

Content

Retrospective Introduction	1
Acknowledgements	6
1. Chipped industry	7
1.0. Introduction	7
1.0.1. Neolithic chipped industry (SI)	7
1.0.2. The Neolithic chipped industry from Bylany	7
1.0.3. Situational analysis of the chipped industry	7
1.1. Formal classification of SI: cores, flakes, blades	9
1.1.1. Principal characteristics of blade forms (length and width)	9
1.1.2. Principal characteristics of flake forms (length, width)	10
1.1.3. Primary characteristics of blade and flake sizes (weight, length)	10
1.1.4. Primary characteristics of chip and core sizes (weight, length)	11
1.1.5. Formal classification of blades	11
1.1.6. Formal classification of flakes	12
1.1.7. The chronological variability of formal classes	12
1.2. The economics of raw materials use and the production of chipped artefacts. Relationships to the environment: the adaptability of raw materials and basic forms	13
1.2.1. Adaptation of production and the use of basic forms	13
1.2.2. Raw materials and their processing	14
1.2.3. The volume of chipped industry in houses with simple and double mid-sections	14
1.2.4. Basic forms during phases 8 - 11	14
1.2.5. Basic forms in households of phases 8 - 11	15
1.3. The informative content of the functional categories of the chipped industry	15
1.3.1. Genotypes in settlement phases 8 - 11	15
1.3.2. Phenotypes in households	16
1.3.3. The quality of the chipped industry in individual houses	16
1.4. The classification of the primary functional categories of chipped industry within the subsistence system, and division of labour	18
1.4.1. Design of the working edge (edge angle)	18
1.4.2. Wear (gloss)	20
1.4.3. Functional classification	20
1.4.4. Chronological variability of functional classes	20
1.5. Identification of activities within households, and the stability and variability of economic activities	20
1.5.1. The economy of raw material procurement	20
1.5.2. Identification of activities in households	22
1.5.3. Implement function, gender and the age of household members	22
1.6. The information content of the chipped industry from the point of view of technique continuity and discontinuity, and the securing of subsistence between and during the phases	23
1.6.1. Functional classes within the space of the phases	23
1.6.2. Functional classes within the space of households	24
1.7. The style of chipped industry technology in the context of ideas and imagination	25
1.7.1. Direction and strength of percussion	25
1.7.2. The style of retouch	25
1.7.3. Stylistic classification of blades	26
1.7.4. The chronological variability of the stylistic classification	26
1.8. The symbolic value of the chipped industry and kinship or labour groups in different stylistic presentations	26
1.8.1. Blade and flake prototypes	26
1.8.2. Chipped industry prototypes in phases and households	27
1.8.3. Awls and arrowheads	27

1.9. The formation and preservation of cultural tradition in the chipped industry	27
1.9.1. Stylistic classes of blades in the space of phases	27
1.9.2. Stylistic classes of blades in the spaces of households	29
1.9.3. Information and communication from the point of view of the chipped industry	29
2. Polished industry	39
2.0. Introduction	39
2.0.1. Study of the polished industry (BI)	39
2.0.2. The study of the polished industry from Bylany	39
2.0.3. Introduction to the situational analysis of the polished artefacts	39
2.1. Primary functional classifications: adzes and axes	41
2.1.1. Primary characteristics of shape (length and width)	41
2.1.2. Primary characteristics of size (weight)	41
2.1.3. Formal classification	42
2.1.4. The chronological variability of formal classes	42
2.2. The economics of raw material procurement and the production of polished artefacts. Relationships with the environment: the adaptability of implements	42
2.2.1. The adaptability of production and usage (basic forms)	42
2.2.2. Raw materials and their processing	42
2.2.3. Number of artefacts in houses with simple and double mid-sections	43
2.3. The informative content of polished industry functional categories. The organisation of pro duction and use: individual variability	44
2.3.1. Genotypes in the space of settlement phases	44
2.3.2. Phenotypes in the space of households	44
2.3.3. The quality of the industry in particular houses	45
2.4. Classification of primary functional categories in the subsistence system, and division of labour. Polished industry taphonomy	45
2.4.1. The design of the working edge (gamma angle)	45
2.4.2. Wear (adzes and axes)	47
2.4.3. Functional classification	47
2.4.4. The chronological variability of functional classes	47
2.5. The identification of household activities from polished artefacts. The stability and variability of economic activities	47
2.5.1. Ratio of adzes and axes within phases	47
2.5.2. Identification of activities in households	48
2.5.3. The number of implements and number of inhabitants	48
2.6. Informative content regarding continuity and discontinuity in polished artefacts	49
2.6.1. Functional classes within the space of phases	49
2.6.2. Functional classes within the space of houses	50
2.7. The context of ideas and imagination. The style of polished stone industry technology	50
2.7.1. Symmetry of plan (omega angle)	50
2.7.2. Symmetry of elevation	50
2.7.3. Symmetry in section	51
2.7.4. Stylistic classification of adzes	51
2.7.5. Stylistic classification of axes	51
2.7.6. The chronological variability of stylistic classification	52
2.8. Kinship or work groups in the different stylistic displays of polished artefacts	52
2.8.1. Adze and axe prototypes in the space of households	52
2.8.2. Bored non-practical artefacts	52
2.9. The formation and preservation of the cultural tradition of polished artefacts	54
2.9.1. Stylistic adze classes in the spaces of phases and households	54
2.9.2. Stylistic classes of axes in the spaces of phases and houses	55
2.9.3. Information and communication as seen through the polished industry	55
3. Double querns	73

3.0. Introduction	73
3.0.1. Neolithic querns	73
3.0.2. Neolithic querns from Bylany	73
3.0.3. Situational analysis of Neolithic querns	74
3.1. Basic functional classification: upper and lower stones, refuse	74
3.1.1. Metrics of double querns	74
3.1.2. Metrics of the lower stones	76
3.1.3. Metrics of upper stones	77
3.1.4. Formal classification of double querns	77
3.1.5. The chronological variability of the formal classes	77
3.2. Economics of the raw material procurement and quern production	78
3.2.1. Quernstones as refuse within households	78
3.2.2. Local and zonal raw materials of the upper stones	79
3.2.3. The proportions of querns in houses with simple and double mid-sections	79
3.3. Organisation of quern production and their use	80
3.3.1. Formal types within phase space as genotypes	80
3.3.2. Formal types in complexes of phases 19 to 22 as phenotypes	80
3.3.3. Quality of querns in individual houses and phases	82
3.4. Classification of basic functional categories of grinding slabs in the subsistence system, and divisions of labour	82
3.4.1. Design of the working surface	82
3.4.2. Working plane use/wear	83
3.4.3. Functional classification	84
3.4.4. The chronological variability of functional classes	84
3.5. Identification of activities in the framework of complexes	84
3.5.1. The economics of the procurement and use of raw materials	84
3.5.2. Identification of household activities	85
3.5.3. The indicative value of querns as an index of the age of women in the household	86
3.6. Informative content from the point of view of continuity and discontinuity in techniques for ensuring subsistence	87
3.6.1. Functional classes within the space of the phases	87
3.6.2. Functional classes in the spaces of complexes	87
3.7. The style of production technology for both parts of the querns in the context of ideas and the imagination	88
3.7.1. The symmetry of lower and upper stones	88
3.7.2. Stylistic classification of the lower stones	89
3.7.3. Stylistic classification of the upper stones	89
3.7.4. The chronological variability of stylistic classes	89
3.8. Kin and working groups in stylistically different presentations of querns	90
3.8.1. Quern prototypes	90
3.8.2. Prototypes within the spaces of phases and households	90
3.8.3. The index value of quernstones as a symbol of life	91
3.9. The historical content of the category of quernstones in terms of the expression and preservation of cultural tradition	91
3.9.1. Stylistic classes in the phases	91
3.9.2. Stylistic types in the space of houses	91
3.9.3. The informative value of quernstones	92
4. Vessels as implements	99
4.0. Principles of Linear Pottery Culture ceramics morphology	99
4.0.1. Classification of forms	99
4.0.2. The morphology of the Bylany ceramics	99
4.0.3. Situational analysis of forms	99
4.1. Principal classification of forms	101

4.1.1. The forms of the earliest examples of pottery	101
4.1.2. The characteristic points of forms	101
4.1.3. Descriptive system for vessels	101
4.1.4. Vessels of the Linear Pottery Culture	101
4.1.5. Anatomy of principal forms	104
4.1.6. Ratio of individual principal forms	104
4.1.7. Thickness of the vessel walls	105
4.1.8. Average height and width of vessels	105
4.2. The archaeological and systems context of pottery production	106
4.2.1. Vessel proportion as a cognitive attribute	106
4.2.2. Classification of primary forms	107
4.2.3. Adaptability of the range of forms	107
4.2.4. Primary forms within site refuse	107
4.2.5. Refuse in household complexes	107
4.2.6. Iconography of forms	108
4.3. The informative content of primary forms	108
4.3.1. Variability between phases: phenotypes and genotypes	108
4.3.2. Genotypes and the role of complexes in ceramic production	109
4.3.3. Phenotypic variability between complexes	110
4.3.4. Skill coefficient	110
4.3.5. Genotypes in site development	110
4.3.6. Phenotypes of synchronic complexes	110
4.3.7. Production circles?	111
4.3.8. Production continuity	114
4.4. Classification of the principal functional categories of pottery in the subsistence system and division of labour	115
4.4.1. Rim angle	115
4.4.2. Orifice diameter	115
4.4.3. Vessel volume	116
4.4.4. Knobs, handles, projections	117
4.4.5. Vessel feet	117
4.4.6. Pedestals and feet	117
4.4.7. Material and tempering	118
4.5. Identification of activities within complexes	119
4.5.1. Ethnographically proven classifications	119
4.5.2. Security and accessibility of content (functional classification SHASI)	119
4.5.3. Pot capacity (the SHAVO alternative classification)	119
4.5.4. Pot size and shape as an index of household activities	120
4.5.5. The coefficient of portability	122
4.5.6. Stability	123
4.5.7. Life-span of pottery	123
4.6. The informative content of functional classification from the point of view of the continuity and discontinuity of the subsistence process	124
4.6.1. Continuity of vessel function within the phases	124
4.6.2. Variability of vessel functions within households	125
4.6.3. Distribution of functional sets within synchronic households	126
4.6.4. Social interactions between households and phases	126
4.7. The context of ideas and imagination	128
4.7.1. The cognitive significance of pottery proportions	128
4.7.2. Rim preparation	130
4.7.3. Composition: real and symbolic ligatures	130
4.7.4. The quality of technological processing and surface finishing	131
4.8. The social groups in different stylistic manifestations	132

4.8.1. Prototypes as a symbol of prestige status among household members	132
4.8.2. Houses with a predominance of symbolic ligature	132
4.9. The creation and preservation of cultural tradition	135
4.9.1. Prototypes in the process of information exchange	135
4.9.2. Composition as a message from our ancestors	136
4.9.3. The tradition of technological style in Neolithic pottery	136
4.9.4. The geometry of Neolithic forms and lasting traditions	137
5. Pottery decoration	149
5.0. Introduction	149
5.0.1. The study of linear decoration	149
5.0.2. The decoration of Linear Pottery Culture ceramics from Bylany	149
5.0.3. Situational analysis of linear decoration	150
5.1. Primary classification of decoration	150
5.1.1. The decoration of the early pottery	150
5.1.2. Technical decoration	152
5.1.3. Incised linear decoration	152
5.1.4. Relief decoration	152
5.1.5. Ceramics with a red slip	152
5.1.6. Painted pottery	153
5.1.7. Other types of decoration	153
5.1.8. Undecorated pottery	153
5.1.9. Decoration of fine and coarse wares	153
5.1.10. Stability of decoration during the development of the LnK	154
5.2. The archaeological and systemic contexts of pottery decoration	154
5.2.1. Distribution of decoration in site refuse	154
5.2.2. Primary decorative categories in the spaces of phases, households and isolated pits ...	155
5.2.3. Components of linear decoration within the spaces of phases, households and isolated pits	155
5.2.4. The adaptability of decoration to conditions in settlement areas	156
5.2.5. Pottery decoration in the context of Neolithic decorativeness	156
5.3. The informative content of the formal categories	157
5.3.1. Genotypes of decoration within the phases	157
5.3.2. Decorative difficulty	157
5.3.3. Decorative difficulty in synchronic households	158
5.4. Classification of primary decorative categories within the subsistence system and division of labour	158
5.4.1. The design of linear pottery	158
5.4.2. Frequency (numericity)	158
5.4.3. The chronological variability of frequency	160
5.4.4. Linearity	160
5.4.5. The chronological variability of linearity	160
5.4.6. Lines under the rim	161
5.4.7. Chronological variability of lines under the rim	161
5.5. Identification of social groups within the households	161
5.5.1. Numericity and linearity within the space of phases	161
5.5.2. Numericity and linearity in the space of households in phases 1-7	162
5.5.3. Numericity and linearity in the space of phases 8-17	162
5.5.4. Numericity and linearity in the space of households in phases 18-25	163
5.5.5. Changes in the social perception of linear design	163
5.5.6. The sign value of design shape (linearity)	165
5.5.7. The sign value of lines under the rim	165
5.6. The informative content of design from the point of view of continuity and discontinuity in the interaction of social groups	166

5.6.1. Lines under the rim within the space of households	166
5.6.2. The continuity of complementary decorative elements	166
5.6.3. The continuity of principal motifs	167
5.6.4. Pottery sociology	167
5.7. The context of ideas and imagination	169
5.7.1. The style of the incised decoration	169
5.7.2. The chronological variability of incision style	169
5.7.3. Style of notes	170
5.7.4. The chronological variability of notes	170
5.8. The kinship or labour groups in different stylistic manifestations	172
5.8.1. Households of the earliest LnK period and incision style	172
5.8.2. Households of the middle LnK period and stylistic techniques	173
5.8.3. Households of the later and terminal LnK periods and stylistic techniques	174
5.9. The constitution and preservation of tradition	175
5.9.1. The composition of linear decoration	175
5.9.2. Cultural tradition in linear composition	175
6. Houses of the Linear Pottery Culture	187
6.0. Introduction	187
6.0.1. Neolithic architecture in Temperate Europe	187
6.0.2. Neolithic architecture at Bylany	188
6.0.3. Situational analysis of Neolithic architecture	188
6.1. Primary classifications: small, medium and large	190
6.1.1. Primary classification of the ground-plan (length and width)	190
6.1.2. Primary characteristics of the shape of the ground-plan (index), and the length of a house's mid-section	190
6.1.3. Formal classification of houses	191
6.1.4. The chronological variability of the ground-plans	191
6.2. Economy of house construction	192
6.2.1. Adaptation of construction and house models	192
6.2.2. Construction materials and their volume	194
6.2.3. The inner structure in the phases	194
6.2.4. The construction of walls in the phases	195
6.2.5. House structures within phases and their sturdiness	195
6.2.6. Estimation of material consumption for the construction of houses	196
6.3. The informative content of the formal categories	196
6.3.1. Score of the labour used in building particular houses	196
6.3.2. The core of the ground-plan	197
6.3.3. Genotypes and phenotypes of ground-plans within the space of the settlement phases	197
6.4. Classification of the principal functional categories in the system of subsistence and labour division	198
6.4.1. The functional subdivision of buildings	198
6.4.2. The northern section	215
6.4.3. The mid-section	215
6.4.4. The southern section	215
6.4.5. Functional classification	216
6.4.6. The variability of functional classes	216
6.5. Identification of activities within households and phases	217
6.5.1. The economic efficiency of the buildings	217
6.5.2. The interpretation of activities in particular sections of the houses	218
6.5.3. The role of house parts according to gender and age	219
6.6. Informational content, from the point of view of continuity and discontinuity of shelter	220
6.6.1. Functional classes within the space of the phases	220
6.6.2. The efficiency of houses within the space of phases	220

6.7. The context of ideas and imagination	221
6.7.1. The orientation of houses	221
6.7.2. The style of the southern facade of the houses	222
6.7.3. The stylistic classification of houses	222
6.7.4. The chronological variability of stylistic classification	223
6.8. Kinship or labour groups in different stylistic manifestations	223
6.8.1. Prototypes of houses	223
6.8.2. Prototypes of houses within the phases	223
6.9. The informative significance of Neolithic architecture for creating and preserving cultural tradition	224
6.9.1. Stylistic classes of houses within the space of the phases	224
6.9.2. Information and communication within Neolithic architecture	224
6.9.3. The cultural tradition of the Neolithic house	226
7. The Linear Pottery Culture settlement area	235
7.0. Introduction	235
7.0.1. The concept of site in archaeology	235
7.0.2. Neolithic sites and archaeological theory	235
7.0.3. Current concepts and situational analysis	236
7.1. Primary functional classification: residential houses and their neighbours	237
7.1.1. The size and shape of a site according to the distance from each house to its nearest neighbour	237
7.1.2. The temporal dynamics of asynchronous house clusters	238
7.2. The economy of the building area in an environmental context	240
7.2.1. Groupings of synchronic houses	240
7.2.2. Space outside the houses	240
7.3. Informative content of functional categories	243
7.3.1. Individual houses, their development and rebuilding	243
7.3.2. House clusters, their development and relationships between the generations	244
7.4. Classification of primary functional areas in the settlement system according to a definite subsistence pattern and division of labour	244
7.4.1. Functional areas	244
7.4.2. Functional variability	245
7.5. The identification of activities within households and phases	245
7.5.1. The economic role of household and habitation components	245
7.5.2. Index of activities	246
7.5.3. Site demography	248
7.6. The informative content of continuity and discontinuity in subsistence patterns	248
7.6.1. Socio-economic structure within the phases	248
7.6.2. Socio-economic structure among the phases	249
7.7. Neolithic settlement style in the context of ideas and imagination	254
7.7.1. Symbolic attributes	254
7.7.2. Symbolic variability and the historical dynamics of the site area	255
7.8. Kinship or labour groups in different stylistic settlement manifestations	256
7.8.1. Information exchange within the phases	256
7.8.2. Information exchange between phases	256
7.9. The historical role of Neolithic houses and their grouping in the cultural landscape in creating and preserving cultural tradition	256
7.9.1. Site development: the site in a regional context	256
7.9.2. Site development in the context of the LnK	260
8. Life at the Neolithic site	265
8.1. The world of people and the world of artefacts (situational analysis)	265
8.2. A short history of the Bylany site (chronology)	268
8.3. People and their homes (houses and settlement)	273

8.4. The stone implements of men and women (chipped and polished industry, grindstones)	278
8.5. Kins, families and proximities (ceramic pottery and its decoration)	282
8.6. The heritage of the Linear Pottery Culture	285
Czech abstract - (Život na neolitickém sídlišti)	287
Svět lidí a svět artefaktů (situační analýza)	287
Stručná historie sídliště v Bylanech (chronologie)	289
Lidé a jejich obydlí (domy a sídliště)	293
Kamenné nástroje mužů a žen (štípaná a broušená industrie, ruční mlýny)	298
Rody, rodiny a sousedé (keramické nádoby a jejich výzdoba)	302
Odkaz kultury s lineární keramikou	305
References	307
Appendix 1	315
Ceramic figurines and other isolated ceramic forms dated into Linear Pottery Culture	315
A. Spoons	315
B. Wheels and smoothers	315
C. Weights	316
D. Spindle whorl	316
E. Figurines (oven/house models, tables, supports, figurines)	316
F. Clay ornament	317
Appendix 2	317
Radiocarbon dates: list of radiocarbon samples dated in AMS laboratory Vienna 2000	317
Appendix 3	319
List of features included into house complexes	319
Plates	323