purpose of this systematic and detailed exposition of the data to establish the empirical basis upon which the comparison of patterns and observable trends within and between the different strands of information can be made, and from which the concluding interpretations spring (see Chapters 5 and 6, below).

The case-study area and terms used.

Before proceeding, it is necessary to add a few words relating to the case-study area FA - FU - FT - FW (properties 2B and 3):

The reasons for choosing this particular locality within FBK have been set out above (see 1.2.). Some abbreviations are used in the characterization of the contexts; these derive from the standard Norwegian terminology used in the site reports etc.:

"K" ("konstruksjon") refers to layers defined, either by the excavator or myself, as deposits relating to episodes of construction activity i.e. those layers "between" clearly definable episodes of occupation and destruction of structures (buildings, passages and street);

"D" ("destruksjon") contexts are those associated with the destruction, usually by fire, of the wooden structures; these comprise layers of fire debris, and some closely-definable *in situ* finds occur therein which may reasonably be interpreted as having derived from the use of the destroyed structure;

"B" ("brukslag") layers, or contexts, comprise those where *in situ* material may occur, and where the finds are possibly in primary (contemporary) association (perhaps directly on, above or below a floor, for example) with the structures' use;

"A" ("avfall") deposits are those which have accumulated or have been dumped in open areas etc. and which are characterised by much waste material.

4.2 Phase 1 (late 10th century - c. A.D. 1025).

No recorded finds.

4.3 Phase 2 (c. A.D. 1025-1075) (revised: late 10th century - 1050).

Macro-distribution (Fig. 41a).

A total of 3 finds, the earliest recorded on FBK. These are confined to area FU at the westernmost extremity of FBK and related to some of the earliest structural remains associated with activity next to the former inlet here.

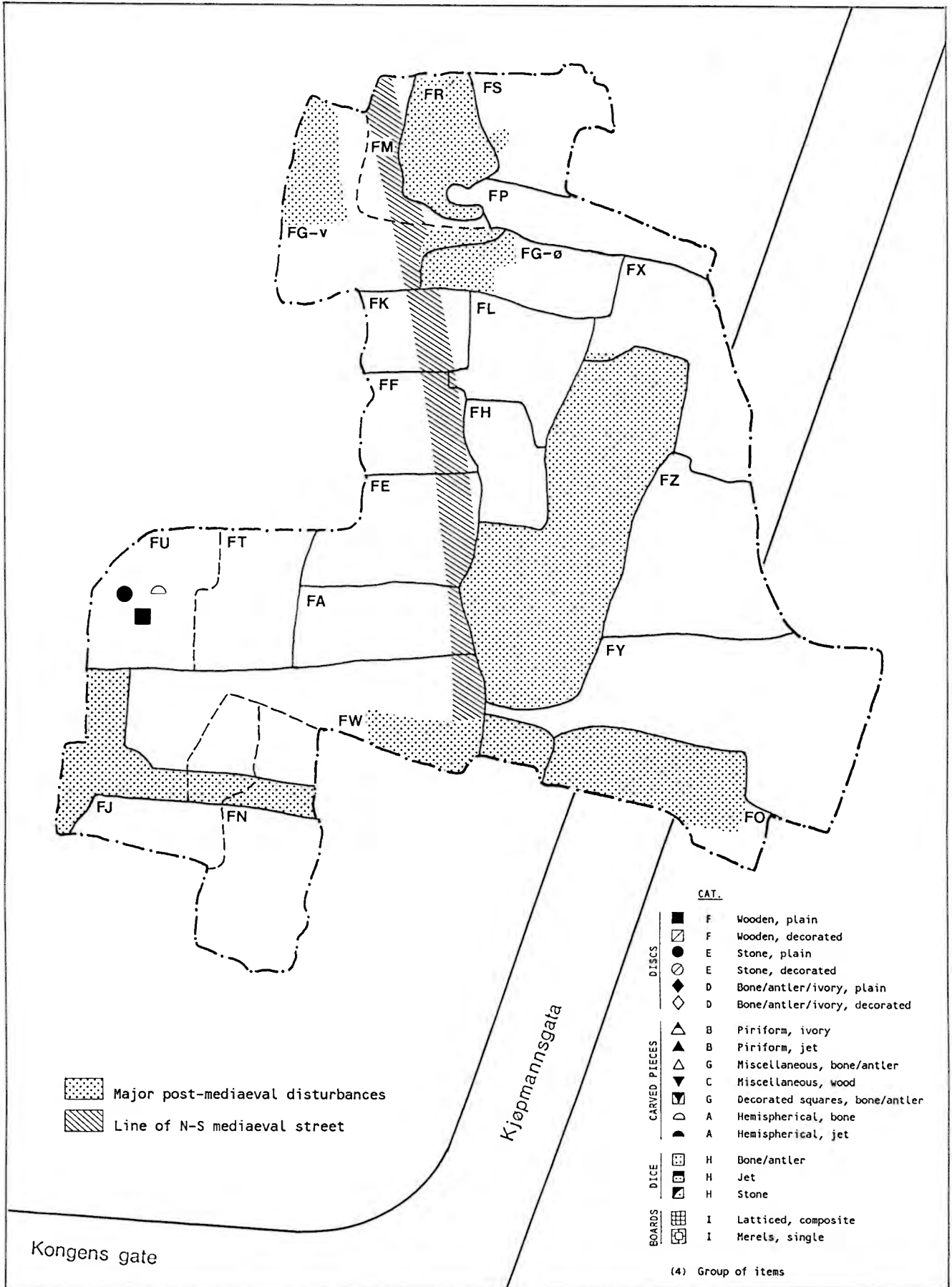
Finds categories represented: A (1), E (1), F (1): 0.5% of the total sample.

Micro-distribution (Fig. 42 a and b).

Only FU has finds: Level 1 produced one hemispherical bone gaming piece from a "waste" deposit ("A") associated with the wattle-retained terraces (FU 512 N96502); "Level 2" produced a plain stone disc from a possible "B" within house K 28 which is the second phase of house K 22 in Level 1 (FU 457 N96825); and a plain wooden disc from a "K" layer beneath house K 28 (FU 469 N95490).

Property 3: This has, in its W. half, some of the earliest structural remains on FBK, and the earliest recorded gaming artefacts, which are in association with the terraces and the subsequent domestic structures. To the E. lies an open area. The finds' dispersal may be seen as commensurate with the concentration of structural activity to the W. and centre of the property, although only one derives from a possible "B" context.

Property 2B: Although similar structural arrangements occur here, there are no finds in association.



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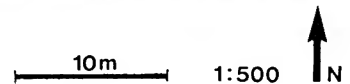


Fig. 41a

PHASE 2: general distribution.

PHASE 2: LEVEL 1

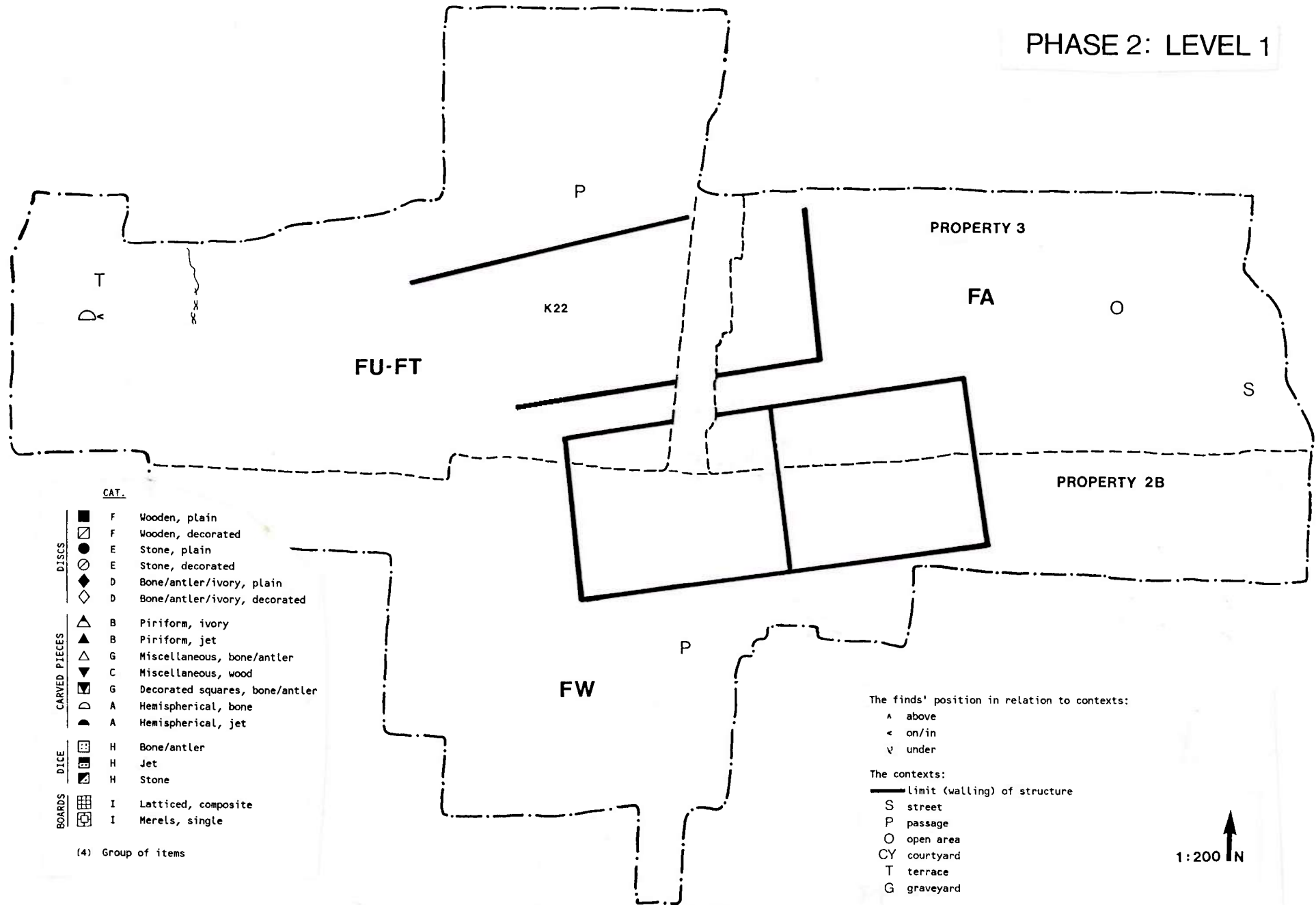
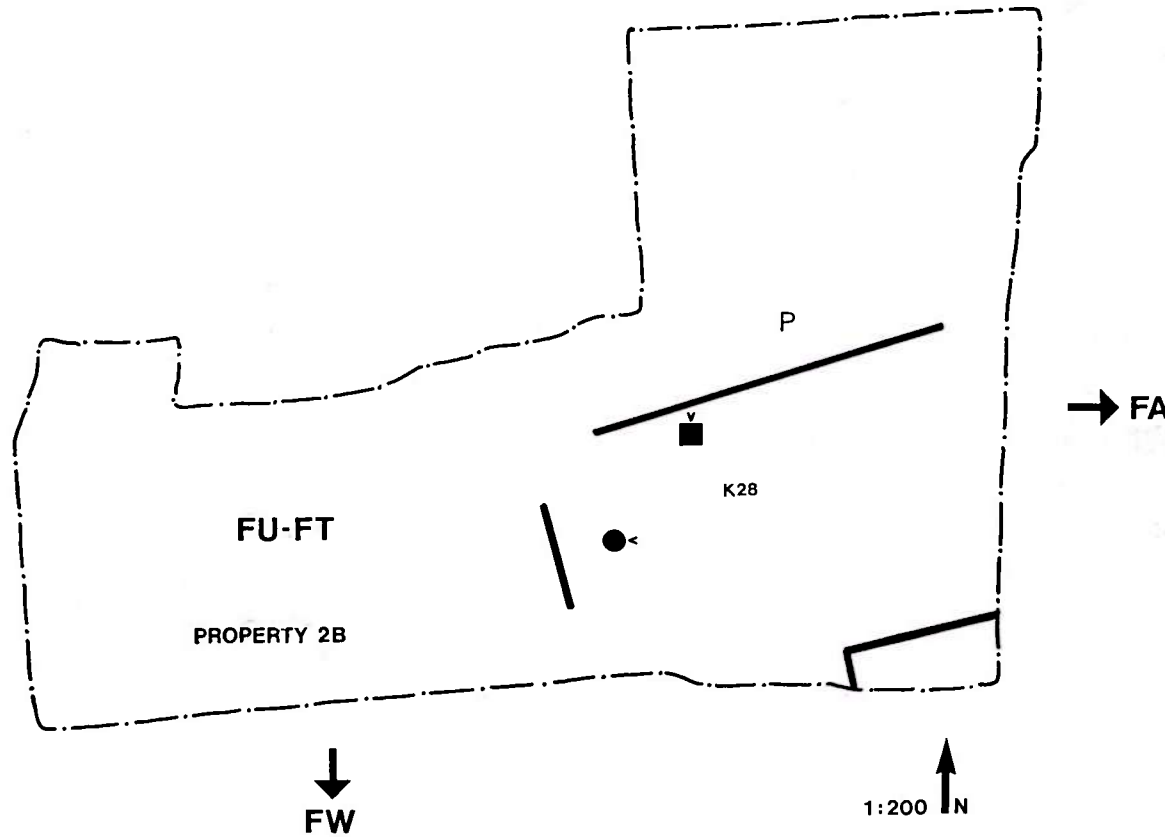


Fig. 42a

PHASE 2: LEVEL 2



CAT.	
■	F Wooden, plain
◻	F Wooden, decorated
●	E Stone, plain
◉	E Stone, decorated
◆	D Bone/antler/ivory, plain
◇	D Bone/antler/ivory, decorated
▲	B Piriform, ivory
△	B Piriform, jet
△	G Miscellaneous, bone/antler
▽	C Miscellaneous, wood
◻	G Decorated squares, bone/antler
◐	A Hemispherical, bone
◑	A Hemispherical, jet
□	H Bone/antler
■	H Jet
■	H Stone
◻	I Latticed, composite
◻	I Merels, single

(4) Group of items

The finds' position in relation to contexts:

- ^ above
- < on/in
- v under

The contexts:

- limit (walling) of structure
- S street
- P passage
- O open area
- CY courtyard
- T terrace
- G graveyard

Fig. 42b

4.4 Phase 3 (A.D. 1075-1125) (revised: ?1025-1050).

Macro-distribution (Fig. 41b).

4 finds from this phase, confined to two areas, FA and FX. FA, to the SW. of FBK has 3 gaming-pieces, while FX, to the NE., has 1 example. Otherwise FBK is devoid of gaming artefacts. By this stage, the structural lay-out of FBK has been established on lines which remain reasonably stable for the greater part of the medieval period.

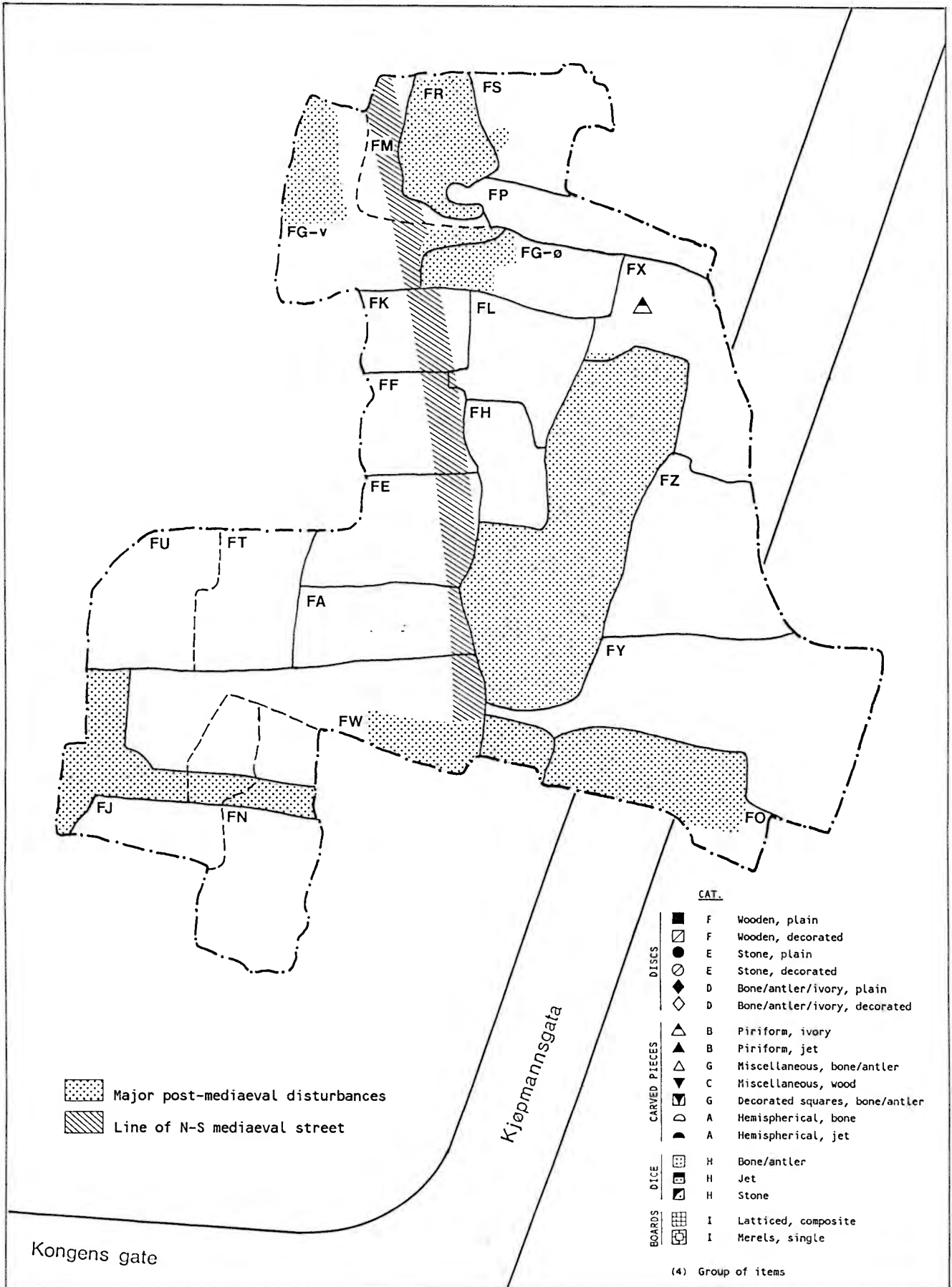
Finds categories represented: B (3) and F (1): about 1% of the total finds sample.

Micro-distribution (Fig. 42c).

FA is the only area here with finds; it also has the majority of finds (3) from FBK in this phase, there being only one other, from FX. In FA, the house, K 6, has in association all the relevant finds: a piriform piece (FA 700 N39594); a plain wooden disc (FA 700 N40059); and a probable rough-out for a piriform piece (FA 686 N39919). The first two are from a layer immediately above the "D" level of house K 3 and below the planking of house K 6, and consequently from a context associated with the "K" or "B" of K 6. The last is from a possible "B" context resting on the planking in K 6's W room.

Property 3: The formerly open area at the E end of the property is now built upon, the larger domestic structure K 6 lying to the W. of a smaller workshop/storehouse (?) which stands against the street. Coming as they do from the layers immediately below K 6's flooring, the first two finds are of ambiguous association. However, the find of a rough-out in a possible *in situ* context within K 6 is an interesting occurrence.

Property 2B: Again, although structural evidence survives here, no finds were found.



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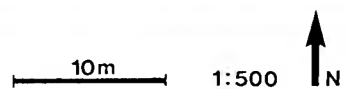
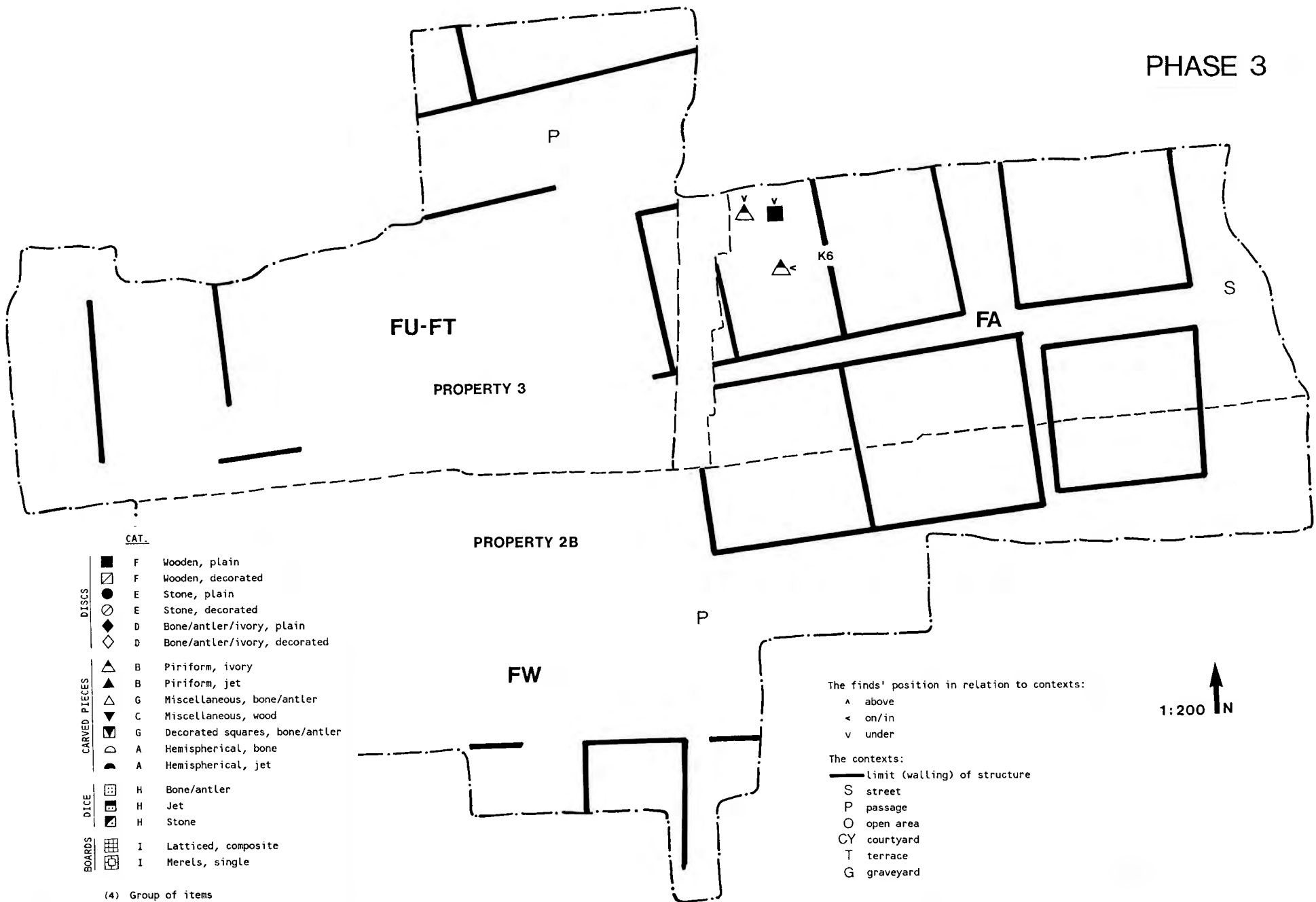


Fig. 41b

PHASE 3: general distribution.

PHASE 3



- CAT.
- | | | | |
|---------------|---|---|--------------------------------|
| DISCS | ■ | F | Wooden, plain |
| | ◼ | F | Wooden, decorated |
| | ● | E | Stone, plain |
| | ◉ | E | Stone, decorated |
| | ◆ | D | Bone/antler/ivory, plain |
| | ◇ | D | Bone/antler/ivory, decorated |
| CARVED PIECES | ▲ | B | Piriform, ivory |
| | ▲ | B | Piriform, jet |
| | △ | G | Miscellaneous, bone/antler |
| | ▼ | C | Miscellaneous, wood |
| | ◻ | G | Decorated squares, bone/antler |
| | ◐ | A | Hemispherical, bone |
| DICE | ◑ | A | Hemispherical, jet |
| | ▣ | H | Bone/antler |
| | ▣ | H | Jet |
| BOARDS | ▣ | H | Stone |
| | ▣ | I | Latticed, composite |
| | ▣ | I | Merels, single |

(4) Group of items

The finds' position in relation to contexts:

- ▲ above
- < on/in
- v under

The contexts:

- limit (walling) of structure
- S street
- P passage
- O open area
- CY courtyard
- T terrace
- G graveyard

1:200 N

Fig. 42c

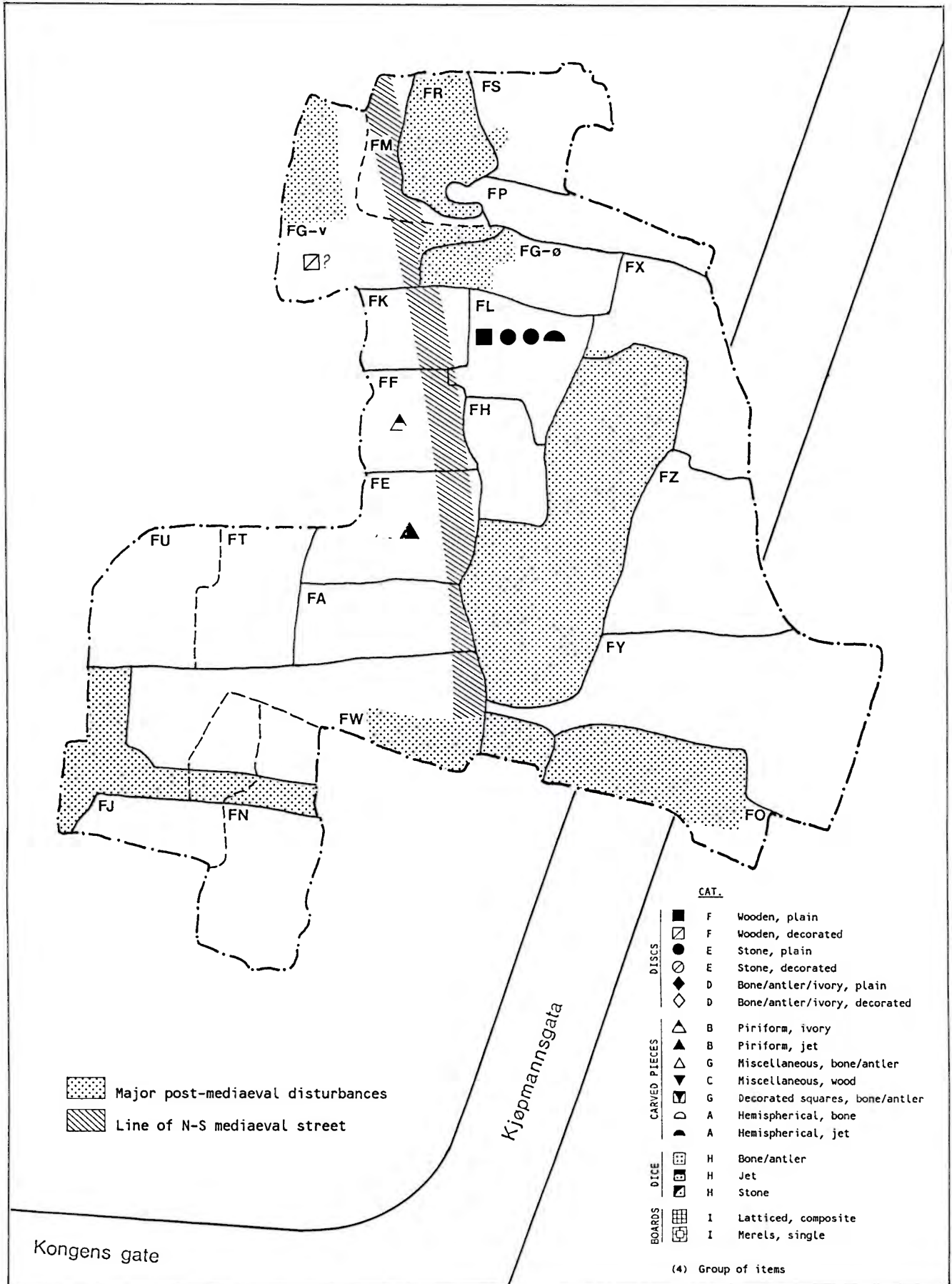
4.5 Phase 4 (c. A.D. 1075-1175) (revised: 1050-1100).**Macro-distribution (Fig. 41c).**

This phase has 8 finds from four areas: Two from FE, one from FF, one from FG-v and four from FL. These areas are concentrated centrally within FBK, immediately against the line of the N-S street, to the E. and W. thereof. No finds derive from the more outlying areas.

Finds categories represented: A (1), B (3), E (2), F (2): approximately 2% of the total sample.

Micro-distribution

No finds from the case study properties in the phase. Domestic structures lie to the centre and W. of both properties, whereas possible workshop and/or stores lie to the E; there are some indications of metalworking activities to the east of Property 3 (FA) at this juncture. A passage running E-W. now intervenes between the properties, and remains a consistent feature until Phase 10.



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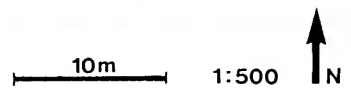


Fig. 41c

PHASE 4: general distribution.

4.6 Phase 5 (c. A.D. 1125-1225) (revised: 1100-1150).

Macro-distribution (Fig. 41d).

10 finds from this phase, deriving from seven separate areas: FA (1), FU (1), FW (2), FF (2), FK (2), FH (1), FY (1). There is no notable concentration, finds coming from a scatter of areas to the E. and W. of FBK, though the majority lie to the W. of the N-S street. The graveyard now encroaches to the S. of FBK.

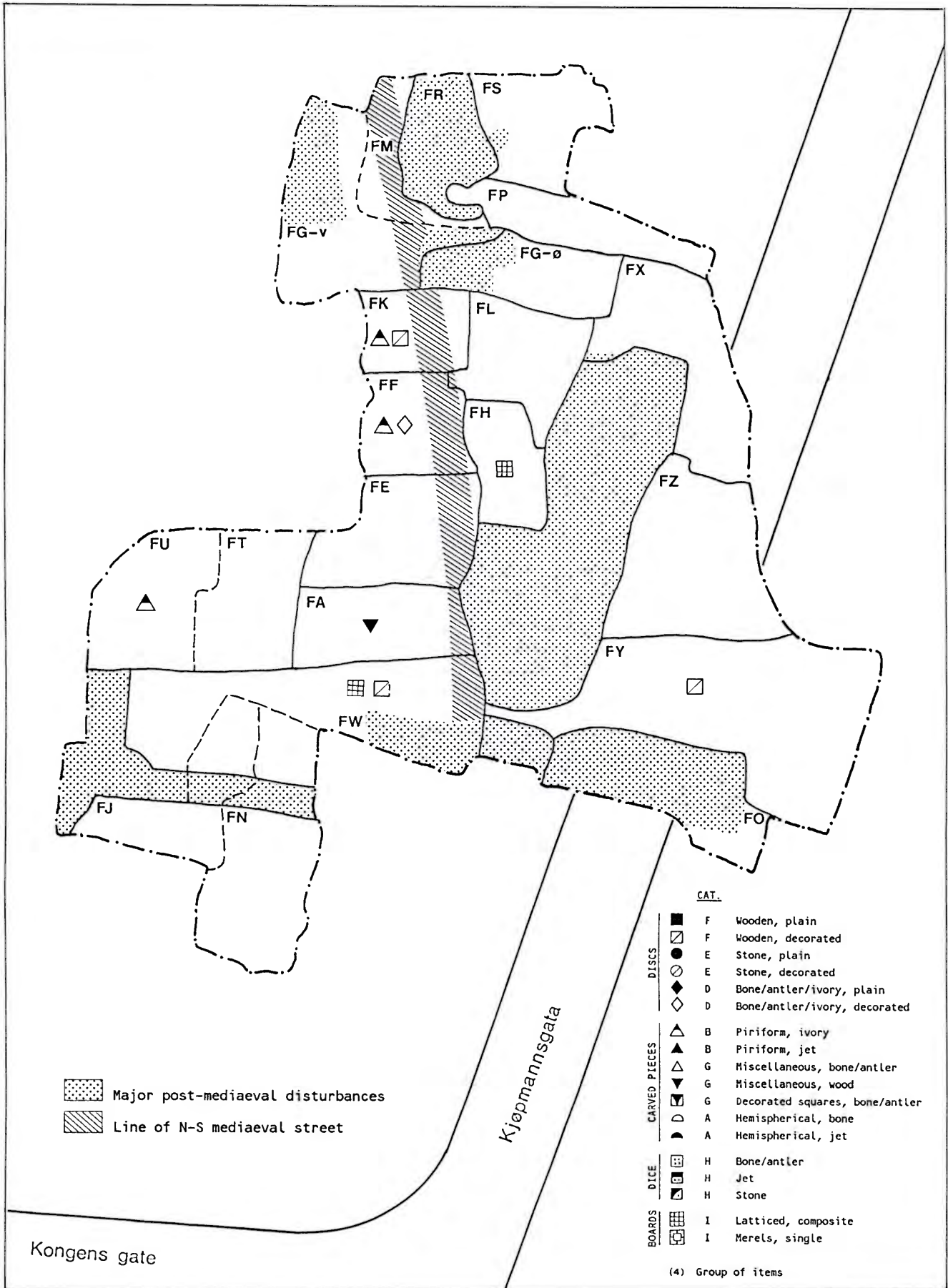
Finds categories represented: B (3), D (1), F (3), G (1), I (2): ca. 2% of the total finds sample.

Micro-distribution (Fig. 42d).

There are 4 finds: A fragment of a single panel, possibly double-sided, gaming-board (FW 737 N94068) from a burnt "D" layer associated with the building K 24; a carved wooden piece (FA 633 N38168) from the "K"? of building K 13; a possible rough-out of an antler piriform piece (FU 403 N91266) from the "B" or "D" of K 46, or the "K" of K 57 in Phase 6; a decorated wooden disc (FW 695a N93497) from the "D"? of the building K 23.

Property 3: Structural remains are scrappy to the E. of the alignment, where there are also indications of metalworking. To the W. lie more emphatic structural remains, and from K 46 derives a possible half-fabricated piece, the only gaming artefact from this property. This structure was also otherwise noted to have produced evidence of cheese-making.

Property 2B: For the first time finds are associated with structures herein. A possible *in situ* gaming-board fragment is associated with the destruction debris of the westernmost building here, K 24. Again evidence to the E. is fragmentary, though one find derives from the burnt layer which terminates the phase, above the easternmost structure, K 23. A further object of more dubious gaming function is associated with very fragmented structural remains, K 13.



FOLKEBIBLIOTEKSTOMTEN

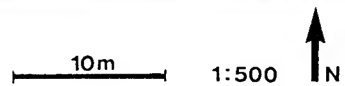
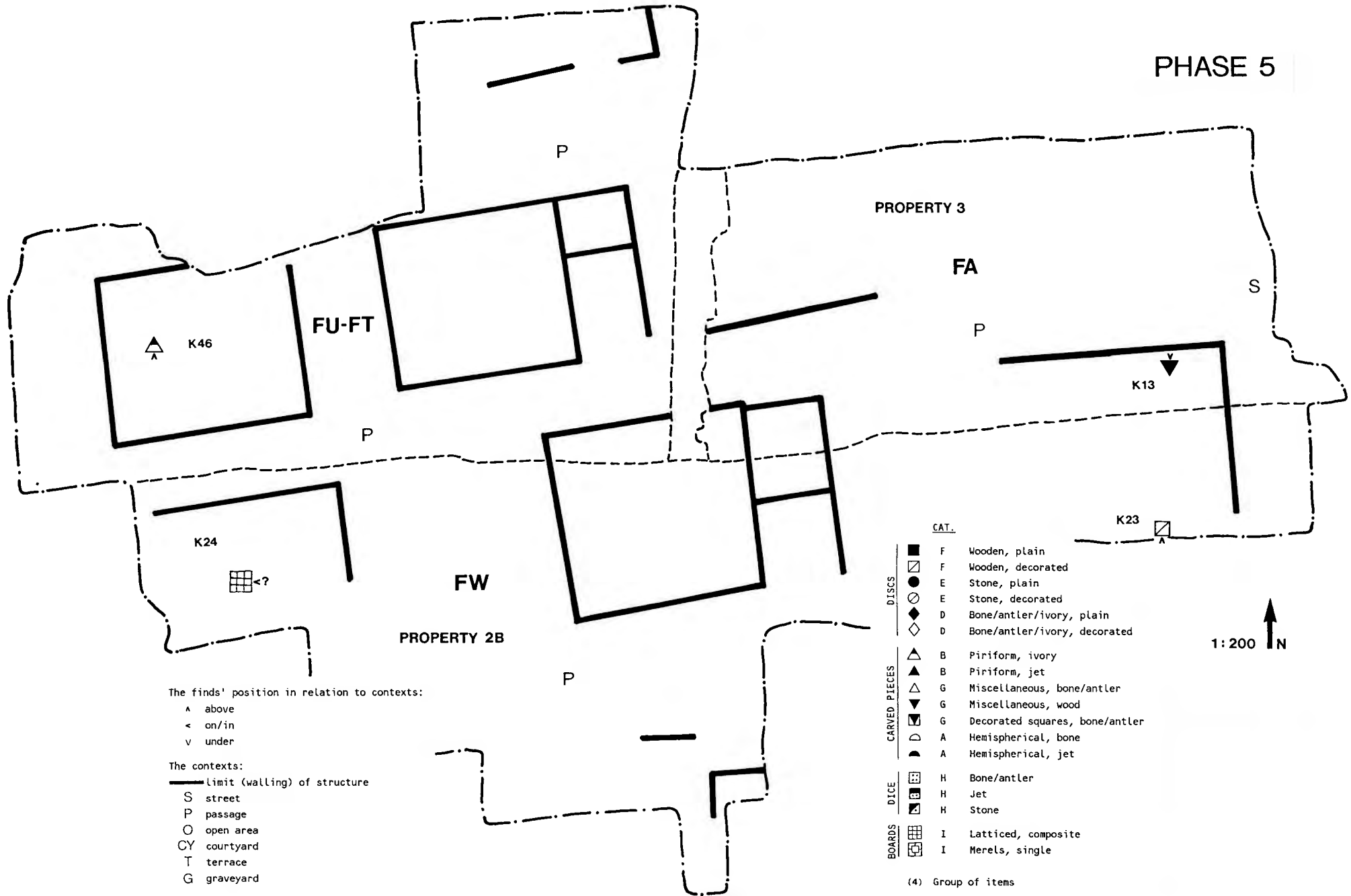


Fig. 41d PHASE 5: general distribution.

PHASE 5



The finds' position in relation to contexts:

- ▲ above
- < on/in
- ▼ under

The contexts:

- Limit (walling) of structure
- S street
- P passage
- O open area
- CY courtyard
- T terrace
- G graveyard

CAT.	
■	F Wooden, plain
◻	F Wooden, decorated
●	E Stone, plain
◉	E Stone, decorated
◆	D Bone/antler/ivory, plain
◊	D Bone/antler/ivory, decorated
▲	B Piriform, ivory
▲	B Piriform, jet
△	G Miscellaneous, bone/antler
▽	G Miscellaneous, wood
◻	G Decorated squares, bone/antler
◐	A Hemispherical, bone
◑	A Hemispherical, jet
◻	H Bone/antler
◻	H Jet
◻	H Stone
◻	I Latticed, composite
◻	I Merels, single

(4) Group of items

Fig. 42d

4.7 Phase 6 (A.D. 1125-1275) (revised: 1150-1175).

Macro-distribution (Fig. 41e).

18 finds are associated with this phase, deriving from seven areas: FA (2), FE (3), FF (4), FK (1), FG-v (5), FM (1), FP (2). There is a notable concentration of finds within areas bordering the N-S street on its W. side, with only two finds from an outlying area to the NE of FBK.

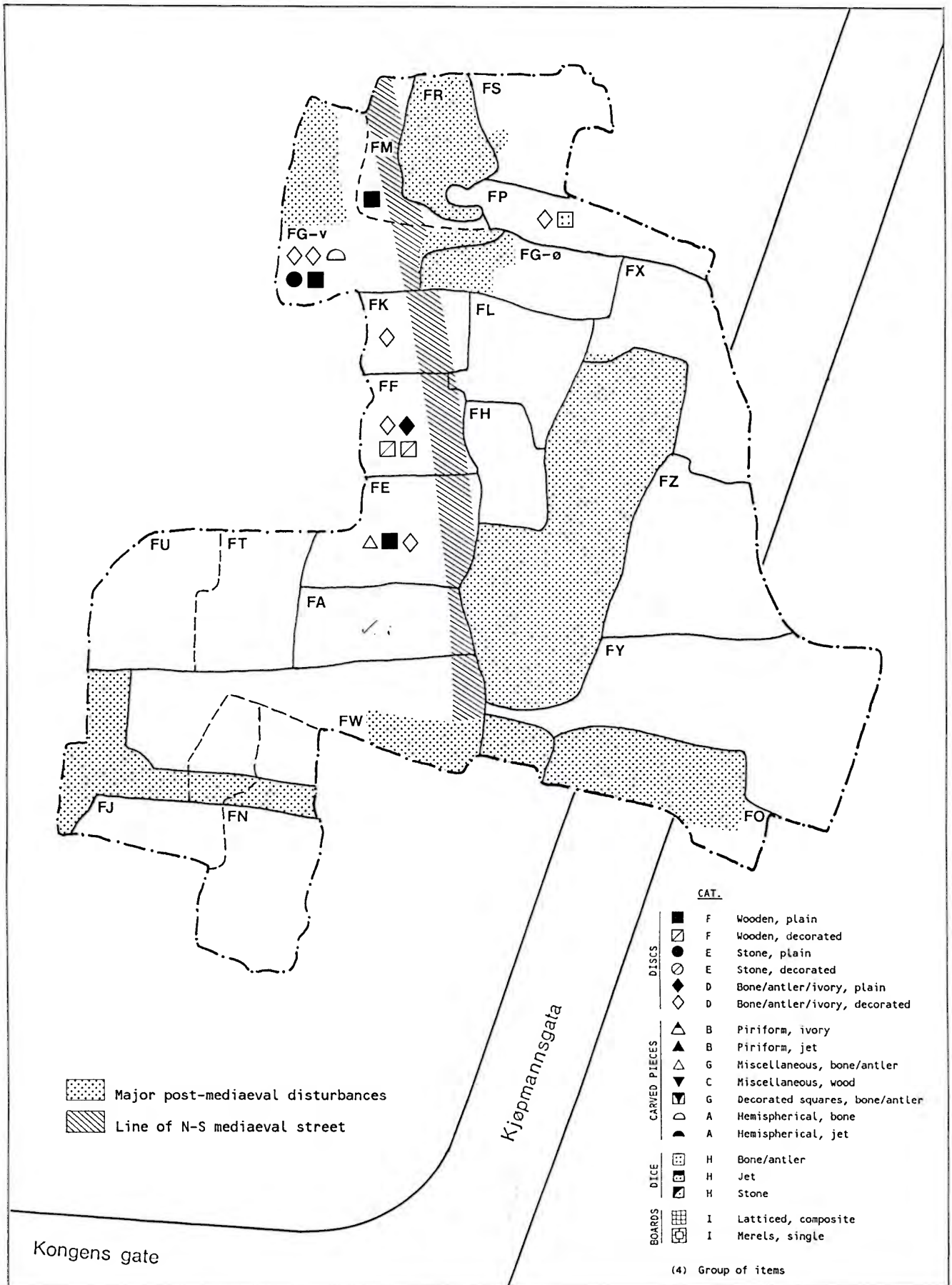
Finds categories represented: A (1), D (8), E (1), F (6), G (1), H (1): ca. 4% of the finds sample.

Micro-distribution (Fig. 42e).

2 finds: a plain (rough-out?) bone disc (FA 448 N31493) and a fragmentary decorated wooden disc (FA 423 N28429), both from the locality of building (metal workshop?) K 15, the former from the "D" for the first K 15 and the latter from the "B" or "D" of the second K 15.

Property 3: K 15, the only structure in either property to have associated finds, appears to have been an isolated structure built on posts, of two phases of construction, and does not conform to previous or subsequent arrangements. Being bereft of a hearth it is probably not of domestic function, and there is some evidence suggestive of metalworking here. None of the presumed domestic structures ranged to the W. bear any relevant finds.

Property 2B: No finds from the centrally-placed structures surviving here.



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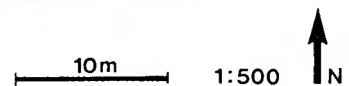
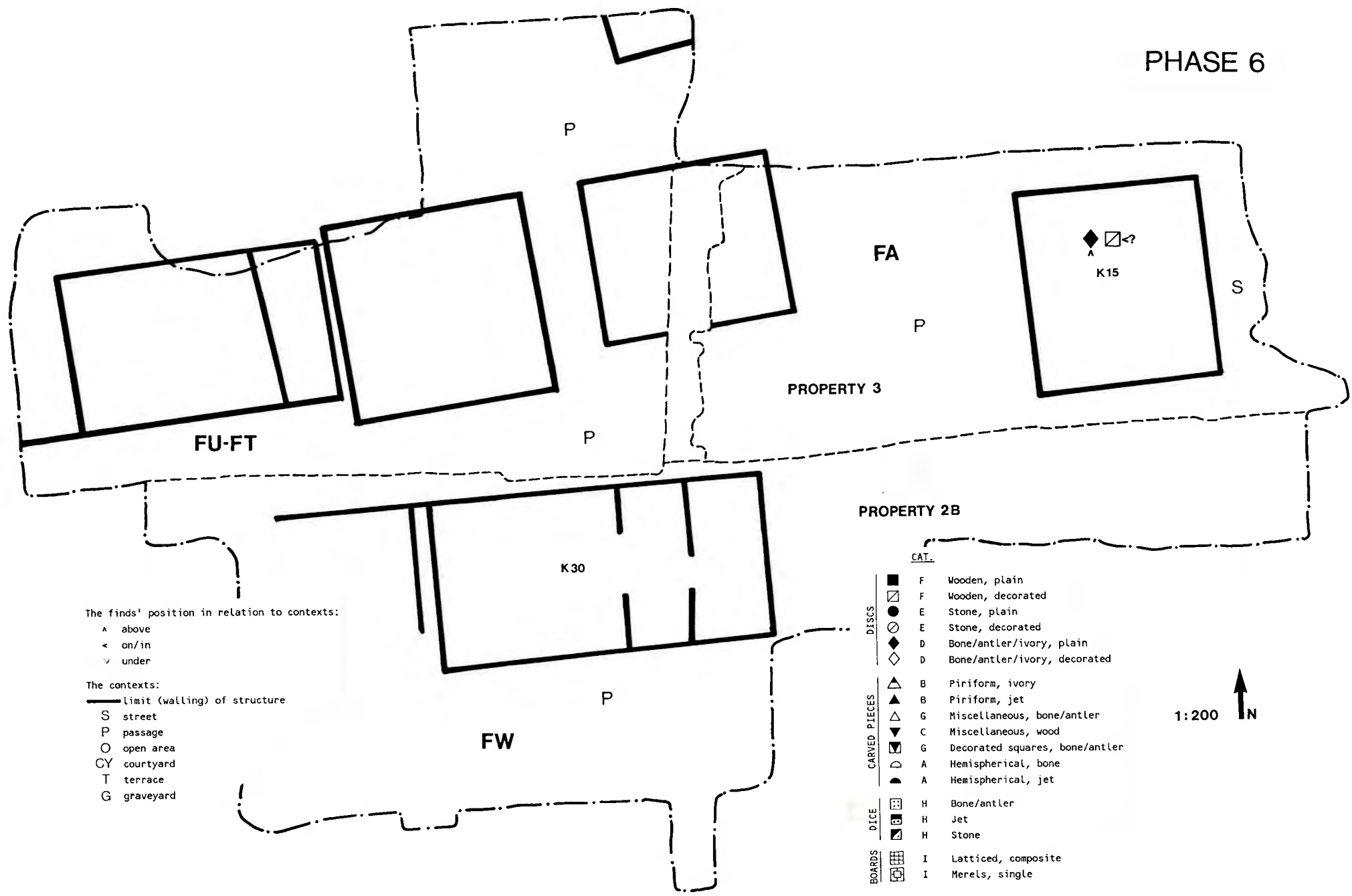


Fig. 41e PHASE 6: general distribution.



PHASE 6

The finds' position in relation to contexts:

- ▲ above
- < on/in
- ▼ under

The contexts:

- Limit (walling) of structure
- S street
- P passage
- O open area
- CY courtyard
- T terrace
- G graveyard

PROPERTY 2B

CAT.	
■	F Wooden, plain
◻	F Wooden, decorated
●	E Stone, plain
◉	E Stone, decorated
◆	D Bone/antler/ivory, plain
◊	D Bone/antler/ivory, decorated
▲	B Piriform, ivory
▲	B Piriform, jet
△	G Miscellaneous, bone/antler
△	C Miscellaneous, wood
◼	G Decorated squares, bone/antler
◐	A Hemispherical, bone
◑	A Hemispherical, jet
◻	H Bone/antler
◻	H Jet
◻	H Stone
◻	I Latticed, composite
◻	I Merels, single

1:200 ↑ N

(4) Group of items

Fig. 42e

4.8 Phase 7 (A.D. 1175-1300) (revised: 1175-1225).

Macro-distribution (Fig. 41f).

59 finds from 14 areas: FA (6), FT (1), FU (4), FW (3), FE (10), FF (2), FK (4), FG-v (11), FM (2), FL (3), FH (10), FN (1), FD (1), FP (1). The most dense concentration in this large body of finds is within areas lying against the N-S street, on both its W. and E. sides, though with the majority to the W. thereof. FE, FG-v and FH have notable concentrations. There are some single finds from outlying areas, such as FN, FO and FP. A generalized observation might be that for the first time each area with surviving structural arrangements (with the exception of FZ) bears some relevant artefactual evidence.

Finds categories represented: A (1), D (27), E (7), F (22), H (2): 12.5% of the total finds sample.

Micro-distribution (Figs. 42f and g).

14 finds altogether. Based on the successive structural reorganization in this phase, two "levels" are represented on plan, and the finds placed in association.

Early level (Fig. 42f): 4 finds: a decorated bone disc (FU 335 N88709) from a possible "B" context on the floor of house K 59; a decorated bone disc (FW 654 N91157); a plain antler (?) disc (FW 654 N91494), and a decorated bone disc (FW 654 N91970), all from a possible "K" layer under house K 36.

Property 3: There seem to be two perceptible episodes of building in Phase 7, at least within the case study area. This early level comprises the remains of the first buildings to the W. and their "K" levels on FA which lie between Phase 6's K 15 etc. and Phase 7's K 17 etc. At this juncture, the area to the E. of K 59 on this property bears no structural evidence. The building K 59 is itself compartmentalised, and the solitary find derives from an organic layer associated with the central portion. This building has been interpreted as a possible storehouse.

Property 2B: As above, the structures here represent the phase's early episode of activity. The three bone discs lay within a wood-chip layer possibly representing a pre-occupation deposit beneath the house K 36, a domestic structure. The layer FW 654 is a good example of a deposit which can not be related confidently to earlier or later occupation, lying as it does above a burnt "D" layer and below the succeeding structural elements.

Later level (Fig. 42g): 11 finds (including an assemblage of 5 items): five similarly decorated antler discs and one plain bone (?) disc (FA 358 N26416), from the "D" of building K 17; a plain wooden disc (FT 171 N58074) from the fill of a drain under passage K 62 in the SE. corner; a fragment of an ivory

piriform piece (FU 326 N88715) from a "K" layer under passage K 62; a decor-

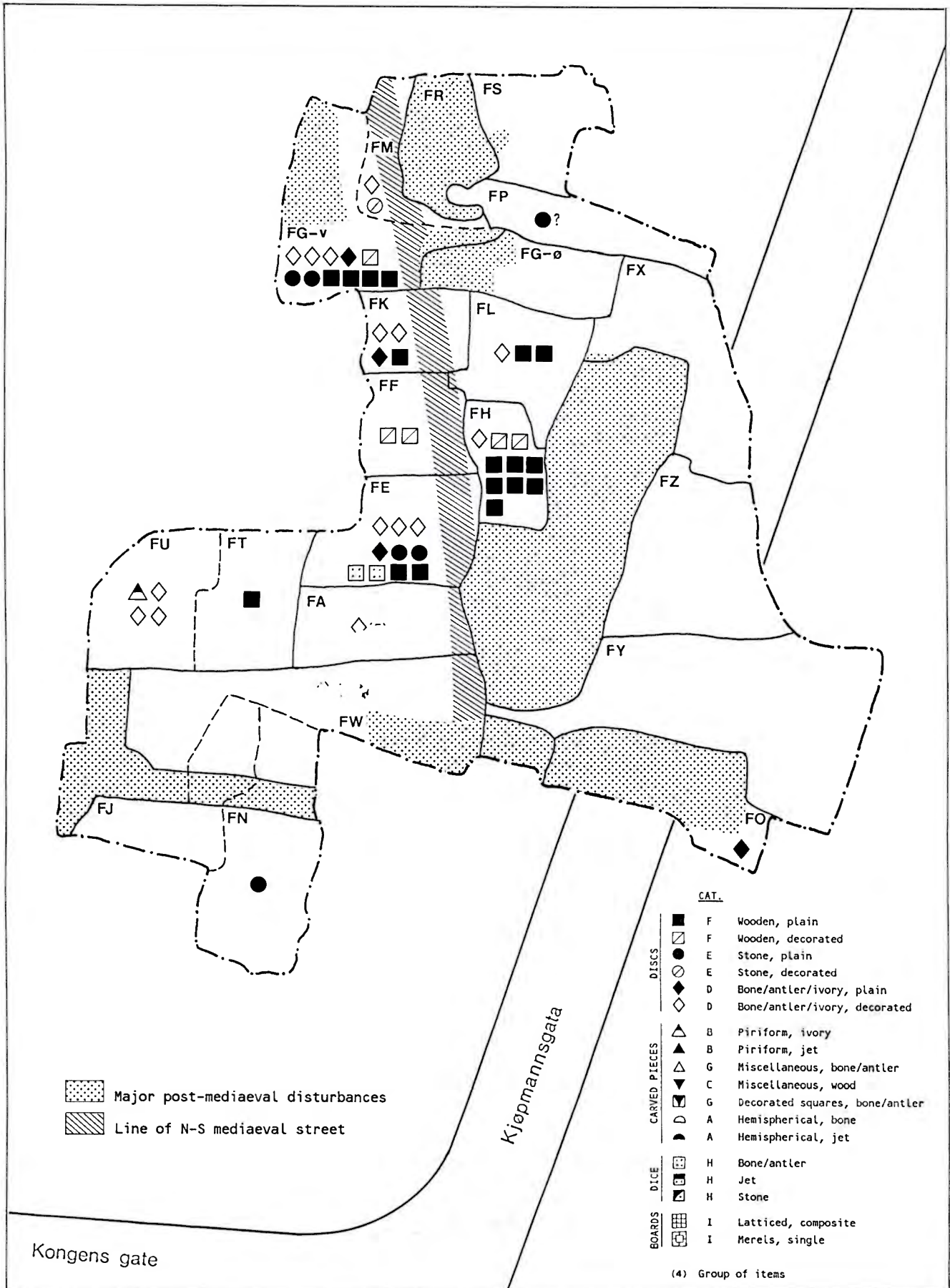
ated ivory disc (FU 318 N87813) and a decorated bone disc (FU 318 N88068) from an open area between Phase 6 and Phase 7 structures to the N. of the area; and a burnt decorated bone disc (FW 616 N89897) from the "D" of building K 44.

Property 3:

There are no structures along the length of the property, those to the W. succeeding the previously noted arrangements, and contemporary with those to the E. The domestic (?) structure K 17 produced an interesting assemblage of 5 identical antler discs and one plain bone disc from the burnt layer associated with its destruction. These finds were themselves burnt: they represent one of the few probable *in situ* groups from FBK. No other building on this property produced gaming items at this stage, though two pieces derive from the E-W passage K 62. This is the first instance on this area where finds occur in passage levels, a phenomenon which is characteristic of the succeeding phases here. While possibly deriving from contemporary occupation of the neighbouring structures, the context is such that these finds in the passages or street may be residual, perhaps deriving from earlier activity in the immediate vicinity or transported in together with make-up material brought from elsewhere. The finds to the N. of the site are associated with the N. passage and possibly therefore also with the structures relating to the neighbouring FE property.

Property 2B:

One find from this level - a burnt decorated bone disc (FW 616 N89897) from a burnt layer sealing building K 44. This is a probable *in situ* find, deriving from the occupation of this probable residential building, and is therefore an important find. Unfortunately, through an oversight, this item was not included in the statistical analyses, and was added at a late stage in the study.



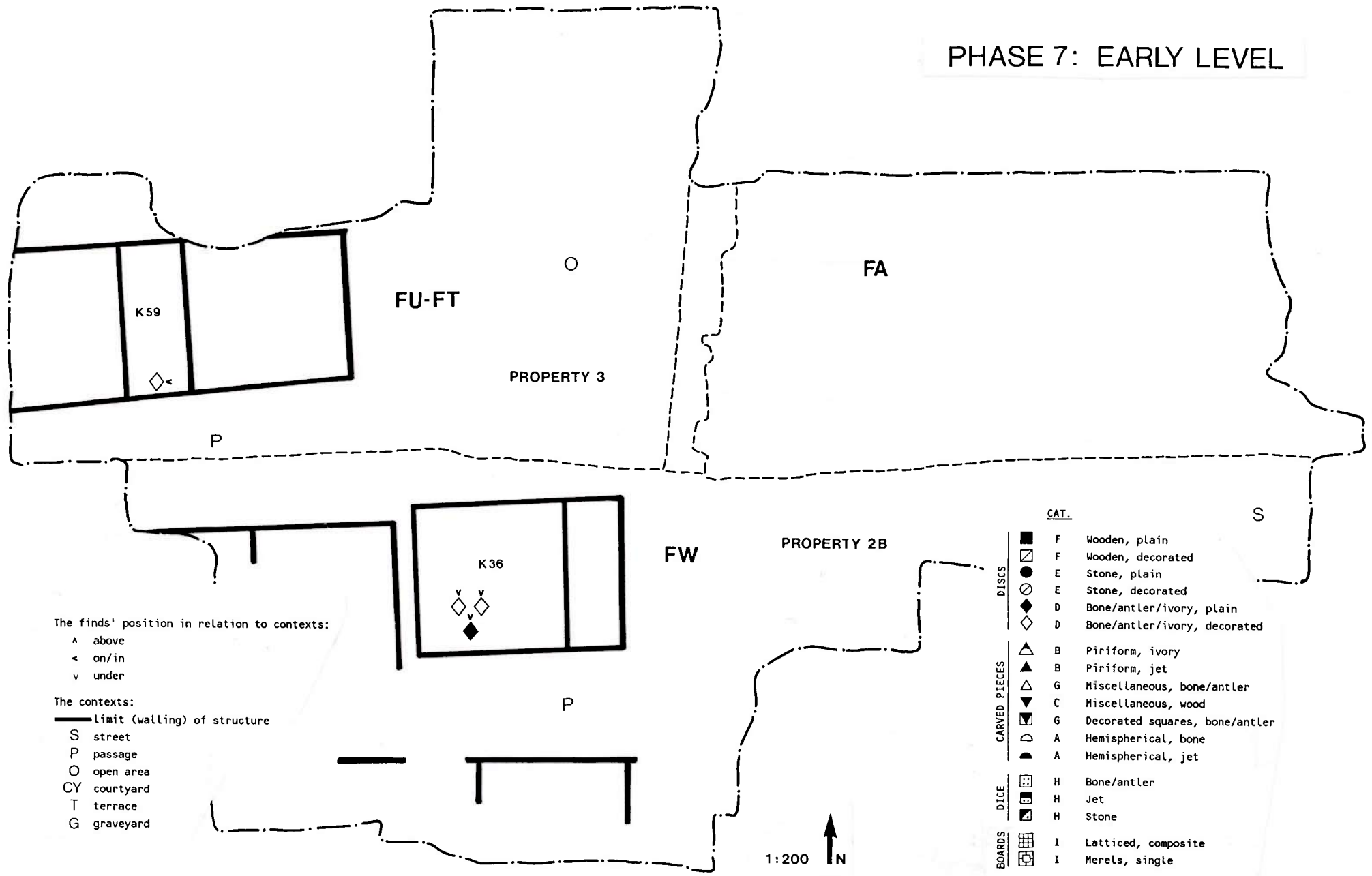
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Fig. 41f

PHASE 7: general distribution.

PHASE 7: EARLY LEVEL



The finds' position in relation to contexts:

- ^ above
- < on/in
- v under

The contexts:

- Limit (walling) of structure
- S street
- P passage
- O open area
- CY courtyard
- T terrace
- G graveyard

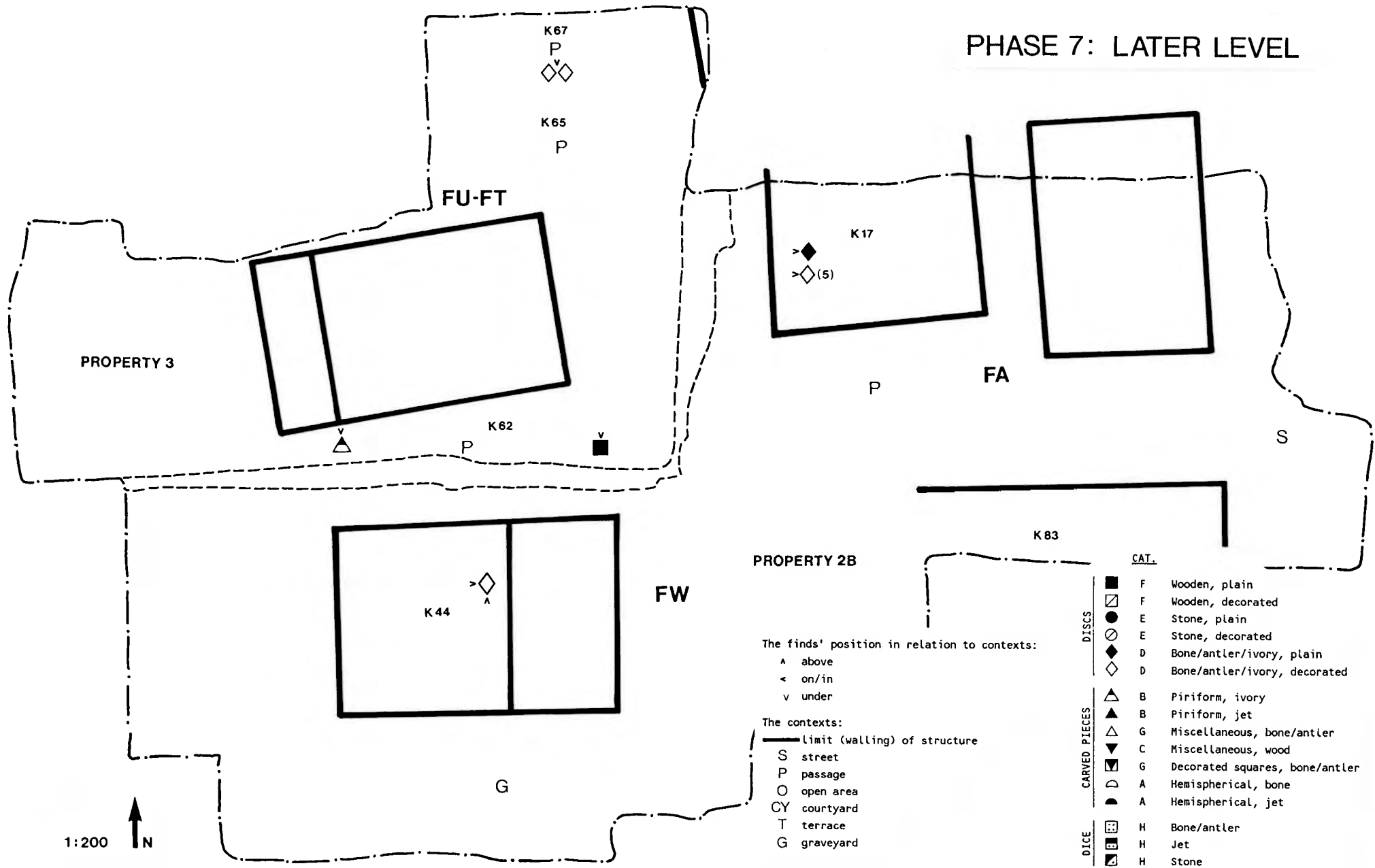
		CAT.
DISCS	■	F Wooden, plain
	◻	F Wooden, decorated
	●	E Stone, plain
	◉	E Stone, decorated
	◆	D Bone/antler/ivory, plain
	◇	D Bone/antler/ivory, decorated
CARVED PIECES	▲	B Piriform, ivory
	▲	B Piriform, jet
	△	G Miscellaneous, bone/antler
	▼	C Miscellaneous, wood
	◻	G Decorated squares, bone/antler
	◐	A Hemispherical, bone
DICE	●	A Hemispherical, jet
	▣	H Bone/antler
	▣	H Jet
BOARDS	▣	H Stone
	▣	I Latticed, composite
	▣	I Merels, single

1:200 ↑ N

(4) Group of items

Fig. 42f

PHASE 7: LATER LEVEL



1:200



PROPERTY 2B

The finds' position in relation to contexts:

- A above
- < on/in
- v under

The contexts:

- Limit (walling) of structure
- S street
- P passage
- O open area
- CY courtyard
- T terrace
- G graveyard

(4) Group of items

CAT.

DISCS		F	Wooden, plain	
		F	Wooden, decorated	
		E	Stone, plain	
		E	Stone, decorated	
		D	Bone/antler/ivory, plain	
		D	Bone/antler/ivory, decorated	
	CARVED PIECES		B	Piriform, ivory
			B	Piriform, jet
			G	Miscellaneous, bone/antler
			C	Miscellaneous, wood
		G	Decorated squares, bone/antler	
		A	Hemispherical, bone	
DICE		A	Hemispherical, jet	
		H	Bone/antler	
		H	Jet	
BOARDS		H	Stone	
		I	Latticed, composite	
		I	Merels, single	

Fig. 42g

4.9 Phase 8 (A.D. 1225-1325) (revised: 1225-1275).

Macro-distribution (Fig. 41g).

144 finds, from all areas except FG-ø, FJ and FS. As in Phase 7 clustering is greatest in areas abutting the N-S street on its W. side, areas FA, FF and FK having notable concentrations. Areas FH and FL, to the E. of the street also contain a fair number of items. The outlying areas to the E. and S. of these "core" areas, as they might be referred to, bear fewer finds, though it can be noted that most sites with structural evidence bear some relevant artefacts (FG-ø being an exception): FA (36), FT (14), FU (10), FW (10), FE (6), FF (12), FG-v (2), FH (5), FK (22), FL (15), FM (1), FN (2), FO (2), FP (2), FX (1), FY(1), FZ (3).

Finds categories represented: B (4), C (7), D (18), E (45), F (58), G (1), H (10), I (1): approx. 31% of the total finds sample.

Micro-distribution (Figs. 42h, i, and j).

The structural longevity and complexity on these properties requires that the contexts be divided up into three distinct "levels" producing 70 finds in total.

Early construction ("K") contexts (Fig. 42h): 34 finds, including an assemblage of 11 items: a plain wooden disc (FA 377 N26366) and a decorated bone disc (FA 377 N26168) from "K" deposits under the timbers of passage K 28; a plain wooden disc (FA 343 N23246) and a decorated wooden disc (FA 343 N26401) from a "K" or "B" finds-rich wood-chip layer directly under the flooring of the W. room of house K 23; a group of 11 plain wooden discs (FA 374 N25394) found together in a "K"(?) context under building K 26; a carved wooden hemispherical piece (FA 342 N23251) from a "K" or "B" layer under the planking of house K 23; a single-sided wooden merels gaming-board (FA 367 N25218) from a finds-rich "K" or "B" layer under the N. wall of house K 23; a decorated disc (FA 316 N22960), a plain wooden disc (FA 316 N23030) and a plain stone disc (FA 316 N23156), all from a finds-rich layer "K" or "B" layer around the floor-joists of building K 26; a decorated bone disc (FA 309 N21229) from a finds-rich "K" or "B" layer to the S. of building K 27; a plain wooden disc (FT 167 N58070) and a plain stone disc (FT 162 N58066) from "K" or "B" layers for house K 73; a decorated wooden disc (FT 139 N56950) from a "K" layer under the joists of the first K 70 floor, to the E.; a decorated bone disc (FU 302b N87327) from a possible "B" layer over the first floor of house K 70, to the W.; a plain stone disc (FU 308 N87625) from the fill of a post-hole under the passage K 71; four plain stone discs (various, from FW 554) from a "K"(?) layer under house K 48 and passage K 47; a plain wooden disc (FW 415 N68389) from a "K"(?) layer under K 49; a bone/antler die (FW 323 N67858) from a "K"(?) layer under K 33.

Property 3: The contexts cited above are all broadly synchronous in that they comprise layers which lie in conformity below the structures of Phase 8, and above the burnt contexts terminating Phase 7. The whole property is densely built over, expanding on the pre-existing arrangements slightly. A large number and variety of gaming items derive from

these contexts, the bulk lying to the E. below the two easternmost buildings (this locational bias is not consistent throughout the phase). These items are essentially of uncertain origin. A number lie in apparently close physical relationship with the flooring, and their "filtering" down through gaps therein is a possibility, though there is some evidence to the contrary; e.g. the assemblage of 11 wooden discs, found *en masse*, and evidently *in situ*, on the surface of a thick wood-chip layer below K 26. That such a group dropped down between flooring elements during the building's occupation seems unlikely, and these particular pieces rather appear to have been deposited here while the area lay open, prior to construction of the flooring. The large number of single finds present in these contexts may suggest piecemeal accumulation if the area stood open for some time (though this seems unlikely given the nature of site and finds), the dumping of redeposited material either brought in from outside or moved about on-site during restructuring activities, or perhaps gradual loss during the occupation of the structures, loss occurring through floorboards, the sweeping-out of rooms etc. etc...

Property 2B: Similar expansive structural and depositional developments occur here, and the same uncertainties may be voiced as to how exactly the finds entered their contexts. Layers beneath all the structures here produce relevant finds.

First "floor" ("B") contexts (Fig. 42i): 28 finds: a carved wooden chess (?) piece (FA 371 N25556), a fragment of decorated antler disc (FA 371 N25458-cf. FA 358 group in Phase 7) and an ivory piriform piece (FA 371 N25430), all from a thick wood-chip layer under the joists and planking in the N. of passage K 29, to the S. of house K 23; a fragment of decorated bone disc (FA 260 N20384) and a plain stone disc (FA 260 N20390), both from a finds-rich "B"(?) layer over the street level G10; a decorated bone disc (FT 131 N55115), a plain wooden disc (FT 131 N55856) and a plain stone disc (FT 107 N55333), all from "B" or "K" layers between lower and upper floors of building K 70; a plain bone disc (FT 105 N55527), a decorated antler disc (FT 105 N55531), an ivory piriform piece (FT 105 N55481), three plain wooden discs (FT 105 N54326, FT 105 N54370, FT 105 N55514) and a carved wooden chess(?) piece (FT 105 N55310), all from a "B" or "K"(?) layer of wood-chips between the upper and lower floors of the easternmost section of building K 70; a plain bone disc (FU 263 N58277), and six plain wooden discs (FU 264 N59855-7), all from a wood-chip "K" or "B" layer between the floors of K 70's room 2; a plain wooden disc (FU 263 N59288) from between floors in K 70's room 1; a plain wooden disc (FW 406 N68275) and a bone/antler die (FW 406 N67152), both from a burnt "D"? layer above the floor of house K 49; two plain stone discs (FW 309 N67036 and N67039), from a "K"(?) layer to the W. of the street K 80.

Property 3: These contexts relate to the early floor levels here (the majority of structures having two successive floors), and the synchronous passage and street levels. The finds, in layers "sandwiched" between activity horizons may derive from either the earlier or later occupation, or lie in redeposited material. The weighting in the distribution at this juncture is to the W., within the buildings K 69 and

K 70, the buildings to the E., K 23 and K 26, being devoid of items. This contrasts with the "K" level distribution, where the bias in dispersal lay to the E. of the property. K 69 and K 70 produced a limited variety of items.

A possible group of plain wooden discs comes from FU 264 in K 70.

N.B. A "cross-phase" connection occurs (as is common in pottery analyses i.e. the "joining sherd" principle) between the Phase 7 gaming-piece group from the "D" layer of K 17 house (FA 358) and a single piece, which clearly derives from the same set (FA 371), found above Phase 8's passage K 28. The single piece was found in a thick wood-chip layer, which, according to the daybook, may have lain partly over the burnt deposit in which the Phase 7 group was found. Consequently, the presence of a clearly redeposited item in such a context provides food for thought on the process of deposition of both find and layer. It may be noted, however, that the single item, although located stratigraphically higher than the group, is situated not too far away, spatially, from the probable *in situ* assemblage. The find derives essentially from activity in the previous structure here although its find-spot is indicative of some secondary disturbance in association with an episode of restructuring in the locality, which has resulted in some horizontal and vertical movement. That this movement is limited in extent may, tentatively, give some hope that many of these finds are not too greatly divorced, spatially and chronologically, from their contexts of use and loss (see further under 5.3.6.).

Property 2B: This property has comparatively few finds. However, the large house, K 49, has two items probably deriving from its destruction and consequently *in situ*. To the E. a number of finds lie on the surface of the N-S street, and, like most of such finds, may derive from any number of sources.

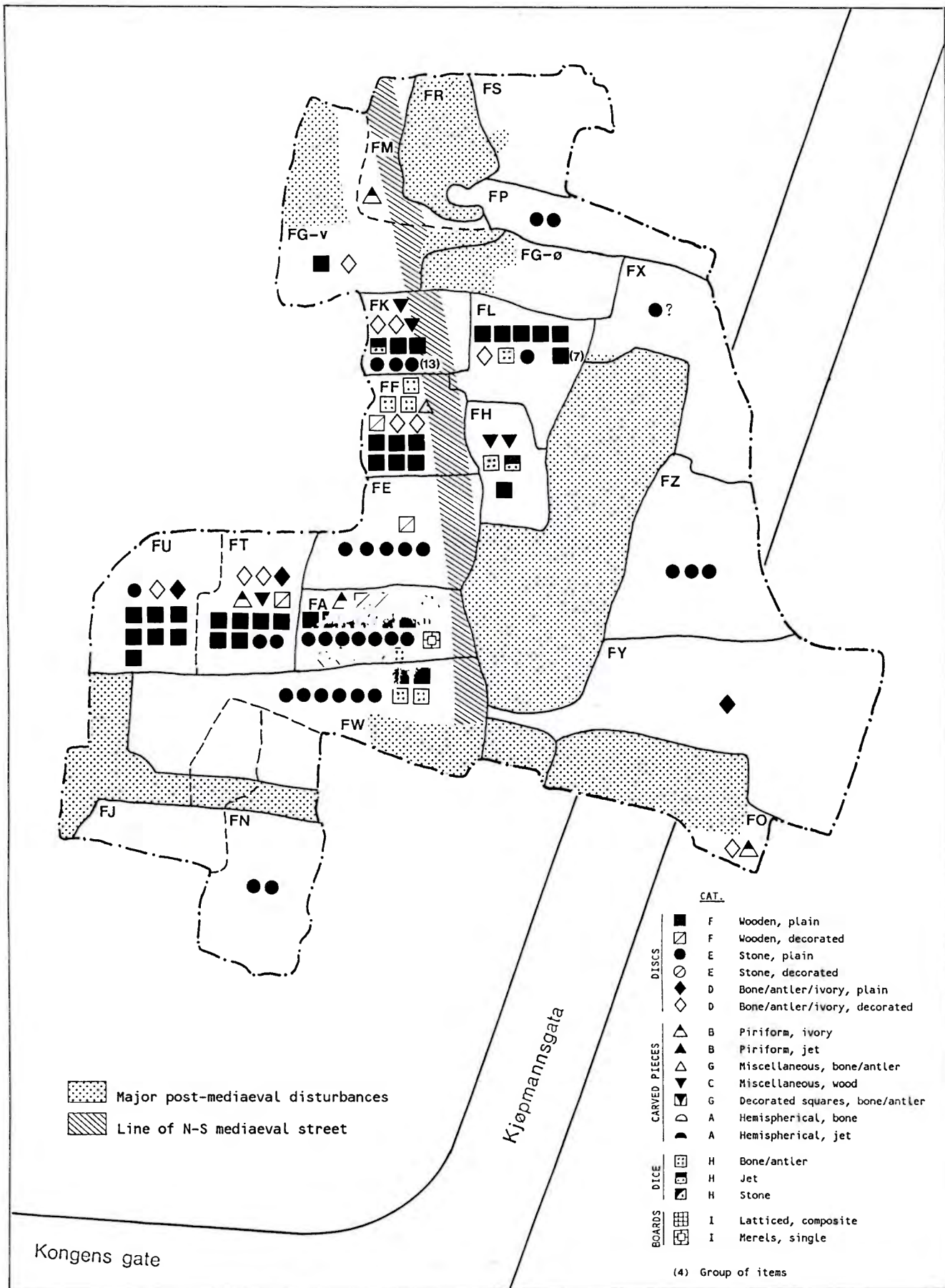
Second "floor" ("B"?) contexts (Fig. 42j): 8 finds: a decorated wooden disc (FA 257 N19028) from the surface of the upper floor in the W. room of house K 23; a plain wooden disc (FA 295 N21441) and a antler die (FA 294 N20838) from a wood-chip layer "B" (?) on the planking of passage K 29; a plain stone disc from a similar context (FA 235 N19718); a plain stone disc (FA 250 N20599) from a wood-chip layer to the W. of house K 23, a "B" (?) in K 69?; three plain stone discs (FA 245 N19939 and FA 256 N19875) from the "B" (?) of street G11.

Property 3: These finds relate to the second occupation levels within the pre-existing structures. There are only a few items and they are associated solely with the E. range of structures, the W. range having no finds at this juncture. Only two finds can be in any way related directly to buildings (K 23 and K 29), most being found on the

contemporary street and passage levels. The significance of the complete absence of finds from a formerly productive area to the W. of the property is, of course, difficult to estimate. That it may be explained by changes in the functions of units is one possibility.

Property 2B: Structural evidence at this stage is very fragmentary. There is some slight evidence for a second floor-level for house K 49. There are anyway no finds from contemporary contexts.

There is a structural division in this phase. There is also a corresponding change in emphasis in the range of gaming items which may be commensurate with some other changes in the character of 13th century occupation herein. It should also be noted that from this phase the two properties are now combined into one.



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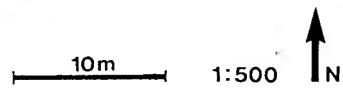


Fig. 41g

PHASE 8: general distribution.

PHASE 8: EARLY CONSTRUCTION ("K") CONTEXTS

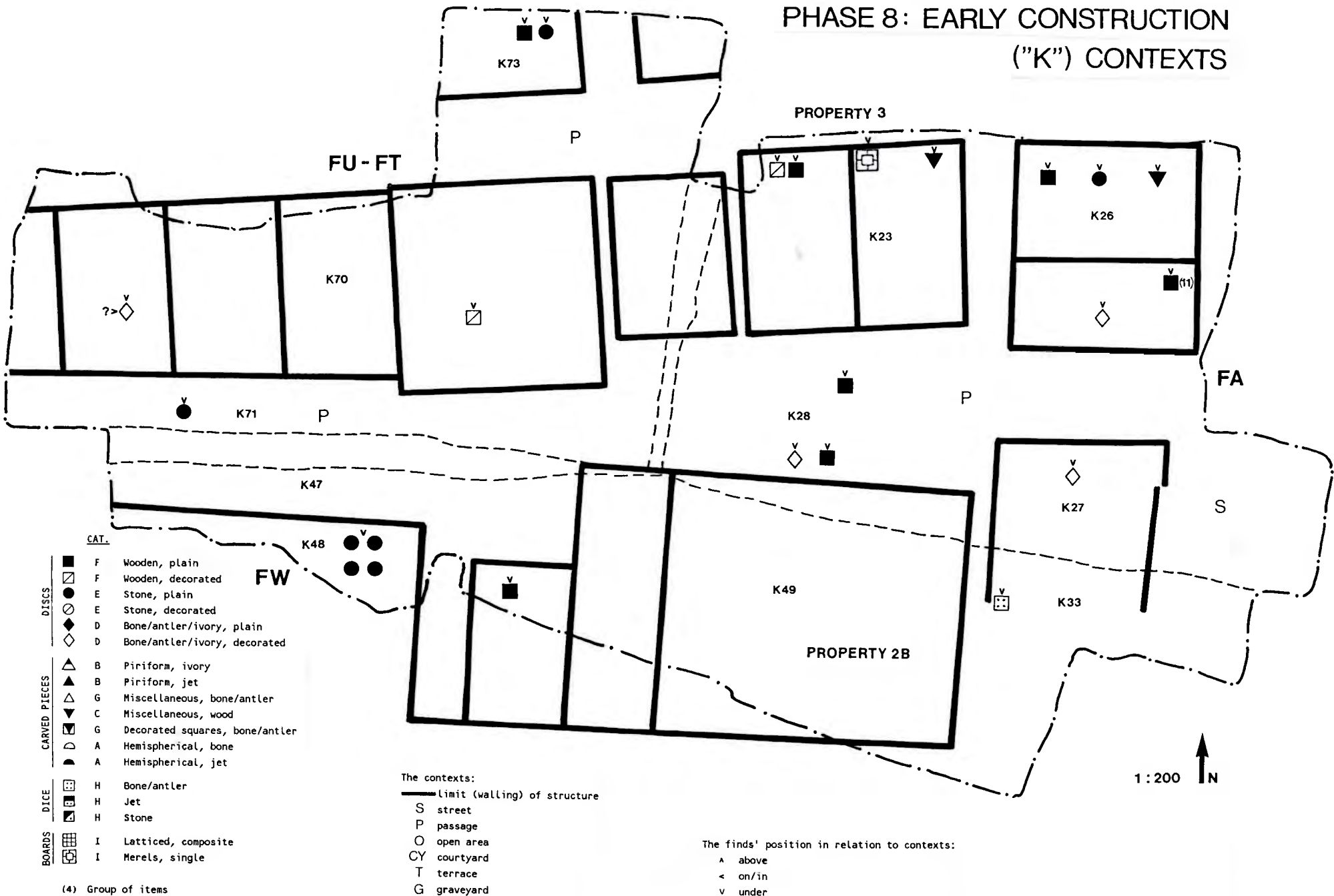


Fig. 42h

PHASE 8: FIRST FLOOR
("B") CONTEXTS

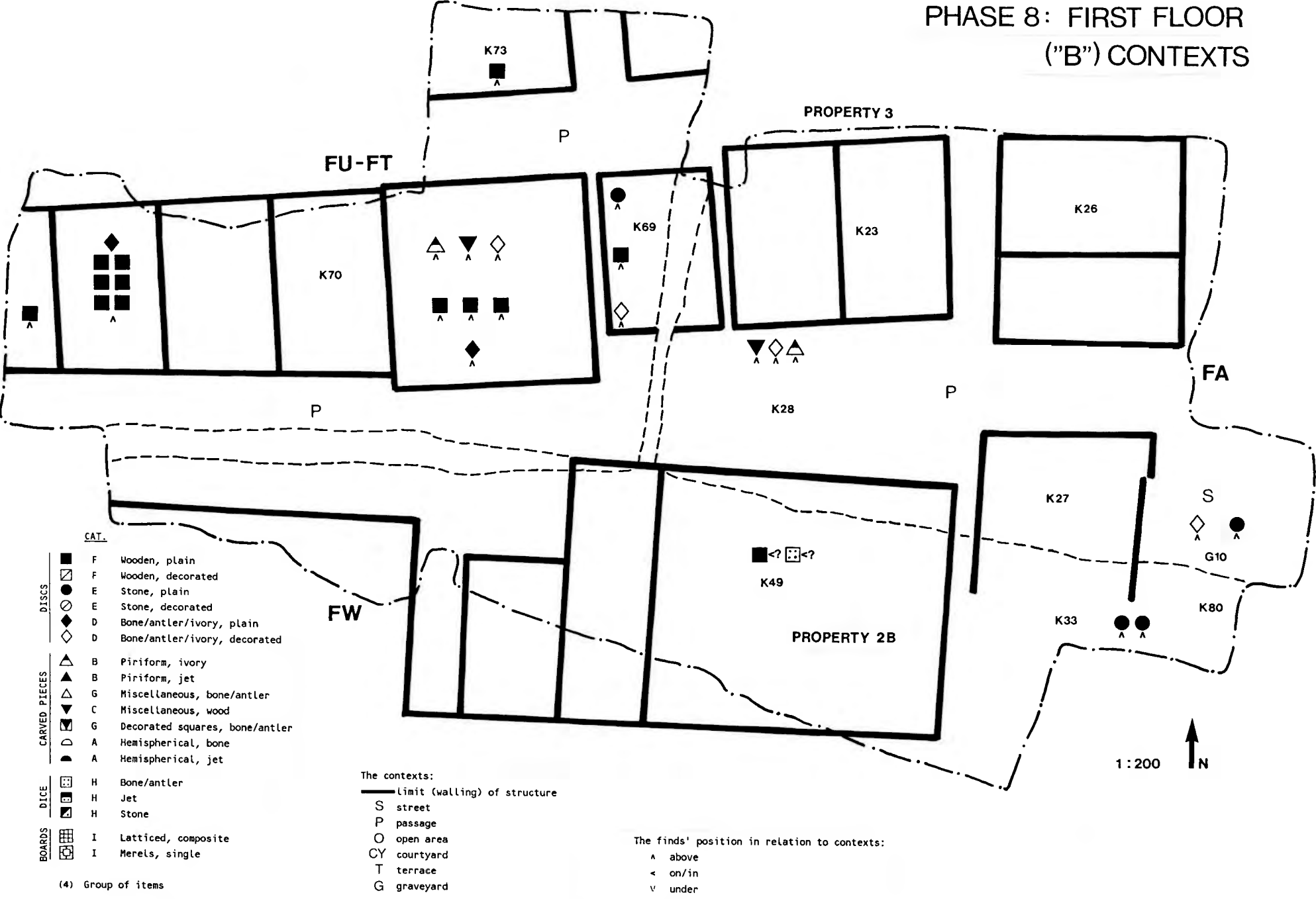


Fig. 42i

PHASE 8: SECOND FLOOR
("B") CONTEXTS

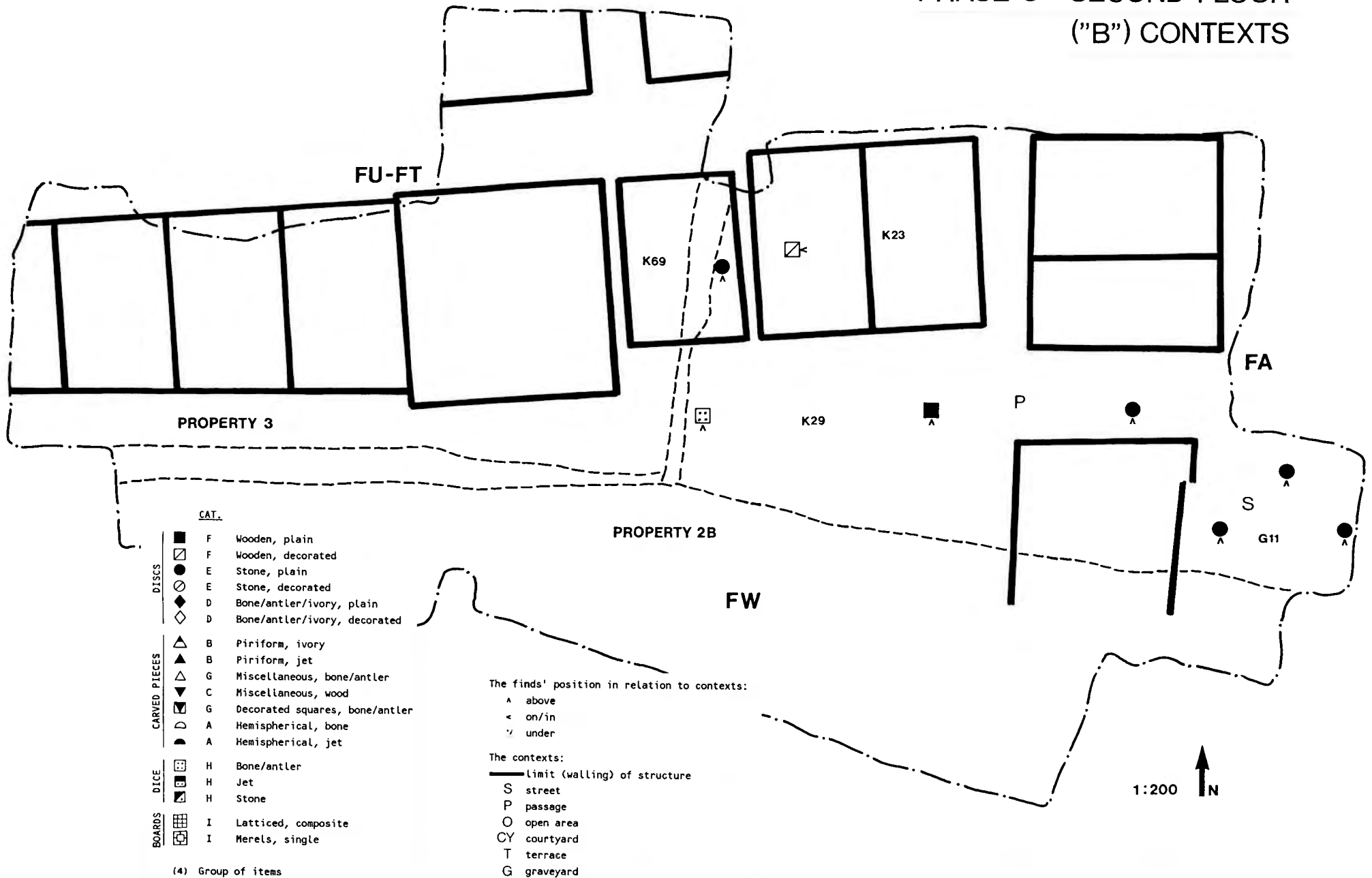


Fig. 42j

4.10 Phase 8/9 interface (c. A.D. 1250-1300) (revised: c. 1275).

This is an artificial subdivision arising from the stratigraphical uncertainties at this rather unclear phase boundary. The finds placed herein may relate to the final episodes of Phase 8, the early episodes of Phase 9, or from activities in both main phases.

Macro-distribution (Fig. 41h).

75 finds, from 4 sites: FA (35), FT (27), FU (10), FX (3). As can be seen, the phasing problems, particularly acute in the case-study area, have produced a concentration of finds there, with three finds in the outlier FX.

Finds categories represented: C (1), D (3), E (63), F (6), H (2): ca. 16% of the total finds sample.

Micro-distribution (Fig. 42k).

72 finds: seven plain stone discs (finds from FA 170 - an assemblage?), found in a wood-chip layer between the joists of K 26 and the flooring of K 24 ("B" or "K"?); seven plain stone discs (various finds from FA 153 and FA 222), from wood-chip layers above passage K 30 ("B" or "K"?); three plain stone discs and one decorated stone disc (finds from FA 220, FA 202, FA 233) from wood-chip layers over planking ("B"? and the "D"? of street G11; three plain wooden discs (finds from FA 237), a carved wooden chess(?) piece (FA 242 N18832), a plain bone disc (FA 237 N19499), a decorated bone disc (FA 237 N19723), a bone/antler die (FA 237 N18809) and ten (an assemblage?) plain stone discs (finds from FA 237), all from a find-rich "B"? or "K"? layer above earlier "B"? layers (for K 27) and below construction level for K 31?; six plain stone discs (finds from FT 104 and FT 78), and a jet die (FT 104 N53192) from wood-chip layers between the passage levels K 75 and K 81 to the N; seventeen plain stone discs (including a possible assemblage of nine?) (see finds from FT74) and two plain wooden discs (same layer) from a wood-chip layer ("K"? between the upper floor and K 70 and the floor of K 77 succeeding; nine plain stone discs and one plain wooden disc (various from FU 152, FU 153, FU 140, FU 137 and FU 133) all from layers of wood-chips between the upper floor K 70 and the flooring of K 78 and K 79 succeeding; one decorated bone disc fragment (FT 77 N55484) from a wood-chip "K" (?) layer over the passage K 71.

Property 3: These lie in stratigraphical limbo, there being no clear "D" horizon between phases 8 and 9. The contexts all comprise wood-chip deposits above the Phase 8 and below the Phase 9 structures. The finds' dispersal herein is wide-spread, though the layers over K 23 and K 69 are devoid of finds at this stage. All the localities which produced no finds in late Phase 8 now produce quite significant numbers, as do the passage and street levels. Does this reflect differential zones within the units, shifting activity, or, rather, the shifting of material and soil? There is diminished variety in the finds represented, with stone discs being by far the most frequent find.

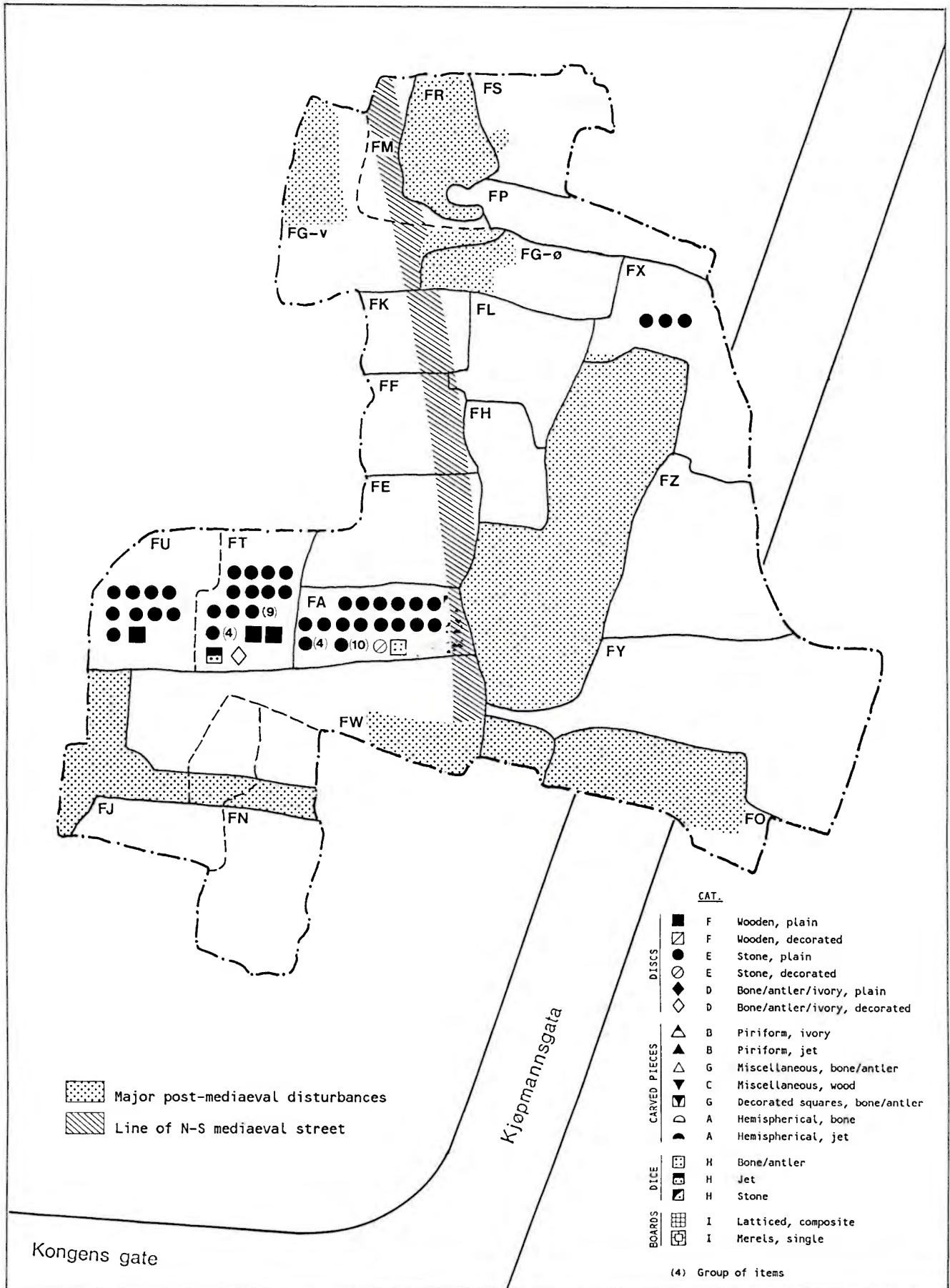
If the distribution at this stage is superimposed on that observable in the final Phase 8 level, and the finds in the Phase 8/9 interface related to Phase 8, it may be seen that all structural units bear evidence, though the range of items has become somewhat restricted.

Property 2B:

The structural remains continue to be fragmentary, with only one reasonably well-preserved structure to the E., the building K 27, succeeded in Phase 9 by K 31. The former building contains various finds-rich layers possibly deriving from its long occupation throughout Phase 8, though until the 8/9 interface these are strangely devoid of gaming finds where there is now quite a varied group. This layer may also, however, relate to the "K" or "B" of Phase 9's K 31.

There is evidence to suggest that these finds may relate to the Phase 9 occupation (Fig.411). Phase 9 bears buildings raised on posts, and the resulting gap between floor and ground would have been a natural haven for material swept aside during that phase of occupation (see 5.3.6).

As noted above in the conclusion to Phase 8, the synchronicity between structural and depositional changes and the diminution in the range of finds in these particular later 13th century contexts may result from a number of causative factors, ranging from social determinants to more mundane influences, such as prevailing soil conditions.



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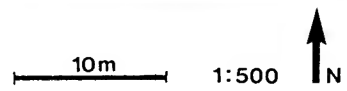
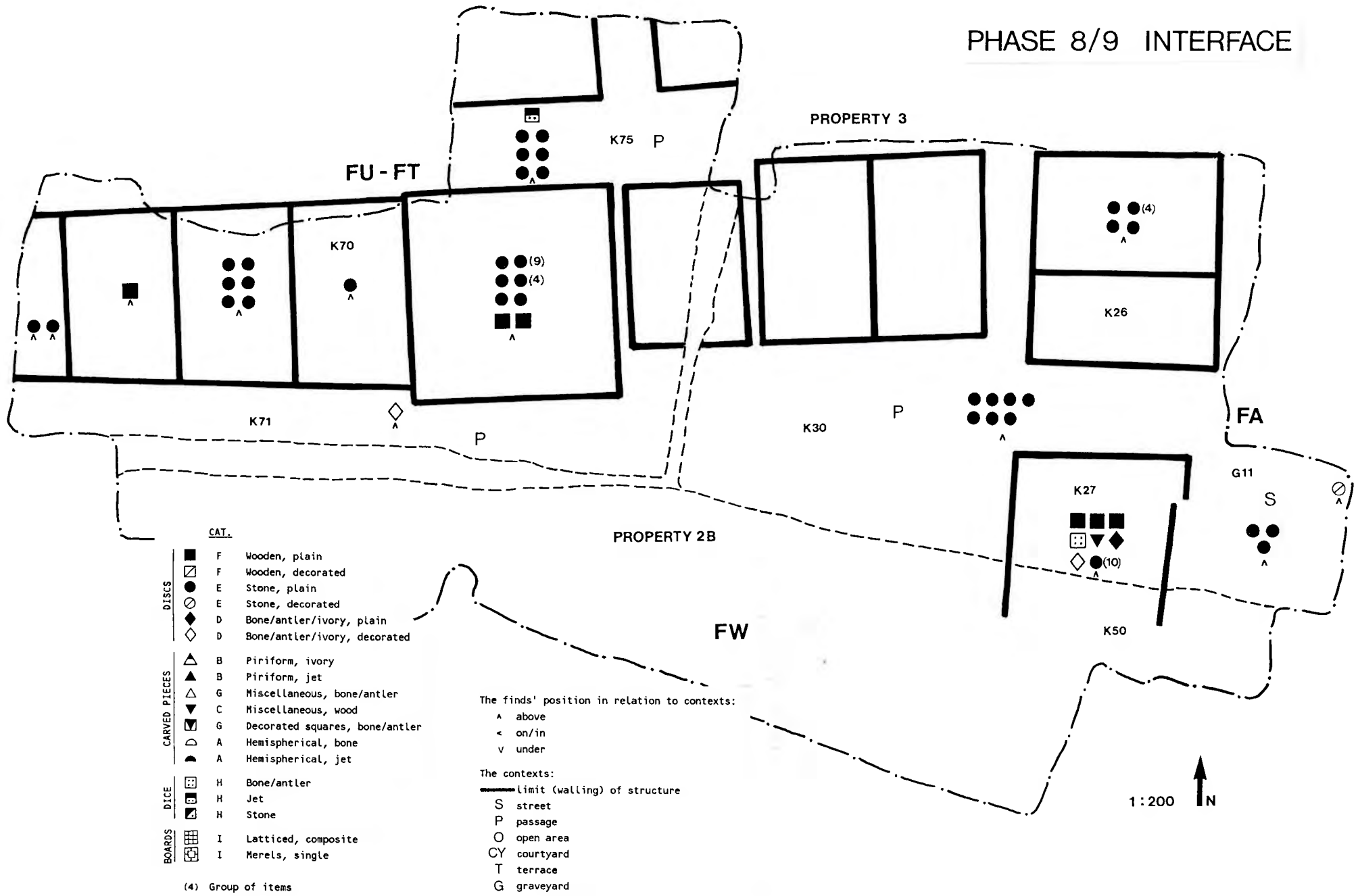


Fig. 41h

PHASE 8/9 (interface): general distribution.

PHASE 8/9 INTERFACE



CAT.	
DISCS	<ul style="list-style-type: none"> ■ F Wooden, plain ◻ F Wooden, decorated ● E Stone, plain ◉ E Stone, decorated ◆ D Bone/antler/ivory, plain ◊ D Bone/antler/ivory, decorated
CARVED PIECES	<ul style="list-style-type: none"> ▲ B Piriform, ivory ▲ B Piriform, jet ▼ C Miscellaneous, bone/antler ▼ C Miscellaneous, wood ◻ G Decorated squares, bone/antler ◐ A Hemispherical, bone ◑ A Hemispherical, jet
DICE	<ul style="list-style-type: none"> ⊞ H Bone/antler ⊞ H Jet ⊞ H Stone
BOARDS	<ul style="list-style-type: none"> ⊞ I Latticed, composite ⊞ I Merels, single

(4) Group of items

The finds' position in relation to contexts:
 ^ above
 < on/in
 v under

The contexts:
 — limit (walling) of structure
 S street
 P passage
 O open area
 CY courtyard
 T terrace
 G graveyard

1 : 200 ↑ N

Fig. 42k

4.11 Phase 9 (A.D. 1275-1375) (revised: 1275-1325).

Macro-distribution (Fig. 41i).

72 finds from 11 areas on FBK: FA (9), FU (7), FW (19), FE (9), FF (4), FG-v (2), FL (2), FH (4), FJ (11), FN (2), FO (2). The distributional bias is still towards the "core" area immediately to the E., and particularly, to the W. of the N-S street, with FO the only area of those to the E. of FBK to bear finds, though FN, and FJ in particular, to the SW., produce a number of items. The range generally, however, is restricted.

Finds categories represented: B (1), D (6), E (50), F (5), G (9), H (1): approximately 15% of the total finds sample.

Micro-distribution (Figs. 42m and n).

The depositional sequence in the case-study properties at this stage may be subdivided into two "levels". There are 35 finds in association.

Early construction "K" contexts (Fig. 42m): 12 finds: a plain stone disc (FC 145 N18607) from a "B"(?) layer in K 31; a plain stone disc and a decorated stone disc (FA 172 N17674) from a sandy wood-chip layer ("B"? or "K"?) directly under floor planking in K 24; a plain stone disc (FW 244 N66933) from a wood-chip "K"(?) layer under K 56; a plain stone disc (FW 203 N66945) from a wood-chip "K"(?) layer under the K 57 street level; a decorated bone disc fragment (FW 551 N90828) and six plain stone discs (finds from FW 551, FW 548, FW 297, FW 273) from wood-chip and earthy layers ("K"? or "B"?) between passage levels K 52 and K 53.

Property 3: These contexts lie directly beneath contemporary structures. There are a few finds, restricted in range, and the majority lie within passage levels. A few can be related to structure K 24, but these lie in ambiguous relationship to the flooring. These deposits may derive from restructuring activities on-site, and the finds they contain may be residual, possibly originating in Phase 8 activities and redistributed as stray items during cleaning-up and rebuilding.

Property 2B: The contexts are of the same nature as those in Property 4. There are only two finds, both in association with building K 31, and these may derive from previous activities here.

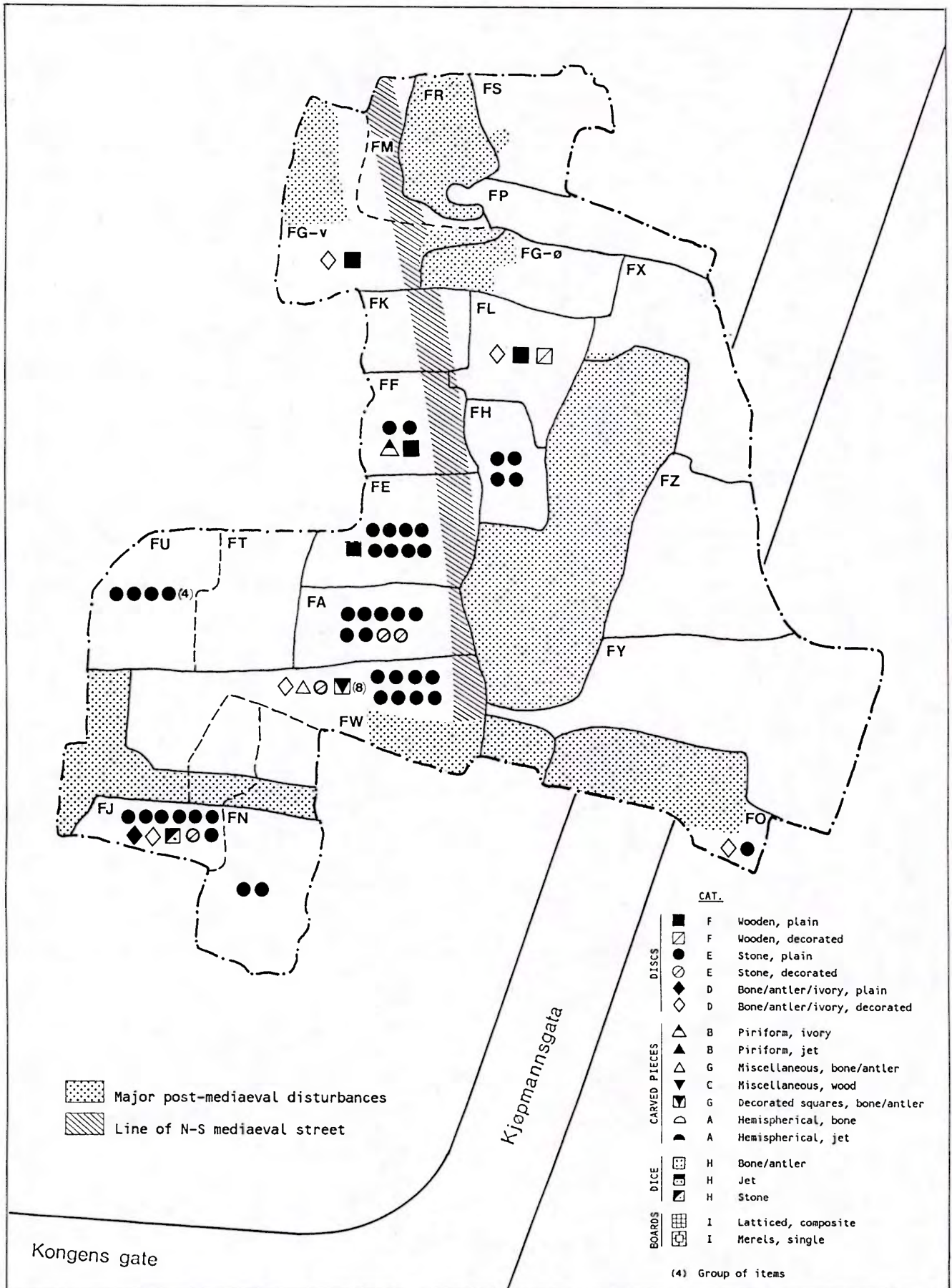
Occupation and destruction levels ("B" and "D") (Fig. 42n): 23 finds, including an assemblage of 8 items: four plain stone discs (FA 79 N2182 and finds from FC 141) from "D" layers over rooms in house K 24; a decorated stone disc (FC 93 N3118) from a possible "B" over either K 24 or K 33; seven plain stone discs (FU 32 N57385 and FU 32 N57482), all from a sandy area probably associated with (ie. the fill of?) a wall-bench over the floor of building K 78 - a possible assemblage?; a plain stone disc (FA 137 N13400) from a possible "D" layer over passage level K 32; a decorated stone disc (FW 234 N66932) from a "soapstone debris" layer ("B"?) over house K 55; an assemblage of eight similarly decorated bone/antler squares (FW 249 N66223) from a "powdery" "B"(?) layer rich in bone waste over the planking of K 56; a carved/turned bone piece (FW 537 N88174) from a burnt "D"(?) layer over passage K 53.

Property 3:

These contexts are reasonably attributable to the period of occupation of the contemporary structures, and there are a fair number of associated finds dispersed in two quite separate groups, one to the E. in K 24, the other to the W. in K 78. The W. group, a possible set, derives from a wall-bench to the SE. of the easternmost room there. The range of forms is again limited to stone discs. The full range of components in this long structure are reasonably well-defined and preserved, and there are recognisable "B" and "D" levels. The long compartmentalised "courtyard house" K 24 has been interpreted as having been mainly a storage building, and also has evidence suggestive of on-site brewing at its E. end. The finds here derive from the W. rooms. The building to the W. (K 78) is of patently domestic character, with fireplace and wall-bench. The finds here were found in the sandy fill of the latter. The courtyard is an innovation, and the alignments established in the earliest phases and respected thereafter, are now no longer strictly maintained. The large open area of the courtyard produced only one find at this stage (perhaps it was kept relatively clean?). There are no finds from the building central to the range (K 77).

Property 2B:

The structures here are also well-defined, though their orientation has tilted somewhat. The E. building (K 31) covers the area formerly occupied by K 27 and continues to produce finds. There is an interesting set of bone items from a waste layer, and it is tempting to equate them with workshop activity here. The stone disc from the house K 55 also derives from a layer possibly representative of the working of material, this time soapstone. There is a solitary find from the W. extent of the passage K 53.



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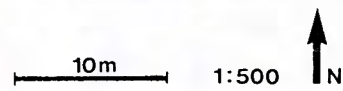
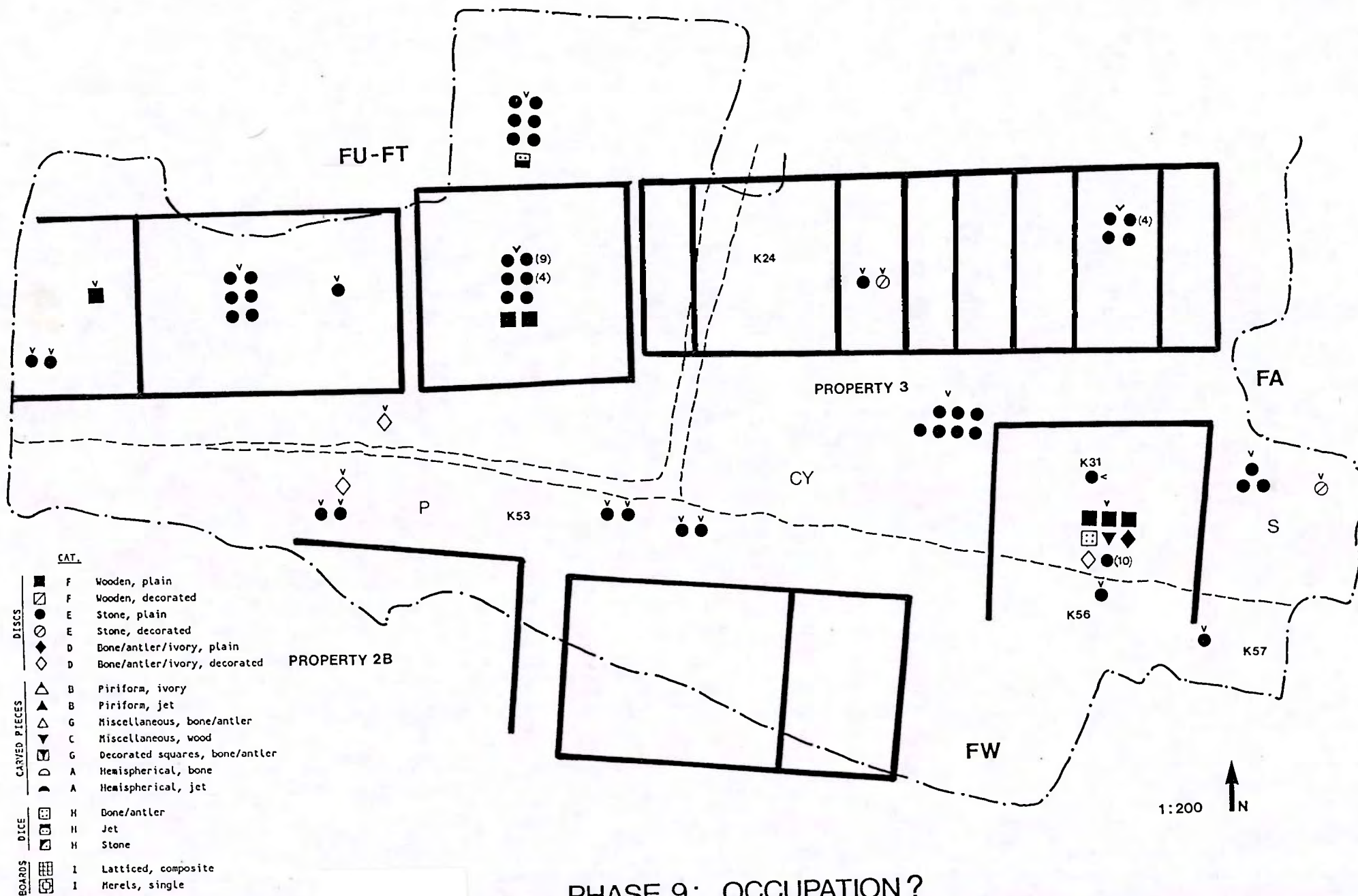


Fig. 41i

PHASE 9: general distribution.



(4) Group of items

Fig. 42l

PHASE 9: OCCUPATION?

PHASE 9: EARLY CONSTRUCTION ("K") CONTEXTS

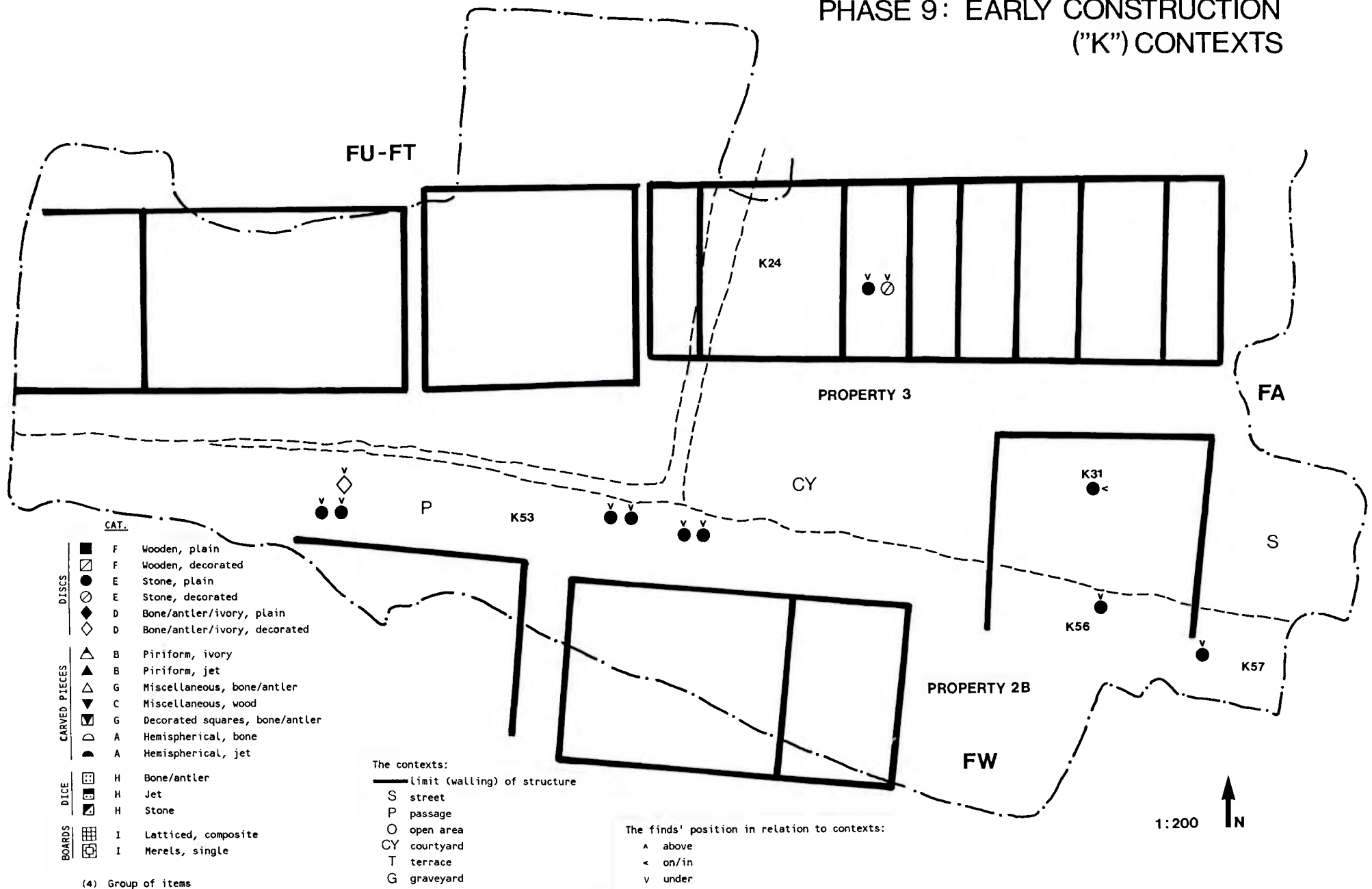


Fig. 42m

PHASE 9: OCCUPATION AND DESTRUCTION LEVELS

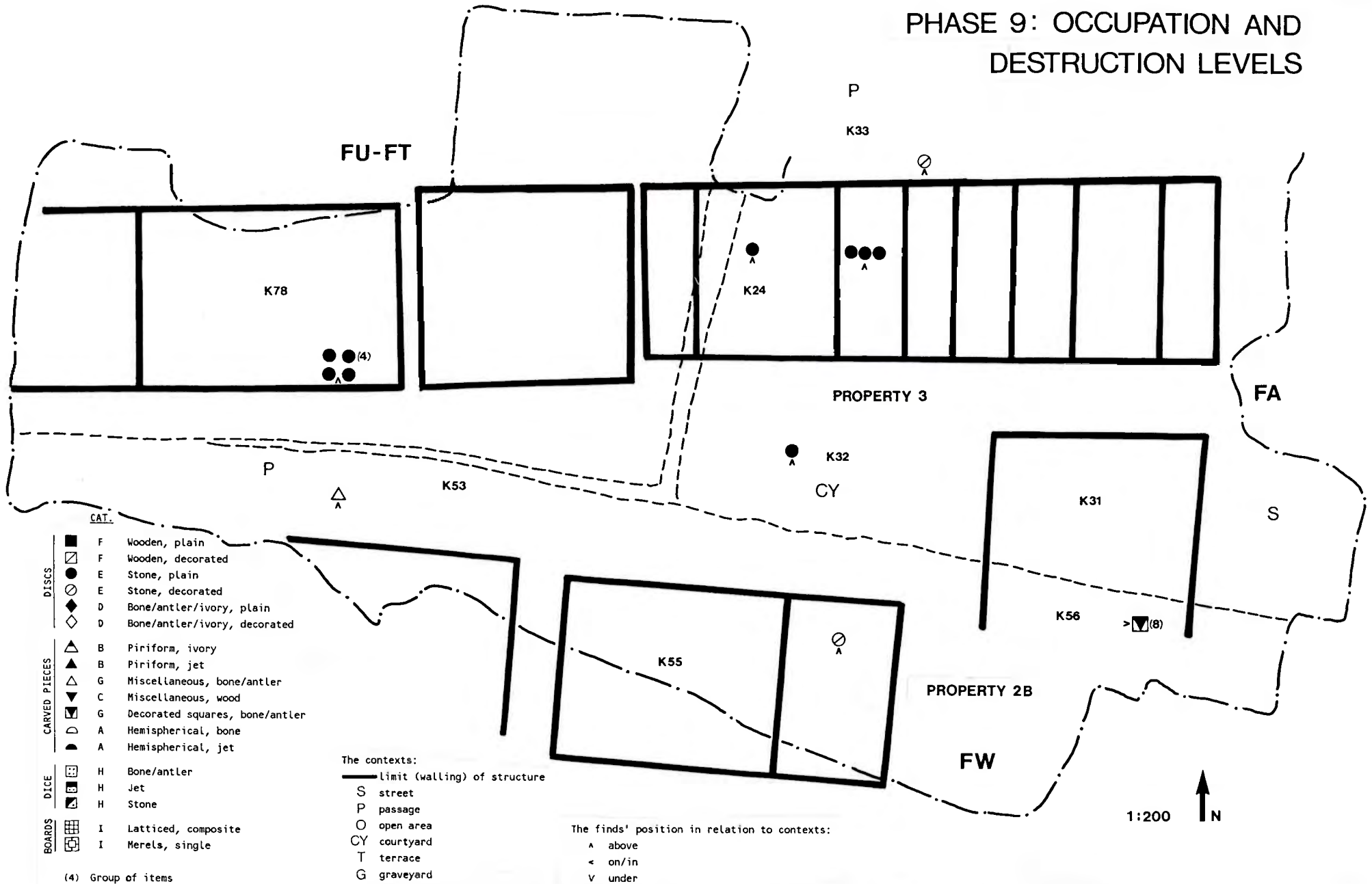


Fig. 42n

4.12 Phase 9/10 interface (c. A.D. 1300) (revised: c. 1325).

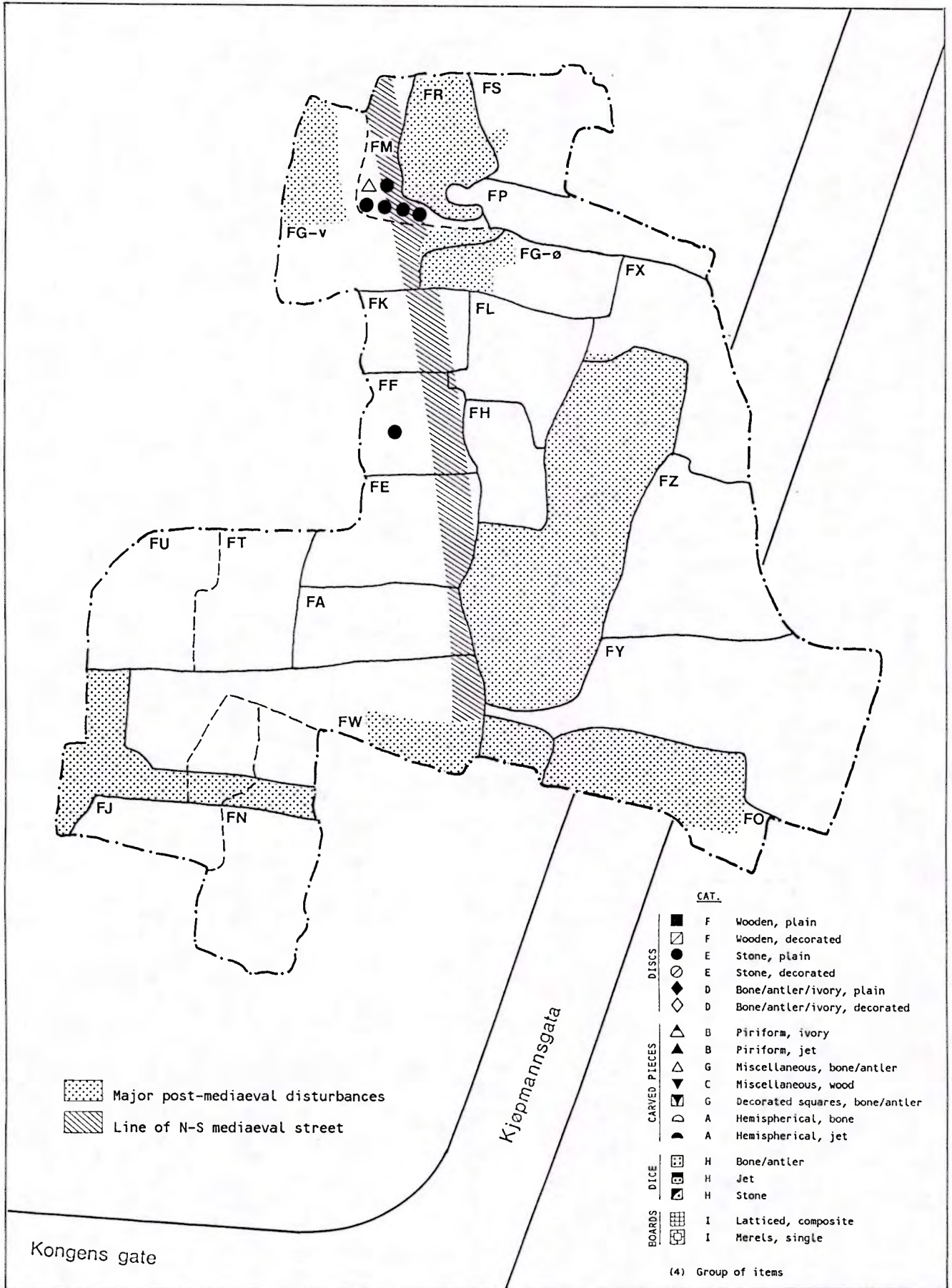
Localized stratigraphical difficulties require that this subdivision be made, where finds may be attributed to either phase.

Macro-distribution (Fig. 41j).

7 finds, from only two areas: FF (1), FM (6). Distribution relates to stratigraphical problems. Restricted range of items: E (6); G (1): ca. 1.5% of the total finds sample.

Micro-distribution.

No finds. A clear destruction level for the Phase 9 "courtyard house" levels forms a clear termination and no discussion is required here.



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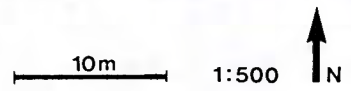


Fig. 41j

PHASE 9/10 (interface): general distribution.

4.13 Phase 10 (A.D. 1325-1475) (revised: 1325-c.1500).

Macro-distribution (Fig. 41k).

30 finds, from 12 areas on FBK: FA (1?), FT (9), FU (2), FW (1), FF (3), FH (1), FJ (1), FK (2), FL (3), FO (1), FY (5), FZ (1). The "core" areas bordering the N-S street on either side continue to produce finds, though greatly restricted in numbers and range, while sites to the SW. and, notably, the SE., produce some items. The structural evidence across FBK is generally diminished, as is the potential for preservation of organic materials. None the less, areas with structural remains do generally produce some artefactual evidence. Finds categories represented: D (3), E (24), F (1), G (1), H (1): ca. 6% of the total finds sample.

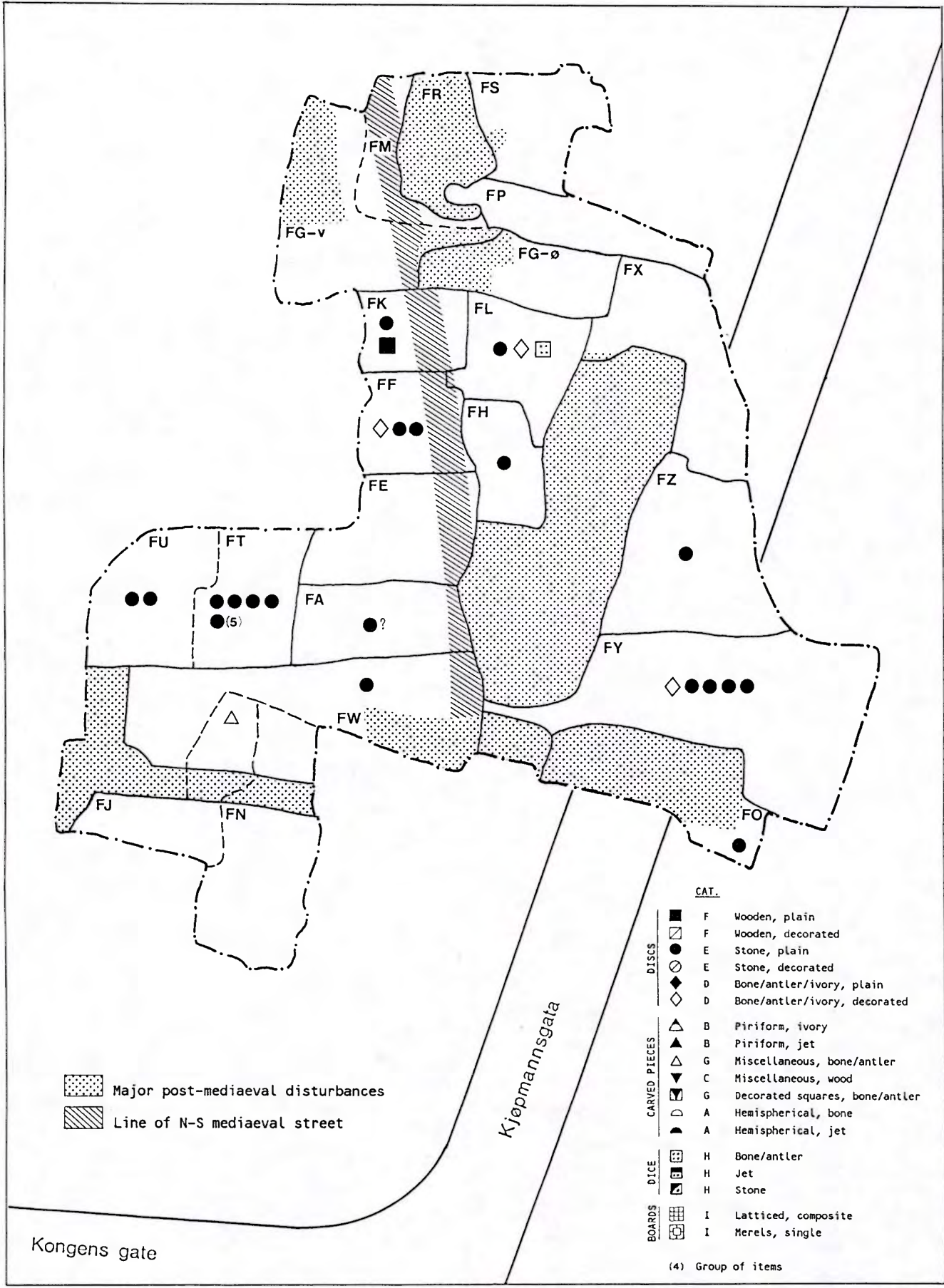
Micro-distribution (Fig. 42o).

This phase is also subdivided, and the case-study area bears some 13 finds, though all derive from lower construction contexts, and only one can be placed in a possible occupation layer.

Early construction ("K") levels: 13 finds: a plain stone disc (FA 72 N3216) from a "D" layer over passage K 34, five plain stone discs (FT 30 N52184), a possible assemblage (?) from a wood-chip "K" layer under passage K 85 or building K 82; four plain stone discs (see finds from FT 53 and FT 22) from a wood-chip "K" layer, and in the latter's case, a burnt "D" layer under building K 82; two plain stone discs (FU 62 N57123 and FU 63 N57261) from wood-chip "K" layers beneath K 82; a plain stone disc (FW 220 N66934) from a "K" layer under passage K 59.

Property 3: The condition of the structural evidence drops dramatically in quality in this phase. All the finds, with the exception of the single FA find, come from contexts below the fragmentary floors, and their dispersal is biased to the W. of the long building K 82/K 35, possibly reflecting activity patterns prior to Phase 10 (ie. perhaps deriving originally from Phase 9's domestic structure K 78 below?). Only stone discs occur, which may reflect diminished potential for organic preservation rather than a true bias. Only one find may lie in a context more confidently attributable to the Phase 10 occupation on this property.

Property 2B: This property also bears very fragmentary structural remains, and like its N. neighbour has a similar lack of finds attributable to the activity within contemporary structures. One find exists, under the passage/courtyard area, which, it seems, is, as previously observed, generally clear of finds, perhaps being swept clean regularly.



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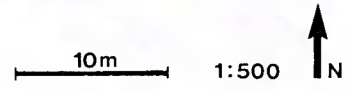


Fig. 41k PHASE 10: general distribution.

PHASE 10:
EARLY CONSTRUCTION
("K") LEVELS

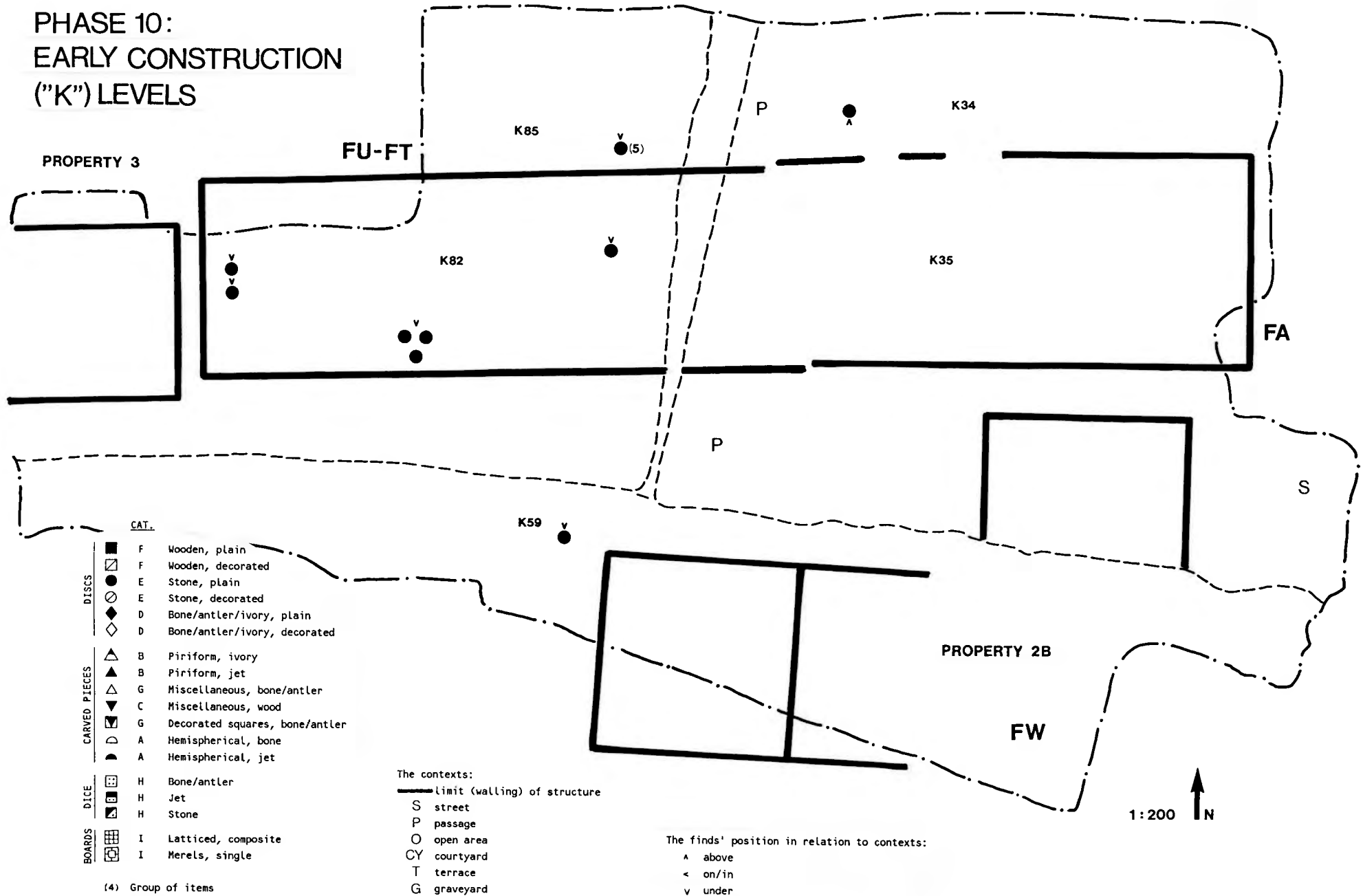


Fig. 42o

4.14 Phases 11 and 12 (A.D. 1475+) (revised: c.1500+).

Macro-distribution (Fig. 411).

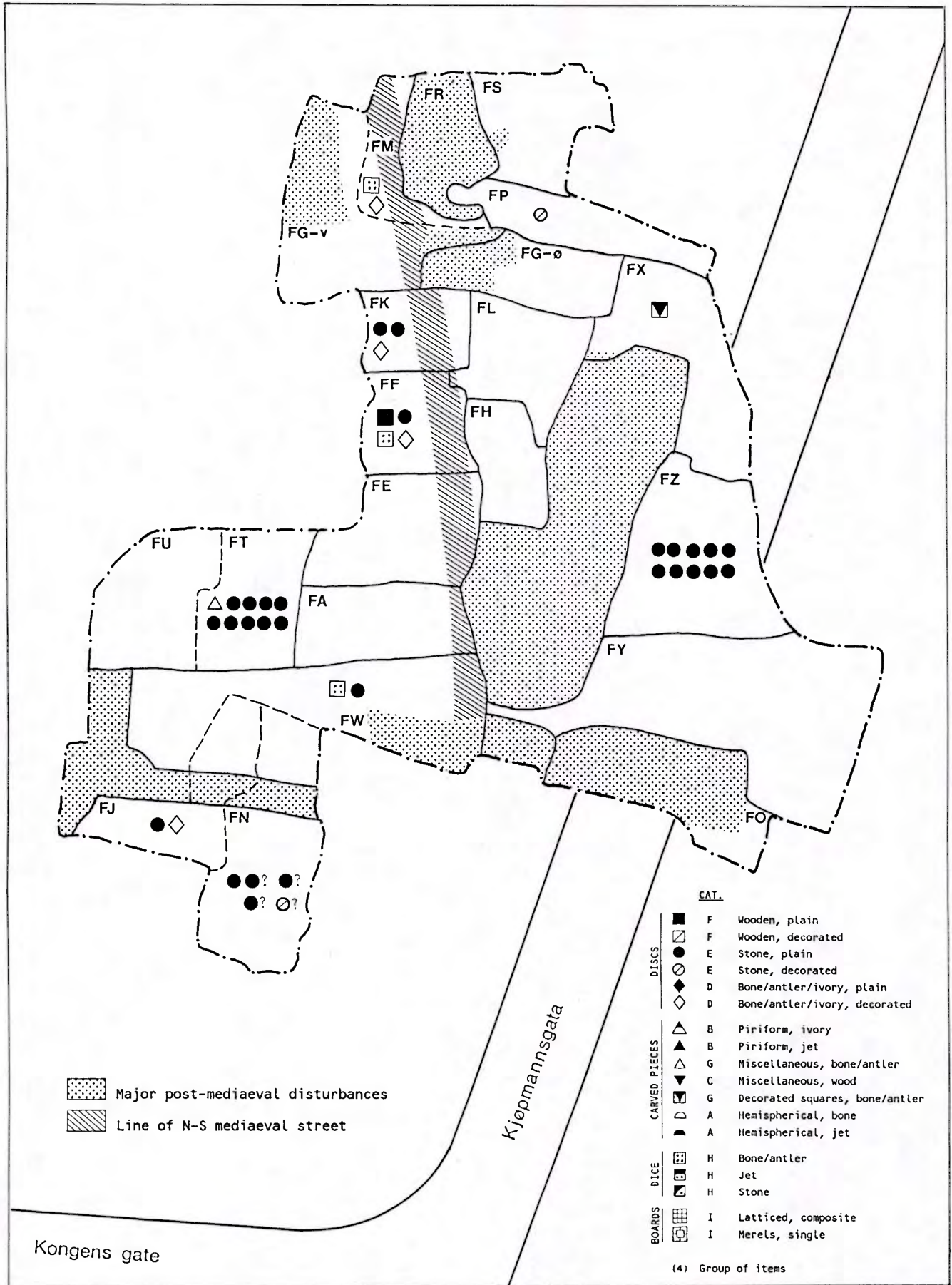
40 finds, from 10 areas on FBK: FT (10), FW (2), FF (4), FJ (2), FK (3), FM (2), FN (5), FP (1), FX (1), FZ (10). Structural evidence across FBK is extremely fragmentary at this stage, and soil conditions poor. The finds are scattered widely across FBK, are restricted in range, and derive predominantly from intrusive contexts (pits, cellars etc.). The redistribution of material here is more readily observable in the large amount of disturbances, and much of the material may be residual or intrusive.

Finds categories represented: D (4), E (30), F (1), G (2), H (3): 8.5% of the total finds sample.

Micro-distribution (Fig. 42p).

10 finds: seven stone discs (finds from FT 20) from a mixed burnt "K"(?) layer under K 88; a carved/turned bone piece (FT 20 N52159) from the same context; two plain stone discs (FT 1 N50542 and FT 2 N50974) from disturbed contexts; one plain stone disc (FW 555 N88716) from an uncertain context; one bone /antler die (FW 504 N87317) from an intrusion.

Properties 3 and 2B: These phases are heavily disturbed and fragmented. The structural evidence, such as it is, suggests broad reorganization and realignment of the properties. No finds occur which can be confidently related to the episodes of occupation. The range is again restricted, the customary stone discs predominating.



FOLKEBIBLIOTEKSTOMTEN

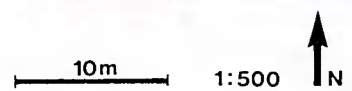


Fig. 411 PHASE 11 AND 12: general distribution

PHASE 11

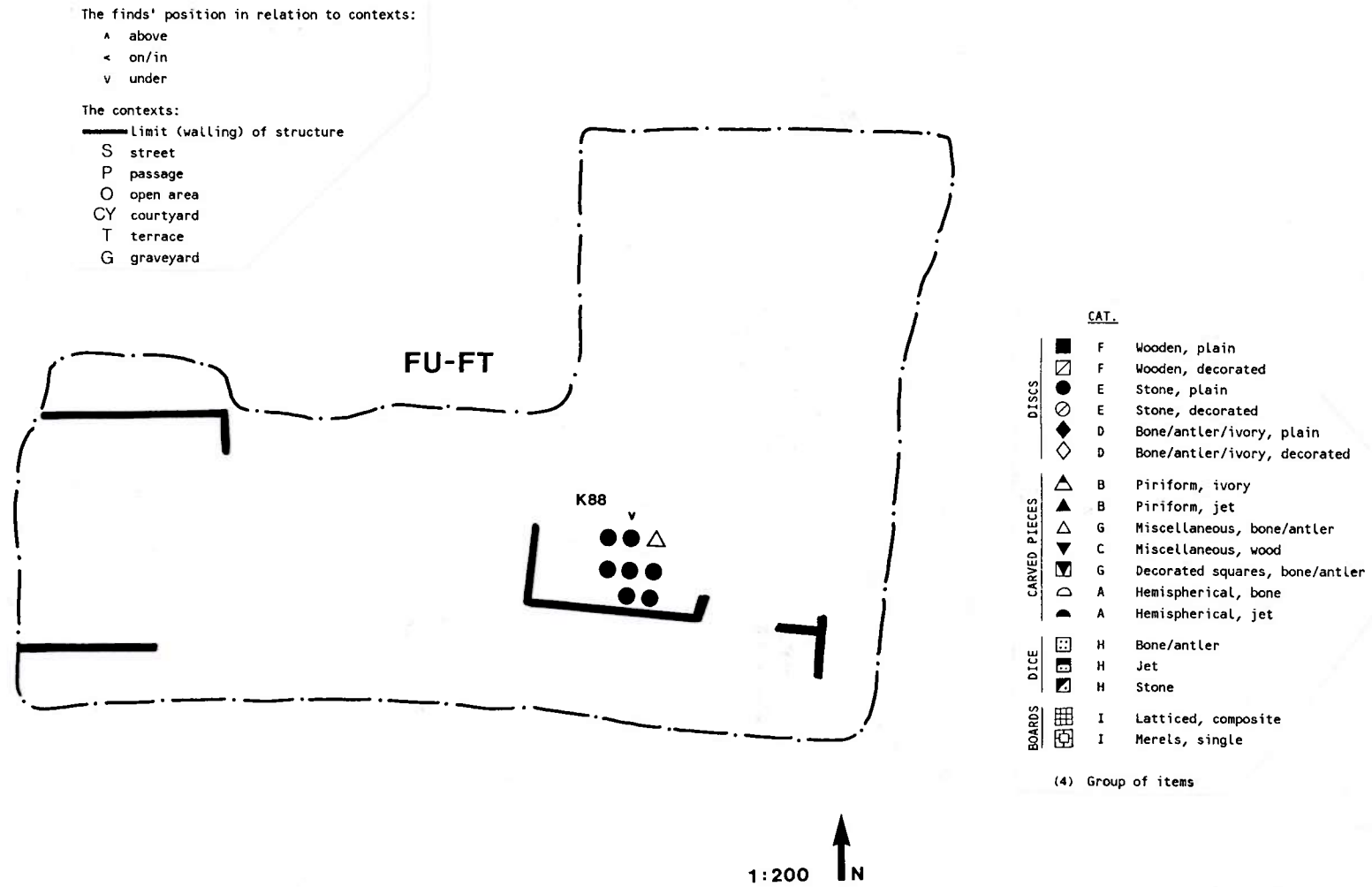


Fig. 42p

5. TREND ANALYSIS: TYPOLOGIES AND DISTRIBUTIONS IN SPACE AND TIME

5.1 Introduction.

This chapter will deal with a number of trends arising from the data set out in Chapters 3 and 4. Each theme relating to the characteristics of the objects themselves and their patterns of spatial and chronological distribution will be discussed independently. Chapter 6 (Conclusions) provides a synthesis of these observations in a broader interpretative form.

5.2 Typological Trends.

5.2.1 Representative Forms: A comparative review of the characteristics of the gaming artefacts found on the Library Site (FBK).

Introduction

Each find has a function, being usually classifiable as being associated with one particular game-type, or a number of related variants. The locally-occurring categories of gaming items may be compared, in their chronological incidence, with the established typologies available for most games as derived from etymological, historical, ethnological and archaeological studies.




Fig. 43 places the FBK categories, and their corresponding families of games, into broader historical perspective. Each band represents the known chronological range of individual games and their actual, or presumed, associated artefacts in Scandinavia. In cases where there is only tentative evidence of occurrence the bands have broken lines. The darkened section in each band represents the specific chronological range of the relevant FBK material.

In addition to this overview, some specific internal trends particular to the representative categories will also be noted, and their spatial and chronological distributions on FBK are listed in 5.3.5. below. For detailed accounts of the forms characteristic to each category see Chapter 3 above.

The Categories: Representative forms and their chronological dispersal on FBK.

Categories A and B include items which bear common generic traits, the hemispherical pieces (A) being simple forms with a variety of analogues within Viking and early medieval contexts. The greater potential for carving offered by morse ivory has been appreciated in the production of the more sophisticated piriform varieties (B). Although a subjective postulation, it might be suggested that the piriform pieces represent a later developed form of the older traditional hemispherical items, their relative sophistication inspired by the more responsive, and more intrinsically valuable, raw material. Again tentatively, in recognition of the need for further research, the florescence of such pieces in the later Viking period may perhaps be indicative of greater exploitation of this valuable resource at this time?

KEY:

-  = certain historical and/or archaeological evidence for occurrence/practise of game type in Scandinavia
-  = uncertain/doubtful histor. and/or arch. evidence for occurrence/practise in Scandinavian context, incl. FBK
-  = certain archaeological evidence from FBK: broken line loose limit due to contextual problems

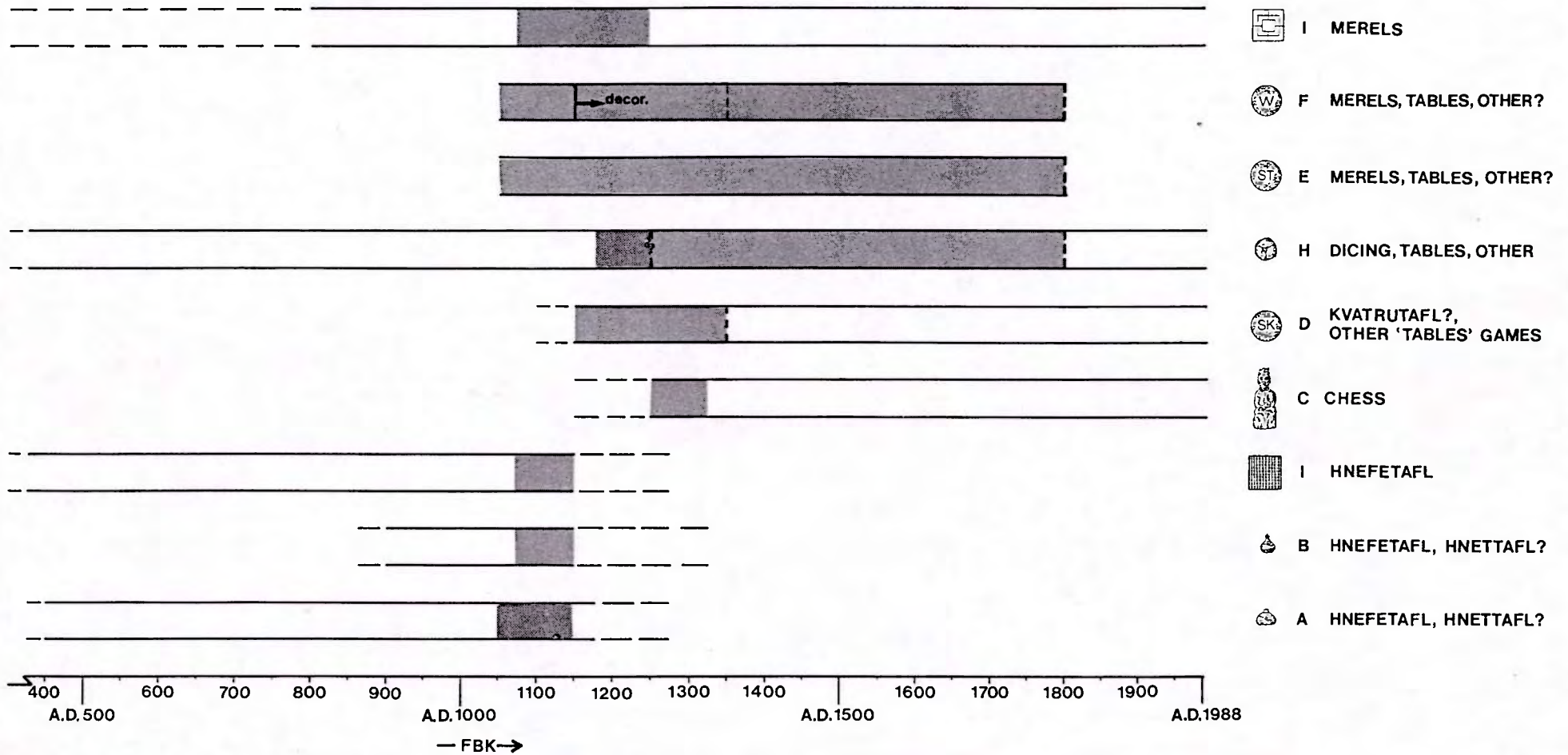


Fig. 43 Games and gaming equipment in Scandinavia and on the Library Site (FBK): their chronological distributions.

A glance at their chronological distributions on FBK (Fig. 43) demonstrates that categories A and B overlap in time, occasional hemispherical pieces in bone (and jet) being concurrent with the more prevalent piriform pieces, the latter persisting further into the medieval period proper. The historically-known games recorded for the late Viking and early medieval transition are the saga games of hnefetafl and halatafl/hnettafl. The two fragmented gaming-boards (Category I) are the most explicit evidence for the former's practise in early medieval Trondheim, prior to 1150 at least. They compare favourably with the variants known within the genus, and may be characterized as humble, yet evidently prized possessions (viz. the fact that the best-preserved one has been repaired in antiquity). One at least combines a merels design on its reverse side, a combination known from Viking finds, and a fashion enduring and used in relation to other games (e.g. chess with merels, chess with tables etc.). The strikingly similar chronological distributions of these boards and the hemispherical and piriform pieces seems to point to their all having some common cultural identity, and even possibly a common functional association. The boards are undoubtedly to be associated with hnefetafl, one of the documented games native to Scandinavia from Viking times. However, whether in fact the hemispherical and piriform pieces were used in combination with these boards is open to debate, the matter of the basal perforations in most of the pieces being particularly enigmatic. This general provision of basal holes, together with the comparable designs of the pieces themselves, argues for a certain standardization in their manufacture and their use, though it is possible that the holes have more relationship with the manufacturing process than function (although see the tempting hypothesis presented above in relation to piriform pieces, 3.2.2., that, where provided, peg-holes were intended to facilitate their use aboard ship, while those pieces and boards we usually find on land were used in a household context, the pegs removed to allow their use on boards not intended for use as ship-board equipment).

There is a clear and expressive tradition of producing standardized items which clearly had a recognised function implicit in even the small corpus from FBK, a tradition which clearly has roots in customary Viking practises, and which here can be seen to extend into the first half of the 12th century. That most were prized objects is to be implied from the material used, and the care taken, in their manufacture. That they denote a degree of status in their owners might, consequently, be inferred. These items were among the possessions of the first generations of settlers here, settlers clearly of sufficient status to play a sophisticated game, with simple, but well-made pieces in prized materials. The evidence of rough-outs suggests the local manufacture of what must have been very familiar forms, their ubiquity apparent from the many directly comparable forms known from widely-separated geographical locations in the Viking and early medieval world. The FBK examples would appear to represent forms current at the latest end of the range, though their correlation with certain historical games must remain conjectural until the finding of such pieces in association with a characteristic board.

Category C incorporates a variety of items which may all be characterized strictly as stylized; however, the Arabic-derived abstract forms and the essentially European/Scandinavian naturalistic varieties constitute distinctive classes of chess artefact, of which FBK has some good typical examples. Their occurrence on FBK is restricted to the mid 13th century and possibly into the early 14th century. Both stylistic classes appear to be concurrent here. In terms of popularity, the classic Arabic-derived forms were by this time largely replaced in the European chess piece repertoire by transitional and modified forms or purely naturalistic representations. In a sense, the classic Arabic-

derived king form from FBK may be termed old-fashioned when compared with contemporary developments elsewhere, though this and the modified form which accompanied it are by no means anachronistic, and in fact are illustrative of the appearance in 13th-century Trondheim of mainstream pieces typical of forms familiar generally in medieval Scandinavia and Europe.

In addition, FBK also produces items relating to the broad naturalistic tradition then popular throughout Europe, although a Nordic bias in the specific forms of pieces is detectible. The wooden chess king from FBK represents, in simple, yet expressive form, a classic king-figure with traits which can be compared favourably with the rather more sophisticated mid 12th-century Isle of Lewis chess kings. It is suggested that such forms are particularly Nordic in inspiration and execution, being expressive of a distinctive tradition of anthropomorphic gaming-piece carving with roots in the Viking period, as exemplified by small figures classed as possible "hnefis"; the seated beard-grasping figures known from Iceland, Sweden and Denmark (e.g. Fig. 23), which are possibly to be associated with a Nordic game, such as hnefetafl. The possible continuity, and indeed development, of this tradition, and its transference and application to the population of the medieval chess board, with all the potential for lively expression offered by these figures so representative of power and an increasingly complex Christian society, should be seen as a response, consistent with the evolution of gaming and society in Scandinavia, by local carvers who were well acquainted with their traditional repertoire and open to fresh opportunities for expression. Similar wooden kings occur in other contemporary urban deposits in Bergen and in an aristocratic rural settlement at Trondenes in N. Norway, revealing the pervasiveness of this particular mode by the 13th century. The finding of the ivory chess queen in St Olav's Church in Trondheim (Fig. 22) serves to focus attention even more sharply upon the roots and development, within Scandinavia and Norway, and possibly even Trondheim itself, of such a strong cultural association with miniature carving for board-games (M^cLees, forthcoming).

The Trondheim king is a simple, but competently produced example of wood carving, and may well have been made locally, though by someone aware of exactly how such a piece should appear. Although it is Gothic in its details, this king harks back, in terms of its distinctive formal composition, to its Romanesque forebears from Lewis.

The conventionalized Arabic-inspired forms may have been imported directly from Europe, though they might just as easily be local copies. These are essentially items of exotic character, and although concurrent with naturalistic forms, and despite their relatively late context, these pieces might indicate the introduction of chess to the inhabitants of this town quarter anytime during the 12th or 13th centuries (the St Olav's Queen suggests a local parishioner may have played chess some time in the second half of the 12th century), perhaps by a merchant or a pilgrim, conveying pieces in a style which was formerly widespread in Europe, though which was now approaching its demise there. Their old-fashioned nature may foster suspicions that they are residual finds; however, that there is more than one, and indeed, that two derive from the same archaeological context, may suggest otherwise, and as stated this form is not unknown in 13th-century Europe.

Apart from the recognizable principal chess figures, there occur some other probable chess items, again in wood, which broadly correspond to pawns familiar from the European repertoire (these were the first pieces to be conventionalized within sets which were otherwise made up of naturalistic

pieces), though the full contemporary range of forms is not known. Nonetheless, these pawns may well derive from sets bearing similar principal figures to those of the naturalistic school, and some of the pawns themselves, like their principal companions in a set, may arguably have stylistic roots in native Viking and early medieval gaming-piece carving traditions, in this instance their formal prototypes being the piriform pieces possibly associated with hnefetafl.

Categories D, E and F: The discs manufactured in skeletal materials, predominantly bone and antler, are stackable counters normally associated with the backgammon-like games known collectively as tables, the Scandinavian variant being known as "kvatrutafli" in 12th- and 13th-century Icelandic sagas. The range represented on FBK is typical of the simpler utilitarian forms known throughout Europe, normally plain or with crudely applied dot-and-circle motifs, with only occasional zoomorphic motifs, and even then unelaborated in execution. The most common raw material being bone, decorative limitation is to some extent built-in, though the occasional pieces in more workable ivory, antler and whalebone only rarely display any appreciation by the manufacturer of their innate qualities, qualities which made these materials so popular amongst more able craftsmen. The discs generally are humble items, perhaps the products of casual whittling, or at most the quickly turned out by-products of bone- and woodworkers. There are only occasional instances where a number of pieces bear matching designs; the mass of individual items each exhibit a unique rendering of a limited repertoire of design. This may be indicative of a large original stock of such items dispersed among the population, as each relevant gaming set required at least 30 pieces, composing two differentiated sides of 15 men each. The sides were presumably differentiated by means of motif (e.g. the antler group from FA in Phase 7) and/or colouration. The occurrence of decorated stone and wooden discs may, it is tentatively proposed, be suggestive of differentiation between sides in an individual set by means of material (one side bone, the other wood?). The occasional examples of zoomorphic representation are, as suggested above, 3.2.4., examples of local application by competent, probably professional, artist-craftsmen, who were particularly active in other media in medieval Trondheim. They may even actually be representative of the high standard of local "folk art" (i.e. produced by skilled local amateurs, aware of current trends) as noted by Fuglesang (1981 and 1985), and which is particularly perceptible in the 11th-century carved wooden material. At least one of these particular pieces, the "Urnes piece" (Fig. 26), bears a motif which has something in common with Urnes-Romanesque monumental and minor sculpture in Norway.

The plain stone and wooden discs are functionally enigmatic, their close affinity with spindle-whorls being striking, and the possibility also exists that some may have a commercial function. The skeletal discs are less ambiguous in terms of function, though there are perforated examples, and some (including the aforementioned "Urnes piece") have clearly been re-used as spindle whorls. It is notable that skeletal discs do not appear in the record prior to Phase 5 (the first half of the 12th century), something which may support the view that they are associated with a new game (tables?), possibly introduced to the town during the mid 1100s. The fact that decorated wooden discs also first appear at approximately the same time is surely not fortuitous, and they are probably also to be related to the arrival and adoption of the new game.

Although examples of plain stone and wooden discs occur right from the earliest phases on FBK, their greatest numerical and spatial density is confined

to the later phases, most notably phases 8 and 9 (the mid 13th to early 14th centuries on the revised dating). Prior to this only a gradual and limited increase in examples is evident. This has already been contrasted with the chronological distribution of finished spindle-whorls of stone (3.2.5. and Fig. 32), there being no matching of the temporal distribution on FBK of finished objects and their possible rough-outs. (Nonetheless, it is interesting to note, for future inter-town comparison, that the greatest numbers of spindle-whorls from the Bergen excavations correspond to similar, contemporary developments in the numbers of FBK stone spindle-whorls and stone discs in the period from the mid 13th to early 14th centuries - see Øye, 1988, pp. 43 and 141). Further study may clarify the enigmatic relationships hinted at here. The later density is commensurate with possible de novo on-site workshop activity and/or increased demand for, and use of, spinning equipment, or (and here a number of sets of stone and wooden discs of diminishing relative diameters may contribute to the discussion) there is some other catalyst involved, perhaps related to commerce, which is an important factor at this juncture. However, that simple gaming-pieces were also in demand cannot be entirely dismissed, their use in unsophisticated games such as merels being particularly suitable, the game's inherent simplicity and widespread popularity expressed in the two relevant examples of boards (Category I).

Category H, incorporating cubic dice in a variety of materials, has examples of both humble workaday objects and imported specimens, finely-made in exotic material. These latter, the jet dice with silver- or tin-inlaid "eyes", are likely products of a York workshop, on the evidence of various parallels. These appear to be unique of their kind in Scandinavia, and comprise a significant proportion of the world's known jet dice, rare items, with only a few similar examples in England. These are from Phase 8 contexts in the mid 13th century, and may relate to tables or pure dice-play, and they must have been prized objects, especially when compared to the mass of humbler bone and antler forms more generally known. However, some of these latter have also had some time and care spent on their manufacture, with edges bevelled and eyes carefully cut, and perhaps even highlighted with applied colouration. Dice are well represented here, the popularity of dice-related games and their suitability for gambling being well attested by contemporary documents and laws. Their comparatively late appearance in the FBK record is a slightly puzzling factor, however, when viewed against their known wide chronological spread generally. Apart from one example from Phase 6 which might be 12th century (the Phase 7 examples come from a problematical area), their greatest incidence occurs in the mid 1200s in Phase 8. Their dramatic reduction in numbers from Phase 9 onwards is striking, and may be related to certain contemporary legal strictures on dicing (see 3.3.), though additional factors, such as deteriorating soil conditions, should also be borne in mind.

Fig. 7 (see 3.1. above) shows the relative proportions of categories within the FBK range. Clearly, discs of stone, wood and skeletal materials comprise the most numerous items. Although the other categories are poorly-represented in comparison, this is not surprising given the inherent nature of most of the "minor" categories, comprising as they do individualized carved objects with a relatively significant material and functional value. Also, being small transportable items, predominantly in organic materials, their restricted occurrence in the record is not unexpected. Other factors, relating to the dispersal of games among an increasing population with greater access to exotic practises are also responsible for the various patterns (see further below).

5.2.2 Materials used in the manufacture of gaming equipment.

Fig. 44 shows the relative proportions of materials represented in the FBK corpus of gaming artefacts.

	MATERIAL	%	No.	
	JET	1	5	
	SKELETAL	24.5	116	
	WOOD	25.5	119	
	STONE	49	230	
	4	100	470	TOTALS

Fig. 44

Materials used in the manufacture of gaming equipment.

Stone

Stone, predominantly steatite, is the most represented raw material (used almost exclusively for the manufacture of discs; one stone die is recorded). This abundant raw material was utilized widely during the Viking and medieval periods in Norway. Trondheim has local quarrying sources (Long, 1975, p. 21; KLMN 8, 1981, pp. 452-456), and steatite-working and the production of varieties of utilitarian objects, common particularly in early medieval contexts in the town, are readily apparent (Long, 1975, pp. 21 and 23). However, the greatest numbers of discs occur in the 13th century (as in Bergen), few occurring in earlier contexts in the town, and it seems clear that there is some factor specific to 13th-century activities in this locality which is responsible for a sudden florescence at this time.

It is possible that some of the earlier stone discs from FBK are not of steatite, though this has not been independently confirmed.

Wood

Wood is the second most prevalent raw material, again used mainly in disc manufacture, with some fine decorated examples, though boards and other carved gaming-piece forms also occur in wood. Chess pieces from FBK are executed exclusively in this material.

Individual species of wood have not been determined.

Skeletal materials

Skeletal materials, such as bone, antler and ivory (notably walrus, or morse, ivory) are well represented, and utilized widely in the production of a variety of artefacts including categories A, B, D and H.

Morse ivory, with cetacean bone, was a natural raw material of especial significance in Viking and medieval Scandinavian contexts (MacGregor, 1985, p. 40), widely utilized in local handicrafts and as a valuable trading commodity. Its potential as a medium for intricate carving was widely appreciated, by Scandinavian and European master craftsmen (Beckwith, 1972). Indeed, from the time of the fall of the Roman Empire in the West (and the resultant collapse of the old trade routes whereby supplies of elephant ivory had been secured) to the re-establishment of the elephant ivory trade (to Europe) some time in the 12th century, northern European workshops relied chiefly on supplies of morse ivory, narwhal tusk and whalebone from Greenland, Iceland and Norway. This trade is known from at least the time of King Alfred (MacGregor, 1985), and Kongspegelen ("The King's Mirror"), a moral treatise of the mid 13th century, testifies to the value placed in materials such as the tooth of the sperm whale for the manufacture of knife-shafts and gaming-pieces (Hellevik, 1965, p. 43). Indeed, it is documented that in 1327 Greenland was paying tithes to the Archbishop of Trondheim with walrus tusks which were subsequently sold in Bergen to a Flemish merchant from Bruges (Stratford, 1987, p. 107).

The production of the earlier gaming-piece forms (Categories A and B) and some discs in morse ivory and whalebone is interesting when viewed against this background, and forms a theme for discussion in the concluding chapter.

Antler was a commodity used frequently in the manufacture of contemporary utilitarian items, and its use by comb-makers in local Trondheim workshops (and, of course, bone as well) is probable (Flodin, 1989). Its use in the manufacture of gaming-pieces and spindle-whorls is known also from Viking sites such as Birka and Ribe (Ambrosiani 1981, p. 124), and FBK produces a fine finished disc assemblage from FA in Phase 7, as well as some slight evidence of off-cuts possibly resulting from gaming-piece manufacture.

Jet

Jet comprises the only exotic material used in connection with local gaming artefacts (though morse ivory, while obtainable from northern Norway, may have been imported from Greenland). In fact, its occurrence here is rare, and it is interesting to note that few finds other than these gaming-pieces utilize this material. These gaming artefacts consist of two possible gaming-piece rough-outs, one a hemispherical piece, and the other a piriform piece (Categories A and B). Also, three dice with silver inlay (Category H), and one decorated disc (Category G) occur.

Jet objects are known from Viking-Age graves, particularly in Norway and Scottish and Irish Sea contexts (Shetelig, 1944, pp. 3-14). It was clearly a commodity valued as a medium for sculpting and ornamentation. Its natural source is the shale beds on the coast near Whitby in N.E. England, and the export of this material, in worked and unworked forms, via York, is suggested by Shetelig (1944, p. 10 and MacGregor, 1978, pp. 40-41). Shetelig further proposes that jet was worked in Norwegian Viking contexts and not only in York and the Isle of Man, for example. Consequently, the two probable half-fabricated examples of typical late-Viking gaming-piece forms present on FBK should not be considered too surprising in light of this, though, by virtue of their comparative rarity and their particular context (urban, late 11th - early 12th century), they comprise important items.

The York connection, and its continuance well into the medieval period, is demonstrated dramatically by the three finely-made jet dice with silver or tin inlay. MacGregor (1978, p. 41) notes a number of objects from York, which, in terms of manufacture, are clear parallels, and Hall (1984, pp. 76, 80, 114) demonstrates the presence of objects manufactured in local workshops, including a jet die (two others are known from Winchester). The FBK dice are clearly imports, though of medieval (?mid 13th century) rather than Viking date, and possibly unique in Scandinavia, as is the fragment of decorated disc (Category G) which bears part of a simple petal design (or maltese-cross?), though it has probably been re-used as a spindle-whorl. This disc might easily have been manufactured locally, though it may be noted that the design it bears is unparalleled in other discs here, and relatively carefully and competently executed, in contrast to the mediocrity of most of the discs in other materials. Consequently, it is suggested that it might also be an import, part of a fine tables set, with, perhaps, black pieces in jet, and white pieces in bone (or ivory)?

5.2.3 Techniques of Manufacture and Decoration.

The overwhelming general impression arising from an appraisal of the range of items is of their innate simplicity in terms of methods of fabrication and design, and in the choice and application of ornamentation, when used. This said, there occur some items with distinctive forms and ornamentation of

especial qualitative significance. The inherent limitations of some of the raw materials utilized should be borne in mind, though the choice of such materials by the manufacturers is itself illuminative of the character of resources and the time and effort spent on the production of these items. Conversely, the use of some materials normally characterized as luxurious in the production of ostensibly humble items provides food for thought.

Categories A and B include a series of items which are essentially variations on a theme, variations, at least in part, delimited by raw material, though aspects of changing taste and function may also be instrumental. These items occur in raw materials familiar in, and characteristic of, Viking contexts: walrus ivory, bone (including whalebone) and jet (see 5.2.2.). These are all readily workable raw materials. Rough-outs suggest that all these materials were being worked locally in the manufacture of both these categories of gaming artefact, and the near-exclusive use of morse ivory and jet for the manufacture of such gaming-pieces is a significant factor. Generally speaking, these are unelaborated, but nonetheless competently made objects, part of a long and quite conservative tradition of gaming-piece manufacture which occurs widely in the Scandinavian world during the late Viking and early medieval periods, and their common formal characteristics and near-standardized stylization clearly reflects deeply-rooted cultural and functional dictates (i.e. their use in a long-established and widely-known game form) rather than any innate manufacturing limitations. The piriform pieces are, on the basis of their near-regularity, possibly lathe-turned, and their usual basal perforations are either the by-product of that process or deliberately provided for the insertion of (removable?) pegs which may have allowed these pieces to be used on both perforated and unperforated boards. The evidence, including that from Trondheim (e.g. that hemispherical pieces also occur without basal holes) is often contradictory, and the pros and cons are discussed above (3.2.1. and 3.2.2.), no firm conclusions being possible, as yet. That these items represent carefully made items in prized materials, however, is not in doubt, and there is evidently a degree of standardization in their manufacture, though with inevitable variations in size and individual details as might be expected. That they are produced for discriminating customers in late Viking and early medieval Trondheim by competent craftsmen with, perhaps, access to a lathe and other sophisticated tools, is a tempting supposition.

The boards with which such pieces might have been associated functionally (the double-sided varieties in Category I) are of wood and are, again, competent products, though of somewhat inferior quality when one compares them to the ivory and bone pieces with which they are at least partly contemporary (the boards here derive from contexts in the first half of the 12th century, perhaps at the tail-end of the game's currency?).

These boards, judging from our near-complete example (Plate 11), were each manufactured from a single wooden panel with at least one solid raised edge incorporated at one end and supplemented, on the two other sides by specially-fitted strips of wood forming a pegged border. The characteristic hnefetafl grid has been somewhat clumsily scored with a knife, though care has been taken to raise each cell in relief and to mark special squares. The reverse side's merels motif is similarly poorly-executed. However, the fact that the board was repaired in antiquity with a form of "kipper" (?) joint, testifies to the board's functional, rather than intrinsic, value. Again standardization in manufacture is apparent, and these boards form late examples of a tradition which extends back into Viking times. These particular boards did not necessarily emerge from a craftsman's hands, however.

The chess pieces (Category C) are all in wood, though the two established stylistic traditions, with various sophisticated counterparts in European museums executed in more luxurious materials (such as walrus ivory), are represented in this humble material. As described above (3.2.3.) the FBK items represent competently reproduced examples of these two traditions, one exotic, the other possibly "home-grown", and the chess king is a typical example of a naturalistic form with earlier and contemporary Norwegian parallels. The carver's awareness of conventions in dress and hair-style, as well as the seated form, is testament to a possible "school" of gaming-piece carving, or at least a tradition of imitative carving drawing on a common pool of stylistic references in which old and new elements were combined, and which can be detected in items of varying sophistication and raw materials. Some of the wooden pawns arguably have stylistic analogues in the ivory piriform pieces of the 11th and 12th centuries. Most of the chess pieces from 13th-century FBK contexts required some competence in wood-carving and familiarity with established formal "codes", though one or two might have been produced by casual whittlers. The examples in the Trondheim material betray a certain conservatism (though certainly not retardation), the two stylistic traditions being long-established by the time these occur in the record.

The discs and dice in skeletal materials (Categories D and H) are predominantly the products of casual, hurried, and generally careless work, though the raw material and the use of certain scribing tools in their manufacture may allow them to be seen as the by-products, or sidelines, of boneworkers whose main concerns lay in the production of other items; combs, for example. Perhaps apprentices were given the task of turning out these easily-made items, which, it seems, may well have been mass-produced by the 13th century, in response to increased popular demand (?).

Little deviation from dot-and-circle motifs or circumferential or concentric circles occurs, and the zoomorphic forms are hurried, unrefined or simple (though the "bird piece" is, for all its simplicity, remarkably eloquent; Fig. 27). The "Urnes" piece (Fig. 26) stands out as the only such piece bearing a faithful and competent reproduction of an established artistic motif commonly employed in mid 12th-century sculptural contexts, a motif which may have originated within the local community of craftsmen if one compares it with the animal motifs used in Trøndelag's stave and stone churches. It is possibly exemplary of an artist-craftsman's work, though it would seem from our sample that the vast majority of these discs were produced as near-standardized by-products of bone- and woodworkers whose repertoire of ornamentation was severely restricted, at least when it came to producing these items. Indeed, many pieces are so crude as to suggest their production by casual whittlers.

The dice are a mixed group in terms of quality of manufacture, though some, with bevelled edges and carefully-applied eyes of dot-and-circle form, betray a possible origin as workshop by-products. The jet dice are clearly workshop products of quality, and are likely imports from York, where there are clear parallels. No false dice have been noted, though a couple, of irregular form, appear to be biased against throwing a six, while some typically slapdash examples of misnumbering occur.

In mitigation, however, the ornamentative limitations of bone (other than whalebone) and even antler, may well have exerted some restrictive influence on the degree of sophistication, and a glance at most contemporary varieties from Scandinavia and Europe shows the same general simplicity, the sophistic-

ated varieties being mainly executed in ivory, and rarely found on urban excavations (though see the outstanding exception of the fine red deer skull and antler pieces and tables board found, in a rubbish pit (!), in Gloucester-Stewart and Watkins, 1984 and Stewart, 1988).

The stone and wooden discs, plain and decorated (Categories E and F) are simple items with no sophistication in design or decoration for the most part (though a few examples of greater variety of decoration than shown even on the bone discs do occur on some wooden discs). Functionally, the decorated wooden discs are probably to be associated with the same varieties of game, tables, in which bone discs were used, while the plain forms may have other functions, or are nascent spindle-whorls (see 3.2.5. and 3.2.6.).

The workability of steatite, used for most of the stone discs, has not been appreciated by the carvers, though some spindle-whorls, it must be noted, have been deeply and competently incised and decorated. This may add weight to their interpretation as blanks awaiting further working into spindle-whorls. However, some have already been worked along their circumference and appear to have been used (judging from evidence for wear) in this plain form, notably those with a faceted perimeter. Occasional "sets" of discs, in the form of a series of discs with diminishing diameters, and stackable enough to form a tower, need some explanation (the same phenomenon occurs occasionally in wood).

5.3 Distributions: Spatial and Chronological Patterns within a Structural Environment.

5.3.1 Density of Finds and the "Core Zone".

Any review of the FBK patterns of find dispersal must take heed of the clear disparity in preservation potential across the site, whether it be as a result of prevailing soil conditions or the effect of intrusions and disturbances, such as the medieval graveyard or post-medieval cellars. The general distribution plans (Figs. 41 a-l) and the various graphs and tables (e.g. Fig. 45) clearly reflect this E-W disparity and the presence of the graveyard to the S. What might be termed a "core zone" can be discerned, centred on the N-S running street, where the greatest density of finds occurs consistently through time. This clustering, or "core" distribution, includes the areas adjacent to the street on its E. side, and most particularly, its W. side, as well as the areas extending furthest to the W. which comprise the case-study area (FU-FT-FA-FW).

5.3.2 Range of Finds.

Fig. 45 shows the broad (unquantified) range of finds categories distributed among individual FBK areas. Viewed collectively, the greatest range of categories clearly occurs to the W. of the street, the bulk of these areas (excluding FN and FJ) showing a wide range of items, though diminishing somewhat to N. and S. To the E. of the street, FH and FL bear the greatest variety, while the range diminishes greatly to the E. (FS and FG-ø have no relevant finds). While the "core" areas consistently produce examples which derive from nearly all the representative categories, the easternmost sites tend mainly to produce discs, stone discs being the most well-represented items (Category E).

● = occurrence of item(s) (not enumerated)

◐ = occurrence of piece of too fragmentary, re-used or clearly residual character (= Category B)

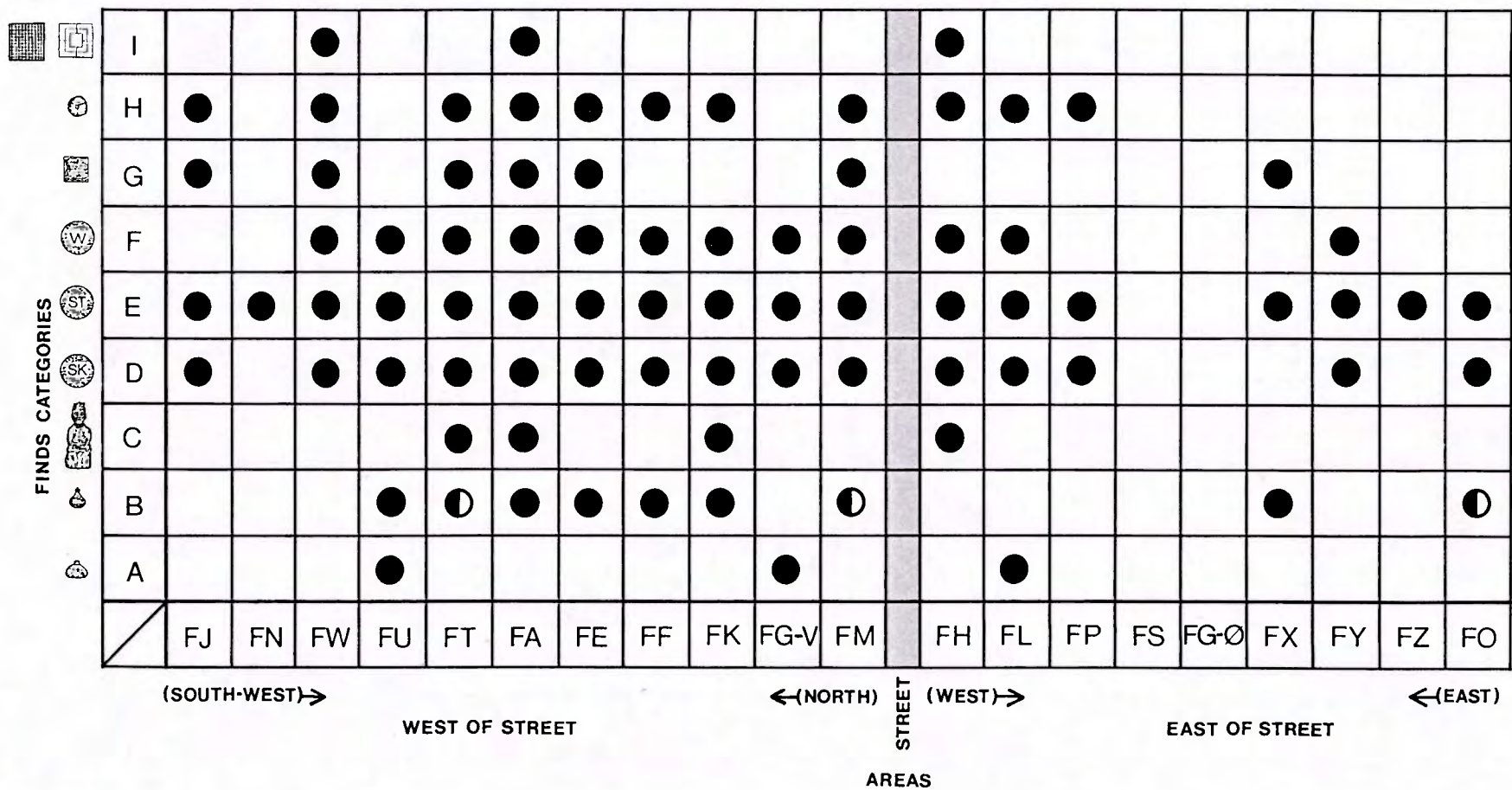


Fig. 45

"At-a-glance" table showing the areal distribution of the game categories (unphased and unquantified).

This pattern may well be a product of the variable character of the natural conditions and the fragmented stratigraphy rather than any bias determined in antiquity. The occasional notable find from the easternmost contexts (isolated representatives of Categories A and B, for example) may well be suggestive of the former potential here, diminished by subsequent natural and human agencies. However, some contexts here are highly suspect in terms of the character of deposition in antiquity, dumping along the waterfront in FO and FY probably producing a disproportionate amount of residual material (as discernible in the pottery from these localities - Ian Reed pers. comm.).

The wide dispersal of most finds categories over the whole area of FBK is a factor worth noting. Most categories are represented in areas lying to either side of the street, though categories C and I are closely confined to the "core" areas, and some of the Category B items are demonstrably in secondary associations, most particularly those lying to the E. Nonetheless, despite the evident clustering of types in the "core" zone, a variety of items (though, again, predominantly discs) are scattered across the greater part of FBK.

The tables (Figs. 45 and 46) demonstrates the suitability of the FA - FT - FU - FW areas for selection as subjects for the case-study in terms of the wide range of categories of item represented there.

5.3.3 Volume of Finds.

The greatest density in the range of representative types occurs in the W. areas. This spatial bias is repeated in quantitative terms also, the "core" areas (and those to the W. of the street in particular) producing the greatest numbers of finds per category (see Figs. 46 and 48). Of these, FA is clearly the single most productive area, though its immediate neighbours in the case-study locality are also prolific, and, as seen, productive of a wide range of items. This productivity is not necessarily a constant feature through time, localized fluctuations within and between areas being apparent (e.g. FT produces very few items until Phase 8). Of the E. areas FH and FL are again the most fertile in terms of numbers as well as range, though in comparison to the majority of their west-of-street neighbours they produce a relatively small proportion.

Fig. 46 shows that FA is the most productive area on FBK in terms of both range and volume. The case-study areas individually and collectively maintain this bias, though range and volume diminish to the S., N. and E., a pattern already seen to be determined greatly by differential preservation - the "core" areas certainly contain the most well-preserved structural remains. These mainly comprise, on the majority of the "core" zone's areas, the preserved components of the easternmost or westernmost buildings in each property, those lying with their greatest length parallel with the N-S street, and interpreted usually as workshops or stores. That such localities produce a significant range and volume of material in contrast to the localities (e.g. FU and FT) within the properties usually interpreted (at least in part) as the domestic quarters, is a factor to be noted, and this and other aspects of the relationship of finds with structures will be discussed in greater detail later in this chapter (see 5.3.6. and 5.3.7.).

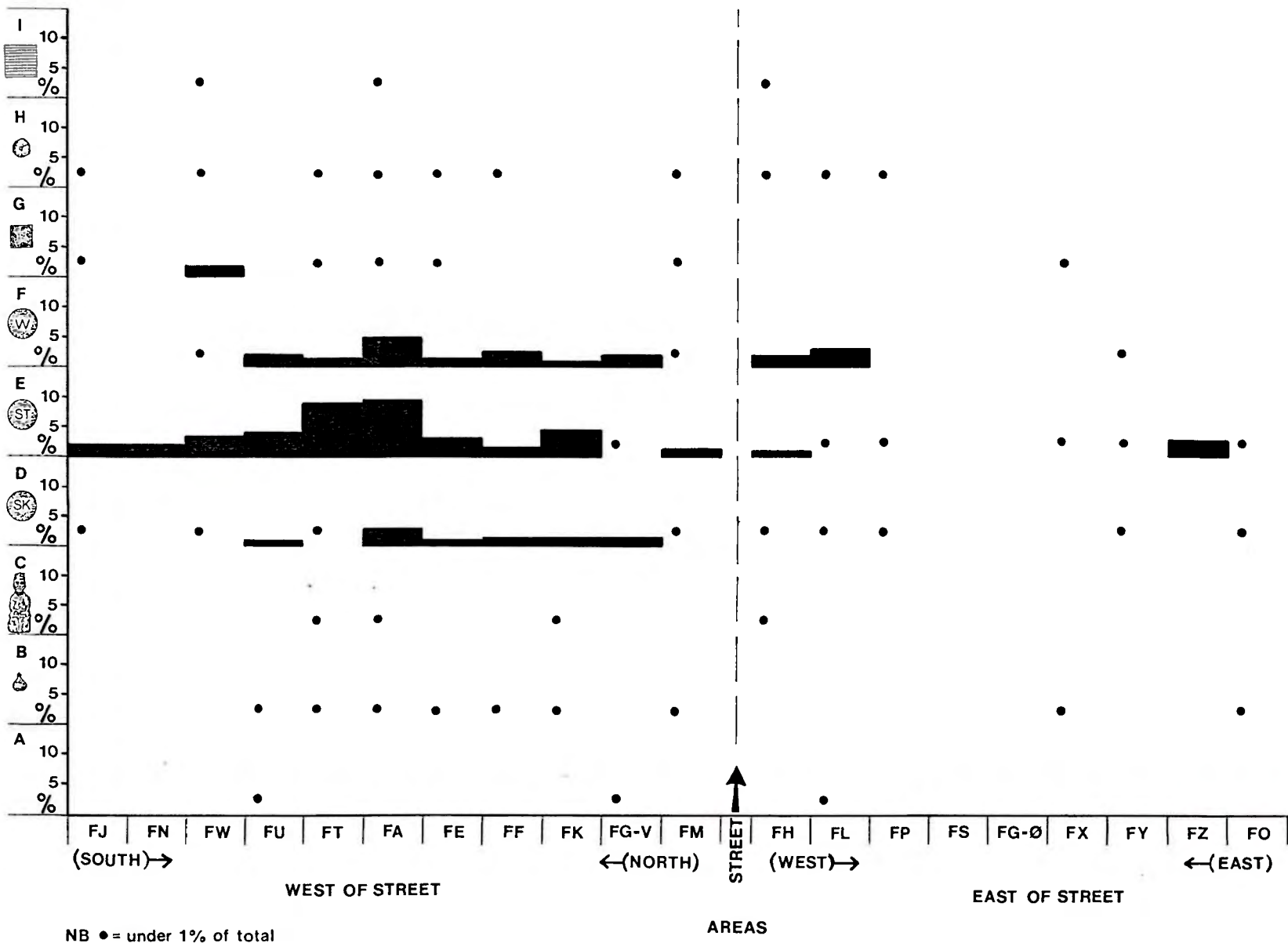


Fig. 46 Table showing the areal distribution of the game categories (quantified; expressed as percentages of the total sample).

5.3.4 Distribution Breakdown: The phase-related densities for the individual areas.

Fig. 47 shows the amount of gaming artefacts found for each phase on FBK (expressed as percentages of the total). The broad trend shows a gradual increase in numbers in phases 2 to 6, a more notable rise in Phase 7 heralding a significant rise in numbers to a peak in Phase 8, the numbers falling off again in Phase 9, with a sharp drop in the final phases.

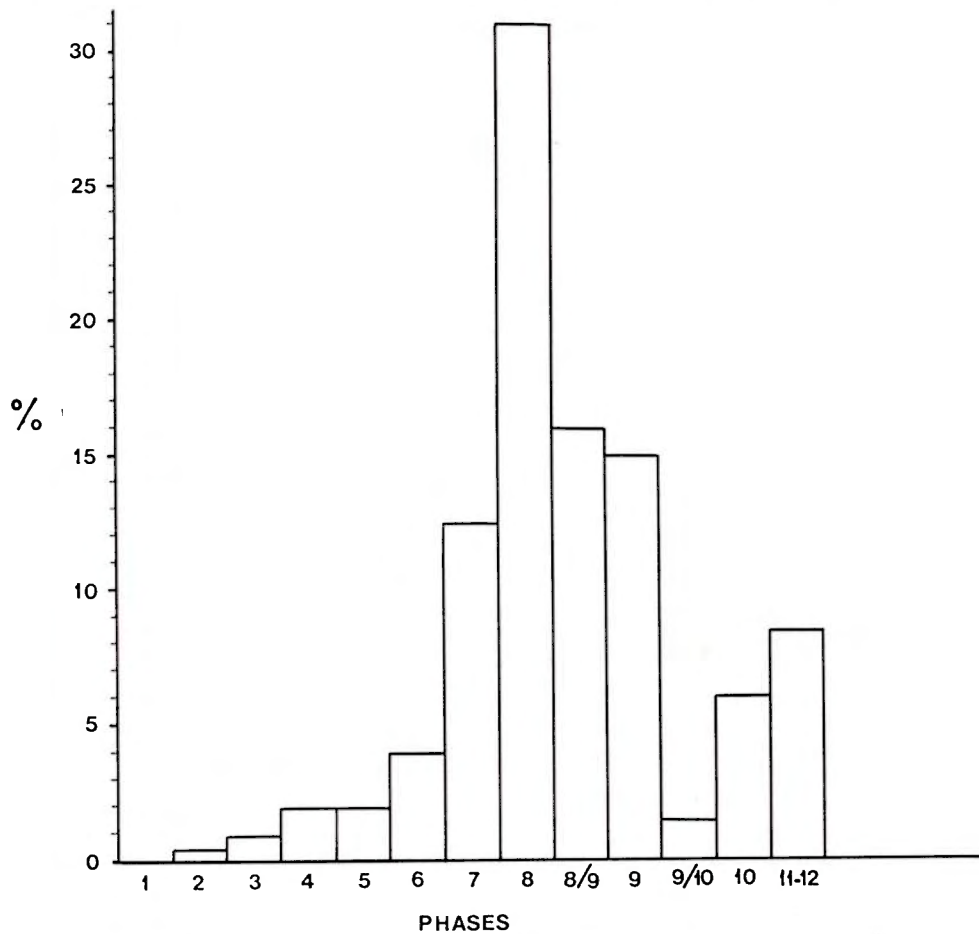


Fig. 47

Table showing the percentages of the total number of gaming artefacts occurring in each phase on FBK.

Fig. 48 places the chronological dispersal within the spatial framework, expressing the relative proportions of finds occurring in each area per phase. The previously defined "core" zone is apparent, density in numbers being greatest to the W. of the street, and most notably in the case-study locality (FA - FU - FT - FW).

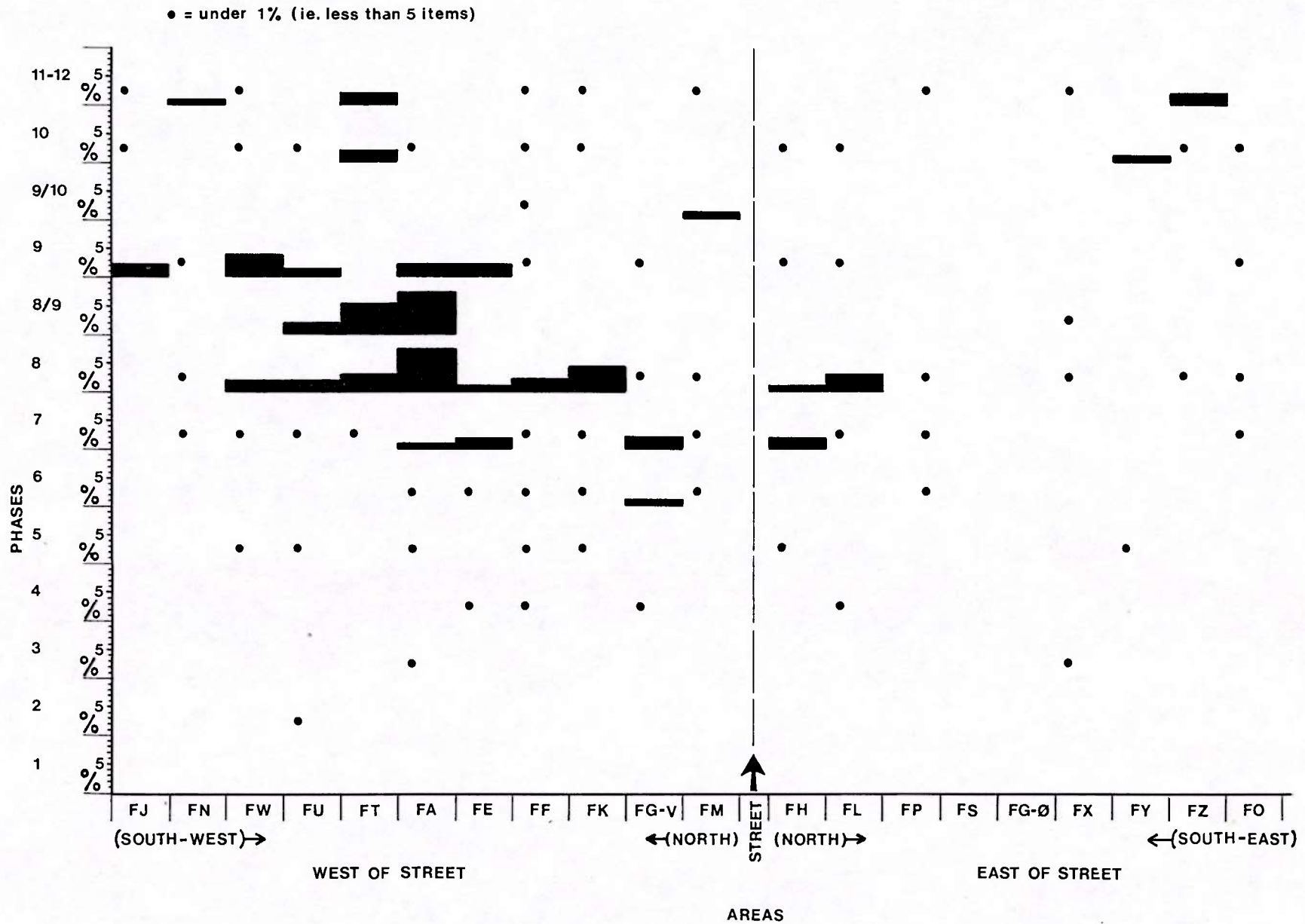


Fig. 48 The percentages of the total amount of gaming artefacts occurring in each area per phase.

The relative poverty in the numbers of finds during phases 2 to 6, and their restriction in spatial dispersal to the western areas, can be seen. In these earlier phases all the "core" zone areas (except FT) produce some evidence, while areas to the S. (FJ and FN) and the E. produce few finds, or none at all. In Phase 7 the pattern is set for the two subsequent phases wherein substantially increased numbers of finds occur in the "core" zone, including the majority of sites to the W. of the street and FH and FL to the E. (although these last register significant proportions in Phases 7 and 8 only). Of the "core" areas, FA registers the greatest relative proportion in the so-called "boom" phases (8 and 9), though FU and FW also display significant proportions in these phases. FT's explosion in numbers is restricted to Phase 8 and the 8/9 interface. FF and FK "boom" in Phase 8, while FE portrays a steady concentration, though comparatively minor, in phases 8 and 9.

As noted already with respect to the spatial dispersal, it can be reiterated that the "core" areas (the majority of which lie against the street) are those which, in Phase 8, display a rise of dramatic proportions in numbers of items. With the exception of FT, these "core" areas tend to show a gradual increase in both numbers and range of gaming items from the earlier phases, and while the Phase 8 "boom" is reflected in a minor increase in numbers and spatial spread of items to the E., it is essentially these "core" areas which register the most emphatic increase at this time. The boom is generally short-lived, and restricted to a few categories of items (notably discs), though some individual areas maintain and expand on their Phase 8 proportions in Phase 9 (FW and FE in particular), though the general trend is towards a reduction in numbers and a contraction both in the range of finds and in their spatial distribution (though the majority of areas do continue to produce some evidence in the final phases, much of which is, however, probably residual, again judging from the pottery material).

5.3.5 The Individual Categories of Finds: Their Spatial and Chronological Distributions.

Figs. 45 and 46 show the spatial distribution and densities of the series of finds categories, while Fig. 49 illustrates their chronological dispersal. Each category will be discussed independently with reference to these figures and the series of general distribution plans (Fig. 41 a-1).

Category A (hemispherical pieces).

These have a restricted chronological distribution. Their spatial distribution, while restricted by virtue of the small number of representative finds, is nonetheless quite widely dispersed, there being finds from the W., N. and centre of FBK, and from both sides of the street. Single items occur on FU, FL and FG-v, from phases 2, 4 and 6 respectively. This category comprises, with the boards (Cat. I), the most poorly-represented category in terms of numbers, though these particularly interesting items' wide dispersal across FBK is perhaps a significant feature when viewed in association with the nature of the settlement at this time (the 11th and early 12th centuries).

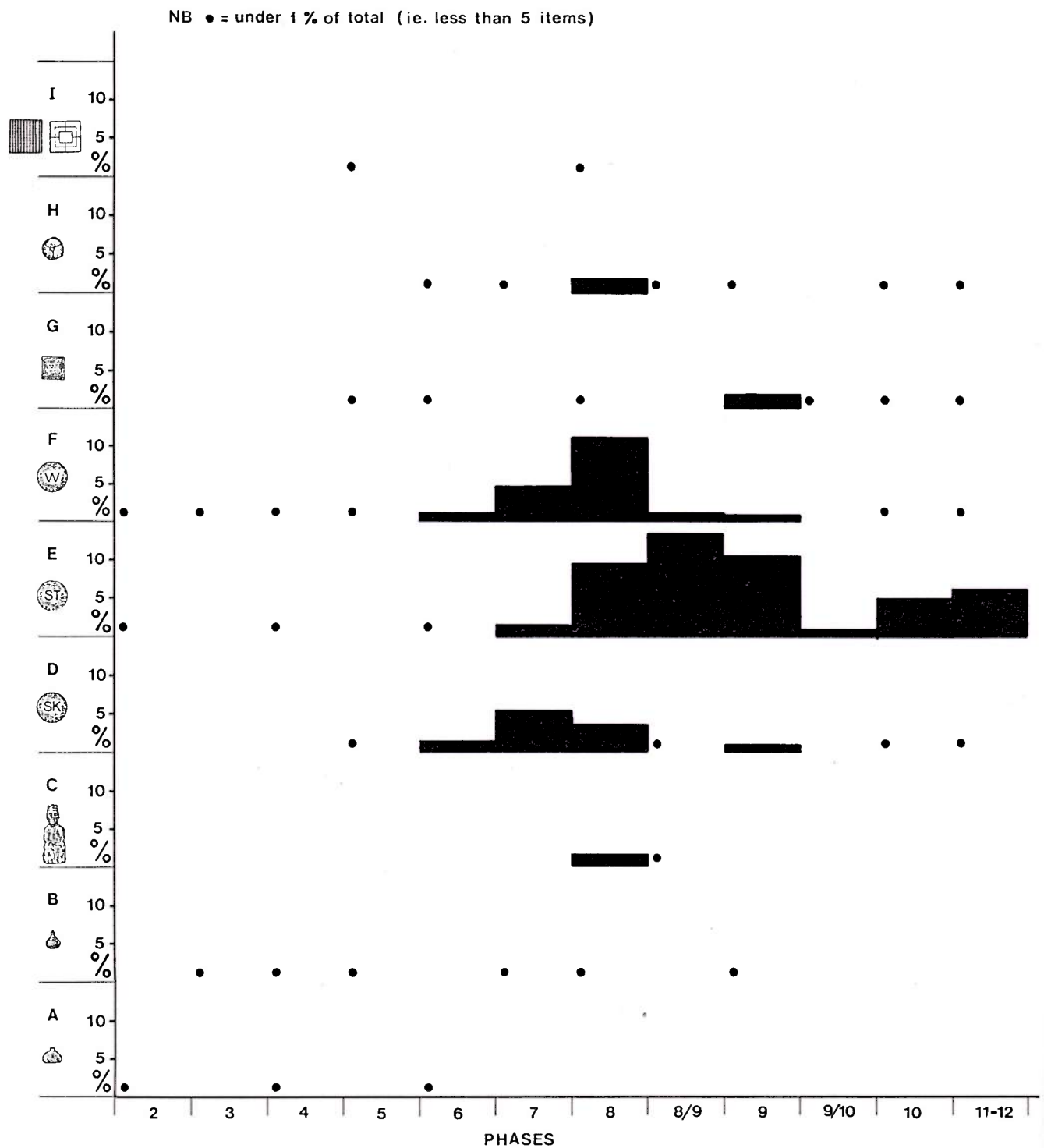


Fig. 49

Table showing the chronological distribution of the individual finds categories, and the percentages (of the total) for each occurring in each phase.

Category B (piriform pieces).

This group is somewhat better represented numerically than Category A, and it also has a wider spatial distribution. However, it is important to note that the extensive chronological spread of these pieces is somewhat illusory, as some are clearly re-used, in extremely fragmentary condition, or in "high-risk" disturbed contexts where they are likely to be residual. Consequently, only items deriving from phases 3 to 5 inclusive should be regarded as reflecting their likely primary distribution, spatially and chronologically (i.e. the 11th and early 12th centuries). These earlier examples occur predominantly on areas to the W. of the street, in the "core" areas FA, FE, FF, FK and FU, with one outlier to the NE. on FX. These comprise 9 of the 15 items in the category. The remainder also derive mainly from the W. areas, with outliers in FM and FO, the latest example occurring in Phase 9. Consequently, the spatial dispersal of earlier intact items and their later re-used or redeposited counterparts does not diverge greatly.

Category C (carved wooden chess pieces).

As can be seen this group is of extremely limited spatial and chronological dispersal, restricted to later 13th-century contexts (Phase 8 and one Phase 8/9 example; following revised dating) located to the W. of FBK on areas bordering the street (FH and FK) and in the case-study area (FA and FT).

Category D (discs of skeletal materials).

Numerically, this is the smallest of the disc categories. It is also the most restricted in terms of chronological distribution, and, while representative examples occur in phases 5 to 12 (mid-12th- to post-medieval contexts), most arise in phases 6 to 9, peaking in Phase 7 (late 12th-early 13th century, revised dating). The greatest density in numbers occurs in the "core" zone to the W. of the street, although individual items are scattered over the greater part of FBK. This category's distribution, when compared to those of its stone and wooden counterparts (E and F), displays a slightly greater bias in density to the areas to the W. of the street, although the wooden discs show a comparable clustering in the "core" areas. As in the case of other organic items, this bias (at least in the later phases) may be dictated by environmental factors. The peak in numbers in Phase 7 is at odds with the other discs' patterns which peak in Phase 8 or at the Phase 8/9 interface. Also, very few skeletal discs occur after Phase 9.

Category E (stone discs).

This is the most well-represented category in terms of numbers, and it portrays widespread spatial and chronological distribution. However, until Phase 7 it is represented mainly by occasional scattered single items, although stone discs, it must be noted, do occur from Phase 2, and are amongst the earliest items possibly associated with gaming found on FBK. Following a marked increase in Phase 7, a phenomenal explosion in numbers occurs in the ensuing two phases making this category, from Phase 9, the single most represented item in contemporary levels. Prior to this its numbers were slightly inferior to those of the wooden discs (in Phase 8), and the skeletal discs (in Phase 7). Spatially, stone discs occur, in varying proportions, on all FBK's areas (except

FS and FG-ø). However, as with all categories, the bias in density is to the W., and the areas to the W. of the street in particular. To the E., stone discs are more patchily represented, though fair proportions occur on FH and FZ. This imbalance, even in the dispersal of these inorganic items, may result from the distortion of the historical pattern by later disturbance which is greatest to the E. of FBK, though it is clear that a) some historical catalyst causes a dramatic rise in the numbers of stone discs from at least Phase 8, where environmental factors have little negative impact anyway, and b) the subsequent disparity in the proportions of organic and inorganic items owes something to the varying environmental conditions across the site, at least from Phase 10 onwards.

Category F (wooden discs).

In common with the other disc categories, this group forms a substantial proportion of the total, and as with the discs of wood and stone, scattered items in phases 2 to 5 give away to a substantial increase in numbers and spatial distribution in later phases (6 to 8). As in the case of the skeletal discs (D), a severe drop in numbers occurs after Phase 8, and certainly from Phase 10 prevailing soil conditions must be influential.

Again, a dense clustering is evident in "core" areas to the W. of FBK on locations bordering the street on either side, and on the case-study areas. Few examples occur on the E. areas (only FY), and none in the graveyard (in FJ and FN).

N.B. The probable distinction between plain and decorated wooden discs in terms of function has already been suggested. Note that decorated discs (in wood and skeletal materials) occur first in Phase 5 (from mid? 12th century contexts), widely-scattered. From Phase 6, they are limited to the "core" zone, though scattered therein. The final examples occur in phase 9.

Category G (miscellanea).

Scattered finds in various organic materials occur from Phase 5 to Phase 12, with the greatest incidence in Phase 9. As with all categories the bias in numbers and spatial clustering is towards the "core" zone. One item occurs to the east of the street in FX.

Category H (cubic dice).

This bulk of finds in this group portray a restricted chronological incidence, although dice do occur from Phase 6 to Phase 12 (possibly late 12th century to post-medieval). The greatest proportion occurs in Phase 8 (mid 13th century) where, in contrast to the preceding and succeeding phases, a large number of individual areas possess examples (FA, FF, FH, FK, FL, FW). Again, the "core" areas produce the majority of items, there being only one outlier in FP. Phase 9 sees a sharp drop in numbers, perhaps the result of historical determinants.

Category I (boards).

As with Category A, this category has markedly restricted spatial and chronological distributions. Of the three items, two occur in Phase 5 (though from separate areas) and one is from Phase 8. All lie within the "core" zone, deriving from areas FA, FH and FW.

5.3.6 The Finds' Contexts: Characterization and a model for the interpretation of finds dispersal.

An appraisal of the layers and structures on Folkebibliotekstomten (FBK).

The limiting factors exerting themselves upon such a detailed finds distribution in a complex urban context have been identified already in the section relating to Source Criticism (1.3. above). Having just presented the data relating to the finds' distribution in time and space, the next step involves a review of the character of the immediate physical and structural environment within which the items were presumably used, lost, and perhaps subsequently redistributed.

As has been stressed throughout, the obvious variability in soil conditions and structural survival across the site, horizontally and vertically, and the effect of disturbances, lend an in-built bias to all patterns of finds distribution. Having recognised this, is it possible to estimate the impact of such factors on FBK's range of material? How representative of the range of games played in antiquity is the surviving corpus of finds? How closely do the finds' ultimate locations reflect their original functions, and their places of use within the medieval settlement as represented now by layers of variable character and associated fragmentary structures. In other words, do they lie close to their original point of deposition, spatially and chronologically, and can we therefore draw certain conclusions about these finds and the various units of settlement with which they are associated, or, alternatively, can it be demonstrated that the erratic, diverse, and essentially unquantifiable, actions of man and nature have removed them from their original situations and placed them in misleading associations?

Such questions cannot be answered fully by this study alone, and must await complementary information from other finds analyses, in particular that relating to pottery. It may be noted provisionally that the pottery will demonstrate that residuality and the redeposition of finds are major factors on FBK, and that joining sherds are found widely separated horizontally and vertically, implying movement of material around the site (Ian Reed, pers. comm.). The uncertain origin, character and associations of many of the site's typical wood-chip layers have already been noted (1.3. above). The table (Fig. 50b) shows that such layers form nearly 60% of contexts containing gaming finds. These layers (as will be demonstrated in the case-study discussion, below, 5.3.7.) frequently lie "between" (i.e. stratigraphically sandwiched) structural levels, "around" structural elements such as joists, and "beneath" floors.

The layer/structure relationship is characterized in Fig. 50a. Only 11% of the gaming finds' contexts may be reasonably regarded as *in situ*. Of these 8.5% derive from house areas (i.e. dwellings, workshops, stores etc.), and 2.5% from streets or passages. Otherwise, the bulk of finds occur in contexts with undetermined relationships to structures and the activity within and around them, on house areas (the majority), streets and passages and open areas.

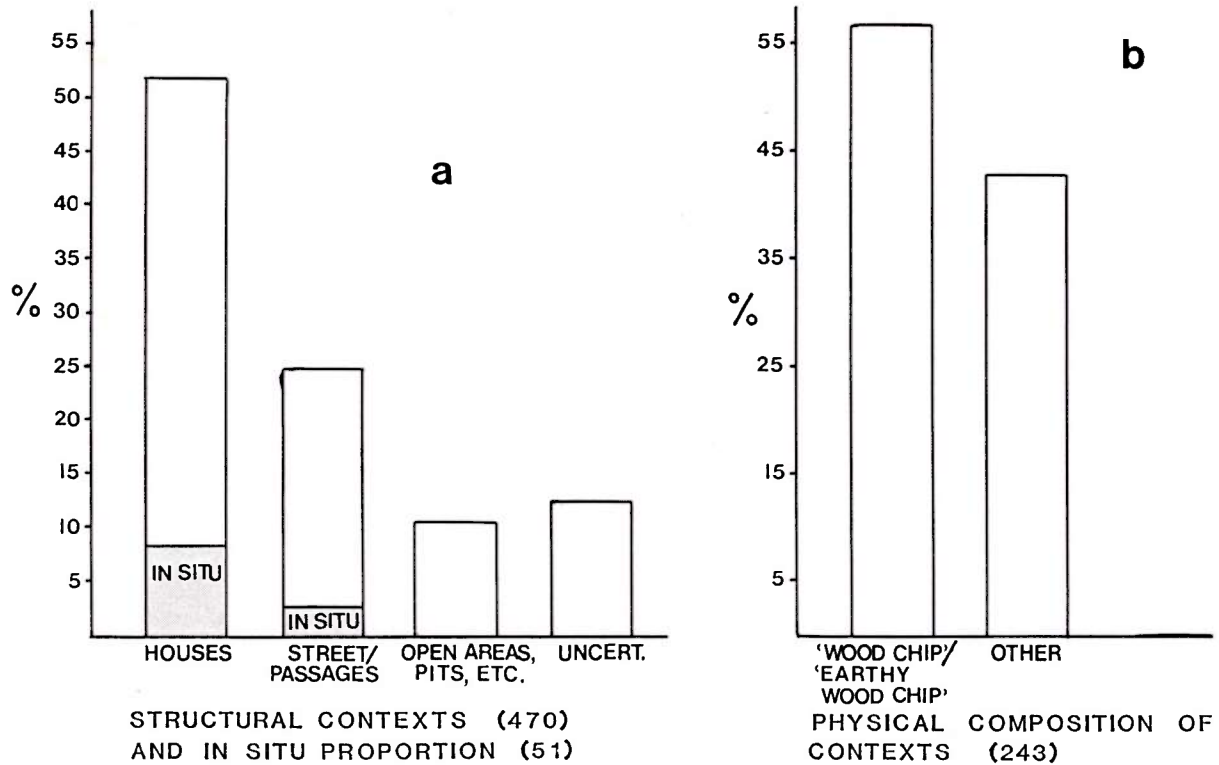


Fig. 50a-b Characterization of finds contexts on FBK.

Dispersal patterns within the structural remains: A model for interpretation.

In such an intensively built-upon and lived-in area like FBK, the accumulation of material and its removal and redistribution are part of an erratic interactive process, difficult to assess and quantify. However, in order to provide a model for interpretation, it might be suggested (tentatively) that this very intensity of activity, taking place within relatively stable and closely-definable structural confines, might allow certain structures and related layers to be seen collectively as self-contained "depositional units". Furthermore, the particular character of these gaming artefacts (as items with particular and delimited intrinsic value in functional terms) may also play a role in restricting the degree to which they are displaced from their primary contexts: An artefact such as an unbroken gaming-piece (as most of these are), it is suggested, is not, unlike most potsherds for example, essentially classifiable as a deliberately discarded item of rubbish, and consequently the likelihood of there having been fewer processes leading to its ultimate deposition may allow it to be regarded as lying at a point in time and space which is not too greatly divorced from its original context of use and subsequent loss. In other words, fewer potential processes of interference and redeposition intervene between a gaming-piece's active use, its loss, and its finding by the excavator, than might obtain to an item deliberately discarded as part of the usual detritus of domestic life, often physically removed some distance from its place of use. Such a view must, of necessity, suppress certain arguments and caveats relating to the wholesale or

discriminatory transportation of materials through cleansing and restructuring procedures in antiquity, though it allows for some limited horizontal and vertical movement of soils (and their associated finds content) within properties, or even between neighbouring properties, as a result of localized processes of redistribution such as, for example, the normal sweeping out of houses and courtyards, or even the more drastic structural reorganization of a house plot or a property during an episode of clearance and rebuilding following a fire, for example.

The case-study area has been assessed in this light, though it must be admitted that only slight material support for such a model could be obtained: for instance, the occurrence of an *in situ* group of distinctive antler discs (Fig. 25) in the destruction debris of a building, and the finding of a disc from this self-same set in a slightly higher and horizontally separated context, associated presumably with the construction of the subsequent on-site structure (see next section). However there are encouraging associated aspects: For example, support should, it is hoped, emerge (via the correlation of more datable sources of information) for the argument that finds found directly beneath the floors of raised structures are probably contemporary with the occupation of those self-same structures. A tentative pointer to this occurs on property 3 in the case-study area in Phase 9 (Fig. 42m) (pers. comm., Ian Reed). The building K 24/77 was raised on posts which have been variously dendrochronologically dated to c. 1218-1239. Directly beneath the surviving flooring occurred pottery dated to the late 13th century - early 14th century, lying over layers containing late 12th - early 13th century pottery, which in turn sealed the previous phase's structures here. Clearly, therefore, those finds in layers directly beneath the flooring comprise items deposited in the gap between the floor and ground-level during the lifetime of the long-lived K 24/77 building in the late 13th - 14th centuries, while those in the lowest layers sealing the previous structures were probably deposited (or redeposited?) here during K 24/77's construction. (See the following schematic section, Fig. 51, which portrays the foregoing process taking place in Phase 9, and compare to the reconstruction, Fig. 52, of the same property in the preceding phase, showing the presence of some raised buildings, and the obvious potential for deposition of material in this manner).

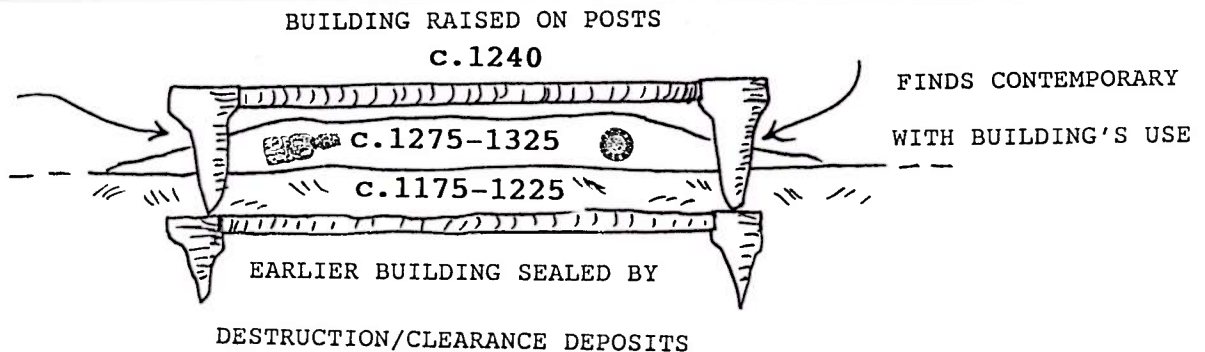


Fig. 51

Diagram showing the possible "mechanics" of deposition of finds beneath raised buildings. Although the finds under the standing building lie below it stratigraphically, in reality they have been deposited while it was in use.

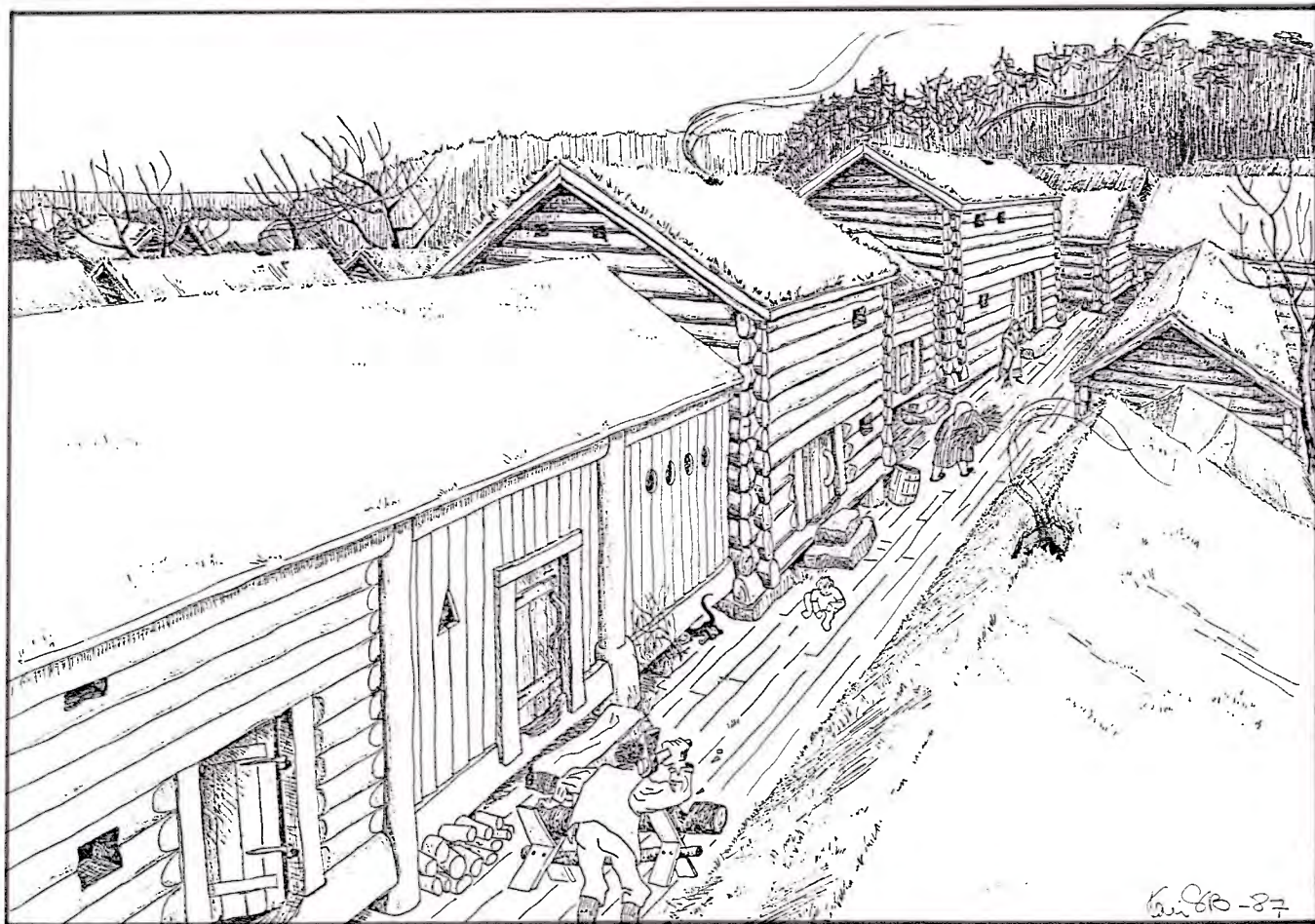


Fig. 52 *Reconstruction of FBK's "Property 3" (FA-FT-FU) in Phase 8 (mid 13th century). Note the gaps under the buildings along the passage, especially those raised on posts in the foreground and furthest away. The cat in mid picture is perhaps playing with a lost gaming-piece swept under the nearest building. (Drawing: K. Støren Binns).*

As can be seen, the finds/structure associations extracted for the case-study area are at first glance somewhat enigmatic (Fig. 53), with the majority of finds strewn within contexts not normally associated with residential structures. Consequently, the general impression gained is one of the dispersal, possibly entirely random, of items within the length of individual properties, and between street levels (or on them). This said, it is perhaps possible to detect a more systematic process of movement of finds inherent to this observable bias away from dwellings; namely the removal of these items from the interiors of dwellings and courtyards, most feasibly as a result of the brushing of floors, and their retention only in areas not subject to such processes, such as the gaps under raised floors. It is therefore probable that finds not lying *in situ* within structures are likely to have been moved subsequent to their primary deposition or loss, though it is suggested here that

such cleansing operations were unlikely to have displaced these items too greatly in time or space, since they are closely definable and restricted temporally and spatially, occurring as they did as normal daily activity within the structural limits of single and neighbouring properties whose life-spans are in turn delimited by their construction and destruction. Although these finds are generally not closely datable, the absence of any glaring anomalies in the temporal occurrence of historically-known forms is seen as at least offering some, qualified, support for such temporal restriction, though subtle discrepancies may go unnoticed of course.

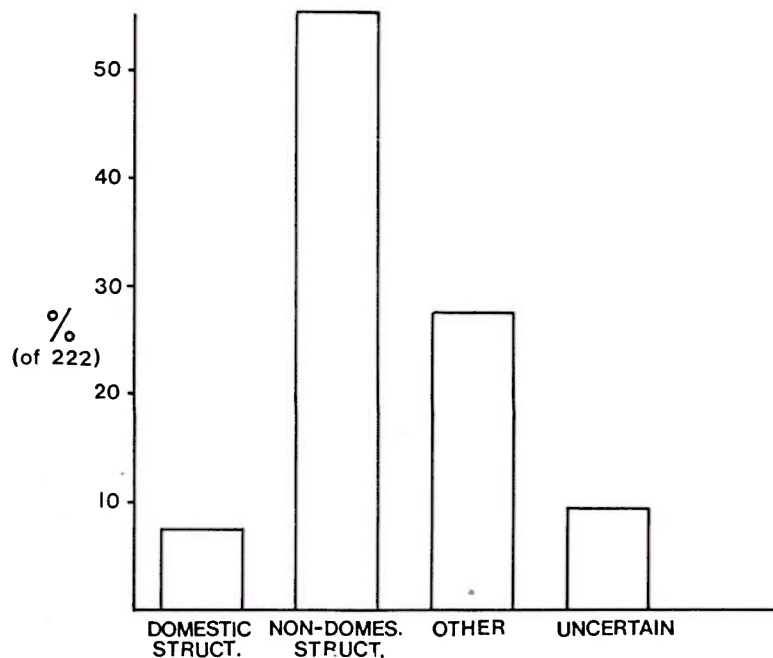


Fig. 53

Table showing the general structural associations of gaming finds on the case-study areas.

Furthermore, although the situation on FBK is not strictly analogous, it might be noted that in his discussion of the movement of rubbish and the deposition of layers within English medieval towns Keene (1982, 28-9) distinguishes between the different depositional conditions which prevailed in streets, houses and yards, noting that streets essentially comprised good stratigraphic deposits of rubbish derived from the immediate proximity and sealed by new surfacing when the going became too difficult, while the floors of houses, being regularly swept clean, essentially bear "occupation" deposits only in corners or firmly trampled into the floor, any so-called "occupation layer" covering the floor in fact comprising material dumped or accumulated there during a period of disuse. Yards are likely to be more disturbed by pit digging, though dumping etc. probably raised the ground surface here quite quickly, the floor levels in houses being built up in response to the run-off of surface water. (These latter are not directly relevant to the courtyards on this site). It is quite clear

that there is considerable complexity in the deposition of material, though there is a certain logic, and, perhaps, a detectible restriction in movement inherent to the envisaged scenario.

As pointed out already (though it is perhaps worth reiterating), there is a factor particular to Trondheim which may play a significant role in the localized redistribution and accumulation of finds in these FBK properties. Many of the buildings here were raised on posts above the ground, thereby leaving a convenient gap beneath the flooring of houses in which material could be swept or blown. There is a fair chance that this accumulated detritus derives from contemporary activities within the immediate locality, and this is material which will be sealed by the destruction of the building standing above and contemporary with it.

The appraisal of such contexts is important as it was a main purpose of this study to see if these finds could shed some light on the function of individual structures or portions of properties within the town quarter represented by FBK. Obviously, certain spurious assumptions automatically associating a find with activity within the nearest structure must be avoided, though, for the purposes of reconstructing a model of behavioural patterns within a dated structural sequence, the finds, unless undeniably residual or intrusive, are here regarded as at least deriving from activities contained within broad units of settlement (i.e. individual and neighbouring properties) at particular episodes in their sequential development which are not too greatly separated in time and space. The accumulation of material beneath a raised building, and the possibility that this represents material accumulated during that self-same building's lifetime, seems feasible. Another possibility, as will be detailed in the following discussion of the case-study area, is that although a find may lie beneath a Phase 8 structure for example, and in the probable construction levels thereof, it is possible that it in fact derives from the final episode of activity in Phase 7, its source being in that phase's structures, the recorded association with the subsequent phase's superimposed structures being the logical consequence of limited redistribution in the process of re-structuring in antiquity. This situation may pertain particularly to situations where groups of finds were firmly sealed by buildings with floors laid directly on the ground i.e. in the case of "lafted" buildings.

In conclusion, therefore, although it is rarely possible to state firmly whether a find or a group of finds were used within particular buildings, their former use at relatively closely-definable temporal junctures within the area of their host property is possibly assertable. Generally, therefore, a find's present stratigraphical position (unless it is demonstrably residual, intrusive or re-used) relates quite closely to its period of use in antiquity, and it may conceivably derive from activity which took place within its host property, or those immediately neighbouring it.

5.3.7 The Case-study Area: The finds/context relationship in microcosm.

This analysis was successful in illustrating the enigmatic nature of many finds' contexts, in the fact that unequivocal depositional and functional correlations of individual finds with individual structures were rarely obtainable. As a result, conclusions regarding behavioural patterns within units of settlement remain broad rather than specific. Nonetheless, certain internal patterns may be discernible and documented for use in comparison with future analytical work, and certain observations and suggestions as to the nature of game-

playing within the two properties scrutinized here will be formulated. A general characterization will be followed by a phase-related survey of individual contexts (Finds and structures, below).

Following more or less strictly the classifications allotted by the site excavators, the various contexts were divided into "K" layers (formed post-destruction but pre-occupation), "B" layers/contexts (possible occupation-related contexts; i.e. those in close physical association with flooring elements) and "D" layers (destruction layers, usually burnt, forming probable *in situ* contexts). Contexts from the case-study area have been characterized thus, and the results are shown graphically in Fig. 54 (based on a sample of 222 finds contexts, or 47% of the total sample).

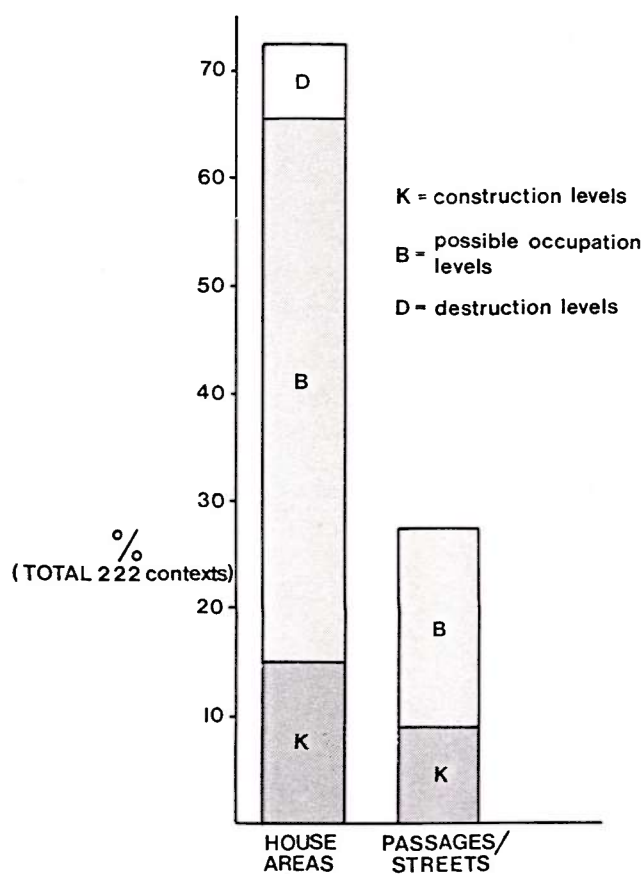


Fig. 54

Table showing the defined stratigraphical relationships of finds with structures on the case-study areas.

The majority (72.5%) lie on house plots (N.B. residential and non-residential buildings), the remainder (27.5%) within the street or passages. In the house areas, 15% may be classed as "K" layers, 50.5% as "B" layers, and 7% as "D" (probable *in situ*) layers; in the street/passages 9% are "K" layers and 18.5% "B" layers. Overall it may be seen that the "B" contexts or layers (and their finds) lying in close physical proximity to floor planking in houses, streets and passages form the largest group (70%), while "K" contexts, or layers and finds lying between the destruction level of a lower structure and the flooring elements of a succeeding structure, comprise some 24% of contexts. The remaining 6% are layers containing finds among the debris of destroyed structures. On face value, therefore, it might give rise to some optimism when so many of the finds contexts appear to be so-called "occupation layers". However, as pointed out in the previous section, it seems highly improbable that the occupants of the dwellings and workshops here would have allowed detritus to accumulate within their buildings to the degree noted under excavation, where thick wood-chip layers, often full of finds, lie directly over flooring elements. Consequently, until all such layers are examined in detail a healthy scepticism should be maintained, though, as postulated above (5.3.6), it is possible to suggest a working model wherein such contexts (and their finds) are seen to derive generally from contemporary or near-contemporary activities in the immediate vicinity (rather than being transported-in wholesale from elsewhere), though they may have been prone to some limited horizontal and vertical redistribution.

Finds and structures: Interdependent chronological developments.

This section comprises a micro-study of particular chronological trends discernible in the dispersal of finds within the structural complex covered by the case-study area. For the raw data from which this discussion is drawn, see above, Chapter 4 (the micro-distributions).

The close association of finds with the surviving structural layout is in fact demonstrated already from **Phase 2** where the earliest gaming finds are associated with one of the early terraces (wharfs?) in FU (Fig. 42a), and the subsequent buildings thereon, concentrated to the centre and W. of the northernmost property, Property 3 (Fig. 42b). The building K 28 is of uncertain function, though K 22 preceding it here (and from which one of the finds may have derived) was clearly a dwelling.

The shift in location of buildings eastwards in **Phase 3** (Fig. 42c) is also reflected in the complementary eastward shift in find locations, and in this phase some early artefact forms are associated with K 6, a domestic building lying just E. of centre. One find, a rough-out for a piriform piece (Cat. B) was found on the flooring of that building.

In **Phase 5** (Fig. 42d) Property 3's E. end is possibly used for metalworking. The central residential unit(s) bears no finds, the only item deriving from the area of a small building of uncertain function to the W., K 46. To the S. in Property 2B, the first finds here are again associated with buildings, the most notable being a fragment of gaming board (Cat. I) from a burnt layer, the destruction horizon of K 24, a building of uncertain function to the W. of the property. Otherwise the obvious dwelling, as in the property to the N., is devoid of any associated gaming finds, while the dubious construction to the

E., K 13, has two in possible association. This demonstrates that structures of uncertain function, not readily interpretable as domestic units and often probably constituting workshops or storehouses etc., often bear associated finds, whereas their domestic counterparts are frequently devoid of such finds.

Phase 6's (Fig. 42e) distribution also conforms to this pattern, where the phase's two finds are associated with a post-built building (K 15) against the street, a possible workshop/trader's booth/storehouse? The ranges to the W. are devoid of gaming items.

In **Phase 7** (Fig. 42f and g) the pattern is reversed, there being a greater number of finds generally, concentrated to the centre and W. of the properties. Also, for the first time (in the later part of the phase) finds occur in the passages. The phase's early buildings have some associated finds, though K 59 in Property 3 is interpreted as a possible storehouse. In this property K 36 is a domestic house with three bone discs beneath it. These may be residual from the previous domestic structure, Phase 6's K 30, on this spot. In the later structural sequence, the passage contexts in Property 3 bear some finds, including one, probably residual, piriform piece (Cat. B). These passage finds are difficult to explain - they may derive from contemporary activities taking place in surrounding buildings, being swept out therefrom, etc. The piriform piece, however, is probably a residual artefact, as typologically it is more likely to derive from an earlier context. The layer it lies in also contains residual pottery (I. Reed, pers. comm.). The finds in the N. passage, K 67, may also derive from activity in the property lying further N. The finds in K 17 in FA form an interesting group: An assemblage of 5 burnt decorated antler discs and one burnt bone disc lying, probably *in situ*, in the "D" layer of a building of probable non-domestic function (storhouse, workshop?). It has no fireplace, and the domestic unit lies further to the W. in FT - FU. The presence of a part of a gaming set within such a building poses some questions as to the exact activities taking place within it (e.g. is it a boneworker's workshop?).

In **Phase 8** the dramatic growth in structural complexity and in the numbers of associated finds is striking. Both properties have emphatic structural remains with units preserved along the greater part of their lengths. Fig. 42h shows the finds deriving from under the primary structures in this phase. They are scattered throughout the area, though there is an easterly bias in density within Property 3 where finds occur beneath K 26 and K 23 (workshops/storehouses). N.B. These buildings had floors resting directly on the ground; consequently, the finds beneath them probably derive from the previous phase. Only two finds are associated with the long domestic building, K 70 to the W. A few finds come from the passage area between the properties. To the S. in Property 2B finds occur under K 27 (non-domestic building?), the W. section of K 49 (domestic?) and K 48 (uncertain).

The finds lying on or above the first floor levels of these structures (Fig. 42i) reverse the previous E. bias, at least in Property 3, and the bulk of the finds now derive from levels within the W. units, notably the westernmost sections of the long partitioned building K 70. At this level there is no apparent domestic unit herein, K 70 possibly comprising a complex of traders' booths. Among the finds in the E. section are a possible chess piece and a re-used piriform piece. The layer FT 105 here contains some residual material (Ian Reed, pers. comm.). To the W. particularly, wooden discs form an important group. K 69 neighbouring to the E. may be associated with the building K 23. The broad passage K 28 has three finds from layers above it, notably a burnt

antler decorated disc (Cat. D) which matches a group found *in situ* a short distance to the N. in a lower stratigraphical context ending Phase 7. It is consequently indicative of residuality and some movement of material. Also found here is a possible chess piece (Cat. C) and a large re-used piriform piece.

To the S. in Property 2B the finds lie to the centre and E. of the range. Two pieces, including a die (Cat. H), derive from the domestic building K 49, while a few finds, predominantly stone discs, come from the street (K 80, G 10).

The later, second, floor levels (Fig. 42j) produce fewer finds, though there is an E. bias in their distribution, and all derive from Property 3 or the associated passage and street. Single items derive from K 69 and K 23 (storeroom-/workshop?) and finds are scattered along the passage (K 29) and in the street (G11). These include one die (Cat. H), but the predominant finds are stone discs, a pattern which from now on becomes more and more assertive.

In fact, the **Phase 8/9 interface** (Fig. 42k) is illustrative of this sudden explosion in the numbers of stone discs. K 70 in Property 3 with its range of partitioned units bears a large proportion of these, including some possible sets (Cat. E). In Phase 8 proper, wooden discs tended to predominate here; some still occur, and wooden and stone discs comprise the only relevant finds from this particular context. The material here may derive from the second internal phase of occupation or activity in K 70 during Phase 8, and Fig. 42k denotes this. There may be some functional correspondence between this possible commercial/trading(?) complex K 70 and the character of the finds from its associated levels, namely the stone and wooden discs (see 3.2.5. discussion above).

Further to the E. in Property 3 lie more stone discs, in association with K 26 (non-residential building?). Nothing is associated with K 23, which is anyway not particularly productive (apart from the early "K" contexts) through Phase 8. Passage finds occur to the N. (K 75), including more stone discs and a notable find of a finely-made jet die (Cat. H). In the broad passage K 30 between the properties to the E. lie more stone discs, and the street G11 also produces some. A solitary bone die lies to the W. of the passage K 71. The most varied collection of pieces (a die, a possible chess piece, two bone discs, wooden discs, and ten stone discs) occurs in layers lying over the fragmentary building K 27, again a possible workshop, storeroom or trader's booth(?), which is now quite productive having been devoid of finds at earlier stages. Property 2B has no associated finds at this instance.

Fig. 42l places the **Phase 8/9** finds pattern in relation to the **Phase 9** structural pattern, as some, or all, of the Phase 8/9 finds may be associated therewith; that finds lying immediately under buildings with floors raised on posts (as in this case) may be contemporary with the occupation of that self-same building has already been suggested. As can be seen, the unified range of structures in Property 3 is maintained and in fact strengthened (particularly to the E.) and a clear domestic unit, K 78, lies to the W. K 77 is a post-built structure with raised flooring and some or all of the various pieces lying here may well have accumulated under the existing floor-space. K 24 is a multi-roomed structure with no evident domestic unit. Finds derive from the easternmost room. K 31, a possible two-roomed building (non-domestic?) lies over the varied items described above (over K 27). Nothing derives from Property 2B. (As in Phase 8 2B and 3 are now combined into one property with elements ranged to either side of an enlarged passage/courtyard - consequently some new and different

functional criteria may arise with regard to any estimation of activities taking place within this enlarged unit of settlement).

Fig. 42m shows the finds which were stratigraphically allotted to locations under the flooring of the structures noted above. Two derive from K 24 and two from K 31. The rest lie in the passage and courtyard levels, K 53. All, apart from one decorated bone disc, are stone discs. Since these lie at an even higher stratigraphical level than the previous array of finds, these items perhaps have a greater chance of deriving from activity in this phase.

From layers on and above the **Phase 9** floor levels (Fig. 42n) come a smaller number of scattered items, predominantly stone discs. An interesting group of these was found in the sandy fill of a wall-bench in the domestic building K 78 to the W. To the E. of the property the partitioned building (storehouse/-trader's quarters?) produces some stone discs. The two-roomed structure K 31 produces an interesting assemblage of 8 decorated square bone pieces from a possible *in situ* context, possibly in association with a boneworker's debris? This building fronts the street, and as with its counterparts, is probably a non-domestic structure, post-built with raised flooring. Consequently the finds found in association may form detritus which has accumulated under the flooring, swept there from surrounding areas. Certainly, the large courtyard here appears to have been kept relatively clean. The finds from beneath the post-built structures may therefore derive from activities occurring generally within the locality rather than from the buildings with which they are now specifically associated. Property 2B produces one stone disc from the domestic building K 55, and the passage K 53.

Phase 10's fragmentary building K 82/K 35 in Property 2B/3 (Fig. 42o) lies over layers bearing a scatter of stone discs (to the E.), probably originating from preceding on-site activity, though if this was a post-built structure the finds may be contemporary. Likewise the scatter of stone discs in the passages to N. and S. (K 85/K 34 and K 58).

Phase 11 (Fig. 42p) is grossly fragmented, the only relevant evidence deriving from FU - FT where a number of stone discs and a bone piece lay under an uninterpretable structure K 88.

Summary and conclusions

A glance at Fig. 53 will show that, of all the interpretable structures with which finds are associated, the most common association (55,5%) is with the non-domestic (i.e. non-residential) buildings (workshops, storerooms, traders' quarters etc.). The next largest proportion (27,5%) lies in relation to the street, passages, courtyard and terrace, while, perhaps contrary to initial expectations, the smallest group (7,5%) is that of finds associated with domestic (i.e. residential) structures. In fact, this clear bias away from dwellings, where one might expect board-games to be pursued, may reflect a quite logical and systematic process of finds distribution, being a natural result of good housekeeping, floors within homes being regularly swept clean of dust and rubbish, and consequently small items such as the occasional lost gaming-piece, would have ended up outside the home. The small amount of *in situ* assemblages or single items associated with the occupation and destruction levels within house areas may furthermore suggest that following demolition or

destruction of a house the former occupants mounted a thorough salvaging operation, and the area was probably cleared of loose debris prior to rebuilding.

This said, the strong association of finds with the non-domestic buildings appears somewhat paradoxical. On the one hand, it may suggest that game-playing within the working environment was not unusual. Such areas were perhaps also less rigorously cleaned out. Of course, some, or all, of the pieces found in association with these particular buildings may be the products of carvers, either amateur or professional, working in these very places. (In the case of the stone discs, and perhaps also the undecorated wooden ones, these may rather be associated with activities other than gaming). Alternatively, and as stressed in the foregoing presentation, many of these apparently non-residential buildings normally lying at the ends of the properties and directly against the street are usually raised on posts, and the resulting gap beneath the flooring would become a natural resting-place for detritus accumulating here by chance or through the systematic sweeping out of the surrounding buildings and courtyards etc. Some of the buildings lying deeper within the properties are also raised off the ground and the same processes may operate here. Finds from contexts directly beneath these raised floors may therefore be contemporary with the structures above them. Those buildings that are "lafted" (of log-cabin construction), however, had floors laid directly on the ground, so it is likely that the finds sealed by such structures derive from activities prior to them.

6. CONCLUSIONS: WHAT CAN THESE FINDS TELL US ABOUT LIFE IN A NORWEGIAN MEDIEVAL TOWN?

6.1 The Repertoire of Games.

What games were played, and when? How does the Folkebibliotekstomten (FBK) material compare with contemporary evidence for game-playing elsewhere?

Despite the fact that the full range and character of games represented in the FBK material may never be fully determined due to various ambiguities and uncertainties in the material and its context, it is clear that even within this comparatively small group of artefacts certain characteristic and classifiable forms appear which relate to a number of late Viking and medieval varieties of games. As such it forms a representative collection of typological varieties, reasonably well dated, and associated with a distinctive concentrated population and an important nucleus of human activity in medieval Scandinavia.

Each recognizable form of game represented on FBK will be discussed in turn, and Fig. 43, which shows their comparative temporal distributions, both generally in Scandinavia and specifically within FBK, should be used in conjunction with this review.

Native Nordic board-games.

Two fragmentary boards (Cat. I; Plates 11 and 12), with their characteristically uneven numbered grid pattern and specially-marked squares, constitute the most explicit evidence for the playing of the native board-game of hnefetafl here on FBK. Their occurrence on FBK is restricted to the first half of the 12th century, suggesting that this known Viking game continued to be played into, but possibly no later than, the early medieval period. Hnefetafl, a battle game of moderate complexity, is known from a variety of contexts throughout the northern lands of the Viking hegemony, including graves (male and female), farmsteads and towns. A Lappish derivative of the game was recorded by Linnaeus in the early 18th century. The game's evident popularity is thought to have diminished greatly on the introduction of chess (at least in Iceland during the 13th century), the game surviving only in variant forms among "fringe" communities (e.g. the Lapps and the Welsh) in later times. The FBK hnefetafl boards presumably coincide in date with the latest currency of the older form of the game in Scandinavia. Simply on the basis of the FBK evidence it might be possible to suggest that the popularity of hnefetafl did not survive beyond the mid 12th century, at least among this portion of medieval Trondheim's population, and perhaps, by extension, other sections of Scandinavian society generally. This awaits confirmation or contradiction by future comparative work.

When it comes to determining exactly which form or forms of pieces were used on such boards, one is limited to only circumstantial evidence. Nonetheless, there are at least two broadly contemporary forms which might be reasonably associated with the playing of hnefetafl - the hemispherical and piriform varieties (Cats. A and B, Figs. 8-11, Plates 1 to 4). Their chronological distribution is at least partly commensurate with that of the hnefetafl boards, though no direct physical association of boards and pieces occurs. These pieces do not exist beyond the mid 12th century (like the boards) other than in reworked

form (i.e. re-used as spindle-whorls), or as clearly residual items. By the 13th century their original function as gaming-pieces appears to have been forgotten, their new owners seeing them simply as conveniently weighty items which, with a little modification, were suitable for use as spinning equipment.

Categories A and B contain standard late Viking forms, types which, with only slight formal variation and some diversification in materials, are widely disseminated geographically and socially throughout the northern lands, including the homelands and colonies of the Scandinavian peoples. Although the matching of such pieces with the historical and archaeological criteria for particular gaming varieties is insecure, their palpable association with games likely to have been played on a board, and clearly a game or games enthusiastically practised in Viking contexts and into the early medieval period, may well limit their potential range of association to those games now known from contemporary and later documentation, notably the sagas, and from surviving contemporary boards.

Other saga games with which these pieces might conceivably be associated are hnettafl and halatafl (probably in fact two terms relating to one game, namely an early version of a hunt game played on a board, a derivative of which is known today as "Fox-and-Geese" - Sw. rävspel). However, this is a long-lived pastime and the demonstrably restricted temporal distribution of Categories A and B argue for their correlation with a game of likewise limited duration of popularity, and the strongest correlation in this sense, as in geographical/ethnological terms, is with hnefetafl. If so, and on the unequivocal evidence of the boards, it is apparent that a traditional cultural pastime is practised within the local late Viking and early medieval urbanized community, and testifies to a certain continuity of established customs within the new nucleated settlement as it expanded throughout the 11th and early 12th centuries, with some evidence of its demise, possibly rapid, thereafter. This decline may have been a response to the introduction of new exotic games into the community, most notably the arrival of the more sophisticated game of chess, and the very popular and dynamic tables games.

Chess.

This game is traditionally thought to have been adopted in Scandinavia during the course of the 12th century, reaching Iceland during the 13th century. Few unequivocal chess pieces occur in certain 12th-century Scandinavian contexts. However, the luxurious pieces found on the Isle of Lewis and dated to the mid-12th century, do seem to have been made by a craftsman very familiar with Scandinavian (and particularly Norwegian) artistic motifs, as well as the precise requirements of a chess set. The queen from St Olav's Church, Trondheim (Fig. 22), stylistically datable to the mid 12th century, derives from an insecure archaeological context, though it is possible that it was lost in the chancel here at some point during the second half of the 12th century (M^cLees, forthcoming). The wooden chess king from FBK (Fig. 21, Plate 6) might conceivably have been made early in the 13th century. Indeed, it appears that the game achieved wide geographical dissemination in Norway by the late 13th century, as is perhaps implied by the wide spread of recorded find spots of chess pieces during this century (viz. Trondenes in the north, Oslo in the south, Bergen in the west, Trondheim in the middle). These same find contexts demonstrate the game's practise in secular and ecclesiastical sites within and outside towns (though the strongest correlation is with the towns).

The FBK material forms a dated sample from an urban context. The types found here are, for the most part, immediately recognizable adherents to established and current traditions of chess-piece representation, and, like most other contemporary Scandinavian examples, these are executed in wood. Some fine ivory specimens, though unprovenanced, exist in Scandinavian and European museums.

The important new find of a chess queen from Trondheim (Fig. 22 and footnote, 3.2.3.), which is clearly of the same tradition or school of ivory carving as that which produced the Isle of Lewis pieces, focuses attention on the probability that these characteristic forms were manufactured in a 12th-century Norwegian workshop. Contemporary Trondheim itself was the home of a talented community of sculptors working in a variety of media in minor and monumental scale, and it is not inconceivable that a local workshop, with access to morse ivory from Greenland, produced these fine pieces. Furthermore, the queen's occurrence within an ecclesiastical context, in a Norwegian town, adds some insight into the character of the contemporary practitioners of the game, in this instance perhaps inferring its practise by a local ecclesiastical functionary some time in the second half of the 12th century.

It has been proposed above (3.2.3.) that even the humble FBK chess king (Fig. 21), and its counterparts from other Norwegian contexts, form part of a distinctive tradition common to the production of small carved figurines specifically for use as gaming-pieces, manufactured in wood, bone, morse ivory and amber. This is essentially a Nordic tradition with roots in late Viking naturalistic carving, including figures which are possibly interpretable as the principal pieces in hnefetafl (Fig. 23). The continuity into the medieval period of a custom of carving naturalistic principal figures for board-games might be inferred, and the enthusiastic seizing by carvers, great and small, of the opportunity for greater scope and virtuosity as was offered by the panoply of figures required for the increasingly popular game of chess would seem a quite natural response. That chess came to replace hnefetafl as the major sophisticated game in Scandinavia during the 12th century is probable. Nonetheless, although these may be successive gaming practises, their similarity as complex board-games with specially-empowered pieces requiring distinctive representation establishes a link which might have facilitated the reapplication and elaboration of familiar Viking naturalistic forms within the context of a new imported fashion. In other words, although the idea of naturalistic representation of chess pieces was already adopted elsewhere in Europe, the distinctive Nordic variants, such as the Lewis pieces, drew on already long-established native forms and motifs rooted in the Viking world.

Chess pawns traditionally comprised conventionalized pieces in sets otherwise containing naturalistic figures. The gravestone and faceted forms are familiar examples from the Isle of Lewis sets. The various distinctive forms from FBK (Figs. 17-20, Plate 5), interpreted here as chess pawns, have analogues in the Lewis sets' faceted forms, and, it is suggested, within the corpus of earlier piriform pieces which are probably to be associated with Viking hnefetafl. Again, a strand connecting the old and new forms is traceable.

Partially concurrent with the characteristic Nordic naturalistic pieces are the Arabic-/Islamic-inspired abstract types, in classic and modified forms. By the mid 13th century, to which the wooden FBK examples (Figs. 14-16, Plate 5) are dated, the naturalistic forms of European inspiration had already assumed greater popularity on the Continent. The FBK items are therefore quite late representatives of the conservative conventionalized tradition, though they

nonetheless demonstrate the strength of mainstream impulses reaching Trondheim at this time.

Chess is clearly a firmly-established part of the repertoire of games in Trondheim by the mid 13th century, and the traditional historical view that the game reached Iceland by the second half of that century is consequently a distinct possibility, especially when one bears in mind the strong contacts between Norway (and particularly Trondheim) and Iceland.

The game's brief duration in the FBK record is apparent, there being no unequivocal evidence for its practise in the area of the town covered by the site prior to the mid 13th century and after the early 14th century (although St Olav's, which produced the mid 12th-century ivory queen, neighbours the site to the S., and the wooden king may have been made sometime in the early 13th century). The arrival of the Black Death in 1350 may well have decimated the chess-playing population. The poorer preservation conditions within the 14th-century contexts and later may also distort the evidence somewhat.

Although small, the FBK chess sample comprises a representative cross-section of contemporary medieval chess piece forms, and, although humble items, simply carved in wood (in contrast to the surviving ivories, including the new Trondheim piece), they clearly conform to recognisable, and popular, contemporary European and Scandinavian trends and fashions within the history of the game.

Merels.

This simple line-game is of some antiquity and is still played today (known variously as nine-men's-morris, møllespill etc.). It has been found in Viking contexts, its characteristic latticed playing-area carved, for example, on one side of the fine wooden gaming-board from the 9th-10th century Gokstad ship burial, on the other side of which is a hnefetafl pattern. This double-sided format, and this particular combination of games, is characteristic of such Viking and early medieval gaming-boards, and the FBK wooden single-panel boards are no exception (though only one of these two can definitely be said to be genuinely double-sided: see Cat. I and Plate 11). These are simple boards, crudely worked, and the use of similarly simple pieces for the merels game (and the hnefetafl game?) is a possibility, though any set of differentiated items, even pebbles, could be used. Stone and wooden discs appear throughout the period of occupation on FBK, and although there are problems in defining their functions, at least their long span of existence matches that of this simple everyman's game.

The medieval games of tables.

The game known in medieval Iceland as kotra, or kvatrufl, a Scandinavian variant of the European backgammon-like games of tables, is the board-game with which the various ubiquitous decorated discs, mainly of skeletal materials (though of wood too) are normally to be associated (Figs. 25-30, Plate 8). The game is mentioned in 12th- and 13th-century Icelandic sagas. The FBK evidence for the occurrence of kvatrufl, or a similar variant of the tables genus, coincides with the florescence of numerous varieties of the game generally in contemporary medieval society, and extends into the early 14th century, with only some isolated examples of discs occurring thereafter. The

earliest examples of decorated discs (bone and wood) on FBK occur around the middle of the 12th century. The impact of the Black Death and the poorer soil conditions may be contributory factors to the fall-off in their numbers in the 14th century.

A game with which such discs are sometimes (mistakenly) associated is draughts (Nor. damspill): it is important to remember that this game only achieved widespread popularity from c. A.D. 1500.

The related varieties of tables were very popular in Europe and Scandinavia, on a par with the medieval mania for chess. Like the latter it was a "chamber" game, known to have been favoured by the leisured and privileged classes, though, as with chess in Iceland (and Norway?) it may well have filtered down into other sections of society, and may even possibly have attained widespread popularity among the variety of inhabitants of the towns.

The majority of discs on the site are humble, workaday products, and they are clearly mass-produced (for example, as sidelines in comb-makers' workshops?) during the game-playing "boom" of the late 12th and 13th centuries. In their simplicity and large numbers, these pieces from FBK are perfectly consistent with developments in towns elsewhere in Scandinavia and Europe. Clearly they represent the impact of a major pastime, popular within urban communities. However, a puzzling discrepancy occurs in the record: tables games such as kvatrutafli required the use of three dice; however, only one die possibly appears in a late 12th-century context, while discs are well-represented by that time.

This said, the chronologies of the bone discs and the dice (Cats. D and H) do partly overlap, and the greatest densities in their occurrence do broadly match. The use of some of these skeletal discs, and the somewhat more ambiguous stone and wooden discs, in some other, unidentified gaming form, may of course also be a possibility.

Dice.

Apart from their possible association with tables games such as kvatrutafli (and also even occasionally chess and merels it seems), dice could be used (very enthusiastically!) in their own right, in pure dice games (hazard, dobbel etc.). Gambling with dice was rife in medieval society and was much condemned by both Church and King as being morally reprehensible and a social scourge.

Dice form a well represented group in the FBK material, and some rare and finely-made specimens occur, notably three jet dice with silver (?) inlay (Cat. H; Fig. 40, Plate 10). More commonplace bone, antler and stone dice are also represented, some of which have had some care taken in their manufacture.

As contemporary documentary evidence clearly suggests, and the evidence from FBK confirms, gaming with dice was an extremely popular pastime in the urban community, achieving greatest popularity (as with gaming generally, it seems) during the 13th century, though numbers do drop dramatically in the last quarter thereof. Although it may simply be coincidental, it is worth noting that King Magnus the Law Giver's (Magnus Lagabøtes) Town Laws of 1276 gave stringent powers of confiscation and fining to the king's officers should gamblers using dice be caught in the act!

6.2. Manufacture and Materials.

Where, how, and by whom were these gaming items made?

The local range of gaming artefacts, actually quite broad and diverse, is presented above (Chapter 3). The quality of individual pieces in terms of fabrication is quite variable, though it can be stated at the outset that there are no outstandingly sophisticated items in the corpus. There do occur some few objects of especial form and significance nonetheless, which may be classed as the products of competent craftsmen. The objects range essentially from crude items of clearly impromptu execution, the improvised products of casual whittling (for example, the merels board carved on a seat panel, Plate 13, and many of the wooden and stone discs), to reasonably competent craft products, though even in these instances exhibiting no technical brilliance, the bulk perhaps best characterised as the sidelines of production, most particularly in bone workshops (for example, simply and quickly produced items such as the varieties of decorated discs, which may well have comprised part of an apprentice's output, and perhaps a means by which otherwise unusable raw materials could be used up?). There occur also objects which evince some degree of care in their manufacture and these might be seen as custom-made creations by a competent carver, perhaps even a professional, working in wood or ivory and acquainted with traditional forms and motifs (for example the piriform pieces in walrus ivory, Fig. 11, the chess king, Fig. 21, and the "Urnes" antler disc, Fig. 26). The bulk are likely to have been made locally, judging from the presence of rough-outs, with only a few being likely imports (for example, the jet dice, Fig. 40).

Interestingly, one of the piriform piece rough-outs in Phase 3 (Fig. 12) appears to derive from what appears to be a residential building rather than a workshop, perhaps implying virtuosity in carving among members of the general population, or simply the absence, at this early stage in the town's history (the 11th century), of permanent, purpose-built workshops (and, therefore, the presence of itinerant craftsmen?).

The raw materials used in the manufacture of gaming equipment include steatite and jet and various organic materials (wood, bone, walrus ivory, and antler). All these materials constitute familiar, readily available and long-exploited resources in regional contexts. The skills of Viking carvers are well documented, and the development, from an early date, of dynamic craft industries within the Norwegian urban communities is a factor of some significance, and particularly so in Trondheim itself, where accomplished wood- and boneworking is apparent from the second half of the 11th century (Fuglesang, 1981 and 1985). However, in the case of the vast majority of these gaming-pieces, the potential for deep-relief carving offered by some of the organic materials is never exploited to any marked degree (a phenomenon which occurs also in relation to comb manufacture, for example), though there are indications that designs and decorative motifs elaborately reproduced in other contexts were known to some of the local(?) manufacturers (e.g. the "Urnes" disc and the seated chess king).

The local piriform pieces, and possibly the hemispherical forms (Categories A and B) appear to almost exclusively utilize materials known to have been highly prized commodities - namely morse ivory and whalebone (with two possible rough-outs in jet as well) - and they are indeed competently produced objects, which each reproduce a prescribed, almost standardized form. That

there is also deliberate choice of rarer and intrinsically valuable materials, as well as careful execution and attention to detail within the range of these closely-related forms, implies systematised manufacture for a specific established and recognised function by competent craftsmen with access to such materials and the tools to fashion them, and hints also at the existence of a body of consumers with defined tastes and requirements in this field. Combined with the cultural and social associations of the known games of late Viking and early medieval Nordic society, the interpretation of such pieces as items bearing a recognised status-related value does not seem unreasonable. Likewise the later chess king, which, although a wooden piece, is a humbler representative of a rich, pervasive and deep-seated tradition of Nordic carving aimed at a specific clientele.

Further to the systematic use of morse ivory in these piriform pieces: These are probably later Viking and early medieval forms, of at least the 10th, 11th and early 12th centuries. Perhaps this florescence reflects contemporary developments in the exploitation and trading of this valuable commodity in the Scandinavian and European world? This aspect awaits further investigation.

As the distribution analysis shows, it is not possible to positively identify the sites of workshops on the basis of the dispersal patterns in this body of material alone, though some individual items or assemblages of pieces possibly occurring *in situ*, in finished and half-fabricated forms, do occasionally crop up in possible workshop structures (FA Phase 7 and FW Phase 9, for example). These indications await corroboration. The presence of individual craftsmen or of centres of mass-production can only be hinted at in general terms from observation of the characteristics and quantities of the various artefacts under review.

There is only rarely any notable variation or experimentation in decorative motifs beyond the ubiquitous basic dot-and-circle and simple geometric patterns, a repertoire known to most contemporary amateur and professional craftsmen. In the case of the skeletal discs the use of simple scribing and punching tools would suffice for executing the ornamentation, and it seems likely, judging from their increasing numbers, simplicity and standardized nature, that these are mass-produced items with their source in bone workshops, where materials and tools (and apprentices!) are ready to hand. The more rare one-off products (such as the "Urnes" disc, various chess pieces etc.), where some stylistic cross-references occur, however simply reproduced, may exemplify the occasional (local?) products of more capable hands for a relatively small number of somewhat more discerning gamesters.

The jet dice are clearly workshop products (involving the inlaying of metal), and they probably derive from York, although there is some evidence for the local working of this prized exotic raw material in late Viking and early medieval contexts in the town (5.2.2.). The piriform pieces (Cat. B) may well have required the use of a lathe (bow- or pedal-?) in their manufacture, and the bone discs might have been won from the parent bone by means of some form of trepanning saw. The stone and wooden discs may be blanks awaiting further working into spindle whorls, for example. Consequently many of these gaming items, humble though they are, required some mechanical aid in their manufacture beyond that offered by a knife, and most may have originated in workshops. Standardization is an increasingly apparent characteristic (with a commensurate growth in numbers) through the medieval period, reaching a peak in the 13th century. This is most emphatically demonstrated in the disc corpus, though even here the term must be qualified by the observation that the bulk

of individual items are each unique and idiosyncratic in their execution. Also, as already pointed out, even earlier items, such as the 11th- and 12th-century piriform pieces, are clearly reproduced according to a standard formula.

Gaming-pieces are eminently marketable items (though, in their simplicity of form and function also, it should be said, eminently open to imitation by amateurs), and perhaps always had been so, at least from the time of the various Viking examples in Scandinavian settlements and graves. From the mid 12th century on, however, it is perhaps possible to detect the emergence of an expanding and increasingly diversified urbanized population, forming a captive market receptive to new, exotic fashions, though with variable ability to pay or barter for professionally-produced items. This demographic development is possibly reflected in the increasing quantities and diversity in quality evinced by a new range of gaming-pieces and the disappearance of older forms, complementary phenomena evident in the town's archaeological record during the 12th century (see next section).

6.3 Game-playing in the Urban Milieu: The historical evolution of games within a developing urban community.

Who played games? Can these finds shed some light on the character of the generations of inhabitants of this particular town quarter?

The demographic and structural context.

The excavated area of FBK represents only a small portion of the medieval town (17.7% of the built-up area c. A.D. 1300), one part of a centralized community which included a broad social mixture, yet with clear social hierarchies and groupings. A medieval Norwegian town's population (as documented for Bergen; see Helle 1982, p. 447ff) comprised the king's liegemen, clergy, land and house owners, merchants and traders, craftsmen, shipmasters, seamen, working folk and servants, as well as wives and children, old people, the poor, and beggars. Seasonal and foreign visitors (itinerant craftsmen, foreign merchants, and, with special relevance to Trondheim, hosts of pilgrims to the shrine of St. Olav) augmented this mix and formed part of the network of links with the rest of medieval Europe.

It is thought (Christophersen et al, 1988, p. 72ff) that FBK lies in the area first laid out in the late 10th and early 11th centuries as the primary core of settlement centred on a sheltered inlet in the west bank of the River Nid (see 2.1. above). Subsequent developments in spatial organization display a consistency and continuity through time. The area was intensively developed on an increasing scale and in a regulated manner to either side of the N-S running street, which must have been one of the main arteries of communication in the town. From a general appraisal of the finds and structures encountered during excavation, the character of the FBK town quarter appears to be marked by the presence of a distinct commercial element, particularly in the later phases. Most of the structures bordering the street are regarded as non-residential buildings (storehouses, workshops, traders' booths etc.), and while there are clear residential units lying in the heart of the properties (or at least in those long properties of which it was possible to excavate the greater part), it is clear that a variety of activities took place within these intensively populated plots. The long excavated properties to the W. (the case-study area, Ch. 4 and

5.3.7. above) contain 47% of the gaming finds, while the situation is more obscure to the S. and E. Nonetheless, wherever they occur, the majority of finds do not appear to derive directly from the localities within these properties where one might have expected games to have been played i.e. in the domestic units. The more common association of finds is with structures probably not used as dwellings. This is something of a paradoxical situation since game-playing is essentially a sedentary, sociable activity, which might be expected to have been pursued in comfortable and warm surroundings, among families or groups of friends, in homes or in taverns etc. However, the relevant finds' ultimate locations within the settlement complex do not automatically tally with such a scenario. Many variables qualifying interpretation arise: Are the finds redistributed, either haphazardly or systematically, following their loss? Have the structures they lie in association with been correctly interpreted? Are these items lost by people actually playing games, or by their manufacturers during the production process? etc.

A working model for interpretation has been proposed above (5.3.6.), whereby the potential for the redistribution of finds subsequent to their loss is recognized (only a small proportion - 11% - of items can be regarded confidently as being *in situ* i.e. at their original point of deposition), though the extent of this movement is postulated as being confined within the bounds of individual properties, or between directly neighbouring properties, finds being moved around therein during periodical episodes of cleaning, reconstruction or reorganization. Some horizontal and vertical movement has taken place which obscures the finds' primary relationships with the structures in which they were originally used, or made, although it is argued that this movement may be so restricted as to not greatly distort their true chronological sequence of deposition, wherein the distribution of finds reflects patterns determined in antiquity, and in reasonably close harmony with their primary dispersal. In fact, the evident bias away from dwellings possibly results from a systematic process, namely the regular sweeping-out of floors and the redeposition of such small items in gaps beneath contemporary structures. The finds are therefore broadly associable with the lifetimes of their host properties and may be viewed within the context of each property at a particular instance, or temporal phase, in its structural and historical development, though only rarely may they contribute to the estimation of a particular building's character, and, by extension, the activities or status of its occupants. Consequently, these artefacts' main value in this respect lies in portraying broad temporal developments in the forms of games utilized within this physically-defined segment of the urban community, and, as a corollary, in their use as instruments capable of registering historically-related trends in the social and cultural evolution of this community (see the following discussion).

In the following subsections I shall present a systematic review of the character and development of games particular to this evolving town quarter. The discussion is historical, and an attempt is made to marry the evolution of traits in this small world of games to broader dynamic social and cultural developments within the town. This interpretation, or portrayal, draws on the typological and distributional trends set out above, and the appropriate distribution plans and tables should be consulted (Figs. 41a-1, 42a-p and 43).

The Early Town: Gaming as an elitist pastime?

There are few surviving gaming artefacts in the early phases of settlement, though from the start these are closely related to the extant structures and include characteristic late Viking forms.

The town, or "kaupang" (trading settlement) as it was at this stage, is established during the late 10th century, and FBK probably forms part of the original core of settlement. In the two initial phases the area is possibly inhabited on only a seasonal basis, activities being related to the market function of the "kaupang". Some metalworking, particularly casting, is evident from earliest times through to Phase 6, often centred on workshops to either side of the street (U. Bergquist, 1989). The town expands quite rapidly from this seasonal market and centre for (itinerant?) craftsmen during the course of the 11th century, both in terms of total area and in the increasingly intensive utilization of plots. Interestingly, the 12th century saw Norwegian towns becoming an increasingly popular overwintering location for the king and his troops, and by King Sverre's time (late 12th century) they were rarely out of the towns (Helle, 1974, p. 166).

The first finds of gaming-pieces occur in **Phase 2** (c. A.D. 1025-1075: revised late 10th century-1050), and these clearly derive from activities centred on and around the wharf-terraces on the E. side of the small inlet here (FU), and from buildings subsequent to them. Of these finds the most interesting is a hemispherical piece of classic form (Cat. A; Fig. 9) which may well derive from a hnefetafl set, the popular board-game in Viking society. Although it lies in a potentially redeposited context, its presence in connection with these wharf structures conjures up an image of the pioneering traders and craftsmen taking a break during the busy routine of loading and unloading wares and provisions on the wharfside, at some point very early in the life of the community.

In **Phase 3** (c. A.D. 1075-1125: revised late 10th century-1050) the shift of domestic and other structural units eastwards within the long western properties is matched by a corresponding movement of associated finds, a small group including late Viking - early medieval hnefetafl(?) pieces occurring in relation to a domestic building on FA. One of these ivory pieces is in rough-out form, suggesting that such items were made locally, and, possibly, not necessarily within separate established workshops.

The old board-game of hnefetafl, or at least its name and cultural associations, was known to the saga writers of the 13th century. In its hey-day in the preceding centuries, it was played by both men and women, and was certainly regarded as a noble pursuit. Being a battle-game of moderate complexity, it was undoubtedly a popular pastime in status-conscious warrior circles. If these pieces (Cats. A and B) do indeed belong to this game, their presence among the first generations forming this incipient urban community argues for a strong measure of continuity of old customs and is also possibly illuminative of the calibre of some of the people partaking in the early development of the town. The fact that these are made competently in valued raw materials (whalebone, and most particularly, walrus ivory) argues for their being prized objects with some material value and, by virtue of their function and associations, that they evince a measure of status in their owners. Their conformity to a near-standardized repertoire of forms, and a repertoire known from a wide geographical spread within the Viking hegemony, points to these pieces' strongly defined function and their deep-rooted cultural associations.

Right from its earliest days, it seems, the long property (property 3) to the W. of FBK may well have been occupied by a high-ranking member of society—certainly, throughout its long life it produces some very fine items. From the NE. of FBK (FX) comes one piriform piece (Cat. B), though from a rather uncertain context.

In **Phase 4** (A.D. 1075-1175: revised 1050-1100) gaming finds include four more gaming-pieces probably associated with hnefetafl, in finished and half-fabricated form. The two unfinished items are of jet, another luxury material, prized in Viking and later times for its decorative potential and exotic nature (5.2.2. above). These two examples (Figs. 10 and 11b) are slightly ambiguous in nature due to their fragmentary state, though their surviving formal characteristics are highly reminiscent of the typical late Viking gaming-pieces (e.g. Figs. 8, 9 and 11a). They are of particular interest also because they clearly demonstrate local working of an imported raw material, a material which is, furthermore, notably rare in FBK's contexts, and when it does occur, seems to be utilized almost exclusively for gaming-pieces. These particular finds therefore provide some additional evidence for the selective use of luxury materials for some gaming-pieces and the probable status of these particular types and the people for whom they were made.

The distinctive hemispherical and piriform pieces comprise at least half of the surviving range of gaming objects from the earlier phases covering the 11th and first half of the 12th centuries (the others being plain stone and wooden discs of less attributable function). The outstanding impression is that, during the rapid growth of the town in the 11th century, game-playing is restricted to traditional Viking pastimes utilizing well-made pieces which are directly comparable with established Viking forms, and characterised by the use of luxurious materials in their manufacture. Their small numbers (compared to future developments) may be proportionate to the size of the local community and/or reflect the presence of a smaller sub-group within it which had access to such games and their finely-made pieces. This pattern clearly persists into the first half of the 12th century, a period when the town has entered upon a process of consolidation into one of Norway's most important urban and ecclesiastical centres, leading ultimately to its establishment, in 1152/3, as the hub of a vast archbishopric.

It is not unreasonable to assume that the people playing with these distinctive pieces comprised the higher-ranking individuals with time and resources to invest in entertainments utilizing luxurious materials. Their location (both people and pieces) in the central area of the town, and that part which constituted the earliest core of settlement centred on the original harbour and comprising plots originally apportioned out by royal decree, is surely not fortuitous. These particular pieces, and their likely association with the late Viking pioneers and the following generations of early medieval inhabitants with central roles in the expansion and consolidation of the town, are perhaps indicative of some degree of complexity in the social character of this part of the settlement.

The 12th century: A time of transition?

Finds from **Phase 5** (A.D. 1125-1225: revised 1100-1150) point to the persistence, within the developing and increasingly complex social and cultural environment of the 12th century, of traditional Viking games. However, for the first time, there are some indications of innovations in the sphere of games,

and it may be possible to detect transitional tendencies occurring within this century, a time where old, established native pastimes are supplemented by, and finally completely replaced with new, imported games.

Up to the mid 12th century, items relating exclusively to traditional Viking games are still prevalent - indeed we have the most emphatic evidence for hnefetafl in the form of two fragmentary gaming-boards from early to mid 12th-century contexts in Phase 5 (Cat. I, Plates 11 and 12). Although relatively humble examples, they are typical of such finds from contemporary urban sites in Norway, and one at least was valued sufficiently highly by its owner that he (or she) repaired it at some point before finally losing it, or throwing it away. Both hnefetafl and merels could be played hereon, a traditional Viking combination.

Hnefetafl boards with their distinctively marked playing surfaces have not yet been conclusively correlated with particular contemporary forms of pieces, and the proposed use of the Category A and B forms in hnefetafl is implied from circumstantial evidence. These particular pieces and boards do not match comfortably when judged by criteria relating to their comparative sophistication of manufacture and use of materials. Perhaps, by the mid 12th century, hnefetafl had ceased to be the preserve of the highest social ranks (presuming it was such in the first place), and the FBK boards represent humbler imitations, within a more socially diversified urban community, of finer aristocratic boards (like the one found in the Gokstad ship burial of c. 900)? However, one might yet envisage, for example, members of the King's Guard, or successful local traders and craftsmen, gathering round such a sturdy board on a dark winter evening, whether at home or in a tavern, while the finer ivory pieces may have belonged to some of their more prosperous and status-conscious neighbours.

The second half of the 12th century sees the emergence of two major focii of social, political and economic power with close connections to the town of Trondheim (Nidaros); namely the king (notably Sverre) and archbishop (most particularly the energetic Øystein, and his successors). Despite civil war and the unrest inspired by rival royal factions at this time, the horizons of the town's inhabitants demonstrably expanded as political, economic and cultural factors combined increasingly to bring this peripheral urban centre into close contact with the wider European sphere. In **Phase 5**, FBK produces, from possibly pre-1150 contexts, its first decorated bone disc, and three decorated wooden discs, pieces most probably associated with a version of tables, a family of closely related board-games, the precursors of modern backgammon. Tables encompassed a whole range of regional variants in contemporary Europe, and Scandinavia had its own, kvatrutafli, known to have been played in Iceland during the 12th and 13th centuries. Perhaps these few Phase 5 pieces denote the first tentative arrival in Trondheim of a form of board-game which, in the course of the second half of the 12th century and into the next, was to become perhaps the most popular of such pastimes amongst the local inhabitants of the town.

The later 12th and 13th centuries: Games for all?

Phase 6 (A.D. 1125-1275: revised 1150-1175) is particularly illustrative of this change in the pattern of game-playing which appears to occur during the 12th century, and which is comprehensively entrenched by the 13th century. Indeed, Phase 6 seems to form something of a watershed generally, and marked

changes in the observable characteristics of nearly all kinds of find from the site, domestic, industrial and so on, are apparent, setting the pattern of increased numbers and diversity of finds which becomes so emphatic in the two succeeding phases (for survey of all finds categories, see S. W. Nordeide, 1989).

Prior to Phase 5, as we have seen, the numbers and variety of gaming items are restricted, as is their spatial distribution (they are largely confined to the westernmost properties). Games are exclusively of indigenous character. However, from Phase 5, and particularly in Phase 6, impulses of an exotic nature begin to manifest themselves, and by the height of the reign of King Håkon Håkonsson in the mid 13th century there is no explicit evidence for the continued practise of the old Viking games (other than the perennial merels), though some strands of continuity in terms of the reapplication of native traditions of gaming-piece carving are discernible (for example, the chess king, Fig. 21; see 3.2.3.).

As observed before, only rarely do finds lie in close association with dwellings. As Fig. 53 demonstrates, the domestic/residential building (as determined usually by the presence of a fireplace, among other criteria) is in fact often the one unit within a property without any associated gaming items. This has been seen here (5.3.6) as reflecting good housekeeping, with stray loose items being swept out of the living areas and being redeposited in areas within the properties which were less subject to thorough cleaning. This presumes that we have properly identified the character of the individual buildings: although some of these buildings have no built-in fireplaces, heat may have been provided by means of a moveable brazier or the like, and some may well have functioned as public gathering-places, though no obvious taverns or "schøtstue", as occur in Bergen, are identifiable (as yet) on FBK. Provisionally, therefore, it seems that, despite certain paradoxes in their distribution, these gaming-pieces were probably used within private homes in this part of town, and formed an increasingly familiar part of the domestic equipment of local families.

As noted already, the bone discs and the decorated wooden discs (Figs. 25-30, 33 and 34), which in **phases 7 and 8** (c. A.D. 1175-1325; revised 1175-1275) become quite widespread across FBK, occur first in Phase 5, and in Phase 6 they (and presumably a new game) are firmly in place. The adoption of kvatruþafl, or a similar variant of tables, is, judging from the increase and wide distribution of such discs (and the plain stone and wooden varieties?) rapid and pervasive, and its arrival seems to coincide with the disappearance of the older native game of hnefetafl. It has been traditionally postulated that chess was responsible for the demise of hnefetafl (at least in Iceland), though on the basis of the FBK evidence, another instrumental factor in the decline of the old game could have been the imported craze of tables, which manifests itself here prior to chess, and which, if the numbers and spread of decorated discs are any indication, was certainly more widely played than its more complex fellow European board-game.

As regards their physical dispersal: as may be seen (Figs. 42d and 42e) the discs in Phase 6 lie predominantly in association with the buildings standing against the street on its W. side. The domestic quarters to the centre and W. of the two long properties have no associated finds. It has been proposed above that this pattern may result from the sweeping of items from contemporary dwellings into gaps under the raised floors of neighbouring buildings. The situation is perhaps modified somewhat in Phase 7 (Figs. 42f and 42g) where some residential correlation occurs (FW), though the former E. bias in concen-

tration persists. In Phases 6 and 7 the FG-v area produces a fair amount of these bone discs. (In Phase 6 this area also produced a notably fine example of a hemispherical bone piece probably used for hnefetafl, though from a context dated to the early 12th century. This is in keeping with the character of the pattern of game-playing prior to the influx of the new forms, possibly from the middle of that century onwards).

It is perhaps possible, in observing this shift from indigenous to exotic types of games, and in noting particularly the rapid adoption and wide dissemination of the simple discs, to propose that there is what one might call a "democratization", or universalization, of the spirit and practise of game-playing within the town. This process may have been linked to local demographic developments: An increase in the numbers and density of local inhabitants, perhaps now mainly comprising (parvenu?) merchants and traders, their families and servants, with fewer representatives of the traditional oligarchy present in the locality than before, might well have transformed the social complexion of this particular area of the town during the 12th century, a groundswell of change which is perhaps reflected in the character of finds occurring from this time on. Through contact with their European professional counterparts, the traders would have become acquainted with the already popular European varieties of tables, a form of board-game which was then perhaps as popular a form of relaxation, private and communal, as backgammon is today in parts of southern and eastern Europe, for example. Faced with the arrival of such a game, which was dynamic, absorbing, easy to learn, not requiring of elaborate or expensive pieces or boards, and which (perhaps crucial to its wide acceptance and popularity) was well-suited for gambling, it is perhaps inevitable that the limited traditional native gaming repertoire paled in comparison and died out, at least in this particular environment. Whether or not the older game was in fact played by early 12th-century merchants and traders, or whether its practise was confined to an aristocratic elite, it is nonetheless possible that the old battle-game of hnefetafl came to appear too provincial, slow and old-fashioned in the eyes of the later generations of town dwellers, who were perhaps seeking to create a new, more European-orientated identity, or at least to abandon older forms of cultural expression, be they status-related or not. That Iceland at this time received the popular tables fashion via its close trading links with medieval Trondheim is eminently feasible. (It is perhaps relevant to note here that the rune-inscribed wooden labels associated with Iceland/Greenland trade, and a corresponding increase in tally-sticks and weights, occur during the late 12th century, in Phase 7. Furthermore, the quantity of bone waste increases dramatically in the same phase, perhaps indicating intensified and permanent boneworking within the town, and a local source for the discs for the new board-game?).

Although tables was popular among the aristocratic class, and fine ivory discs (so-called "tablemen") with elaborate deep-relief carving fill museums, the bulk of the discs of skeletal materials found here (and on most urban excavations) are humble products, sidelines of boneworkers, and, evidently, increasingly mass-produced. In contrast to the earlier bone and ivory gaming-pieces (even the simple hemispherical pieces), these discs may be characterized as completely lacking in qualitative distinction, and they have arguably little to do with status or conspicuous consumption, at least by a more discriminating social elite. Again, this qualitative contrast between the old forms and the new may, it is tentatively suggested, be symptomatic of a change in the character of population on FBK during the course of the 12th century. Gone are the king's liegemen, the officials and functionaries endowed with land and property in the

town; gradually the more worldly-minded mercantile classes leave their mark here, the practise of a new gaming pastime not requiring ornate pieces being in itself a manifestation of the change in social and cultural perceptions of the local inhabitants. At the risk of stretching the point, it might be interesting to note the reappearance, from Phase 7, of the old piriform ivory pieces, though now their original function has evidently been ignored or forgotten and they are clearly modified and re-used as spindle-whorls - perhaps these testify to both the demise of the old game of hnefetafl and a corresponding diminution of appreciation for such well-made forms in the eyes of their new owners, for whom their only value lay in their potential as weighty objects.

As Eales (1986, p.57) warns (with respect to the occurrence of chess within the towns): "...this should not be used as a basis for airy generalizations about the rise of a middle class culture." Perhaps similar caution should be exercised in interpreting the florescence in numbers of these discoid pieces etc. However, Schia (1987, pp.222-4), has made a case for the emergence of an urban bourgeoisie, and attendant proletariat (family retainers, various petty traders and the like), in Norwegian towns during the course of the 12th and 13th centuries; this development is implicit in some of the town laws of the late 13th century, which compelled householders to reduce the amount of servants under their roofs. It is possible that the changes noted above in the game-playing pattern may, with due caution, help to further define such otherwise nebulous social developments.

Of course, it is not easy to determine to what extent leisure activities, usually documented as being indulged in by the upper classes, filtered down within society. It is clear, however, from these same town laws of 1276, that gambling (by no means a purely proletarian activity, of course) was rife, and that all sorts of morally reprehensible leisure activities were practised in the towns at this time and were duly censured by king, Church and decent citizenry (see the quote from the contemporary moral treatise "The King's Mirror", Chap. 2.3., for example). Gambling was frequently pursued with the help of dice, and the 13th-century levels (in phases 7-8) on FBK are those which for the first time produce a fair number of examples, variable in quality and materials. (Dice might be used by themselves, or, for example, with the bone discs in tables, a game-form eminently suited for gambling).

There is clearly some catalyst, or combination of circumstances which, from the late 12th century, and most particularly in the course of the 13th century, causes game-playing to become more varied and exotic in character, and the more numerous finds in most FBK contexts perhaps testify to a society in which gaming is customary, popular and widely practised. Foreign trade, the arrival of increasing numbers of pilgrims, increased leisure time resulting from greater specialization, a more hectic and varied social life, a more densely populous and socially-mixed local community, the possible emergence of a middle class and a proletariat, and the ability of craftsmen (such as comb-makers?) to mass-produce gaming items in response to increased demand: all these factors may have combined to produce a colourful and energetic local community in 13th-century Trondheim during the reign of Håkon Håkonsson, a community in which the pursuit of entertainment and relief from the daily grind knew few bounds. That things were perhaps getting too much out of hand by the last quarter of that century may be inferred from the clause in King Magnus Lagabøte's Town Laws of 1276 which gave stringent powers of confiscation and fining to the king's official should he find anyone gambling with dice. Interestingly, though perhaps by sheer coincidence, Phase 9 (A.D.

1275-1325) here sees a significant drop in the numbers of dice. Perhaps the law really was strongly enforced!

Chess, the sophisticated game *par excellence*, does not, on the FBK evidence, appear in the town prior to the mid 13th century (Phase 8), and then it is represented exclusively by wooden pieces (Cat. C), though these occur in both exotic and native forms (3.2.3.). A drawing of an ivory piece, which closely resembles the queens of the Isle of Lewis sets, has recently been found among the documentation from excavations in the ruin of St. Olav's Church in the last century (Fig. 22). The church lies just to the S. of FBK. Although the find does not derive from a securely datable context, on analogy with the Isle of Lewis pieces it may well date to the second half of the 12th century, and its deposition within the chancel of this Romanesque church at some date not too long after the church's completion c. 1175 is possible (M^cLees, forthcoming). Viewed in the light of this chess queen's form and context, the possibility exists that a church functionary, for example, was playing chess in Trondheim already in the second half of the 12th century.

Chess represents another exotic impulse which arrived to supplement the local repertoire of games, and the Arabic/Islamic-derived forms are typical European types, though they may perhaps be said to be somewhat conservative and old-fashioned when viewed against contemporary developments in Europe.

The wooden chess king can be seen as an example of the medieval Nordic tradition of carving gaming-pieces in naturalistic forms, proposed here (3.2.3. and 5.2.1.) as having formal and functional antecedents in the miniature three-dimensional figures, the probable "hnefi" or king-figures of Viking provenance, and developed to a sophisticated degree on various ivory chess pieces, including the Isle of Lewis figures and the new find from St. Olav's Church. FBK's 13th-century king, despite being carved in wood, is part of the mainstream of this stylistic expression. Even the chess pawns from the town may also draw on older traditional gaming-piece forms, in this case geometrical, there being broad similarity between some forms of presumed (and actual) pawns and the earlier ivory piriform pieces probably associated with the old native game of hnefetafl (compare figures 11a and 20, for example).

Medieval chess is normally regarded as having been almost exclusively a high-status pastime, though Murray (1913, p. 442) suggests that in Iceland at least chess achieves wider social dissemination. As in the case of kvatrutafli, it is possible that the strong communication between Iceland and Norway, and notably Trondheim, in the 12th and 13th centuries may have facilitated the ready transmission of the new game, and as proposed for Iceland, these wooden pieces from an urban site might be suggestive of a slightly wider dissemination of the game beyond the aristocratic and ecclesiastic milieu it is traditionally associated with.

As they have been since Phase 2, the long properties to the SW. of the site (properties 2B and 3, Fig. 5) are productive of gaming items typical of their time; this locality seems always to make its mark in terms of finds material, consistently producing items of superior quality or association (though together with numerous humbler items). Perhaps this reflects some continuity in the status of the local occupants of these particular properties, which, it might be noted, neighbour St. Olav's Church.

(In this context, it might be interesting to point tentatively to a possible difference between this site and one lying further W., namely Televerkstomta;

various criteria suggest that this W. part of the town was of a different social character, probably comprising the town's poorer inhabitants. Certainly, as far as gaming items were concerned, only a few items, and a very limited range, were found here).

The emphatic "boom" in the playing of board-games and dicing which occurs during the 13th century prior to c. A.D. 1275 is a clear manifestation of an increasing receptiveness to impulses and fashions from abroad evident among the local populace, and it may be that the popularity and breadth of game-playing is a concomitant of increased economic interaction and security, political stability and a more relaxed, leisured attitude to life. The commercial character of this particular town quarter is by now quite marked, though the area at this time is nonetheless probably densely populated, with large extended families occupying two-floored buildings on one part of the long intensively built-on properties, other portions thereof being rented out to traders, craftsmen etc., with constant bustle in the passages and streets and courtyards. The dynamic social complexity represented in this part of the town is possibly closely mirrored in the varieties of gaming-pieces which have survived from these contexts.

Although the bone, stone and wooden discs form a more or less standardized corpus, and the varieties of games played are imported concepts, there is nonetheless a Scandinavian "flavour" perceptible in the forms of individual gaming-pieces (the chess king and pawns, for example), even though the old native game, or games, which employed their prototypes are now forgotten (viz. the conversion of the old ivory piriform pieces into spindle-whorls). Although the bone discs conform to a standard and universal norm, they are probably used for the documented game of kvatruþafl, a Nordic variant of European tables. Furthermore, in a society highly conscious of kingship and the expression of authority, it is no surprise that eloquent images, such as even the FBK chess king constitutes, appear in association with a dignified game of powerplay such as chess, which operated as a microcosmic vehicle for the expression of contemporary social complexity, appreciated by craftsman and consumer alike. Simple games, such as could be played by children, exist side by side with more sophisticated pastimes - note the scratched-out merels board from Phase 8 which derives from the same property as produces finer earlier and contemporary items variously relating to hnefetafl, kvatruþafl, and chess. This is typical of the paradoxical nature of the information derived from these properties, although the potential for social complexity within properties has already been referred to.

In the 14th- and 15th-century levels, namely in Phase 9, and particularly, from Phase 10, the numbers and variation of pieces decline. This may well be the result of poorer preservation potential across the site: however, Phase 9 has good preservative conditions and already in this phase there are clear signs of a significant historically-determined decline in game-playing. The outlawing of gambling in 1276 may well have partly contributed to this, as suggested above, and certainly some mechanism dampening the former game-playing craze appears to come into operation long before the impact of the Black Death in A.D. 1350, which decimated at least one third of the country's population and which must have given people (those surviving) other preoccupations.

6.4 Summary of Conclusions.

By means of a synthesis of information retrieved by detailed typological and distributional analysis, a historically-related model of the development of activities related to the playing of games within this particular urban environment has been constructed. Briefly, the results, qualified somewhat by unresolved depositional and typological variables, are interpretable as portraying distinctive patterns of recreational behaviour which are perhaps illustrative of more profound social and cultural developments within this evolving urban community. The main lines of development may be characterized as follows:

a) An initial period relating to the first century or so of formative centralized settlement in the town (in which the area covered by FBK seems to have taken a central role from the very beginning) is discernible, wherein continuity with established native traditions rooted firmly in customary Viking practises is maintained. There is a limited stock of board-games, utilizing classic (late) Viking hemispherical and piriform gaming-pieces which are on the whole well made, and worked, probably locally, in various luxury materials. Considerations of status are discernible in the quality of the forms and materials utilized, and the use of such pieces might conceivably be the exclusive preserve of a social elite which perhaps formed a sub-group among the pioneering generations of urban dwellers. Alternatively, the likelihood that the inhabitants of the initial (seasonal?) trading settlement and the subsequently developing permanent settlement were comparatively few in number may account for an initial lack and subsequent sparsity of gaming finds generally. This said, it might be possible to argue, very tentatively, that a small proto-urban centre's constituent members comprised only a restricted cross-section of contemporary society anyway, consisting mainly of people with specific and perhaps specialized roles conducive to the operation of a dynamic centre of production and exchange. Consequently, that most of these early urban dwellers were members of the upper echelons of late Viking and early medieval society may perhaps even be reflected in the character of their recreational equipment. In one possible scenario, one might envisage members of the regional aristocracy, the king's guard and retainers, traders and master craftsmen as composing the core of local nascent urban society at this time, people favouring and accustomed to the practise of long-established traditional customs and pastimes, which would have included such a highly-esteemed Viking pastime as the battle-game of hnéfetafl. As yet, in the 11th century at least, no exotic additions to the indigenous repertoire of games are perceptible, and the period may be characterised as being to some degree inherently conservative, wherein old customs are retained within a new and evolving form of social environment.

b) At some point in the mid 12th century, and perhaps even from the first quarter thereof, new imported forms of board-games may be detected entering the record. Decorated discs of skeletal materials (and wood) are customarily associated with the tables board-games common to contemporary Europe, the Scandinavian variant of which was known in Iceland, in the 12th and 13th centuries, as kvatrutafli. Typical pieces occur first in Phase 5 (from early 12th-century contexts) with a marked increase in numbers during Phase 6 (mid-late 12th-century contexts), and by Phase 7 (late 12th-early 13th century contexts) such discs form the largest single group of gaming items encountered in the record up to this point. It is clear that a new board-game fashion is quickly, and widely, adopted by the inhabitants of the FBK town quarter. While the old-fashioned piriform and hemispherical gaming-pieces persist side by side with the new forms in the early days of their introduction, by the second half

of the 12th century the classic Viking forms of gaming-pieces disappear from the record (only reappearing in modified forms for re-use as spindle-whorls), and the gaming repertoire is, in phases 6 and 7 (mid 12th- to early 13th centuries), almost exclusively composed of discs, which, despite variation in size and the application of (predominantly simplistic) ornamentation, conform to a standardized and universal formal and functional norm: these are clearly increasingly mass-produced items, probably made as side-lines in local bone workshops.

There is clearly an expansion in the numbers of gaming-pieces (and therefore the extent of game-playing?) from the mid 12th century onwards, a surge at first manifesting itself exclusively in the increasing numbers of these humble everyday items associated with a new and attractive European-derived pastime. Such exotic impulses and their spin-off developments here are perhaps not unexpected, occurring as they do at a dynamic epoch in the political, economic and cultural history of both Norway and the medieval town of Trondheim/Nidaros in particular, activated in particular by the establishment here of the seat of the vast Archbishopric of Nidaros, the general effects of the consolidation of royal power under Sverre, and the building of the cathedral church and the town's establishment as a major international centre of pilgrimage. The 12th century, and particularly its second half, may be seen, in the sphere of the town's recreational activities as in other aspects of its social and economic fortunes, as a period of transition, wherein the old native traditions are, quite rapidly, supplemented with, and ultimately completely replaced by, new imported fashions.

c) By the mid 13th century the "boom" in game-playing is an emphatic and dramatic phenomenon, at least prior to c. A.D. 1275. The time is one of economic growth and political stability, and foreign contacts, facilitated through trade and travel, are at their peak, and this is clearly manifested in the varied stock of gaming-pieces belonging to members of the local population. A climax in the variety, density and numbers of pieces is reached in Phase 8 (the mid 13th century), perhaps reflecting the pervasiveness of game-playing among a densely-settled, cosmopolitan and socially complex community. There is evidence for the playing of chess in this part of the town from at least the middle of the 1200s (and possibly, to a more tentative degree, from the second half of the preceding century). Standard European and Nordic varieties of chess pieces occur in contemporary FBK levels, and though all are carved in wood, most are nonetheless objects of respectable worth in terms of form. Tables, as represented by the decorated discs, reaches "craze" proportions, and is clearly a voguish pastime, and probably not the exclusive preserve of a social elite. Dice appear for the first time in the mid 13th century, used either in combination with tables, or in their own right in pure dice-games. Their association with gambling is well documented in contemporary literature, and this may have been rife in the town, judging from the explosion in the number of dice at this time. Three imported jet dice occur, products of a York workshop, with inlaid silver(?) "eyes". Although a number of finely made and individualistic gaming-pieces derive from these levels, the general trend is towards standardization and mass-production, and there is clearly what might be termed a "democratization", or widespread popularization, of at least some gaming pastimes (tables and dicing at least) beyond small groupings in society, though certain games (chess) and certain kinds of pieces might yet be the preserve of the more intellectual and wealthier elements in society, here as elsewhere. The only survivor from the old Viking days is the perennial simple game of merels, though it is clear that this has been demoted somewhat in the popular mind since the days when it was combined on the same board with

hnefetafl. The numbers, variety and widespread physical dispersal of the artefacts, although rarely correlatable with specific buildings and their occupants, testify to the popularity and availability of leisure activities among the (socially mixed?) body of local residents settled in this part of town during the reign of Håkon Håkonsson.

d) After c. A.D. 1275 the range and numbers of gaming artefacts fall off sharply, a possible response to historical determinants (for example, the strict anti-gambling laws of 1276?), and the adverse influence of poorer soil conditions in the upper levels on FBK (from Phase 10 onwards). By the arrival of the Black Death in A.D. 1350 games are represented by only a limited corpus of items, mainly of ambiguous function, and the game-mad "golden" days of King Håkon Håkonsson clearly form a unique phenomenon, never to be repeated.

APPENDIX

CATALOGUE OF GAMING ARTEFACTS

Structure of the Catalogue.

The finds have been arranged into 3 functional classes, each of which is subdivided into typological categories, the total number being 9 (see Chapter 3).

These are as follows:

CLASS 1: GAMING-PIECES:

Category A: Hemispherical pieces, of bone and jet.

Category B: Piriform pieces, of ivory and jet.

Category C: Various conventionalized and naturalistic carved pieces, of wood.

Category D: Discs of skeletal materials.

Category E: Discs of stone.

Category F: Discs of wood.

Category G: Miscellaneous forms, of various materials.

CLASS 2: DICE:

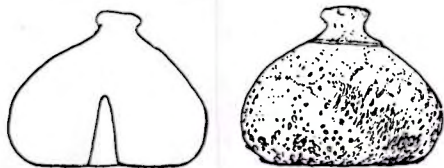
Category H: Cubic dice, of skeletal materials, jet and stone.

CLASS 3: GAMING-BOARDS:

Category I: Single panels, double- and single-sided, of wood.

Each find is placed within its particular category and described in sequence according to its archaeological site **context number** (i.e F-number, placed in alphabetical and numerical sequence: FA1, FA2, FE1, FE2 and so on) and its **accession number** (N-number), to facilitate ready typological identification and location in the site stratigraphy and in the museum.

Sketch drawings of a number of the artefacts have been provided herein. The more notable pieces have also been drawn in more detail and included as figures within the main text.

CLASS 1: GAMING-PIECES.**CATEGORY A: HEMISPHERICAL PIECES.****FG686 N78392**

Gaming-piece. Hemispherical form, with flat base; surmounted by flattened knop. Burnt white. Light circumferential groove around neck. Base perforated centrally by pointed hole, 0.5cm diam. x 0.9cm deep. For hnefetafl?

Bone.

2.6cm max. diam. x 2.1cm high.

Phase 6: early 12th century.

**FL521 N33332**

Gaming-piece; in process of manufacture? Fragment (half): hemispherical form, flat base, top slightly flattened. Body bears evident pare-marks, burnished (more particularly to top). Black. Perforated completely and obliquely through middle; (secondary?) hole 2mm diam. For hnefetafl?

Jet.

2.8cm diam. x 1.7cm high.

Phase 4: late 11th - early 12th century.

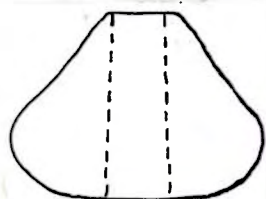
**FU512 N96502**

Gaming-piece. Hemispherical form, flat base, small raised "nipple" on top. Smooth surface. Body slightly indented at four diametrically opposed points. Light brown colouration. Not perforated. For hnefetafl?

Bone.

2.9cm max. diam. x 2.2cm high.

Phase 2: mid-11th century.

CATEGORY B: PIRIFORM PIECES**FA371 N25430**

Gaming-piece. Piriform shape, squat and bulbous; flat base, central rounded perforation. Hole emerges at top, which is flat. Interior of hole smooth, narrowing slightly to top (i.e. 0.8cm diam. to 0.6cm diam.). Clearly modified - former projection at top removed and the formerly incomplete perforation enlarged and extended: re-used as spindle-whorl? Dark brown colour. Originally for hnefetafl?

Morse ivory?

3.1cm max. diam. x 2.2cm high.

Phase 8: 13th century?

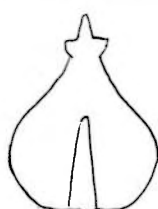
**FA686 N39919**

Nascent gaming-piece. Near-piriform shape, squat and bulbous; flat base, pointed top, slightly lop-sided. Body roughly hewn: chipped and pared. Isolated patch of scaly cortex remains. Not perforated. Rough-out for piriform hnefetafl gaming-piece? (cf. FF1222 N37384, which probably approximates to the size and form of the object this was destined to become).

Morse ivory?

2.5cm max. diam. x 3cm high.

Phase 3: late 11th century.

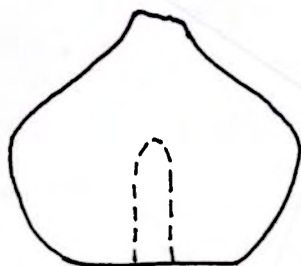
**FA700 N39594**

Gaming-piece. Piriform shape, squat and bulbous; flat base, surmounted by thin flanged and pointed projection. Intact. Slightly off-centre rounded perforation - incomplete, pointed, 0.4cm diam. and 1.2cm deep. Body worn and scratched, scored circumferentially, with one consistent circumf. line towards the base. Brown to brownish-red in patches. Scaly and marbled. For hnefetafl?

Morse ivory?

2.3cm max. diam. x 3.2cm high.

Phase 3: late? 11th century.

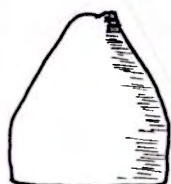
**FE1043 N38256**

Gaming-piece. Piriform shape, squat and bulbous. Flat base, top broken off; otherwise intact. Central rounded perforation, incomplete, pointed, 0.4cm diam. x 1.5cm deep; interior bears slight longitudinal grooves. Body smooth and polished; patchy yellowy-brown and cream colouration, marbled. For hnefetafl?

Morse ivory?

3.5cm max. diam. x 3cm high.

Phase 4: early? 12th century.

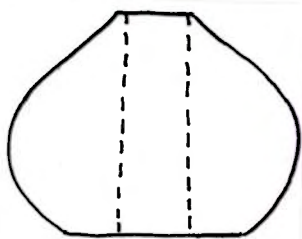
**FE1088 N37569**

Gaming-piece? Fragment (half): near-piriform shape, squat and bulbous. Flat base; indications of a formerly pointed? top, now broken off. Not perforated, apparently. Body slightly worn and scratched, otherwise smooth and well-finished, though with traces of pare-marks. Black. Split longitudinally. For hnefetafl?

Jet.

2.1cm max. diam. x 2.3cm high.

Phase 4: early? 12th century.

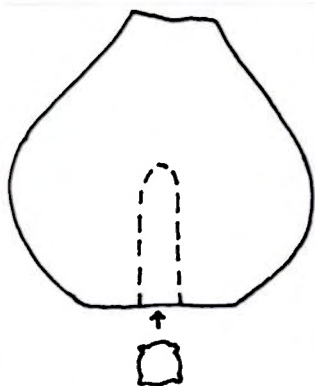
**FF565 N25999**

Gaming-piece. Piriform shape, squat and bulbous; flat base, flat top - tip cut away. Central angular perforation, enlarged and complete, narrowing to top i.e. 1cm to 0.7cm diam. Hole has angular circumference (septag.) and bears internal longitudinal grooves. Body smooth and polished, brownish-yellow, marbled. Modified. Re-used as spindle-whorl? Originally for hnefetafl?

Morse ivory?

3cm max. width x 2.5cm high.

Phase 9: late 13th-early 14th century.

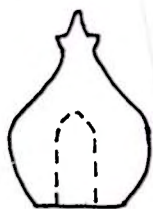
**FF983 N33186**

Gaming-piece. Piriform shape, squat and bulbous; flat base, top broken off. Central rounded perforation, incomplete, pointed, with 4 diametrically opposed longitudinal grooves extending a short way into the interior. Hole is 0.5cm in diam. x 1.5cm deep. Body smooth, yellowish brown-dark brown, marbled. For hnefetafl?

Morse ivory?

3.3cm max. diam x 3.5cm high.

Phase 5: early? 12th century.

**FF1222 N37384**

Gaming-piece. Piriform shape, squat and bulbous, surmounted by flanged and pointed projection. Flat base, with central rounded perforation, incomplete, square-ended?; 0.5cm diam. and 1.2cm deep. Body smooth and polished. Coloured predominantly dark brownish red with some creamy yellow patches. Piece sub-ovoid in cross-section. For hnefetafl?

Morse ivory?

Max. width 2cm x 2.5cm high.

Phase 4: late 11th-early 12th century.

**FK676 N32371**

Gaming-piece. Piriform shape, squat and bulbous; top broken off. Flat base with slightly off-centre rounded perforation, incomplete and pointed: 0.5cm diam. and 1.3cm deep. Hole penetrates at slightly oblique angle and bears a faint short longitudinal groove inside. Body smooth, polished, slightly worn; brown and yellowish brown colour, marbled. For hnefetafl?

Morse ivory?

Max. diam. 2.6cm x 2cm high.

Phase 5: mid-? 12th century.

**FM90 N56790**

Gaming-piece. Small fragment: broken-off tip of (large) piriform piece. Pointed and flanged, expanding at base. For hnefetafl?

Morse ivory?

Max. diam. 1cm x 1.1cm high.

Phase 8: mid-13th century.

**FO124 N66780**

Gaming-piece. Piriform shape, squat and bulbous; top broken off. Flat base. Off-centre rounded perforation, which is complete, emerging at broken end. Hole narrows to top i.e. 0.4cm at base to 0.3cm at top. Penetrates slightly obliquely. Slight trace of a short longitudinal groove inside. Body bears slashes and pare-marks. Creamy yellow-brown colouring, with brownish orange marbling. Sub-ovoid in cross-section. For hnefetafl?

Morse ivory?

Max. diam. 1.7cm x 1.5cm high.

Phase 8: 13th century?

**FT105 N55481**

Gaming-piece. Piriform shape, squat and bulbous. Former pointed and flanged top cut off; now flat. Flat base. Central complete perforation, narrows to top i.e. 0.8cm diam. at base to 0.7cm diam. at top. Body in poor abraded condition. Sub-ovoid in cross-section. Re-used as spindle-whorl? Formerly for hnefetafl?

Morse ivory?

Max. diam. 2.5cm x 1.7cm high.

Phase 8: mid 13th - early 14th century.

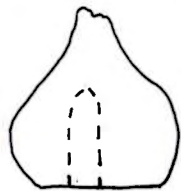
**FU326 N88175**

Gaming-piece. Piriform shape, squat and bulbous. Tip broken off. Flat base. Off-centre rounded perforation, incomplete and pointed: 0.4cm diam and 1.3cm deep. Traces of 2 diametrically opposed short grooves inside. Body in poor condition; flaking and abraded. Remnant patches of smooth polished exterior, reddish brown, otherwise yellowish brown. Sub-ovoid in cross-section. For hnefetafl?

Morse ivory?

Max. diam. 2.1cm x 2.1cm high.

Phase 7: early - mid 13th century.



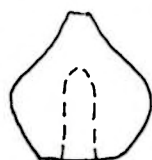
**FU403 N91266**

Gaming-piece. Fragment (c. half). Piriform shape, bulbous. Piece split longitudinally. Flat base, top broken off. Shallow central rounded perforation: 0.4cm diam. and 0.3cm deep. Body worn, lower body bearing crude pare-marks. Pale brownish colouration, porous texture, light weight. In process of manufacture? For hnefetafl?

Antler?

Max. diam. 1.8cm x 2.1cm high.

Phase 5: early? 12th century.

**FX193 N65546**

Gaming-piece. Piriform shape, squat and bulbous. Top broken off. Flat base, near-central rounded perforation, incomplete, pointed: 0.4cm diam. and 1cm deep. Base of neck decorated with pair of lightly incised circumferential lines. Mottled reddish brown and yellowish brown; onion-like scaling. For hnefetafl?

Morse ivory?

Max. diam. 1.9cm x 1.7cm high.

Phase 3: late 11th - early 12th century?

CATEGORY C: CARVED PIECES, CONVENTIONALIZED AND NATURALISTIC, OF WOOD.

**FA242 (in 237) N18832**

Gaming-piece: chess pawn? Squat, sub-conical independently-standing carved object, surmounted by a knob which reproduces the sub-conical shape in diminutive scale. Flat circular base, with short vertical sides and very slight circumferential line at the very bottom. Conical, tapering mid-portion slightly convex in profile; knob at slightly oblique angle. Pare marks visible. Crude workmanship.

Wood (unspecified).

Max. diam. (at base) 1.5cm x 3cm high.

Phase 8/9: late 13th century.

**FA316 N23030**

Gaming-piece: chess pawn? Squat, sub-conical independently-standing carved object, surmounted by a knob which reproduces the sub-conical shape in diminutive scale. Flat circular base. Lower bulbous portion of body tapers shortly to base; rest of body tapers upwards to a thin concave neck, turning outward as it adjoins the

knop. Pare marks visible, indifferent workmanship.

Wood (unspecified).

Max. diam. (at bulbous portion) 1.8cm x 3.1cm high.

Phase 8: mid-13th century.

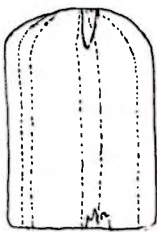
FA371 N25556

Gaming-piece: chess pawn? Sub-cylindrical carved free-standing object, with 4 deeply-bevelled longitudinal concave segments, diametrically opposed. Cruciform shape when viewed from above and below. Flat base, sides and top gently rounded-off. Traces in top and bottom of small perforations; that to top rounded and off-centre, that to base irregular and off-centre. Possibly one-and-the same hole, perforating the object obliquely from top to bottom, though concreted residue of conserving resin prevents conclusive assessment. Also possible trace of metal lodged in top hole? Hole(s) secondary? Very dark brown colour: result of conserving process, or deliberate darkening (by flame) in antiquity? Symmetrical object; competent workmanship.

Wood (unspecified).

Max. diam. 2.1cm x 2.2cm high.

Phase 8: mid-13th century?



FH171 N25557

Gaming-piece?: chess bishop? Carved sub-rectangular block, free-standing. Flat base; body tapers slightly to top where, on one side, two short sub-rounded protruberances emerge, side-by-side. Their tops and external sides are flush with the main body, which has a near-flat top. There is a shallow irregular perforation placed in the centre of the base. Piece bears indications of being formerly smoothed, on faces and angles, though it is now worn and damaged.

Wood (unspecified).

Basal dimensions: 1.9cm x 1.2cm. 3.9cm high.

Phase 8: mid-late 13th century.

**FH221 N25647**

Chess piece: king. Carved seated figurine; representation of a king on his throne. Crown damaged: comprises thin raised band encircling the head with four equidistant stumps. The hair is long, though cut straight across at the nape of the neck and clear of the face; it is slightly wavy. The face bears boldly cut features, with large oval eyes, raised cheek-bones, nose missing, contoured short beard overlain by large moustache curled at its ends, and a slight gash for the mouth. The head is disproportionately large in comparison with the body. The chest is sunken. One broad shoulder intact. Robe (full length?) is suggested by indented neck-line and a slight gash down the front. Encircling the waist, a raised band representing a belt, higher at the front. The arms (right damaged) slope gently to the front. The hands are almost worn away, though enough definition to detect fingers. These rest on the knees and hold between them a horizontally lying elongated object of indeterminate character, though probably a sword, on analogy with similar figures. Knees slope forward. Broad diagonal raised bands on the sides merge with thinner bands cut obliquely across the small of the figure's back, and clearly represent a low-backed throne. A vertical raised band down the back of the throne, with a possible knob on top, is possibly a decorative part thereof. The piece is of competent but unexceptional workmanship. It is worn and damaged.

Wood (unspecified).

Basal dimensions: 3cm x 2.5cm. Height: 8cm.

Phase 8: mid-late 13th century.

**FK275 N27115**

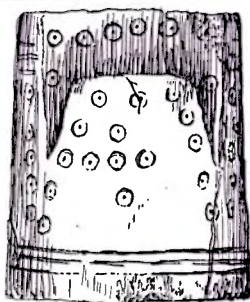
Chess piece: king or queen. Small carved cylindrical free-standing object, flat-based, surmounted with a small sub-cylindrical knob emerging from the middle. On one portion of the body's perimeter two conjoined symmetrical angular notches have been incised from the top down to the middle. Otherwise plain. Worn. Some slight traces of lightly incised lines around the body.

Wood (unspecified).

1.8cm diam. x 2.7cm high.

Phase 8: mid-late 13th century. Cf. FK275 N27285.



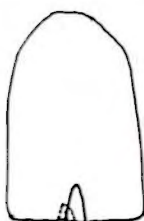
**FK275 N27285**

Chess piece: king (or possible queen?). Cylindrical carved free-standing object. Flat base; body tapers slightly to similarly flat top. One portion of the perimeter has been rebated, from the top, with two symmetrical separated angular notches extending from either end of the rebate down to the middle. The body bears line and dot-and-circle decoration: two groups of three peripheral lines occur, one towards the top of the piece (does not extend into the rebate), and one towards the base; compass-drawn small dot-and-circle motifs are scattered over the whole body (except the base), in apparently random fashion. Although worn, the piece is relatively smooth, regular and well-finished.

Wood (unspecified).

Base: 3.3cm diam. Top: 3cm diam. Height: 3.2cm.

Phase 8: mid-late 13th century. Cf. FK275 N27115.

**FT105 N55310**

Gaming-piece: chess pawn? Bullet-shaped carved free-standing object. Basically a fluted cylinder with flat base and blunt pointed top. Base bears small central incomplete pointed perforation (0.3cm diam. x 0.5cm deep), and a smaller irregular hole off-centre. The body is vertically fluted, with 12 shallow grooves.

Wood (unspecified).

1.8cm diam. x 2.7cm high.

Phase 8: mid-late 13th century.

CATEGORY D: DISCS OF SKELETAL MATERIAL.**FA237 N19449**

Gaming-piece. Plain ovoid disc. Burnished surfaces.

Bone. Cancellous formation on one face. Dull brown.

4.1cm x 3.9cm diam. 1cm thick.

Phase 8/9: late 13th century

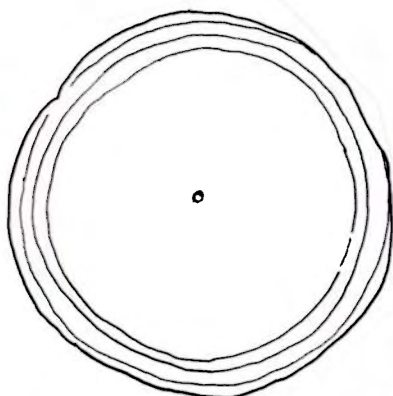
FA237 N19723

Gaming-piece. Decorated disc. Burnished surfaces. Base is irregular and unrefined. Top surface flat and decorated with 3 shallow compass-incised concentric lines towards the perimeter. Small shallow central perforation (produced by compass point). Worn.

Bone (from large bovine long-bone or rib?). Heavy; dense structure with occasional vesicles. Slightly marbled: dark brown - yell. brown.

4.8cm diam. x 1.7cm thick.

Phase 8/9: late 13th century



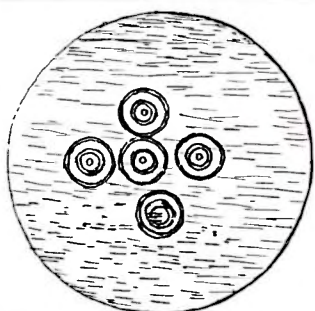
FA260 N20384

Gaming-piece: fragment (half). Burnt. Decorated disc. Shallow compass-drawn perimeter circle and central dot. Surfaces flat and smooth, base particularly well-burnished. Sides modelled to slope out to base.

Bone?

3.3cm diam. x 1cm thick.

Phase 8: 13th century

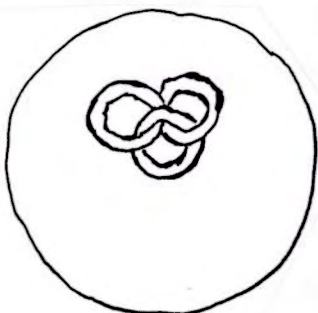
**FA309 N21229**

Gaming-piece. Decorated disc. Flat burnished top surface, unrefined cancellous underside. Slightly off-centre decoration: 5 dot-and-circle motifs, grouped in regular formation. Each motif comprises two concentric deeply-cut rings and central dot; compass-drawn (u-sectioned).

Bone: underside has "spongy" cancellous formation.

3.9cm diam. x 0.7-1cm thick.

Phase 8: 13th century.

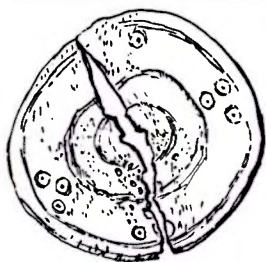
**FA316 N22960**

Gaming-piece. Decorated disc. All surfaces burnished, though poorly-finished and worn. Both faces decorated: upper bears 3 slightly off-centre concentric compass-drawn lines towards perimeter and central dot; underside bears crude off-centre carved motif - 3 linked irregular rings, knife-cut (a later doodle?).

Antler?

3.9cm diam. x 0.7-0.8cm thick.

Phase 8: 13th century.

**FA358 N26416**

6 gaming-pieces: fragments of 5 decorated sub-circular discs and 1 complete plain ovoid disc, all deriving from the same context. All are burnt white. The decorated discs bear a common design on one face i.e. 3 widely-spaced concentric circles, deeply-incised (on one a trace of a small central perforation perhaps suggests the use of a compass), thus forming three bands, the outermost of which bears 4 regularly-spaced clusters of 3 small dot-and-circle motifs (2 outer and 1 inner).

The decorated discs are of antler, the "spongy" internal cancellous mass retained in the middle. They have therefore been won by cutting transversely through the antler shaft.

The single plain ovoid disc is of different, denser morphology; no cancellous mass visible. It is probably of bone.

Decor. discs: diams: c.3cm. Thicknesses: vary between c 0.4cm and 0.8cm.

The plain disc: diam.: c. 3.4cm x 2.7cm.
Thickness: 0.5cm.

Phase 7: late 12th - early 13th century. Cf. FA371 N25458 (from same set).

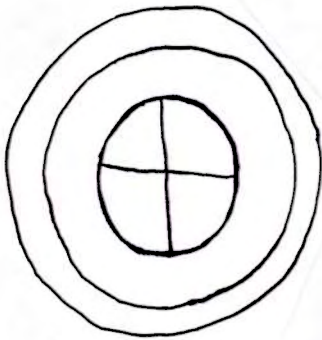
FA371 N25458

Gaming-piece. Fragment of decorated disc. Burnt white. In all respects exactly the same as the assemblage of decorated antler discs noted above (FA358 N26416). Found separately in different context. Bears 3 concentric lines, a characteristic cluster of 3 small d-and-c motifs.

Antler.

0.5cm thick

Phase 8: mid 13th century.



FA377 N26168

Gaming-piece. Decorated disc. Underside unrefined, and other surfaces irregularly smoothed. Decoration comprises two widely-spaced concentric circles, the central area filled with cross motif. All lines knife-cut (v-sectioned and irregular).

Bone (whalebone?).

4cm diam. x c. 1cm thick.

Phase 8: 13th century.

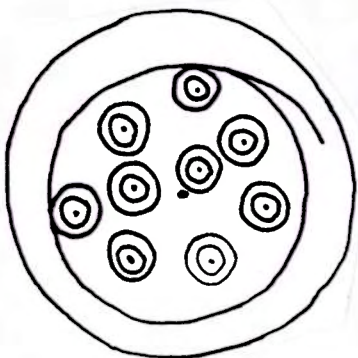
FA448 N31493

Gaming-piece. Disc, in process of manufacture? Top face burnished, with trace of compass scoring on perimeter and slight central dot suggesting use of compass in winning of piece from parent bone. The vertical perimeter edge bears pare-marks. Cancellous unrefined underside.

Bone.

3cm diam. x 0.3cm thick.

Phase 6: mid-late 12th century?



FE647 N25721

Gaming-piece. Decorated disc. Burnished surfaces. One decorated face: off-centre circle bounding area filled with 9 dot-and-circle motifs, randomly arranged, and central dot. All u-sectioned, compass-drawn. Crude, and shows clumsy error in drawing of outer circle.

Bone. Unworked underside bears "spongy" cancellous mass. Piece cut longitudinally through long-bone?

4.4cm diam. x 1.3cm thick.

Phase 6: late 12th-13th century?

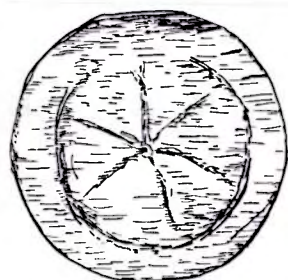
FE648 N25704

Gaming-piece. Plain, slightly ovoid disc. Smooth flat faces, sides slightly concave, smooth.

Bone.

4cm diam. x c. 2cm thick.

Phase 7: early 13th century?

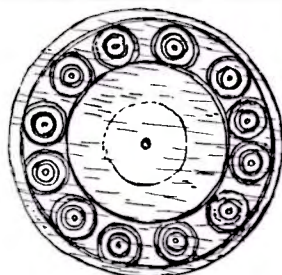
**FE648 N25744**

Gaming-piece. Decorated disc. Flat base. Top face bears crude knife-cut design: circle containing off-centre central dot and crossing lines in loose star formation. Worn.

Bone. "Spongy" throughout, but particularly so on unworked underside.

3.5cm diam. x 0.8cm thick.

Phase 7: early 13th century?

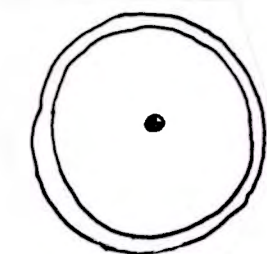
**FE715 N26815**

Gaming-piece. Decorated disc. Decoration on one face: 3 compass-drawn circles, evenly-spaced, u-sectioned. Central dot. Outer band filled with 12 dot-and-circle motifs, unevenly arranged.

Bone.

3.5cm diam. x 0.8cm thick.

Phase 7: early 13th century?

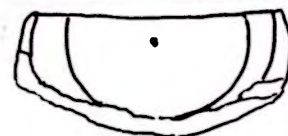
**FE727 N27700**

Gaming-piece. Decorated disc. Decoration is confined to the emphasis, by deep incision, of the compass-drawn peripheral circle and the central dot. Incomplete portion of circle at very edge. Worn, scratched and scored, but quite smooth, shiny and polished.

Morse ivory? Marbled cream and buff colouration.

2.9cm diam. x 0.7cm thick.

Phase 7: early 13th century?

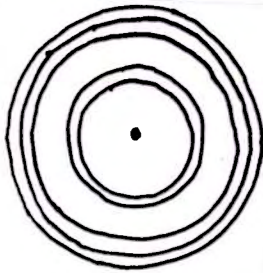
**FF19 N15983**

Gaming-piece: fragment (c. half) of a decorated disc. Burnt white. One face decorated with two u-sectioned compass-drawn concentric rings. Central dot.

Bone. Underside bears cancellous formation.

3.5cm max.diam. x 0.7cm thick.

Phase 12: post-medieval.

**FF176 N18139**

Gaming-piece. Decorated disc. Regular and smoothed. Decoration on one face: two pairs of compass-drawn concentric circles, u-sectioned. Evenly-spaced. Central dot.

Bone.

3.3cm diam. x 0.4cm thick.

Phase 10: 14th - 15th century.

**FF723 N28656**

Gaming-piece. Decorated disc. All surfaces formerly polished, but now very worn. One face bears traces of decoration: two pairs of compass-drawn rings, widely-separated. Central dot.

Bone?

3.1cm diam. x 0.3cm thick.

Phase 8: 13th century

FF782 N28593

Gaming-piece. Decorated disc. Decoration on one surface (formerly polished, now very worn): 2 concentric compass-drawn circles, u-sectioned forming two bands, the outer with a dot-and-circle motifs in side-by-side, the inner with 4 d-and-c motifs. All u-sectioned. Central dot.

Antler?

3.5cm diam. x 0.7cm thick.

Phase 8: 13th century.

FF927 N32204

Gaming-piece. Plain disc. One face polished.

Bone. Unrefined underside bears cancellous formation.

3.1cm diam. x 0.5cm thick.

Phase 7: early 13th century?

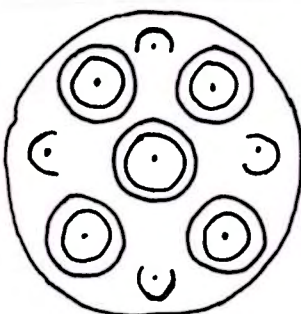
FF991 N33078

Gaming-piece: fragment (c.half) of decorated? disc. Burnt white. Bears traces of central dot and thin compass-drawn peripheral circle.

Bone.

3.5cm max. diam. x 0.6cm thick.

Phase 6: late 12th century.

**FF1017 N33525**

Gaming-piece. Decorated disc. Regular; polished surfaces, slightly convex edge. Decoration on one face: 5 deeply-cut compass drawn dot-and-double circle motifs, in near-precise symmetrical arrangement, with 4 smaller intervening incomplete d-and-c motifs.

Morse ivory? Creamy yellow colour.

4cm diam. x 0.6cm thick.

Phase 5: mid 12th century?

**FG275 N75314**

Gaming-piece: fragment of decorated disc. Burnt white and warped. One face decorated with regular evenly-spaced 5 pairs of circles, shallowly cut with compass. Two central dots.
Bone.

6cm max. diam. x 1.1cm thick.

Phase 9: late 13th-early 14th centuries.

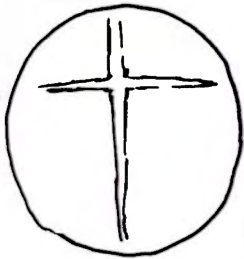
FG316 N76423

Gaming-piece: fragment of decorated? disc. Sawn-off piece. One face polished, and bears thin lightly-cut peripheral line.

Bone.

Max. diam. 3.5cm x 1.2cm thick.

Phase 8: 13th century.

**FG420 N76718**

Gaming-piece. Decorated disc. Formerly polished, now worn. One face decorated with crude knife-cut cross, v-sectioned. Two opposed points on circumference have been worn? down, so piece is oval. Decorated face bears "spongy" cancellous formation.

Bone.

3.1cm diam. x 0.8cm thick.

Phase 7: late 12th - early 13th century.

FG426 N76705

Gaming piece. Plain disc, in process of manufacture? Polished, scratched and scored, edge bears pare-marks. N.B. Found in a context possibly associated with comb-making??

Antler.

3.5cm diam. x 0.7cm thick.

Phase 7: late 12th - early 13th century.

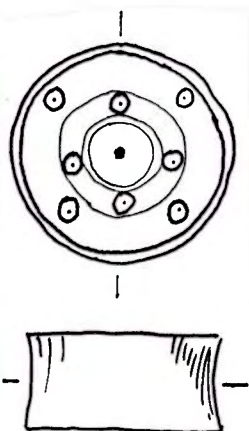
**FG521 N77422**

Gaming-piece. Finely decorated slightly ovoid disc. One face bears a ?knife-incised bird-design, of straightforward deeply-cut lines - a stylized ?dove, in flight; one wing bears depiction of feathers. Simple but competent workmanship. Surfaces smoothed.

Bone (whalebone?). Dense grainy bone. Under-side bears "spongy" cancellous formation. Light greyish brown colour.

4.6cm x 4.7cm diam. x 0.5cm thick.

Phase 7: late 12th - early 13th century.

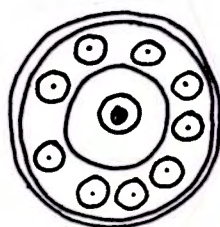
**FG604 N77923**

Gaming-piece. Decorated disc. Polished surfaces. One face decorated: 3 concentric compass-drawn rings and regularly-arranged dot-and-circle motifs. Central dot. Edge concave.

Bone.

2.8cm diam. x 1.3cm thick.

Phase 7: late 12th - early 13th century.

**FG624 N77959**

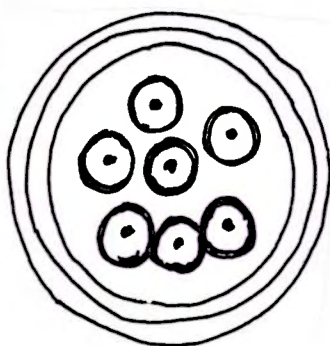
Gaming-piece. Decorated disc. Polished surfaces, slightly worn and warped. Decoration on one face: 3 evenly-spaced concentric compass-drawn rings, with 9 dot-and-circle motifs side-by-side around the outer band. Central dot enlarged.

Green stain (from copper/bronze) on dec. face.

Bone. Underside bears "spongy" cancellous formation.

2.8cm diam. x 0.3cm thick.

Phase 6: mid-12th century?

**FG624 N77690**

Gaming-piece. Decorated disc. Polished surfaces. Decoration on one face: 2 concentric rings towards perimeter, and 7 haphazardly arranged deeply-cut dot-and-circle motifs clustered in the middle. Slightly warped.

Bone. Underside has "spongy" cancellous formation.

4.3cm diam. x 0.7cm thick.

Phase 6: mid-12th century?

FH282 N26622

Gaming-piece. Decorated disc. Polished surfaces, worn. Decoration on one face: random arrangement of lightly incised dot-and-circle motifs. Peripheral line and central dot suggest compass.

Bone.

4.5cm diam. x 0.7cm thick.

Phase 7: late 12th - early 13th century.

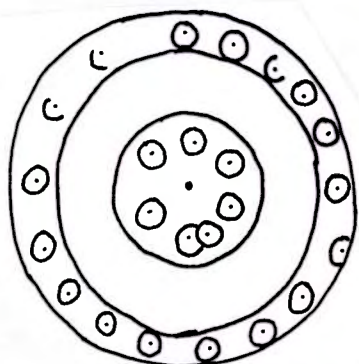
FJ1 N80198

Gaming-piece. Decorated disc. Straight edge deeply-incised by two parallel circumferential lines. One face decorated with 3 raised bands and concentric circles. Central dot.

Bone. Underside bears cancellous formation.

4.5cm diam. x 0.6cm thick.

Phase 12: post-medieval.

**FJ177 N86188**

Gaming-piece. Decorated ovoid disc. Broken in half. Worn condition. One face decorated with two concentric compass-drawn circles, u-sectioned. Outer band filled with 17 small dot-and-circle motifs, side-by-side, and inner area likewise, with 7. Central dot.

Bone. Underside bears cancellous formation.

4.6cm x 4.4cm diam. x 0.6cm thick.

Phase 9: late 13th - early 14th century.

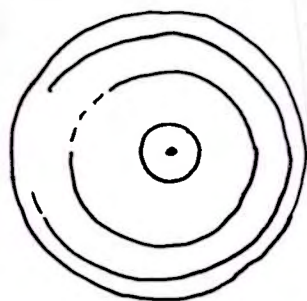
FJ237 N86259

Gaming-piece. Plain ovoid disc, in preparation? One face smooth; both bear central shallow (compass?) perforation. Worn.

Bone. One face (underside?) bears cancellous formation.

4cm x 4.3cm diam. x 0.8cm thick.

Phase 9: late 13th - early 14th century.

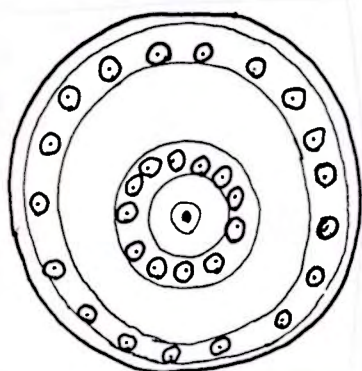
**FK57 N16475**

Gaming-piece. Decorated disc. Decoration on one face: 3 concentric compass-drawn rings, central dot. Worn, though underside patchily polished.

Bone.

3.8cm diam. x 0.4cm thick.

Phase 12: post-medieval.

**FK345 N27597**

Gaming-piece. Decorated ovoid disc. Decoration on one face: 5 concentric, ovoid rings (knife-cut?), forming two thin bands filled with small dot-and-circle motifs. Central dot. Smoothed faces, broadly rilled edge.

Bone (whalebone?).

4.4cm x 4.7cm diam. x 1.3cm thick.

Phase 8: mid 13th century.

FK345 N28673

Gaming-piece. Decorated ovoid disc. Polished faces, concave polished edge. Decoration on one face: worn single dot-and-circle motif, off-centre. Piece worn and scratched.

Morse ivory? Marbled brown - creamy-brown.

3.6cm x 3.8cm diam. x 1.4cm thick.

Phase 8: mid 13th century.

FK497 N29506

Gaming-piece (one of two from same context). Decorated disc. Smoothed surfaces. One face decorated: 3 concentric compass-drawn rings, u-sectioned. One band filled with 8 dot-and-circle motifs, side-by-side. Central dot.

Bone (whalebone?).

3.8cm diam. x 0.7cm thick.

Phase 7: late 12th - early 13th century.

FK497 N29506

Gaming-piece (one of two from same context). Decorated disc. Smoothed surfaces. One face decorated: 3 concentric compass-drawn rings. One band filled with small dot-and-circle motifs. Crude. Central dot lies on plug which blocks a large central perforation. Very worn. Underside very smooth and stained green from contact with copper/bronze. Not the same design as companion.

Bone/antler?

4.6cm diam. x 0.7cm thick.

Phase 7: late 12th - early 13th century.

FK498 N30944

Gaming-piece. Plain disc, in preparation? Smoothed surfaces, pare marks and scratches. Trace of light peripheral compass-drawn marking-out circle. Small complete perforation slightly off-centre.

Antler. "Spongey" cancellous core from middle to one side; cut transversely through antler beam.

3.7cm diam. x 0.9cm thick.

Phase 7: late 12th - early 13th century.

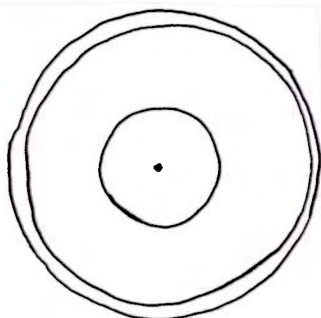
FK535 N30833

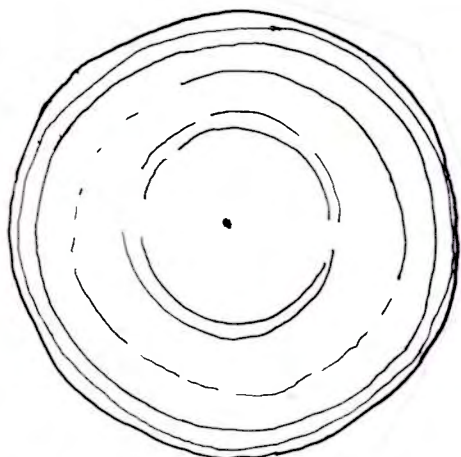
Gaming-piece. Decorated disc. Decoration on one smoothed surface: 2 concentric rings, widely-spaced, compass-drawn, u-sectioned. These are very dark brown in contrast to yellow-brown colour of disc: lines pigmented for contrast? Central dot.

Bone. Underside bears cancellous formation.

4cm diam. x 0.5cm thick.

Phase 6: mid-late 12th century.



**FL28 N22197**

Gaming-piece. Decorated disc. Large. Very worn. Formerly smoothed surfaces. Decoration on one face: 5 faint concentric rings, compass-drawn, u-sectioned, central dot.

Bone (whalebone?).

5.7cm diam. x 1.2cm thick.

Phase 10: 14th-15th century.

**FL65 N23174**

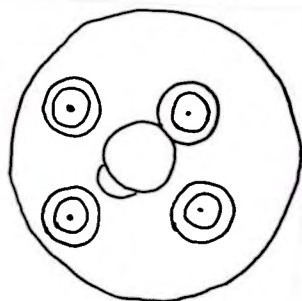
Gaming-piece. Decorated disc. Perforated centrally: re-used as spindle-whorl? Bears well-executed animal motif on one face: a prancing beast in mid 12th-century Urnes-Romanesque tradition. Lively form on crudely hatched background bordered by peripheral circle. The head is turned backwards, with open jaws, sharp teeth and lappet, tear-drop eyes, and one pointed ear. The chest is thrust out, and one foreleg is raised, the other stretched straight back, both with hooves. The slender body is elegantly curved, and the two tucked-up hind-legs descend from a powerful rump. The tail, with its spear-like pointed tip, twists in front of the nearest hind-leg, then behind the far hind-leg, and then emerges to curl up in front of and above the body. Striations on body convey impression of ribs; similar deliberate striations on neck and snout. Worn condition, the pale decorated surface flaking away. Central hole is 0.9cm diam.

Antler. Perhaps possible that the central hole was cut to remove unsightly cancellous formation, if cut transversely through antler beam?

3.6cm diam. x 0.8cm thick.

Phase 9: late 13th - early 14th century.

N.B. Photo (Plate IIIc) published in C.D.Long, Excavations in the Medieval city of Trondheim, Norway, Medieval Archaeology XIX, 1975.

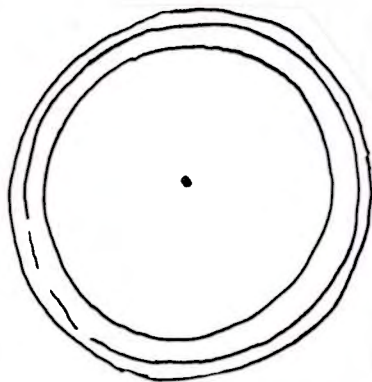
**FL179 N28730**

Gaming-piece. Decorated disc, perforated centrally, possibly re-used as a spindle-whorl. Polished surfaces. One face decorated with 4 complete double-dot-and-circle motifs and 1 additional motif which has been mostly removed by the central hole (diam. 0.9cm).

Antler? Central area bears remnant cancellous formation: perhaps purpose of hole to remove unsightly area?

3.8cm diam. x 0.7cm thick.

Phase 8: 13th century.



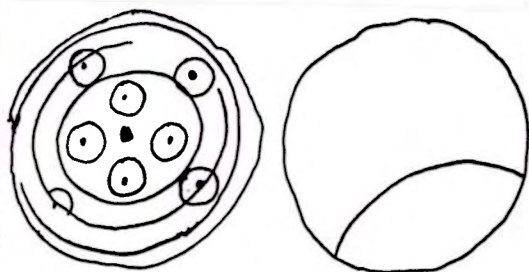
FL179 N28942

Gaming-piece. Decorated disc. Worn condition, though surfaces formerly polished. One face decorated: 2 concentric compass-drawn u-sectioned circles towards perimeter, central dot.

Bone (whalebone?).

4.7cm diam. x 0.8cm thick.

Phase 8: 13th century.



FL243 N29684

Gaming-piece. Slightly ovoid decorated disc. Worn, but formerly polished. Decoration on one face: 3 concentric compass-drawn circles, and 8 dot-and-circle motifs in near-regular formation, central dot. Crudely executed. Underside bears a shallow arc, a remnant portion of an earlier marking-out line.

Bone (whalebone?).

3.4cm x 3.2cm diam. x 0.6cm thick.

Phase 7: late 12th - early 13th century.

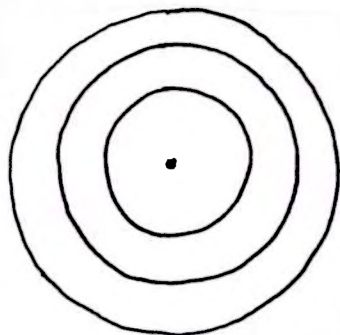
FM15 N51996

Gaming-piece; in process of manufacture? Sub-circular disc. Convex upper surface, flat base. Irregular.

Bone (whalebone?).

5cm diam. x 0.6-1.2 thick.

Phase 12: post-medieval.



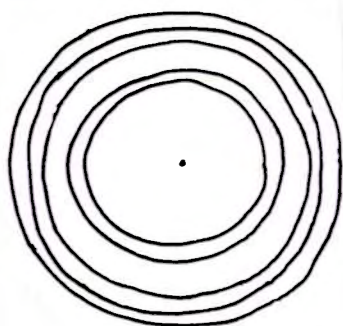
FM283 N59072

Gaming-piece. Decorated disc. Polished surfaces, slightly worn. Decoration on one face: 2 concentric compass-drawn rings, central dot.

Bone (whalebone?). Underside bears cancellous formation.

4.2cm diam. x 0.5cm thick.

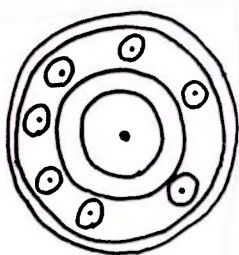
Phase 7: late 12th - early 13th century.

**FN (unstratified) N82775**

Gaming-piece. Slightly ovoid decorated disc. Smooth polished surfaces. One face decorated: 2 pairs of concentric compass-drawn circles, central dot. Black save for portion of underside: darkened by fire?

Bone (whalebone?).

4.4cm x 4.2cm diam. x 0.7cm thick.

**FO68 N63048**

Gaming-piece. Slightly ovoid decorated disc. Formerly polished surfaces, worn. One decorated face: 3 concentric compass-drawn rings, thick outer band filled with 7 dot-and-circle motifs, unevenly spaced. Central dot.

Bone (whalebone). Underside bears cancellous formation.

3cm x 3.1cm x 0.7cm thick.

Phase 9: late 13th -14th century.

**FO125 N67162**

Gaming-piece. Decorated disc. Formerly polished surfaces. Worn and abraded. One decorated face: 4 compass-drawn concentric rings, outer band filled with dot-and-circle motifs side-by-side (11 survive). Enlarged central dot.

Bone (whalebone?). Underside bears cancellous formation.

3.8cm diam. x 0.7cm thick.

Phase 8: 13th century.

FO164 N68693

Gaming-piece. Plain, slightly ovoid disc. Smoothed surfaces.

Bone (whalebone?).

2.8cm x 2.7cm diam. x 0.6cm thick.

Phase 7: late 12th - early 13th century.

FP125 N54022

Gaming-piece. Ovoid decorated disc, re-used as spindle-whorl? One face decorated: 4 concentric compass-drawn lines, 2 thick compass-drawn enlarged rings, and a large number of small dot-and-circle motifs side-by-side in outer band. Large (0.8cm diam.) central complete perforation, roughly cut.

Bone (whalebone?). Underside bears cancellous formation.

4.1cm x 4.4 cm diam. x 0.8cm thick.

Phase 6: mid 12th century.

FT77 N55484

Gaming-piece. Fragment of plain disc. Burnt white. Trace of thin peripheral compass-drawn circle.

Bone.

4.2cm max. diam. x 0.4cm max thickness.

Phase 8/9: late 13th-14th century.

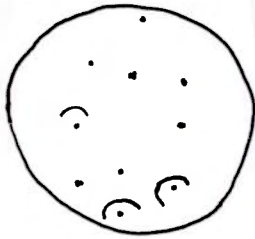
FT105 N55527

Gaming-piece. Plain ovoid disc. Worn.

Bone. Underside bears cancellous formation.

4.4cm x 4cm diam. x 1.1cm thick.

Phase 8: mid 13th century.

**FT105 N55531**

Gaming-piece. Decorated disc. Very worn. Both faces decorated. Upper face: scattered dots and faint arcs; the remains of former dot-and-circle motifs: reverse: one ring and central dot.

Antler. Spongy cancellous core remains. Cut transversely from antler beam.

3cm diam. x 1.1cm thick.

Phase 8: mid 13th century.

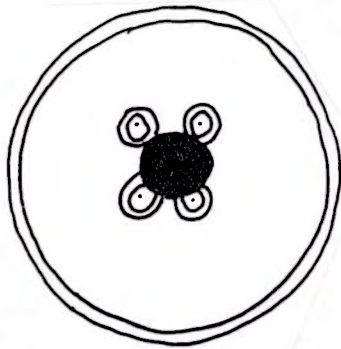
FT131 N55115

Gaming-piece? Plain ovoid disc. Cancellous throughout. Rough.

Bone (whalebone?).

4.2cm x 3.9cm diam. x 1.1cm thick.

Phase 8: mid 13th century.

**FU244 N59693**

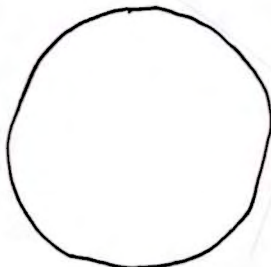
Not included in study.

Gaming-piece. Decorated disc, perforated centrally; re-used as spindle-whorl? Smoothed. Decoration on one face: deep compass-drawn peripheral circle, 4 surviving double-dot-and-circle motifs to centre, cut away by round complete perforation, with smooth interior (0.9cm diam.).

Bone (whalebone?). Underside bears cancellous formation.

4.4cm diam. x 1.1cm thick.

Context: 13th century?

**FU264 N58277**

Gaming-piece. Plain sub-circular disc. Polished surfaces. Two diametrically opposed sections of the edge are flat, naturally or artificially?

Bone (whalebone?). Underside bears cancellous formation.

3.3cm diam. x 0.6cm thick.

Phase 8: mid 13th century.

FU265 N58207

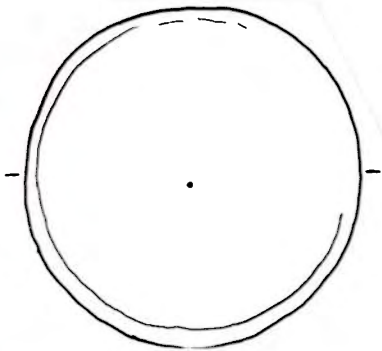
Not included in study.

Gaming-piece, ovoid disc; re-used as spindle-whorl? Polished, now worn. Decoration on one face: 3 concentric compass-drawn circles, crude oblique clusters of knife scratches. Round complete perforation, crudely cut, smooth interior (0.9cm diam.).

Bone (whalebone?). Underside bears cancellous formation.

4.2cm x 4.4cm diam. x 1cm thick.

Phase 8: 13th century.

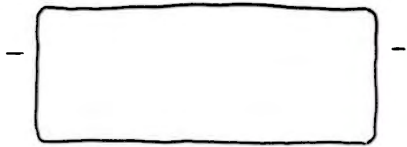
**FU302b N87327**

Gaming-piece. Decorated disc. Polished decorated face: simple decoration comprises one faint compass-drawn peripheral line (marking-out line in fact?), central dot. Simple but well-formed piece. Edge bears antler plug filling a small hole.

Bone (whalebone?). Cancellous formation on underside.

4.4cm diam. x 1.8cm thick (one of thickest).

Phase 8: mid 13th century.

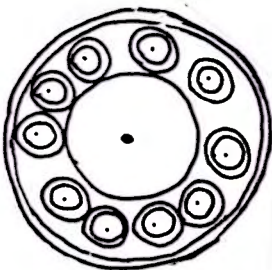
**FU318 N87813**

Gaming-piece. Decorated disc. Polished surfaces. One face decorated: 2 concentric compass-drawn rings, outer band filled with 10 double-dot-and-circle motifs side-by-side. Central dot. Competent piece. Worn.

Morse ivory?

3.3cm diam. x 0.7cm thick.

Phase 7: late 12th - early 13th century.

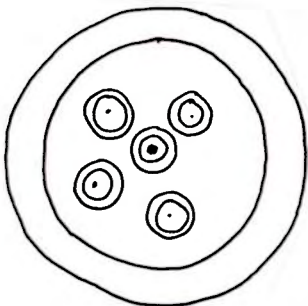
**FU318 N88068**

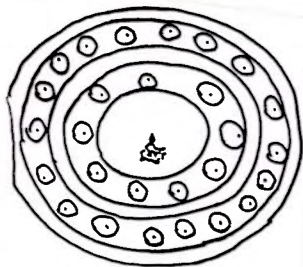
Gaming-piece. Decorated disc. Highly polished surfaces. One decorated face: compass-drawn circle containing 5 loosely arranged double-dot-and-circle motifs. Central dot. Crudely executed.

Bone (whalebone?).

3.9cm diam. x 0.6cm thick.

Phase 7: late 12th - early 13th century.



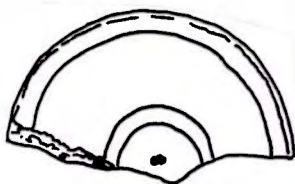
**FU335 N88709**

Gaming-piece. Broken decorated ovoid disc. Burnt white and warped. One face decorated: 4 concentric compass-drawn rings, two bands filled with dot-and-circle motifs. Central dot. Small fragment of metal adhered to centre.

Bone.

3.4cm x 3.8cm diam. x 0.5cm thick.

Phase 7: late 12th - early 13th century.

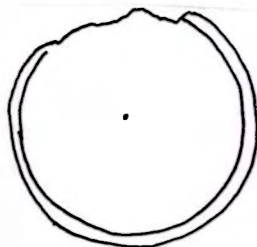
**FW551 N90828**

Gaming-piece fragment (half). Decorated disc. Warped, burnt grey. One face decorated: 2 pairs of concentric compass-drawn rings, central dot.

Bone. Underside bears cancellous formation.

3.8cm diam. x 0.6cm thick.

Phase 9: late 13th - 14th century.

**FW616 N89897**

Gaming-piece. Decorated disc. Burnt white. One face inscribed with compass-drawn peripheral circle; central dot.

Bone.

3.2cm diam. x c.0.9cm thick.

Phase 7: late 12th - early 13th century.

FW621 N90272

Gaming-piece, re-used as spindle-whorl? Decorated disc: dot-and-circle motifs on all surfaces, including edge. Worn. Off-centre complete perforation, 0.8cm diam.

Ivory.

3.6cm diam. x 0.9cm thick.

Context: early 13th century?

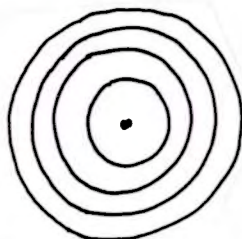
FW654 N91157

Gaming-piece. Decorated disc. 3 radiating circles compass-incised on one face; central dot. Pare marks along edge. Unpolished.

Bone (whalebone?).

3cm diam. x 0.5cm thick.

Phase 7: late 12th-early 13th century.

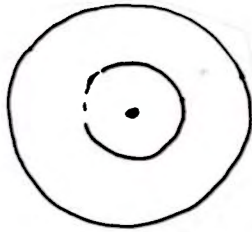
**FW654 N91494**

Gaming-piece? Plain disc. Worn.

2.7cm diam. x 0.6cm thick.

Bone or antler.

Phase 7: late 12th-early 13th century.

**FW654 N91970**

Gaming-piece. Ovoid decorated disc. One compass-inscribed ring and central dot. Worn, unpolished.

Bone (whalebone?).

3.1cm x 2.9cm diam. x 0.6cm thick.

Phase 7: late 12th-early 13th century.

FX240 N65635

Gaming-piece re-used as spindle-whorl? Decorated disc. One ring. Central complete perforation 1cm diam. Smoothed.

Bone.

3.9cm diam. x 0.8cm thick.

Context: unknown.

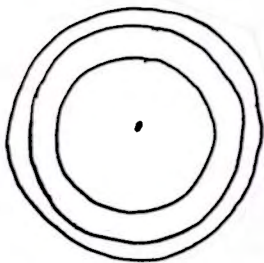
FY22 N60976

Gaming-piece re-used as spindle-whorl? Ovoid decorated disc. 3 concentric rings, central complete perforation 1.1cm diam. Smooth, base bears cancellous formation.

Bone.

4.4cm x 4.6cm diam. x 1cm thick.

Context: late medieval.

**FY226 N65990**

Gaming-piece. Decorated disc. 2 concentric compass-inscribed rings and central dot. polished. Underside bears cancellous formation. Remnant blackish colouring on edge.

Bone.

3.2cm diam. x 1cm thick.

Phase 10: 14th - 15th century.

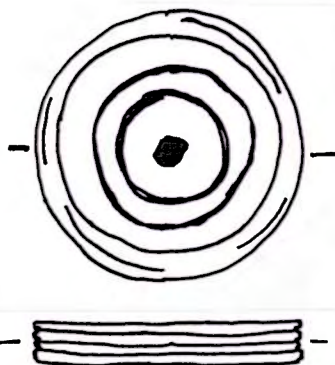
FY358 N66221

Gaming-piece. Decorated disc. Poor condition.

Bone.

3cm diam. x 1.1cm thick.

Phase 8: mid 12th century.

**FY470 N67854**

Gaming-piece. Decorated disc. Re-used? Crude knife-cut rings on all surfaces, including perimeter edge (cf. FH301 N29037 for similar edge). Worn. Small squarish central complete perforation 0.3cm diam. Black patches. Not mapped: perhaps should have been?

Antler.

3.5cm diam. x 0.5cm thick.

Phase 7?: early 13th century?

FZ173 N64131

Gaming-piece re-used as spindle-whorl? Decorated disc. 6 dot-and-circle motifs on one face. Smoothed but worn. Central complete perforation 0.6cm diam.

Bone.

3.4cm diam. x 0.6cm thick.

Context: 13th century?

CATEGORY E: DISCS OF STONE.

N.B. The descriptions under this category have been abbreviated to a greater extent than the others, due to these items' generally innate blandness and uniformity. Their classification as gaming-pieces is in some doubt, though, unless otherwise stated, it can be assumed that they are "possibles". Abbreviated terms are as follows:

Rd. = round; ov.= ovoid; polyg. = edges worked to form polygonal disc; conv. = convex perimeter edge, conc. = concave perimeter edge (otherwise vertical).

Geologically these are mostly of steatite (stea) unless otherwise stated. All are plain, smoothed, undecorated items unless otherwise indicated.

Dimensions (cm) comprise diameter first followed by thickness.

Finally, the phase in which the find occurs is given.

FA72 N3216

Ov., stea?
2.6 x 3.8 x 0.4
10

FA79 N2182

Ov., worn, stea?
4.3 x 3.8 x 0.9
9

FA137 N13400

Ov., worn, stea?
4.8 x 5.1 x 1.0
9

FA153 N16197

Rd., stea?
4 x 1
8/9

FA153 N17358

Rd., worn, stea?
2.3 x 0.5
8/9

FA153 N18342

Rd., worn, stea?, conv
2.8 x 0.7
8/9

N.B. The following are all from the same context - **FA170** (Phase 8/9): possibly collectively form an assemblage?

N17120

Rd., worn, stea
4.7 x 1.3

N17274

Rd., worn, stea, conv
5.1 x 1.2

N18305

Rd., worn, stea
1.7 x 0.4

N18330

Irreg. rd., worn, stea
2.2 x 0.7

N18411

2 irreg. rd, worn, stea, conv
3.5 x 0.9
3.3 x 0.8

FA172 N17674

2 discs:
a) Rd., decorated with small crudely-cut cross on one face, worn, stea
2.5 x 0.2
b) Rd., worn, stea
3.2 x 0.7
9

FA193 N15615

Rd., worn, stea
2.9 x 1.2
8/9 (same context as FA170)

FA202 N18639

Rd., worn, stea
3.2 x 0.5
8/9

FA220 N18326

Ov., worn, stea
2.9 x 2.7 x 0.5
8/9

FA222 N19386

Irreg. rd., worn, stea
4.9 x 2.2
8/9

FA222 N19611

2 discs:
a) Ov., worn, stea
3.8 x 3.9 x 0.9
b) Irreg. rd., worn, stea
2.3 x 0.5
8/9

FA222 N19454

Rd., worn, stea
2.6 x 0.8
8/9

FA233 N19651

2 discs:
a) Irreg. rd., decorated with two crude crosses, one on each face, worn, stea?
5.2 x 1.7
b) Irreg. rd., worn, stea?, conv
2.5 x 1.2
8/9

FA235 N19718

Ov., worn, stea?
2.3 x 2 x 0.4
8

N.B. Possible assemblage(s) of discs from same context - **FA237** (Phase 8/9):

N19686

5 discs, which possibly form a group with near-regularly diminishing sizes:
Irreg. rd., worn, stea
7.2 x 0.7: 15.5 grammes
5.5 x 1.3: 38.3 grammes
4.5 x 1 : 43.1 grammes
4.2 x 1.3: 61.6 grammes
2.5 x 1.2: 115.5 grammes

N19802

2 discs: irreg. rd., worn, stea
6.3 x 1.3
4.2 x 0.9

N19824

3 discs:
a) Irreg. rd., worn, stea
4.8 x 1.3
b) Ov., worn, stea
2.5 x 2.3 x 0.5
c) Ov., worn, stea
2.2 x 2.1 x 0.4

FA245 N19938

Irreg. rd., worn, stea
3 x 0.4
8

FA245 N19939

Irreg. rd., worn, stea
3.9 x 0.9
8

FA250 N20599

Irreg. rd., worn, stea
3.2 x 0.7
8

FA256 N19875

Irreg. rd., worn, stea
1.8 x 0.5
8

FA260 N21534

Irreg. rd., worn, stea
5.8 x 1.2
8

FA316 N23156

Irreg. rd., worn, stea
4.5 x 0.7
8

FA371 N25627

Hemispherical, mudstone. Central shallow perforation in base. Gaming-piece?
3.4cm diam. x 0.6cm high.
8

FC48 N1822

Polyg., worn, stea?
3.3 x 0.2
?

FC93 N3118

Rd., worn, decor. on both faces (star design and cross design, very crude), stea?
3.9 x 0.9
9

FC113 N13216

Rd., good condition, stea
2.1 x 0.4
9?

FC141 (3 discs)

N13592: rd., fair cond., stea
2.1 x 0.7

N16180: ovoid, fair cond., stea
4.3 x 4.1 x 1.2

N16450: rd., fair cond., stea
4.3 x 0.9
9

FC145 N18607: rd., worn, stea

4 x 0.9
9

FE12 N15173

Rd., smooth, conv., not stea
3 x 0.4
12?

FE75 N19324

Irreg. rd., worn, stea
2.6 x 0.9
9

FE75 N20055

Irreg. rd., worn, stea
2.9 x 0.9
9

FE94 N19993

Irreg. rd., worn, stea
3.9 x 0.5
9

FE121 N17383

Rd., worn, stea
2.1 x 0.5
9

FE126 N15736

2 discs
a) Irreg. rd., worn, stea
5 x 1
b) Rd., worn, stea
2.3 x 0.7
9

FE253 N19163

Irreg. rd., worn, stea
1.7 x 0.4
8

FE259 N19841

Rd., worn, conv., stea
1.5 x 0.3
8

FE322 N19261

Irreg. rd., worn, stea
2.9 x 0.3
8

FE323 N21332

Polyg (hept.), worn, stea
2.5 x 0.6
7

FE325 N21126

2 discs: both worn, angular, stea, 5.5 diam.
8

FE343 N20475

Irreg. rd., worn, stea
2.5 x 0.8
9

FE345 N20080

Polyg (hex.), worn, stea
3.1 x 0.9
9

FE443 N20814

2 discs

a) Discoid smooth natural pebble,
micaceous stone
5 x 4.7 diam.b) Irreg. rd., worn, stea
3.2 x 0.6
8**FE450 N22363**Irreg. rd., worn, stea
2 x 0.5
7**FE699 N25214**Rd., smooth, stea
6.2 x 1.6
7?**FF114 N16744**Irreg. rd., worn, stea
3.3 x 0.6
10**FF128 N17270**Rd., fair cond., stea
4.3 x 0.6
10**FF175 N17745b**Rd., worn, stea
1.3 x 0.3
9/10**FF492 N21840**Disc, basalt pebble?
4.3 x 0.6
8**FF555 N27206**Hemispherical, smoothed, beach
pebble/gaming-piece?, ovoid
4 x 3.7 x 1.6
9?**FF567 N25937**Irreg. rd., worn, stea
4.7 x 0.7
9**FF584 N?**Irreg. rd., worn, stea
3.1 x 0.8
9**FF1011 N35116**Hemispherical, clay/mudstone?
Gaming-piece/ nascent spindle-whorl?
2.3 diam.
5**FF1179 N36389**Polyg (hex.), worn, stea
3.4 x 0.9
12?**FG505 N77335**Irreg., rough, stea?
6.5 diam.
7**FG525 N77566**Irreg., rough, stea?
4.3 diam.
7**FG623 N78133**Irreg. rd., worn, stea
5.2 x 0.7
6**FH54 N20669**Rd., worn, stea
3.7 x 0.9
10**FH124 N20889**Rd., good cond., stea
4.4 x 1
9**FH133****3 discs:**
N20445: Polyg (hex.), worn, stea
4.2 x 1**N20447:** Irreg. rd., worn, stea
3 x 0.5**N20881:** Rd., worn, stea
2.6 x 0.9
9**FH260 N29791**Hemispherical, mudstone? Gaming-
piece/ nascent spindle-whorl?
3.7 x 1.2
7?

FJ82 N86917

Irreg. rd., worn, stea
3.9 x 0.9
11

FJ135 N84112

2 discs:
a) Rd., worn, stea
3.6 x 0.9
b) Irreg. rd., worn, stea
3.2 x 0.5
9

FJ135

3 discs:
N84662: Rd., worn, stea, decorated
with crudely scored cross on one
face.
2.4 x 0.6
N85066: Rd., worn, stea
5.2 x 0.9
N85074: Rd., worn, stea
4.2 x 0.9
9

FJ177 N85547

Rd., worn, conv., stea
2.1 x 0.8
9

FJ237 N86186

Rd., worn, stea
2.2 x 0.5
9

FJ237 N86294

Rd., worn, stea
2.4 x 0.9
9

FK37 N18526

Half, rd., worn, stea
6.2 x 0.8
12

FK104 N19080

Rd., worn, stea
3.4 x 0.8
10

FK117 N20746

Rd., worn, stea
4.5 x 1.1
12

FK194 N25397

Irreg. rd., worn, stea
2.6 x 0.6
8

**FK275 (14 DISCS FROM LAYER-
ASSEMBLAGE?)****Phase 8****N26985**

3 discs:
a) Rd., worn, stea
4 x 1.1
b) Rd., worn, stea
3.8 x 0.9
c) Rd., worn, stea
2.7 x 0.6

N27549

3 discs:
a) Rd., worn, stea
3.6 x 0.7
b) Rd., worn, stea
3.9 x 1.2
c) Rd., worn, stea
2.3 x 1

N27549

3 discs:
a) Irreg. rd., worn, stea
3.3 x 1.1
b) Irreg. rd., worn, stea
2.4 x 0.4
c) Irreg. rd., worn, stea
2.6 x 0.5

N27706

4 discs:
a) Rd., worn, stea
4.8 x 1.2
b) Rd., worn, stea
3.6 x 0.9
c) Rd., worn, stea
3.3 x 0.6
d) Rd., worn, black col., stea
3.3 x 0.7

N29310

Rd., worn, bevelled polyg. perimeter,
stea
4.5 x 1.6

FK343 N28206

Rd., stea, central shallow perf. on one face -gaming-piece, nascent spindle-whorl?

3.7 x 1.1

8

FK402 N28762

Rd., worn, stea, scored on both faces, crude dec?

4.6 x 0.9

8

FL178 N29192

Irreg. rd., worn, stea

5.2 x 0.5

8

FL366 N33202

Irreg. rd., worn, micaceous

4 x 2.5

4

FL436 N33204

Hemispherical, mudstone. Gaming-piece?

4 x 1.4

4/5?

FL525 N33656

Hemisph., mudstone. Small perfor. in centre of base. G-piece?

3.9 x 1.4

4

FL615 N37514

Irreg. rd., worn, stea?

2.8 x 0.3

10

FL755 N39845

Irreg. rd., worn, stea

3.2 x 1.1

4

FM2 N51365

Rd., worn, stea

4.2 x 0.9

9/10

FM2 N52780

Rd., worn, stea

3.3 x 1

FM49 N54923

3 discs:

a) Rd. irreg, worn, stea

3 x 0.8

b) Polyg (hex.), worn, stea

2.2 x 0.4

c) Polyg (hex.), worn, stea

2.3 x 0.3

9/10

FM241 N59064

Irreg. rd., worn, stea, decor. with cross patterns on one face, crude.

Underside deeply notched.

6.8 x 0.7

7

FN268 N83614

Rd., worn, stea

2.2 x 0.6

11

FN280 N83631

Rd., worn, stea

5.5 x 1.2

11

FN294 N85900

Rd., worn, stea

3.2 x 0.7

9

FN370 N85058

Rd., worn, stea

7.3 x 1.1

9

FN413 N85542

Rd., worn, stea

3.2 x 0.9

11

FN487 N88564

Rd., worn, stea

2.5 x 0.7

8

FN521 N87563

Rd., worn, stea

5.3 x 1.1

8

FN548 N89066

Rd., worn, stea, crudely decor. with series of transverse slashes around perim.

4.9 x 1.5

11

FN566 N88376

Irreg. rd., worn, stea

5.5 x 0.9

7

FN602 N89068

Ovoid, worn, stea

4.5 x 4.1 x 0.9

11

FO33 N64921

Rd., worn, stea

2.3 x 0.5

10

FO83 N63462

Subrounded, worn, stea?

7.7 x 1.1

9

FP21 N50935

Rd., worn, stea, decorated with two compass-drawn? peripheral lines and central dot.

3.8 x 1.3.

12

FP28 N51543

2 discs:

a) Rd., worn, stea

5 x 0.9

b) Rd., worn, stea

4.3 x 1.5

8

FP78 N52096

Rd., worn, stea

2.9 x 0.8

7

FP125 N54524

Hemispher., stea?, small shallow perfor. in centre of base.

Meas. not taken.

6

FT1 N50542

Irreg. rd., worn, stea

3.3 x 0.6

12

FT2 N50974

Rd., worn, stea

2.2 x 0.5

12

FT20 (A NUMBER OF DISCS-ASSEMBLAGE/S?)**Phase 12****N51677**

Rd., worn, stea

3 x 0.5

N51678

Polyg (hept.), worn, stea

1.7 x 0.5

N52156

2 discs:

a) Rd., worn, stea

2.2 x 0.7

b) Irreg. rd., worn, stea

4 x 0.9

N52268

Irreg. rd., worn, stea

3.8 x 0.6

N51926

2 discs:

a) Rd., fair cond., stea

2.1 x 0.9

b) Irreg. rd., worn, stea

2 x 0.4

N52144

Irreg. rd., worn, stea

2.6 x 0.7

FT30 N52184

5 discs (a group?):

a) Rd., worn, stea

2.4 x 0.5

b) Rd., worn, stea

2.8 x 0.6

c) Irreg. rd., worn, stea

3.4 x 0.4

d) Irreg. rd., worn, stea

3.9 x 0.7

e) Rd., worn, stea

3.9 x 1.1

10

FT53 N52321

2 discs:

a) Rd., worn, stea

3.4 x 0.6

b) Irreg. rd., worn, stea

4.1 x 0.8

10

FT53 N52416Rd., worn, conv., blackish (burnt?),
stea

4.6 x 0.7

10

**FT74 (A NUMBER OF DISCS-
ASSEMBLAGES?)**

Phase 8/9

N52795

9 discs (a group?):

a) Irreg. rd., worn, stea

1.7 x 0.3

b) Polyg (hept.), worn, stea

1.9 x 0.3

c) Rd., worn, stea

2 x 0.6

d) Irreg. rd., worn, stea

2.9 x 0.7

e) Rd., worn, stea

2.9 x 0.7

f) Irreg. rd., worn, stea

3 x 0.4

g) Rd., worn, stea

3.3 x 0.4

h) Irreg. rd., worn, stea

3.6 x 0.5

i) Irreg. rd., worn, stea

3.6 x 0.9

N52971

Rd., worn, stea

3.3 x 1

N53122

2 discs:

a) Rd., worn, stea

2.9 x 0.9

b) Irreg. rd., worn, stea

3.4 x 0.6

N53208

4 discs (group? - all polyg.):

a) Hept., worn, stea

2.2 x 0.4

b) Hept., worn, stea

3.4 x 0.5

c) Pent., worn, blackened (burnt?),
stea

4 x 1

d) Hept., worn, stea

4 x 0.8

N54060

Rd., worn, stea

4.1 x 1.1

FT77 N53300

Ovoid, worn, smoothed beach pebble?

4.4 x 4 x 0.9

8/9

FT78 N53418

2 discs:

a) Polyg (hept.), worn, stea

4.2 x 1.1

b) Polyg. (pent.), worn, stea

4.6 x 0.3

8/9

FT78 N55105

2 discs:

a) Polyg. (hept.), worn, stea

3.2 x 0.6

b) Polyg. (hept), worn, stea, per-
forated by off-centre complete perfor.
=? spindle-whorl.

3.4 x 0.6

8/9

FT104 N54042

Rd., worn, stea

3.9 x 1.2

8/9

FT104 N54398

2 discs:

a) Polyg (hex.), worn, stea

3.2 x 1.1

b) Polyg (hex.), worn, stea

3.5 x 1.1

8/9

FT107 N55333

Polyg (oct.), worn, stea

2.4 x 0.5

8

FT162 N58066

Rd., worn, stea

4 x 0.7

8

FU32 (NUMBER OF DISCS - ASSEMBLAGE/S?)

Phase 9/10: all found in fill of wall-bench.

N57100

Polyg (hept.), worn, stea

1.9 x 2.3 x 0.6

N.B. Found with perfor. disc/spindle-whorl?

N57385

4 discs:

a) Polyg (hept.), worn, stea, blackened (fire?)

2.1 x 0.5

b) Polyg (pent.), worn, stea

2 x 0.5

c) Polyg (hept.), worn, stea

2 x 0.2

d) Polyg (oct.), worn, stea

1.8 x 0.5

N57482

Irreg rd., worn, stea

2.4 x 0.5

N57224

Irreg. rd., worn, stea

2.9 x 0.9

FU62 N57123

Polyg. (hept.), worn, stea

3.1 x 0.8

10

FU63 N57261

Irreg. rd., worn, stea

5.4 x 0.7

10

FU133 N58394

Irreg. rd., worn, stea

2.5 x 0.8

8/9

FU133 N58599

Polyg. (hex.), worn, stea

3 x 0.6

8/9

FU137 N58566

Rd., worn, stea

4.2 x 0.8

8

FU140 N58580

Rd., worn, stea

3.3 x 0.8

8

FU140 N58791

Polyg. (hept.), worn, stea

1.9 x 0.4

8

FU152 N58815

3 discs:

a) Irreg. rd., worn, stea

3.3 x 0.6

b) Polyg. (oct.), worn, stea

2.3 x 0.2

c) Polyg. (hept.), worn, blackish, stea

2.4 x 0.5

8

FU153 N58825

Polyg. (hept.), worn, stea

2.3 x 0.9

8

FU308 N87625

Rd., worn, stea

3.8 x 0.7

7

FU457 N96825

Rd., worn, micaceous

3.8 x 1.6

2

Cf. FL360

FW203 N66945

Rd., worn, stea
5 x 1.1
9

FW220 N66934

Rd., worn, stea
2.9 x 0.7
10

FW234 N66932

Rd., worn, stea, conv., each face
decor. with small quatrefoil perfor.
3.1 x 1.6
9

FW244 N66933

Irreg. rd., worn, stea
4 x 0.6
9

FW273 N67045

2 discs:
a) Irreg. rd., worn, conv., stea
2 x 0.9
b) Irreg. rd., worn, conv., stea
2.2 x 1.1
9

FW297 N67043

2 discs:
a) Rd., worn, conv., stea
5.8 x 1.9
b) Irreg. rd., worn, stea
1.9 x 0.7
9

FW309 N67036

Irreg. rd., worn, stea
2.2 x 0.7
8

FW309 N67039

Rd., worn, stea
3.9 x 1.2
8

FW548 N90089

Irreg. rd., worn, stea
2.5 x 0.7
9

FW551 N90829

Rd., worn, blackened, stea, conv.
3.9 x 1.1
9

FW554 N90615

Irreg. rd., worn, stea
1.1 x 0.4
8

FW554 N90633

2 discs:
a) Rd., worn, stea
3.8 x 0.7
b) Rd., worn, stea
2.3 x 0.7
8

FW554 N90810

Irreg. rd., worn, stea
5.3 x 1.1
8

FW555 N88716

Ovoid, worn, stea
4.2 x 3.9 x 1.1
12?

FW621 N92095 and FW654 N92165

Hemispherical, mudstone?
Both=3.5 diam.

FX49 N61855

2 discs:
a) Irreg. rd., worn, stea
3 x 0.4
b) Irreg. rd., worn, stea
2.1 x 0.8
9

FX50 N62816

Irreg. rd., worn, stea
4.2 x 0.5
8/9

FX62 N65081

Polyg (oct.), worn, stea
3.2 x 0.6
8?

FY97 N62660

Irreg. rd., worn, stea
3.9 x 0.7
10

FY149 N65739

2 discs:

a) Rd., worn, stea

3 x 0.6

b) Rd., worn, stea

4 x 0.7

10

FY288 N65655

Polyg (hept.), worn, stea

2.1 x 0.6

10

FZ15 (NUMBER OF DISCS)

Phase 12

N61353

Rd., worn, conv., stea

3.2 x 1.1

N63153

2 discs:

a) Rd., worn, stea

3 x 0.4

b) Rd., worn, stea

3.7 x 0.6

N63649

2 discs

a) Polyg (hept.), worn, blackened,
stea

3.3 x 0.6

b) Irreg. rd., worn, stea

3.3 x 0.5

FZ16 N65514

Rd., worn, stea

3.5 x 0.8

12

FZ17 N62350

Rd., worn, stea

2.8 x 0.6

12

FZ22 N65516

Half, rd., worn, stea

4.8 x 0.6

11

FZ44 N65377

Rd., worn, stea

2.8 x 0.5

8

FZ44 N68602

Rd., worn, conv., stea

3 x 0.7

8

FZ69 N63766

2 discs:

a) Rd., worn, stea

3.9 x 1

b) Rd., worn, stea

3.3 x 1

11

FZ103 N66426

Polyg (hept. or oct.?), worn, stea

2.3 x 0.5

10

FZ179 N65384

Polyg (oct.), worn, stea

2.6 x 0.6

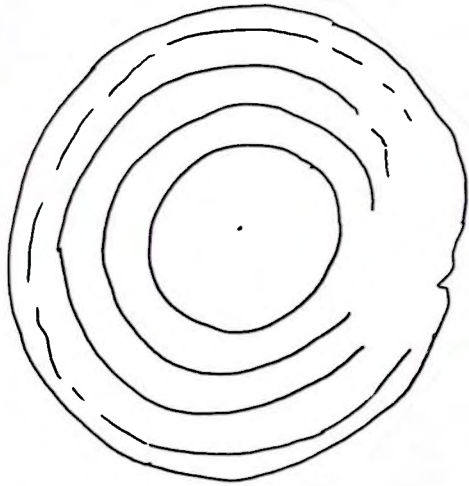
8

CATEGORY F: DISCS OF WOOD.**FA237 N18624**

Rd., plain
5.2 x 1.4
Phase 8/9

FA237 N19020

2 discs:
a) Ovoid, plain
8.5 x 7.7 x 7
b) Rd., plain
4.6 x 1
Phase 8/9

**FA257 N19028**

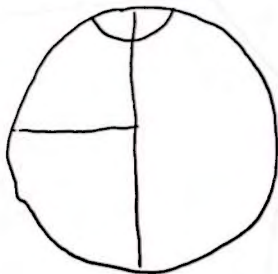
Ovoid, decor. with compass-drawn central dot
and 4 light concentric rings.
6.2 x 5.8 x 1.2
Phase 8

FA295 N21441

Rd., crude, plain
5.7 x 1.2
Phase 8

FA316 N21529

Ovoid, crude, plain
4.7 x 4.4 x 1.5
Phase 8

**FA343 N26401**

Rd., with arbitrary? lines cut on either face
3.3 x 0.5
Phase 8

FA343 N23246

Ovoid, plain
4.5 x 4.2 x 1.3
Phase 8

FA374 N25394

Assemblage of 11 plain ovoid discs, found together. 5 have traces of small central compass dots, and 2 a light periph. circle. Can be stacked; form a series with diminishing diams.

3 main size groups:

6 = 3.5 - 3.7 diam.

3 = 4 - 4.2 diam.

2 = 3.5 - 4 diam.

All are between 1 and 1.5 cm thick.

Phase 8

FA377 N26366

Rd., plain
3.1 x 0.9
N.B. found with spindle-whorl
Phase 8

FA398 N26875

Rd., plain
2.1 x 0.3
Phase 8

FA423 N28429

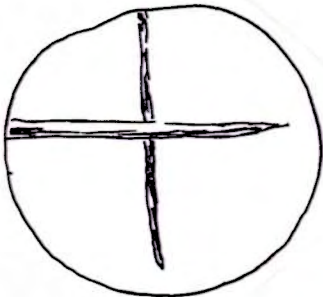
Rd., decor. with crude 2 knife-cut concentric rings.
3.3 x 0.5
Phase 6

FA700 N40059

Rd., plain
3.2 x 0.3
Phase 3

FE146 N19117

Ovoid, plain
3.9 x 3.4 x 0.6
Phase 9

**FE325 N21067**

Ovoid, decorated with crude knife-cut cross on each face.
4 x 3.8 x 1.7
Phase 8

FE407 N22147

Rd., plain
5.1 x 1.3
Phase 8

FE659 N26119

Rd., plain
3.1 x 1.2
Phase 7

FE721 N26885

Ovoid, plain
4.2 x 3.1 x 1.2
Phase 6

FF596 N26284

Rd., plain
4.5 x 0.8
Phase 9

FF674 N30185

Rd., plain
4.2 x 0.6
Phase 8

FF781 : 4 discs

N29028: Rd., plain
4.6 x 1.2

N29736: a) Rd., plain

4.2 x 1.5

b) Rd., plain

3.4 x 1.1

N29741: Ovoid, crude cross on one face, crude scoring on the other.

6.7 x 6.5 x 1.4

Phase 8

FF798 N29500

Rd., plain
5.9 x 1.5
Phase 8

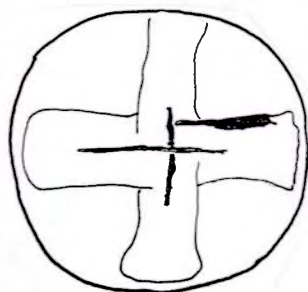
FF798 N29024

Ovoid, plain
4.4 x 4.1 x 1.9
Phase 8

FF799 N29743

(adhered to perforated disc):

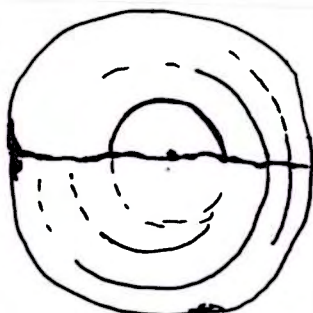
Rd., plain
5.5 x 1.4
Phase 8

**FF810 N29871**

Rd., decorated with interlocking knife-cuts forming cross on one face.

3.8 x 1.1

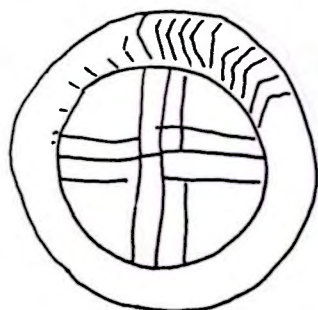
Phase 7

**FF824 N29384**

Ovoid, decorated with three crude concentric rings, knife-cut on one face.

3.5 x 4 x 1.2

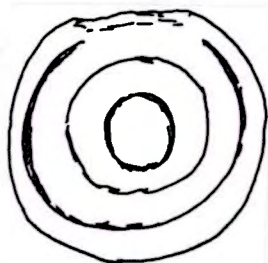
Phase 7

**FF927 N32959**

Ovoid, charred, decorated on one face with two sets of three interlocking lines forming cross, within circle with light chevron design around perimeter. Crude

4 x 3.7 x 1

Phase 6

**FF927 N33578**

Rd., decorated on one face with 3 concentric knife-cut rings, crude.

3.4 x 0.5

Phase 6

FF1236 N37872

Rd., plain

3.4 x 0.3

Phase 12

FG265 N75786

Rd., plain
5.2 x 0.7
Phase 9

FG390 N76394

Rd., plain
5.3 x 1.2
Phase 8

FG448 N76806

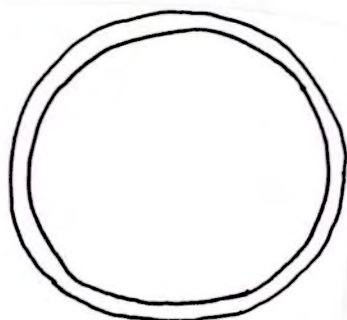
Rd., plain
3.5 x 0.5
Phase 7

FG468 N76951

Rd., plain, compass dot in middle
5.2 x 1.2
Phase 7

FG502 N77301

Rd., plain
3.1 x 1.2
Phase 7

**FG554 N77777**

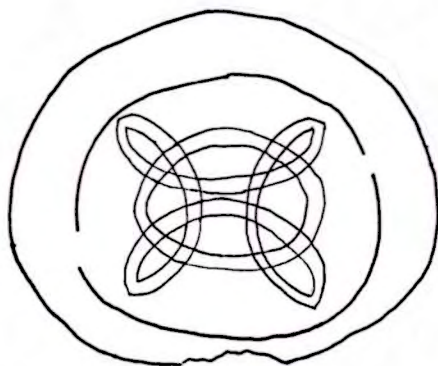
Ovoid, decorated with single light line around perimeter.
4 x 4.5 x 0.3
Phase 7

FG563 N77884

Rd., plain
2.3 x 0.4
Phase 7

FG681 N78380

Subcirc., plain
3.7 x 3.5 x 1
Phase 6

**FG761 N78595**

Ovoid, decorated with lightly knife-cut interlocking lines composing a motif with central circle and interlooped half circles i.e. an attenuated ring-knot with oval ring and fourfold return loops (N.B. cf. the elaborate carved openwork fret from Fishamble St., Dublin, which comprises a sophisticated 3-D rendition of this same motif - Lang, 1988, 11, 13, and 53).
5.2 x 4.8 x 1
Phase 4? (probably intrusive)

FH221 N26250

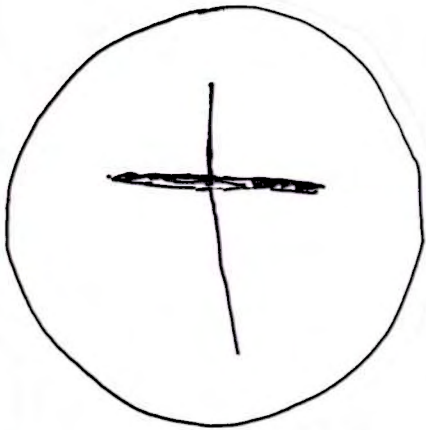
Rd., plain
4.5 x 0.5
Phase 8

FH227 N26249

Rd., plain
4.4 x 0.6
Phase 7

FH245 N26512

Rd., plain
5.2 x 1.4
Phase 7

**FH263 N26358**

Rd., decorated with crude knife-cut cross on one face.
5.2 x 0.6
Phase 7

FH287 N27612

2 discs: (N.B. found with spindle-like objects)
a) Rd., plain
5 x 1.8
b) Rd., plain
3.2 x 0.8
Phase 8

**FH301 N29037**

Rd., decorated around perimeter edge with regular parallel incisions (4) giving serrated profile; faces plain, though polished?
3.9 x 0.6
Phase 7

FH326 N27752

2 discs:
a) Rd., plain,
5.4 x 1.1
b) Rd., plain
5.2 x 1.2
Phase 7

FH339 N29069

Rd., plain
2.9 x 0.9
Phase 7

FK100 N16864

Rd., plain
5 x 1.8
Phase 10

FK345 N29581

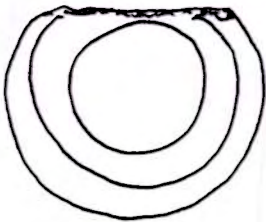
Rd., plain
4.3 x 1.3
Phase 8

FK345 N29862

Rd., plain
4.6 x 1.2
Phase 8

FK498 N30219

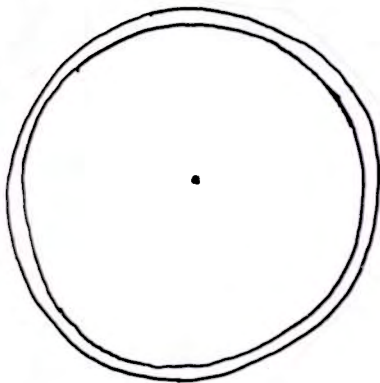
Ovoid, plain
3.5 x 3.3 x 1
Phase 7

**FK596 N31267**

Rd., decorated with two concentric knife-cut rings.
3.3 x 0.6
Phase 5

FL65 N221133b

Rd., plain
4 x 0.8
Phase 9

**FL66 N23086**

Rd., decorated with lightly incised peripheral circle, compass-traced, with central dot.
4.9 x 1.5
Phase 9

FL178 N29231
2 frags. of discs
Phase 8

FL178 N29228
2 discs:
a) Rd., plain
5.7 x 1.9
b) Rd., plain
4.5 x 1.1
Phase 8

FL178 N30191
Rd., plain
3 x 0.6
Phase 8

FL179 N28791
Assemblage? of 7 discs, of descending diameters;
all, apart from c), round; all plain:
a) 6 x 1
b) 5.8 x 1.9
c) 5.5 x 5.7 x 1.3
d) 4.5 x 1
e) 4.8 x 0.7
f) 4.7 x 1.2
g) 3.9 x 0.5
Phase 8

FL209 N30310
Rd., plain
3.9 x 0.8
Phase 8

FL525 N34390
Ovoid, plain
5 x 4.8 x 0.8
Phase 4

FL659 N37314
Rd., plain
3.8 x 0.9
Phase 7

FL659 N37354
Rd., plain
4.9 x 1.3
Phase 7

FM298 ?
Disc
Phase 6

FT74 N53306

Rd., plain
4.5 x 0.6
Phase 8/9

FT74 N53577

Rd., plain
4 x 0.5
Phase 8/9

FT105

N54326: Ovoid, plain
5.9 x 5.7 x 0.7
N54370: Ovoid, plain.
5.9 x 5.7 x 0.8
Phase 8

FT105 N55514

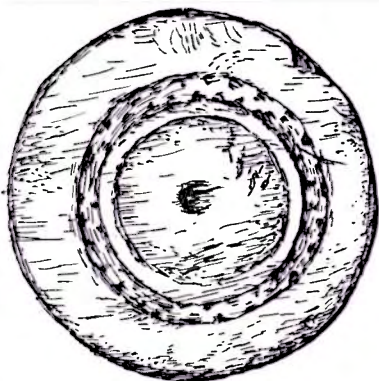
Rd., plain
5 x 2.2
Phase 8

FT131 N55856

Rd., plain
3.5 x 1
Phase 8

FT138 N56818

Rd., plain
4.6 x 1
Phase 8

**FT139 N56950**

Rd., decorated on one face with circular band of chevron ornament, carefully executed and regular. Central perforations, incomplete, on both faces.
4.8 x 1.2
Phase 8

FT167 N58070

Rd., plain
4.2 x 1.6
Phase 8

FT171 N58070

Rd., plain
3.9 x 0.7
Phase 7

FU187 N59288

Rd., plain

4.6 x 0.7

Phase 8/9

FU263 N58202

Rd., plain

4.2 x 1.8

Phase 8

FU264 (number of discs- assemblage?)

All round and plain.

N59855: a) 5 x 0.8

b) 4.4 x 1

N59856: a) 5 x 0.8

b) 4.5 x 1.5

N59857: a) 4.2 x 1.5

b) 4.2 x 1

Phase 8

FW406 N68275

Ovoid, plain

1.9 x 2.1 x 0.2

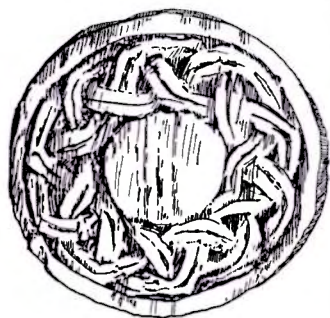
Phase 8

FW415 N68389

Rd., plain

4 x 0.8

Phase 8

**FW695a N93497**

Ovoid, finely decorated on one face with band of double-threaded interlace; competent but crude.

4.2 x 4 x 0.7

Phase 5

**FY551 N68276**

Sub-circ., decorated on one face with 2 concentric rings forming band containing crude and irregular oval motifs.

5.3 x 5.2 x 0.9

Phase 5

CATEGORY G: MISCELLANEOUS FORMS, OF VARIOUS MATERIALS.

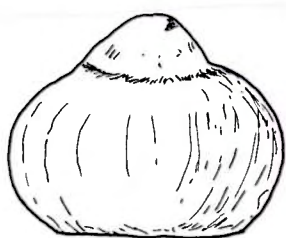
Included within this section are items of more or less ambivalent character. The more noteworthy, those which have been included within the analysed material and discussed in the study, are here supplemented with items of rather more doubtful association with the playing of board-games etc. However, it is felt that their inclusion is merited nonetheless, as future research may rehabilitate them.

FA222 N19396

Piece of cut tusk (morse ivory?), with smooth polished base and central perforation through base, although mostly unworked.

FA237 N19819

Fragment of morse ivory, central perforation, top and bottom cut flat, sides burnished.

**FA342 N23251**

Carved wooden hemispherical object; gaming-piece? (for hnefetafl?). Flattish unperforated base, nipple-like projection at top, Crudely worked and worn.

3.4cm diam. x 2.4cm high.

Phase 8

FA370 N25354

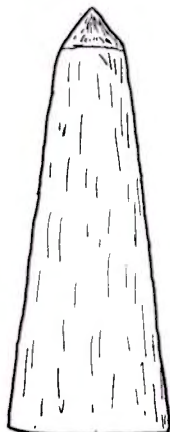
Tip of morse ivory tusk. Squared off at thicker end, point intact. Stands independently.

FA454 N28622

Morse ivory disc, very small and thin. Burnished.

2cm diam. x 0.5cm thick.

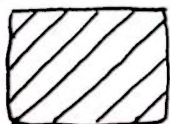
Phase 6?

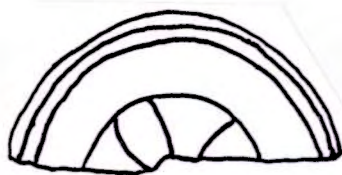
**FA633 N38168**

Obelisk-shaped object, carved in wood. Flat, rectangular base, body tapered to top with blunted point. Pawn? Hnefi?

1.5cm x 2cm base x 5.5cm high.

Phase 5



**FE43 N15671**

Gaming-piece. Fragment (half) of decorated disc of jet. Pierced centrally by a large complete perforation, though piece is arguably too light in weight to have been (re-)used as spindle-whorl. Regular, slightly worn. Black, with remnant reddish brown colouration in grooves. Decorated with deeply-cut compass-drawn u-sectioned lines: 2 closely-spaced concentric circles at perimeter; third circle within, towards centre, filled with further design, possibly maltese cross or petal.

4cm max. diam. x 0.5cm thick.

Context: uncertain.

FE253 N19417

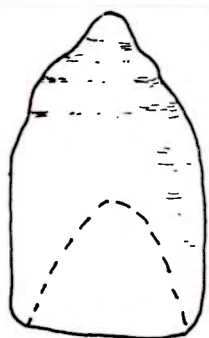
Small cube of antler. Die rough-out?

1cm x 1.2cm.

FE557 N23129

Small cube of antler. Die rough-out?

1.1cm x 1.3cm x 1cm

**FE616 N23253**

Small carved cylindrical object of wood, with tiered pointed top and perforated base. Worn. Gaming-piece?

2.2cm diam. x 4cm high. Basal hole 1.8cm diam.

Phase 7?

FE659 N26227

Tooth (bear?). Base squared off, flat and polished, tip intact with whitish enamel. Stands independently.

FE838 N28811

Bone? carved piece. Gaming-piece. So-called "double-piriform" shape i.e. lower half comprises globular pear-shaped form, with perforated base (hole=0.5cm diam. x 0.4cm deep), surmounted by a carved tip composed of diminutive pear-shaped globular body with pointed faceted tip.

Max. diam. 1cm x 1.8cm high

Phase 6

**FF114 N16243**

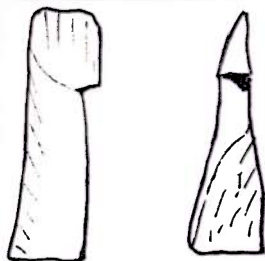
Tooth (bear?). Base squared off, smoothed. Tip intact. Stands independently. White enamel.

FF565 N26000

2 antler cubes. Die rough-outs?
Both c. 1cm³.

FF665 N27060

Very crude carved wooden cylindrical object with roughly pared pointed top. Gaming-piece or stopper?

**FF665 N27171**

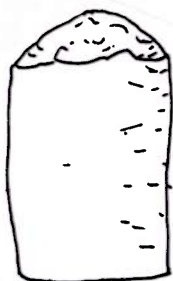
Carved antler piece. Fragment (split vertically). Former independently standing gaming-piece? Flat base, with two small dot-and-circle motifs. Body formerly tapered and rounded? Smooth exterior. Top chamfered to a point, and one side notched. Abstract chess piece (knight)?
3.2cm high
Phase 8

FF795 N29500

Cylindrical pointed object of wood, crude. Gaming-piece or stopper? accompanied plain wooden disc (see Cat. E).

FF799 N29323

Antler cube. Die rough-out?
C. 1.5cm³.

**FF927 N33592**

Cylindrical pointed object of wood. Gaming-piece or stopper?

FG252 N75512

Tooth (bear?). Squared off base, central perforation, tip broken. Stands independently.

FG284 N75655

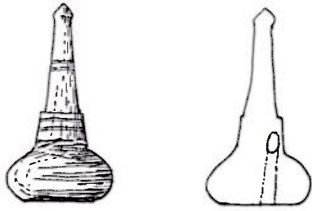
2 teeth (bear?). Enamel intact. Flat bases. Stand independently.

FH155 N25357

Tooth (bear?). Flat sawn base. Stands independently.

FH328 N29379

Assemblage of waste from a bone workshop, incorporating material associated with the production of bone discs i.e. block of bone bearing compass-drawn circle, and a disc, broken in preparation.

**FJ86 N82619**

Ivory or bone carved piece. Gaming-piece. (Chess pawn?). Tower-like shape, with squat bulbous base, tapering body, regularly shallowly indented (turned). Very regular and symmetrical form. Polished. Base perforated by off-centre hole, 0.3cm diam.

1.5cm max. diam. x 2.7cm high.

Phase 10

FK194 N26274

Bone cube. Die rough-out, c. 1cm³.

Tooth (bear?), 7-sided, flat base, complete central perforation.

FK345 N29130

Ivory cube. Die rough-out?
1cm³.

FK345 N29342

Tooth (bear?). Base squared off, perforated off-centre. Flat. Tip rough. Stands independently.

FK360 N28938

Antler cube. Die rough-out?
1.1cm³

FK523 N30431

Cylindrical pointed object of wood, perforated completely by off-centre hole. Gaming-piece or stopper.

FL661 N37566

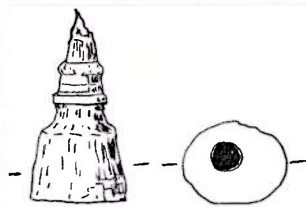
Wooden peg with carved human head.

FM2 N51077

Carved piece of bone. Gaming-piece. Weathered. Tower-like shape, with cylindrical base and tapered, regularly circumferentially indented body (turned?), and broken pointed tip. Base perforated off-centre (0.4cm diam. x 0.6cm deep). Chess pawn?

1.1cm diam. x 2.5cm high.

Phase 11.

**FT20 N52159**

Bone (whalebone?) carved piece. Gaming-piece (chess pawn?). Squat waisted cylindrical body, with carved button-like top. Flat base, perforated centrally by shallow hole.

1.2cm diam. x 2.2cm high.

Phase 12



FT74 N52968

Tooth (bear?). Flat base, smoothed sides, tip intact. Base perforated by ovoid central hole (0.6cm x 0.8cm diam.). Stands independently.

FT131 N54512

Small carved wooden human figurine with face, no arms.

FU302 N87312

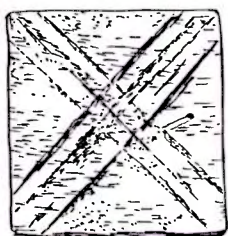
Small carved wooden human figurine.

FW249 N66082 and 66223

8 carved flat square-subsquare blocks of bone (whalebone?), forming set?. Possible gaming-pieces? All bear similar decorative motif on one face only (the undec. face being of spongy cancellous nature). Motif = two oblique bands, intersecting at centre of piece, composed of deeply-incised parallel lines (2 thin and thicker internal band - intersecting with the other band's lines to form pattern of squares in middle). Regular.

All = between 2.5cm - 2.9cm in width, and 0.5cm - 1cm thick.

Phase 9

**FW537 N88174**

Bone carved piece. Gaming-piece. (Chess pawn?). Tower-like form, with squat globular base, tapered, regularly and circumferentially indented body (turned) and pointed tip. Regular and symmetrical. Weathered. Base perforated by off-centre hole, 0.5cm diam. x 1.5cm deep.

1.4cm diam. x 2.6cm high.

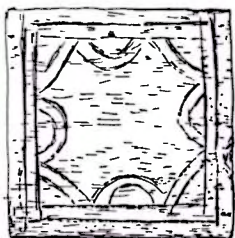
Phase 9

**FX32 N61640**

Bone square. Possible gaming-piece? Near-regular. One decorated face (the undec. face being spongy and cancellous). Motif = double peripheral lines framing central panel with paired lines placed at regular intervals at edge of panel to form a tilted cruciform motif. Crude execution.

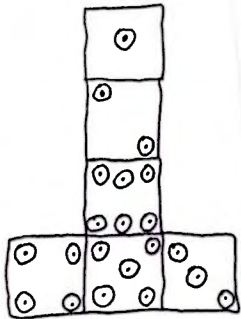
2.9cm² x 0.9cm thick.

Phase 12



CLASS 2: DICE.**CATEGORY H: CUBIC DICE OF SKELETAL MATERIALS, JET AND STONE.**

Unless otherwise stated, the numbering, or "eyes", on these cubes is executed with small dot-and-circle motifs, and the term "correctly numbered" indicates that the numbering on each opposed face adds up to 7.

**FA237 N18809**

Ivory (or highly polished bone?) cube. Deeply-cut eyes. Correctly numbered.

1cm³.

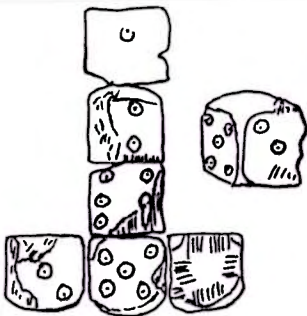
Phase 8/9

FA294 N20838

Antler cube. Slightly irreg. Deeply cut eyes. Correctly numbered, irregular formation.

1cm³

Phase 8

**FE648 N26224**

Ivory (walrus?) cube. Slightly irregular, notably in the fact that one face (bearing the "1" eye) is convex (cf.FW504). In poor abraded and deliberately defaced condition. However, faces formerly polished, and corners rounded off. Correctly numbered.

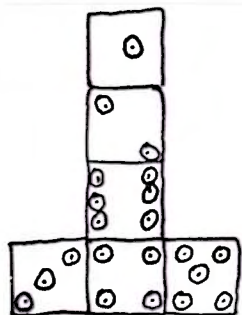
1cm³

Phase 7

FE732 N26814

Ivory (walrus?) cube. Creamy coloured, regular, well-finished. Polished, with flat oval faces and bevelled edges. Eyes deeply cut, sl. irreg. formation. Correctly numbered. 1cm³

Phase 7

**FF492 N21741**

Antler cube. Near-regular. Deeply cut eyes.
Incorrectly numbered.

1cm³

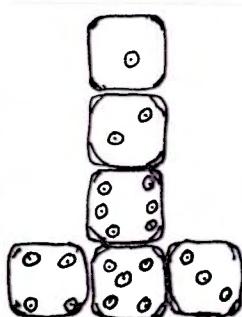
Phase 8

FF771 N28171

Antler cube. Small. Sl. irregular. Deeply cut eyes. Incorrectly numbered.

0.8cm³

Phase 8

**FF1078 N33080**

Antler cube. Regular, well-finished. Eyes sl. irregular formation. Correctly numbered. Edges bevelled to form near-oval flat faces.

1cm³

Phase 12

FH70 N19201

Jet cube. Black. Near regular. Sharp edges, flat polished faces, worn. Deeply cut eyes, in irregular formation; contain greyish silvery inlaid medium (silver?). Correct numbering.

1cm³

Phase 8

FH155 N25309

Bone cube. Regular. Sharp edges. Correct numbering. Possible remnant inlay in eyes-silvery grey.

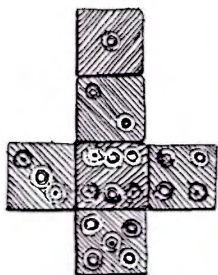
1.1cm³

Phase 8

FJ168 N86306

Steatite? cube. Near regular. Correctly numbered. Sharp edges. Eyes (deep v-sectioned holes) bored regularly.

1.1cm³. Phase 9

**FK402 N28107**

Jet cube. Black. Smooth polished faces, sharp edges. Chipped and worn. Deeply cut eyes, filled with silvery grey medium (silver?). Correctly numbered, though in irregular formation.

0.9cm^3

Phase 8

FL28 N?

Bone/antler die (description omitted through oversight).

FL179 N28943

Antler cube: nascent die. Crude. Incomplete numbering. Eyes comprise small holes, on only three faces (6, 1 and 2?). Irregular.

$1.1^2 \times 0.9^2$

Phase 8

FM35 N53242

Bone/antler? cube. Burnt white. Sl. irregular. Small. Sharp edges. Correctly numbered.

$0.7\text{cm}^2 \times 0.6\text{cm}^2$

Phase 11

FP146 N53235

Antler cube. Poor condition. Sl. irregular. Correctly numbered.

1cm^3

Phase 6

FT104 N53192

Jet cube. Black. Well-finished. Worn. Sl. irregular. Flat polished faces, edges slightly bevelled. Correctly numbered, eyes filled with silvery grey medium: analysis = silver.

$1.1\text{cm}^2 \times 1.2\text{cm}^2$

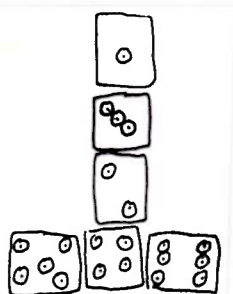
Phase 8

FW323 N67858

Bone/antler? cube. Small. Poor condition. Numbering correct. Small eyes.

0.8cm^3

Phase 8

**FW406 N67152**

Bone/antler? cube. Small. Irregular. Incorrectly numbered. Irregular formation.

$0.9\text{cm}^2 \times 0.7\text{cm}^2$

Phase 8

FW504 N87317

Ivory (walrus?) cube. Sl. irregular: the "1" face is slightly convex (cf. FE648). Polished. Edges bevelled to form oval flat faces.

1.2cm^3

Phase 12?

CLASS 3: GAMING-BOARDS.**CATEGORY I: SINGLE PANELS, DOUBLE- AND SINGLE-SIDED, OF WOOD.****FA367 N25218 (Plate 13)**

One small regularly shaped and wooden-pegged wooden board formerly used as a seat (in a boat?). In two pieces. Max. breadth $17.5\text{cm} \times 2.5\text{cm}$ thick. A **larger merels** or nine men's morris frame or lattice pattern has been crudely scored on the board's upper face towards one end. It is a small design providing a playing area of $15.5\text{cm} \times 16.5\text{cm}$, and would have required small playing pieces (possibly absolute max. of 2cm diam.).

Phase 8

FH414 N29723 (Plate 11)

A single panel of wood, carved on both faces to form a "double-sided" gaming-board incorporating opposed inscribed playing-surfaces for the games of **hnefetafl** (upper face) and **larger merels**, or nine men's morris (underside). The solid panel also bears fragments of applied (pegged) wooden strips which, with a solid raised strip on the only fully intact side, form a raised edge or border around the upper side.

The board is now incomplete (about a third missing, comprising complete length of one side). The line of a complete break has split the remaining portion, though this is clearly an old break which was mended in antiquity, there being two widely-spaced shallow mortises (formerly holding kipper joints?) set across the line of the break, as well as two pairs of small holes, one at either end of the break within the outer rows of cells, which perhaps formerly held staples or some other means of binding.

The board is 37.5cm broad along the intact edge, and c. 24.5cm along the two opposed broken edges. It is c. 1cm thick (+c. 1cm for the raised edges).

The upper playing surface has been crudely carved, with a knife, into a near-regular gridded arrangement of squares, or cells, placed in a rows. The grid-pattern as it survives comprises a row of 11 cells along the intact side, and 7 intact (and 1 partial) cells along the two broken sides. Presumably the original pattern formed a grid of 11x11 cells. Carving is crude, and irregular, the grid comprising squares formed by the intersection of single vertical and horizontal deeply-cut lines, with emphasis in relief provided by the cutting, within the area comprising each individual cell, of a further single internal square within the original lines of the grid. 6 of the squares, arranged in pairs in directly opposed spatial conformity within the area of the grid, have been specially marked internally by the application of deeply-scored diagonal lines to form x's, while the square which must have been centrally placed has been especially differentiated by a double-x design, comprising an inner complete x supplemented with an extra line on each of its arms. The 6 marked squares lie at equidistant intervals from this central cell. Their placement is important, because it is likely that the outermost of these marked squares lay on what was in practise the actual extremity of the playing surface. Although there occurs a further row of squares peripheral to the row in which these marked squares find themselves, it is suggested that the outer rows of cells on this board were redundant and superfluous, and that the actual playing surface was in reality a 9x9 grid. This is supported by the fact that all of the outermost cells are of smaller size, and the border encroaches to such an extent that the peripheral rows must have been unusable. Furthermore, the likely presence of staples or twine in the pairs of holes placed in these rows to either end of the old break seems to imply that these outer squares were not customarily used. The use of a grid of irregular numbers (9x9, 11x11, 13x13 etc.) is a diagnostic characteristic of the game of hnefetafl.

The individual cells vary in size slightly, though (excluding the outermost cells) they average about 3cm². Clearly they would not have accommodated pieces with a diameter larger than this (cf. the various pieces in Cats. A and B).

The raised border on the intact side has been fashioned from the parent board and is one with it, while the other two sides bear fragments of applied wooden strips with oblique ends adjoining the chamfered ends of the solid edge, and formerly held in place with wooden pegs (some present). This raised border may have had combined decorative and functional attributes.

The reverse side: This bears the remains of most of a larger merels lattice or frame, deeply-incised with a knife. The design is correct, but poorly executed. The mortises hereon have been placed in such a way as not to impinge on the lines of the frame. The dimensions of the playing area are such that only pieces of 5cm diam. or less could be used on it.

At some point in time, the board has been scorched by fire. It is worn and scratched.

Phase 5.

FW737 N94068 (Plate 12)

Fragment of burnt wood, forming the remains of a board bearing traces of a gridded pattern of squares closely resembling those carved on the better preserved example FH414 N29732 (above). This therefore probably constitutes the remains of a single-panel board used for the playing of *hnefetafl*, though whether it formed, as FH414, a "double-sided" board incorporating a *merels* design on its reverse side, is unfortunately not certain (though see below).

The fragment's max. thickness is 1.9cm, and its max. length 32cm and max. width 8.5cm. On one side there survives a short length of raised border, carved into the panel (as above). The rows of cells are formed in the same manner as those of FH414. They are deeply-scored, by knife. No specially marked squares are evident. If the irregular-numbered formula is borne in mind, and on counting the number of squares in the longest surviving row, this board must have formed an 11x11 grid at the very least (though like its FH counterpart, the outer row may have been superfluous to the needs of the game, and a 9x9 grid of squares thereon may have formed the true playing area).

Reverse side: This is severely damaged, though there do appear to be scored lines hereon. There are three short, quite deeply cut parallel lines which form a row which might conceivably be recognizable as short lengths of the three main lines composing a *merels* frame or lattice, as well as some fainter, though equally regularly spaced lines.

Phase 5.

PLATES

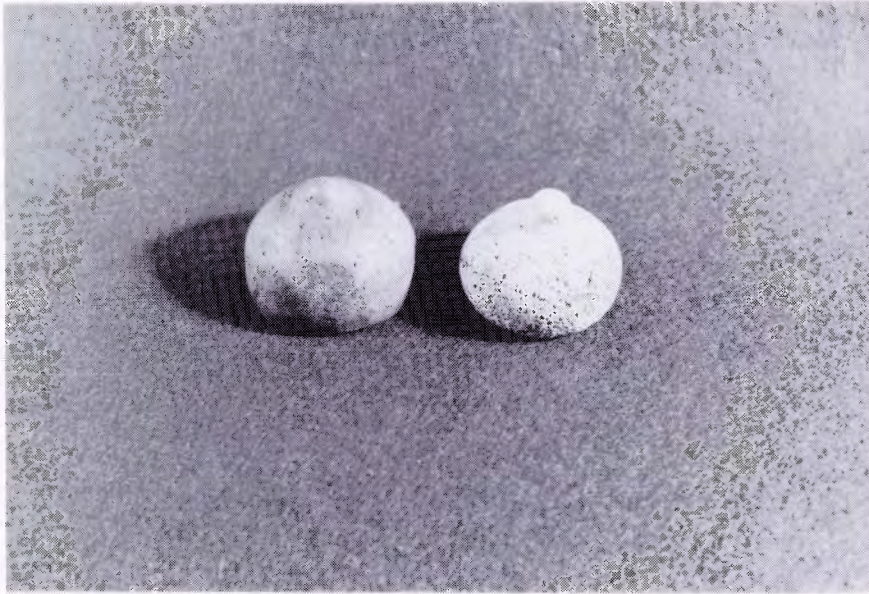


Plate 1

Bone hemispherical pieces.

Plate 2

Broken hemispherical and piriform pieces of jet.

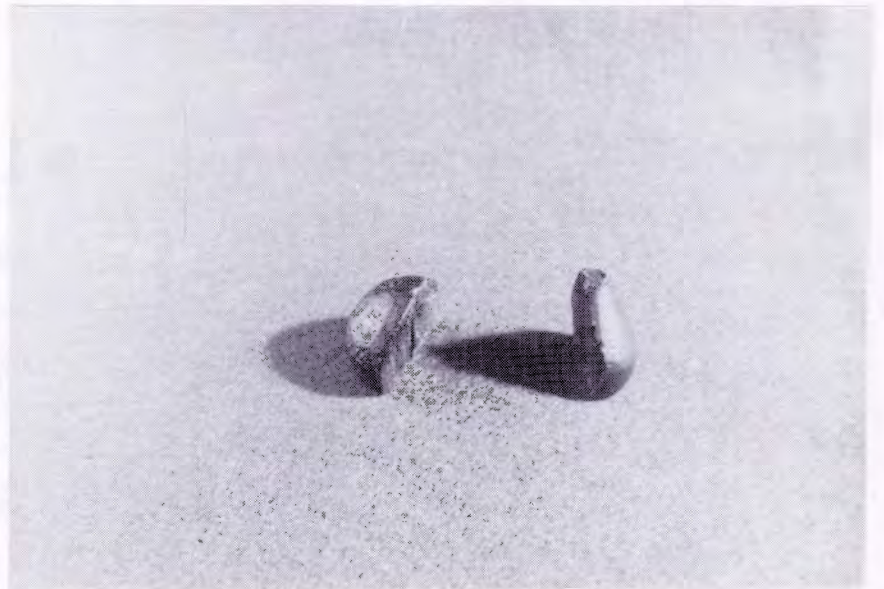


Plate 3

*Varieties of hemispherical and piriform pieces.
From left: 2 bone hemispherical, 1 ivory piriform rough-out, 1 jet piriform, 6 large and small ivory and 1 antler piriform, 2 modified piriform pieces reused as spindle-whorls (?)*

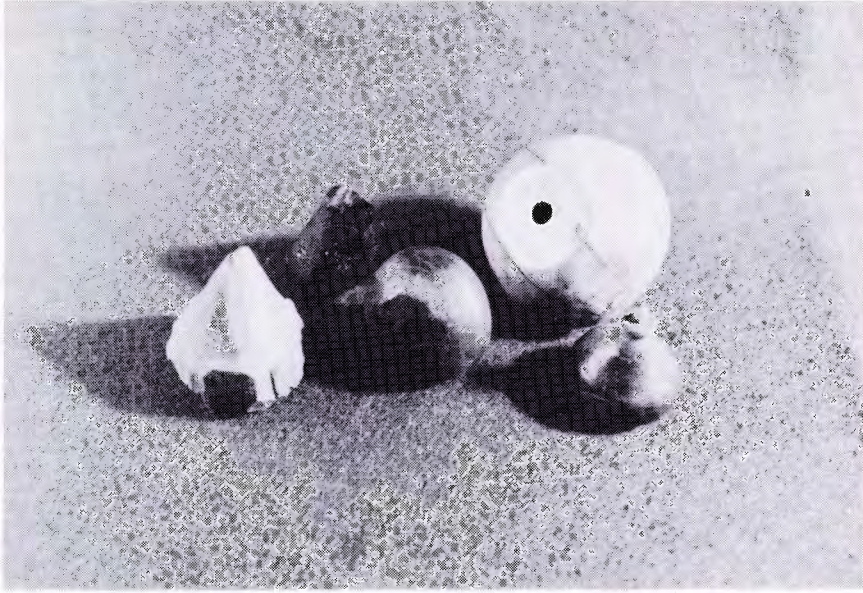


Plate 4

Piriform pieces. From left: ivory rough-out, showing pare-marks and cortex; jet fragment; typical large and small ivory pieces, showing flat perforated base and flanged and pointed top.



Plate 5

Chess pieces of wood from the Library Site (FBK). From left: abstract bishop, abstract king, abstract king/queen, naturalistic king, various pawns?



Plate 6

*The chess-king -
front, side and rear*



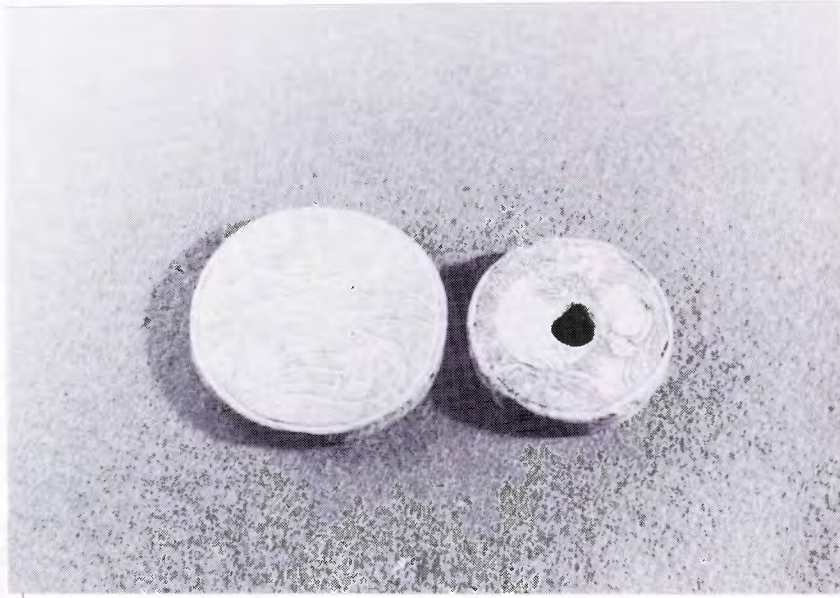


Plate 7

Bone disc with bird motif, and (reused) antler disc with Urnes beast.



Plate 8

Various discs and dice. From left: 2 bone discs with typical dot-and-circle motifs; "Urnes" disc; half a jet disc; "Bird-disc"; dice of ivory and jet with silver-inlay; 2 decorated bone discs and 2 decorated wooden discs.

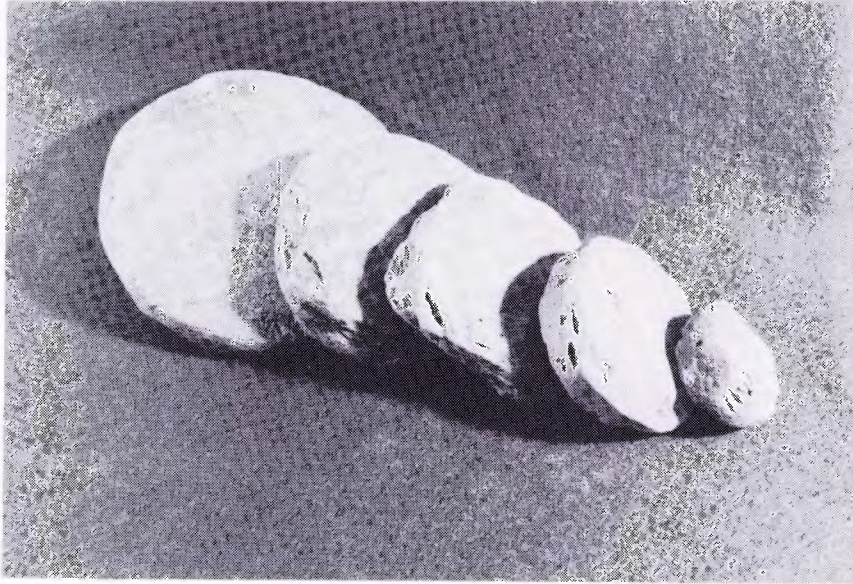


Plate 9 *Assemblage of stone discs.*



Plate 10 *Jet dice with silver-inlaid "eyes".*

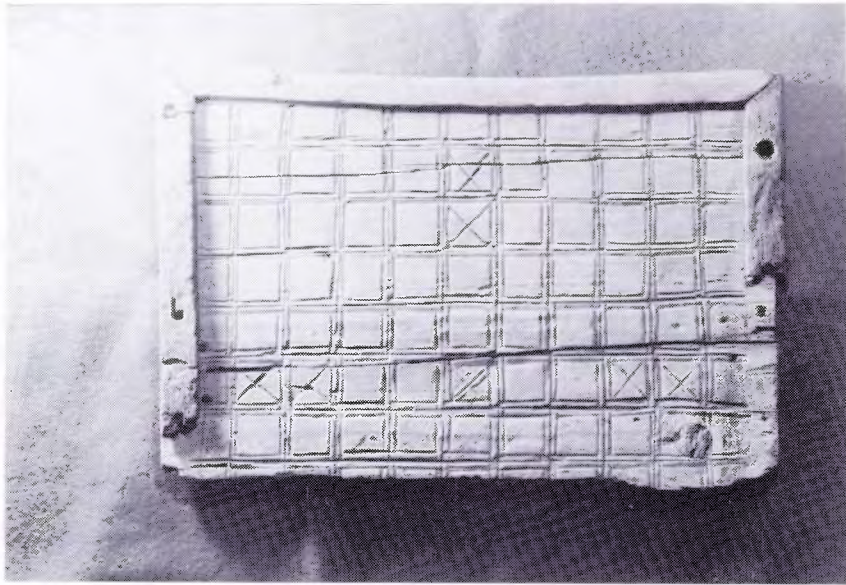
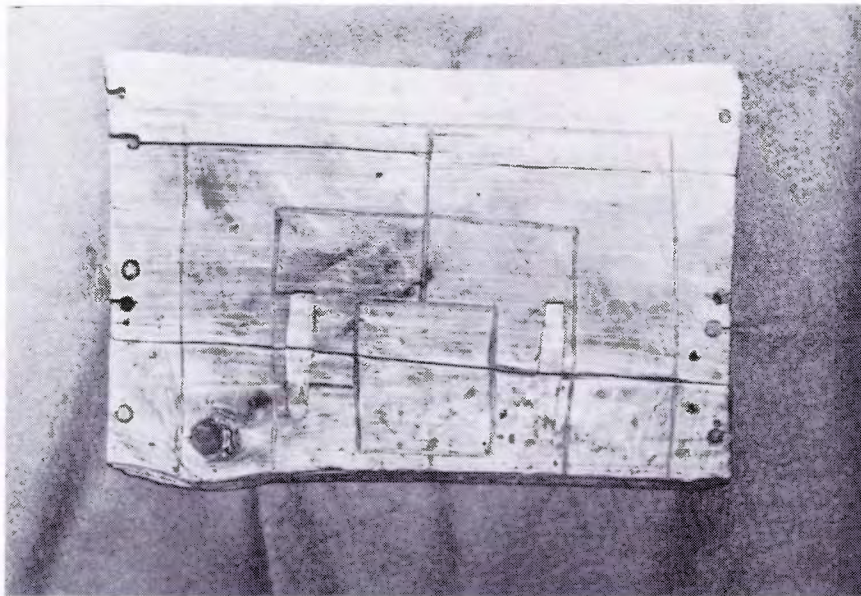


Plate 11

Combined hnefetafl and merels gaming-board: front and back.



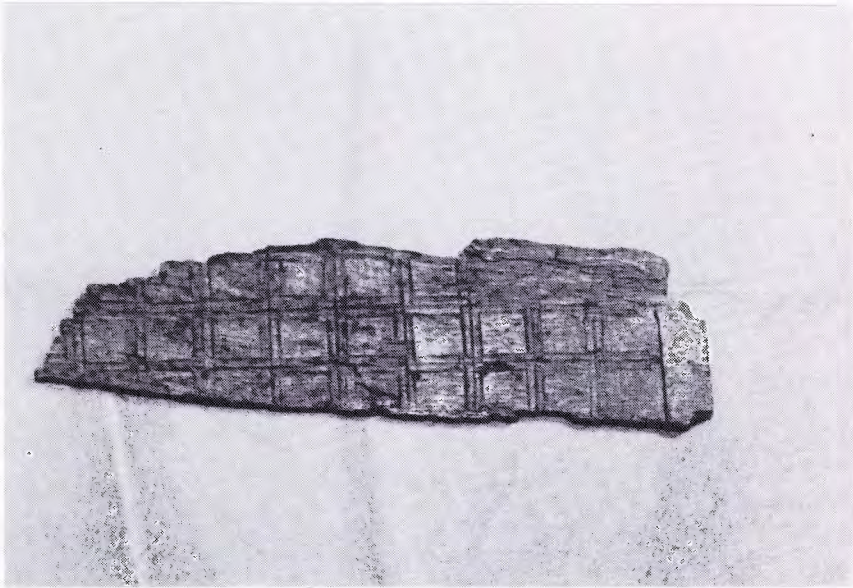


Plate 12

Burnt fragment of hnefetafl gaming-board (with merels on back?): front and back.

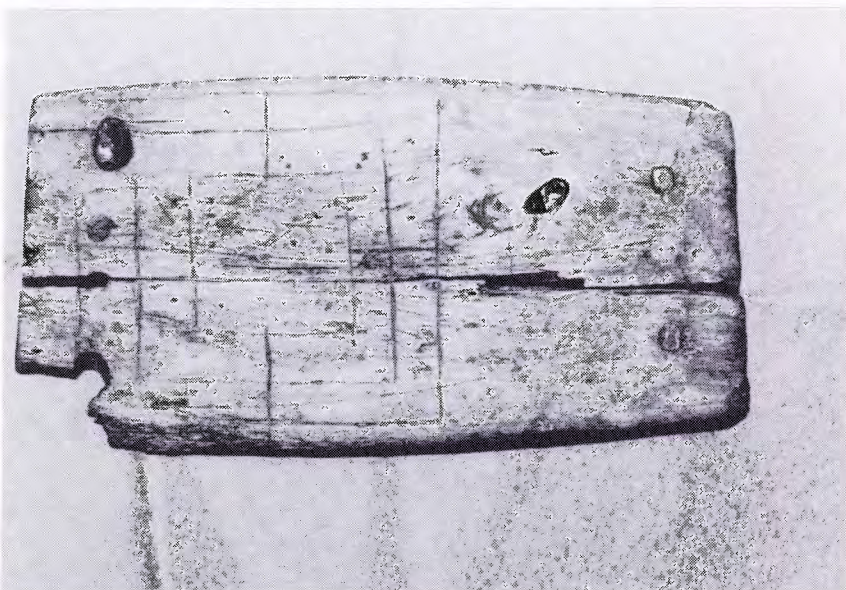
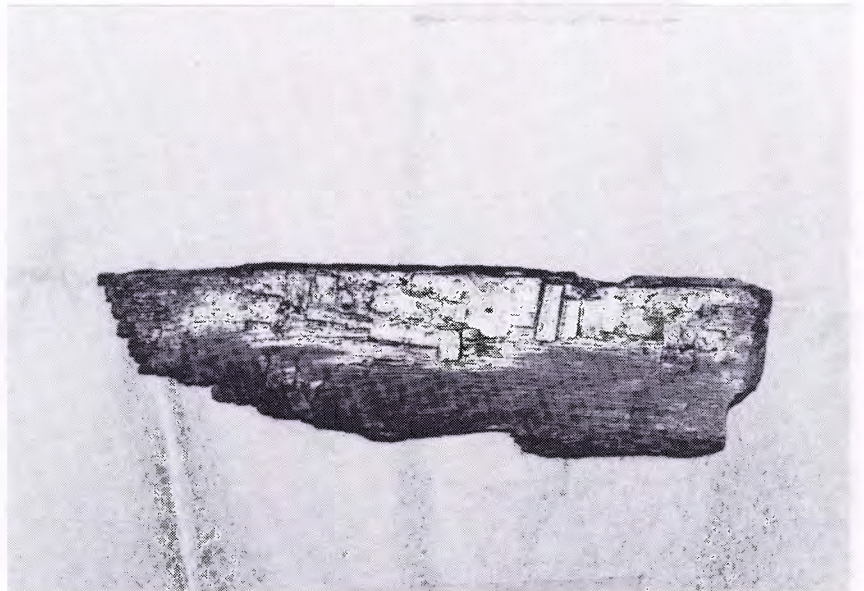


Plate 13

Wooden seat with merels "frame" inscribed.

BIBLIOGRAPHY.

- Ambrosiani, K. 1981 Viking-Age combs, comb making and comb makers. Stockholm Studies in Archaeology 2. Stockholm.
- Amsterdam Historical Museum 1977 Opgravningen in Amsterdam. Amsterdam.
- Arbman, H. 1940 & 1943 Birka I. Die Gräber. KVHAA. Stockholm.
- Ard-Mhúsaem na h-Éireann 1973 Viking and Medieval Dublin. Catalogue of Exhibition.
- Beckwith, J. 1972 Ivory carvings in Early Medieval England. London.
- Bell, R.C. 1960 Board and table games from many civilizations. London.
- Berglund, L. 1970 Hnefetafl - en gåta? In Saga och Sed, Kunglige Gustav Adolfs Akademiens årbok, 1970. Uppsala.
- Bergquist, U. 1989 Gjutning och smide. Metallhantverkets utveckling i Trondheim ca. 1000 - ca. 1350. Meddelelser 16. Riksantikvaren, Utgravningskontoret for Trondheim. Trondheim.
- Blomquist, R and Mårtensson, A.W. 1963 Thulegravningen 1961. *Archaeologica Lundensia II*. Lund.
- Bryggens Museum 1977 Terningen er kastet. Bergen.
- Bryggens Museum 1978 Handbook to the Cultural History of the Middle Ages. Bergen.
- Bøe, J. 1940 Norse Antiquities in Ireland (H. Shetelig, ed.) Viking Antiquities in Great Britain and Ireland, 3. Oslo.
- Christophersen, A. et al. 1988 Utgravning, kronologi og bebyggelsesutvikling. Meddelelser 13. Riksantikvaren. Trondheim.
- " " 1989 Excavation, Chronology and Settlement Development. Meddelelser 17. Riksantikvaren. Trondheim.
- Colardelle, R. and Colardelle, M. 1980 L'habitat médiéval immergé de Collettiève a Charavines (Isère). Premier bilan des fouilles, Archéologie Médiévale 10, 107-269.

- Curle, A.O., Olsen, M, Shetelig, H. 1954 Civilisation of the Viking Settlers in Relation to their Old and New countries (H. Shetelig ed. Viking Antiquities in Great Britain and Ireland, 6). Oslo.
- Dalton, O.M. 1927 Early chessman of whale's bone excavated in Dorset, Archaeologia 77, 77-86.
- Dunning, G.C. 1965 Heraldic and decorated metalwork and other finds from Rievaulx Abbey, Yorkshire, Antiquaries Journal 45, 57-63.
- Eales, R. 1985 Chess. The History of a Game. London.
- Eales, R. 1986 The Game of Chess: An Aspect of Medieval Knightly Culture: in Harper, Bill C. and Harvey, R. (eds.) The ideals & practice of medieval knighthood. Bury St. Edmunds.
- Fiske, W. 1905 Chess in Iceland. Florence.
- Flodin, L. 1989 Kammakeriet i Trondheim. En kvantitativ analys av horn- och benmaterialet från Folkebibliotekstomten. Meddelelser 14. Riksantikvaren. Trondheim.
- Fuglesang, S. Horn 1981 Woodcarvers - professionals and amateurs- in eleventh-century Trondheim. Economic aspects of the Viking Age. D.M. Wilson and M.L. Caygill eds. (British Museum Occasional Papers, Vol. 30, pp. 21-26).
- " " 1985 Woodcarving from Oslo and Trondheim and some reflections on period styles. Universitets oldsaksamlings skrifter nr. 5, pp. 93-108. Oslo.
- Goldschmidt, A. 1918 (1970 reprint) Die Elfenbeinskulpturen aus der Romanischen Zeit XI-XIII Jahrhundert. Dritter Band. Berlin.
- " " 1926 (1975 reprint) Die Elfenbeinskulpturen aus der Romanischen Zeit XI-XIII Jahrhundert. Vierter Band. Berlin.
- Graham-Campbell, J. 1980 Viking Artefacts. A Select Catalogue. London.
- Grieg, S. 1933 Middelalderske byfunn fra Bergen og Oslo. Oslo.
- Hagland, J.R. 1986 Runefunna: Ei kjelde til handelen si historie. Meddelelser nr. 8. Riksantikvaren. Trondheim.
- Hall, R.A. 1984 The Viking Dig. The excavations at York. London.
- Helle, K. 1974 Norge blir en stat 1130-1319. Handbok i Norges historie. Bind 3. Bergen - Oslo - Tromsø.

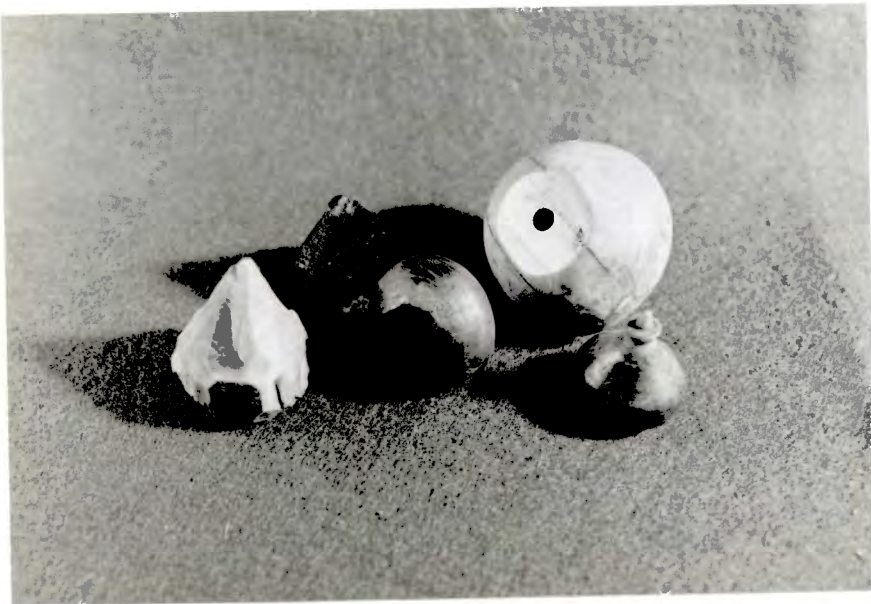
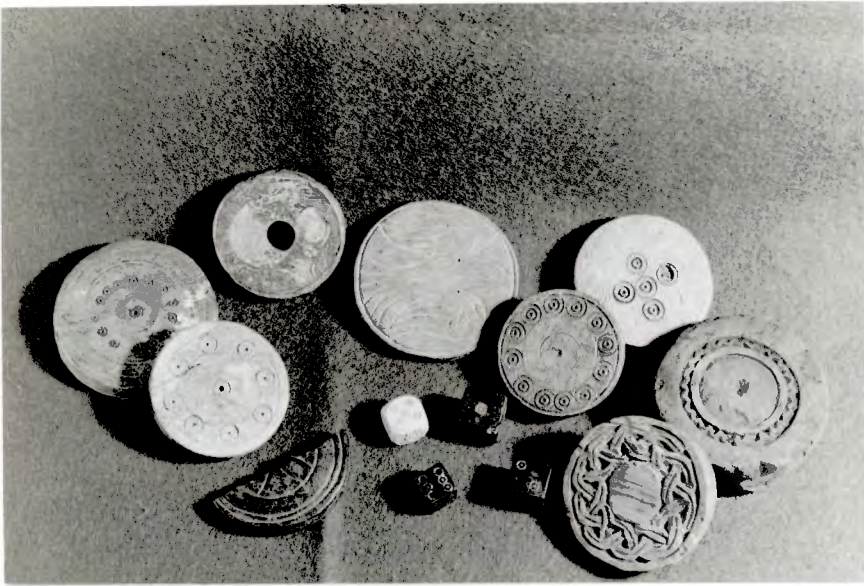
- Helle, K. 1982 Bergen bys historie. I.
- Hellevik, A 1965 (transl.) Kongspegelen. Oslo.
- Hencken, H. O'N 1933 A Gaming Board of The Viking Age. In Acta Archaeologica Vol. IV, 85-104.
- Hildebrand, H. 1884-1898 Sveriges medeltid. Kulturhistorisk skildring, andra delen. Stockholm.
- Keene, D.J. 1982 Rubbish in medieval towns. In Environmental Archaeology in the Urban Context. CBA Research Report - 43. R.A. Hall and H.K. Kenward (eds.). London.
- Kulturhistorisk Leksikon. 1980/81 Various: Brettspill. Rävspel. Tärningspel.
- Lang, J.T. 1988 Viking-Age Decorated Wood. A Study of Ornament and Style (Medieval Dublin Excavations, 1962-1981. Series B; v. 1). Dublin.
- Liddell, D.M. 1938 Chessmen. London.
- Long, C.D. 1975 Excavations in the medieval city of Trondheim, Norway. Medieval Archaeology, Vol. 19, 1-32.
- Lüdtke, H. 1989 Wooden faces from Schleswig. Archaeology and the urban economy: Festschrift to Asbjørn E. Herteig. Arkeologiske skrifter No. 5, pp. 194-8. Historisk museum. Universitet i Bergen.
- MacGregor, A. 1973 Interim 1, No. 1. Bulletin of the York Archaeological Trust.
- " 1978 Industry and commerce in Anglo-Scandinavian York. In Viking Age York and the North. CBA Research Report 27. R.A. Hall (ed.). London.
- MacGregor, A. 1985 Bone, Antler, Ivory and Horn. The technology of skeletal materials since the Roman period. London.
- M^cLees, C. and Ekroll, Ø. 1990 Forthcoming. A Medieval Ivory Chess Piece from the 12th-century Church of St. Olav, Trondheim, Norway. Medieval Archaeology, vol. 34.
- Meddelelser nr. 2-12 Various authors. Stratigraphical surveys of individual excavated areas on Folkebibliotekstomt. Riksantikvaren. Trondheim.
- Moorhouse, S. Non-dating uses of pottery. In Medieval Ceramics Vol. 10 (ed. C. Brooks and A. Mainman).

- Murray, H.J.R. 1913 A History of Chess. Oxford.
- " 1941 The medieval games of Tables. In Medium Ævum Vol. X. No. 2.
- " 1952 A History of Board Games Other than Chess. Oxford.
- Mårtensson, A.W. & Wahlöö, C. 1970 Lundafynd. Archaeologica Lundensia IV. Karlshamn.
- Nicolaysen, N. 1882 Langskibet fra Gokstad ved Sandefjord. Oslo.
- Nordeide, S.W. 1989 "...de beste bønder i kjøbstæden...". En funksjons- og aktivitetsanalyse basert på gjenstandsmaterialet. Meddelelser 20. Riksantikvaren. Trondheim.
- Omberg, U. 1979 Med terning og tafl i nord-norge gjennom 1200 år. In Ottar 115. Tromsø.
- Persson, J. 1976 Spel och dobbel. In Mårtensson, A.W., Uppgrävt förflutet för PK banken i Lund. Archaeologica Lundensia VII. Malmö.
- Petersen, J. 1914 Brettspillet i Norge i forhistorisk tid. Oldtiden 4, 75-92.
- Reed, I.W. 1990 Forthcoming. 1000 Years of Pottery. An analysis of pottery: trade and use. Meddelelser 25. Riksantikvaren. Trondheim.
- Reynert, P.K. 1977 Sjakkongen fra Trondenes. In Ottar 98, 36-38.
- Ritchie, A. 1977 Excavation of Pictish and Viking-age farmsteads at Buckquoy, Orkney. Proceedings of the Society of Antiquaries of Scotland, Vol. 108, 174-227.
- Schia, E. 1987 Bygården. In Schia, E. (ed.), De arkeologiske utgravninger i Gamlebyen, Oslo. Bind 3. Øvre Ervik.
- Shetelig, H. 1944 Smykker av jet i norske vikingefunn. In Bergens museums årbok 1944.
- Spencer, B. 1985 Fifteenth-century collar of SS and hoard of false dice with their container, from the Museum of London. Antiquaries Journal, 65, 449-453.
- Stevens, F. 1933 An early chessman from Old Sarum. A medieval chess piece found in Salisbury. The Antiquaries Journal 13, 308-12.

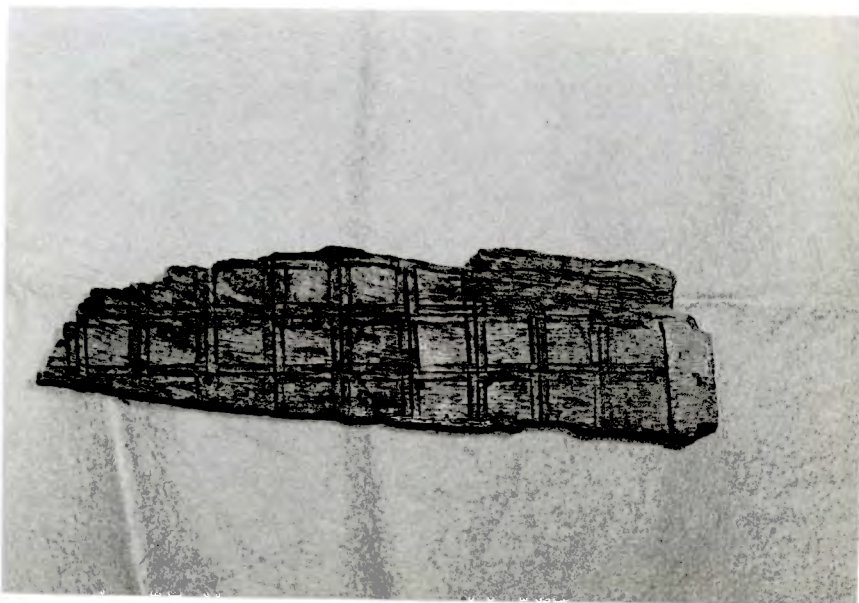
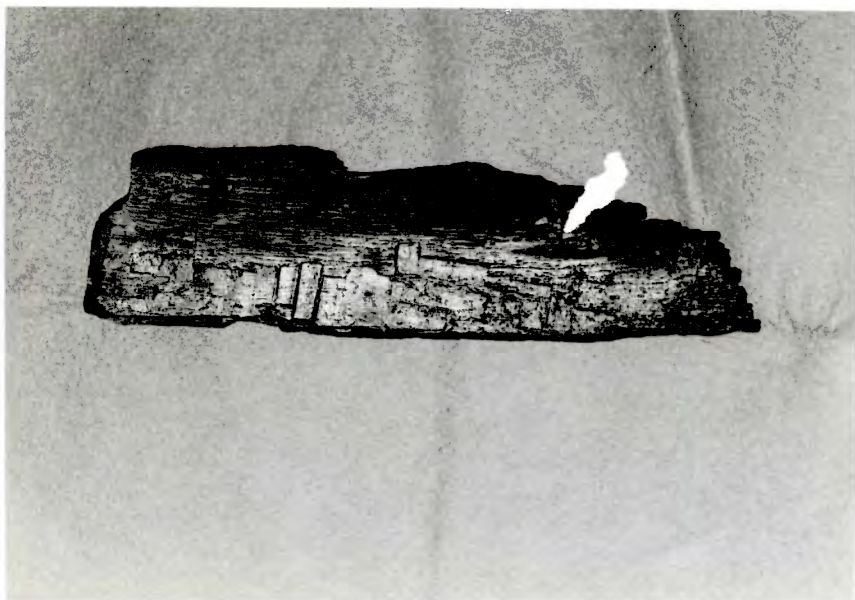
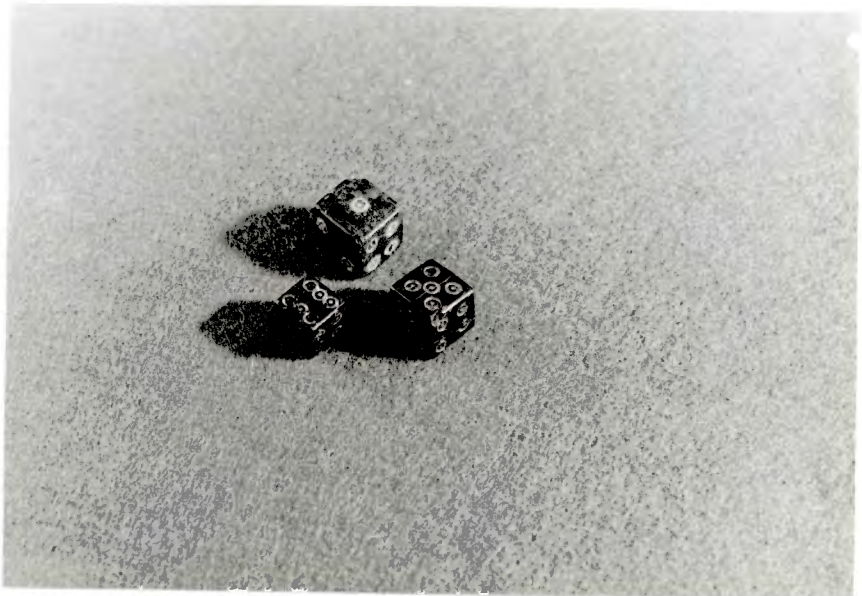
- Stewart, I. and Watkins, M.J. 1984 An 11th-century bone tabula set from Gloucester. In Medieval Archaeology 26, 185-190.
- Stewart, I. 1988 Note on the tabula set: in Ravill, T., Excavations on the Site of the Early Norman Castle at Gloucester, 1983-4. Medieval Archaeology, Vol. 32, pp. 31-35.
- Stratford, N. 1987 Gothic Ivory Carving in England. In J. Alexander - P. Binski (eds.) Age of Chivalry. Art in Plantagenet England 1200-1400. London.
- Taylor, M. 1986 The Lewis Chessman. British Museum Publications. London.
- Vince, A. 1987 The study of pottery from urban excavations. In Urban Archaeology in Britain. CBA Research Report 61. Schofield, J. and Leech (eds.). London.
- Waterman, D.M. 1959 Late Saxon, Viking and early medieval finds from York, Archaeologia 97, 59-105.
- Wheeler, R.E.M. 1927 London and the Vikings. London Museum Catalogues, No. 1. London.
- Wichmann, H&S. 1964. Chess. The Story of Chess pieces from Antiquity to Modern Times. London.
- Øye, I. 1988 Textile Equipment and its working environment, Bryggen in Bergen c. 1150-1500. The Bryggen Papers. Main Series Vol. 2. Bergen.

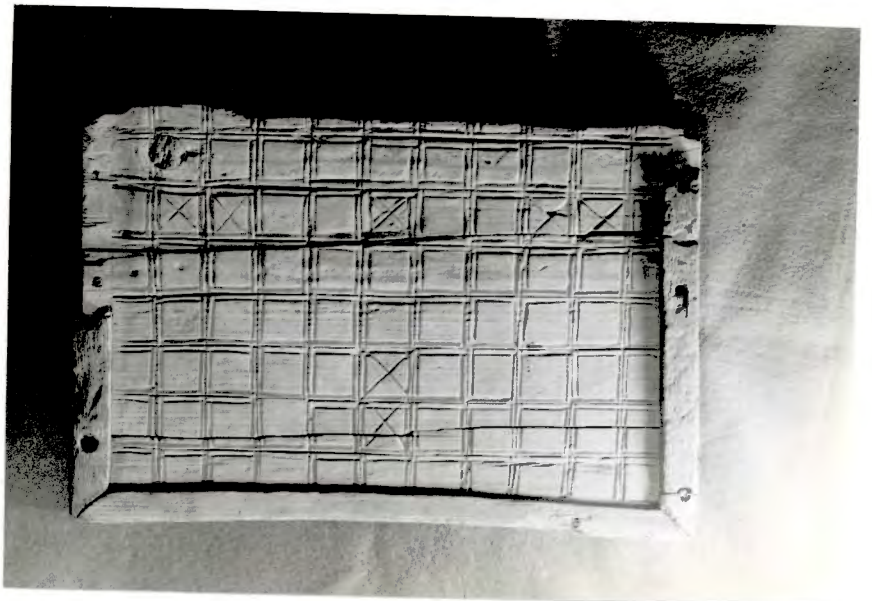
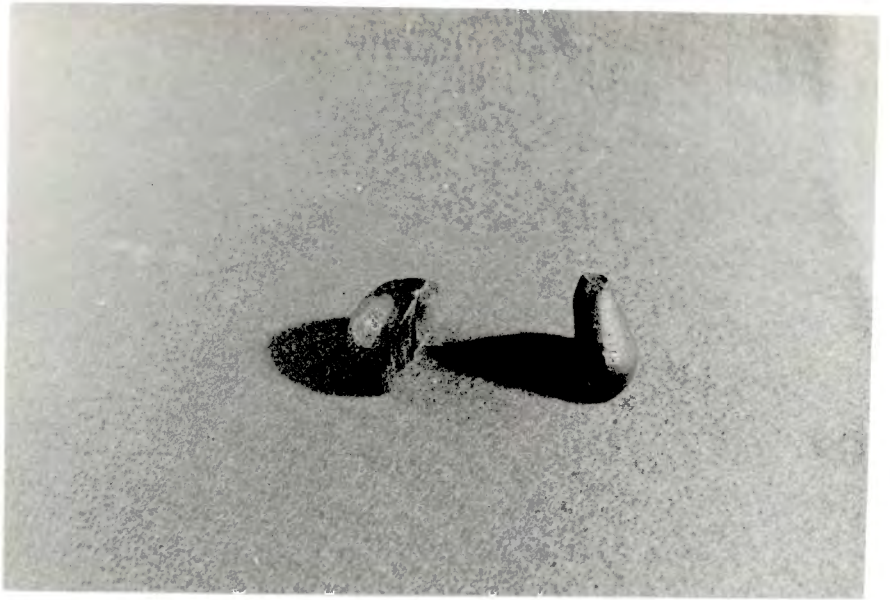
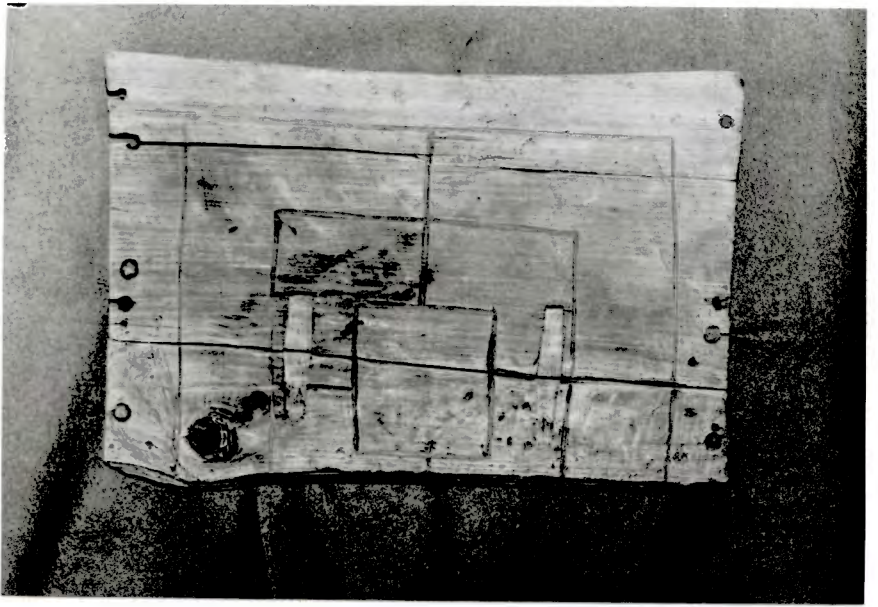
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