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Mesolithic Miscellany appears twice a year, in May and November, as an informal communication among individuals interested in the European Mesolithic. The yearly subscription is US$3 or £2. European subscribers should send payment to Clive Bonsall, Department of Archaeology, 16-20 George Square, Edinburgh. North American subscribers should apply directly to the editor. Individuals for whom currency exchange may be difficult should write to Clive Bonsall, address above. Subscriptions for 1987 are past due.

FROM THE EDITOR

I would like to thank all of the contributors to this issue, as was the case with the last issue this is a full issue and it is my hope that this pattern will continue in the future. I would like to urge everyone to send in a note about there work this summer and to prepare other materials for the newsletter. If you enjoy reading about the work of others, there is a good chance that they would enjoy reading about your work. The deadline for the May issue is 30 April. *Mesolithic Miscellany* publishes research reports, book reviews, national synopses of recent excavations, statements for debate, conference summaries, important radiocarbon determinations, announcements and summaries or abstracts of recent publications to inform readers of current developments in the field. Recent Publications are particularly difficult to keep up to date - reprints or simple citations of your work would be most useful. Please prepare a brief abstract of the artical or publication if one is not included in the text.

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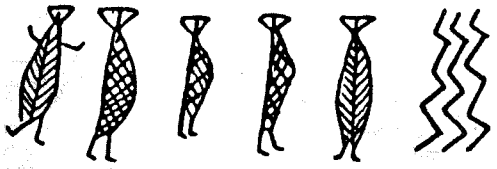

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MESOLITHIC MISCELLANY

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Research Reports

Studies on the Caucasian-Black Sea Component in the Neolithization of Mesolithic Communities in the Basins of the Odra and the Vistula Rivers

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Within the research project on the Mesolithic-Neolithic transition carried out by the Section of Studies on Kuiavia of the Institute of Prehistory of Adam Mickiewicz, University of Posnan, and the Institute of Archaeology of the University of Lodz in the years 1982-87, excavations were conducted at several sites in the great valley zone of the Polish Lowland, primarily in the area of Kuiavia. Results from this project make it possible to reexamine the question of the relationship between the Mesolithic and the Neolithic. Of particular importance is the site of Deby 29 where Mesolithic flint implements and domestic animals bones were discovered together.

The stratigraphy of the site is shown in Figure 1. Archaeological materials were found only in levels 1 and 3. Late Neolithic materials, primarily from the Globular Amphora culture, were found in the modern plow zone. In the fossil soil (layer 3) flint artifacts from the Janislawice culture were recovered. No archaeological materials were found in layer 2 coversands, documenting the absence of mixing between layers 1 and 3. The horizontal distribution of flint and bone also indicates an absence of admixture between layers.

The animal bones have been identified in the assemblage by A. Lasota-Moskalewska. Some 2000 burned bone fragments were found near the

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hearths at the site. They were so badly fragmented that their identification was difficult and only about 20 have been identified. The majority of the specimens represent long bones. Skull and rib fragments are rare. Several of the bones had been worked, including a fragment of a harpoon.

The majority of the bones came from small ruminant skeletons such as sheep, goat, or roe deer. One example of a phalanx I almost certainly belonged to a domesticated sheep or goat. It likely was about 24 mm in length and both longer and more slender than that of a roe deer. Two other examples of phalanx I of sheep-goat were found as well but the most important is the *processus paracondylaris*. Some other bones are also described as sheep or goat but one cannot be absolutely certain that they do not come from roe deer. If all the small ruminant bones came from roe deer, it would mean that one should assume that is was the primary animal hunted at the site. In this situation one should assume generic selection was practiced during hunting and that this species was extraordinarily abundant in the vicinity of the site. Both these assumptions seem artificial and not very probable. The simpler interpretation is that small ruminant bones came from domesticated animals kept by people practicing animal husbandry or herding.

Smaller numbers of bones belong to large animals such as cow, red deer or horse. One fragment of phalanx II is very similar to domestic cattle but it is not complete and one cannot be sure if came from cattle or red deer. Three bones from a probable hare were identified. Only a few fragments come from pig but three, a fragment of a mandible, a tooth, and a fragment of an astragalus, very likely belong to domestic pig. A fragment of phalanx II of dog or fox was also identified. The above conclusions lead to a suggestion that the bones of domesticated animals made up the major portion of the osteological materials from site 29 at Deby.

A total of 3796 flint artifacts were recovered during three seasons of excavation. Chocolate flint, from the nothern border of the Swietokrzyskie Mountains some 200 km from Deby (Schild, Królik, and Marczak 1985), is the primary raw material for 99% of these artifacts. Other sites of the Janislawice culture with a predominance of chocolate flint in the lithic assemblage are generally found within 50 km of this souce. The chocolate flint came to Deby in the form of prepared pre-core forms and initial cores, more rarely in the form of blanks. Only two whole cores were found. There is a slight prevalence of flakes (28.5%) over blades (27.7%) in the assemblage. Large, regular blades were used for the manufacture of retouched tools. *T* croburins are also common at the site. Flakes appear to be largely a product of blade core preparation and very few tools were made on flakes.

Among the 185 retouched tools are microliths (55.7%), especially triangles (17.8% of total tools), Janislawice points (12.4%), and trapezes (7%). In addition, there are 30 microlithic fragments (16.2%). One rhombic and 3 truncated pieces were also identified. With a single exception the triangles are rectangular of two types (1) small, and (2) very

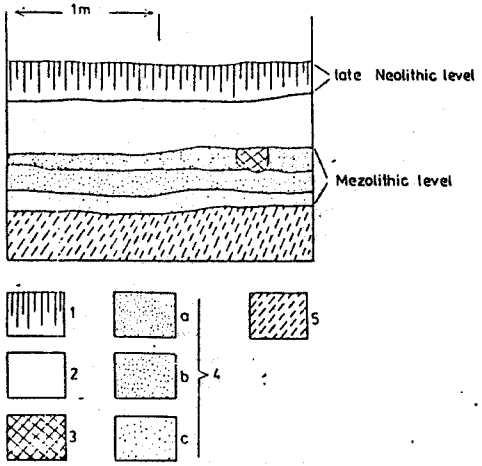
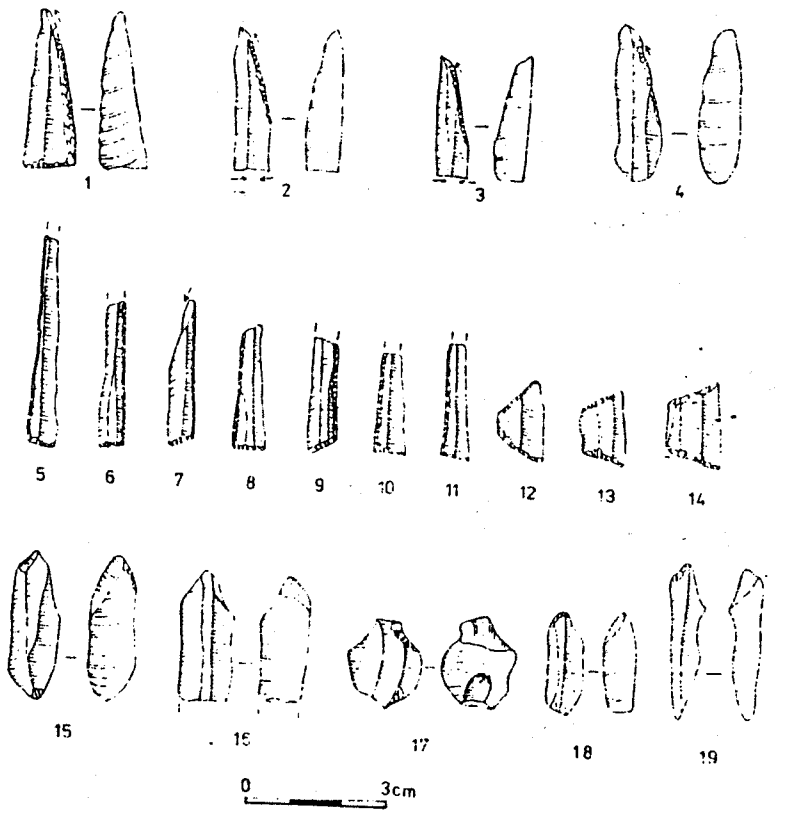


Figure 1. Stratigraphy at Deby 29. (1) Plow zone: 0 - 30 cm, (2) Eolian coversands: 30 - 70 cm [the thickness of this layer varies between 25-60 cm], (3) Fossil soil: 70 - 90 cm, (4) Unstructured sands of the substratum.

Figure 2. Microlithic artifacts from Deby 29. 1-4: Points of Janislawice type, 5-11: triangles, 12-14: trapezes, 15-19: microburins.



long and narrow (Figure 2). Among the remaining tools are retouched blades with a light, discontinuous retouch and occasional polish along the edges. Sixteen side scrapers with semi-abrupt retouch made on flakes were also found along with thirteen burins. Ten "knives" or "knife-burins" (Markevich 1974, Zaliznyak 1984), made on a blade with a burinated backing and a retouched opposite edge, were recovered. Polish was occasionally noted on these artifacts as well. These tools are tentatively defined here as points of the Deby type. Almost all of these artifacts were found inside the hut.

This lithic assemblage belongs to the Janislawice culture (Kozlowski 1972) of the basins of the Upper and Middle Vistula, in Lithuania and in northwestern Belorussia. Other artifacts, primarily the Deby points, seem to originate beyond the Eastern European forest zone and are observed in the late Mesolithic assemblages from the Caucasus (Gabuniya and Cereteli 1977), Crimea (Mackevoy 1977, Telegin 1982), the valley of the Donetz (Zaliznyak 1984), and in Poles'je as well as the early Neolithic Soroki group (Markevich 1974) of the Bug-Dnester culture and further to the east (Beregovaia et al. 1966). The co-occurence of the Deby points and inserts of the Kukrek type is also noteworthy (e.g., Markevich 1974). Deby points were observed in the Murzak-Koba phase of the Upper Crimean culture dated to the end of the sixth and firth millennium b.c. Numerous finds point to contact between Kukrek culture and the late Mesolithic communities of the East European forest zone.

Five uncalibrated radiocarbon dates available from the site:

Culture	Source of Sample	Date	Lab No.
Globular Amphora	pit	4600±90 bp	Gd 2148
Janislawice	sieving	6090±70 bp	Gd 1928
	posthole	7250±100bp	Gd 2278
	pit	7940±80 bp	Gd 2482
	hearth	7140±120bp	Gd 2555

The date from the Late Neolithic is satisfactory but the divergent dates for the Janislawice culture must be explained. Samples 2278 and 2555 are close together. Sample 1928 is the most credible in terms of a Neolithic determination but seems unacceptable in light of the other dates. This sample came from a layer 20 cm thick over a surface of 10 m² in an area with numerous roots. The sample is likely too

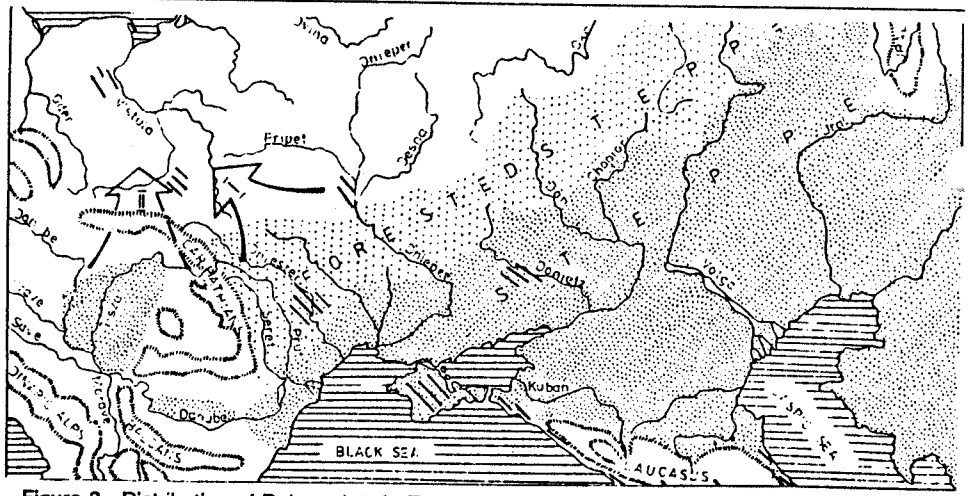


Figure 3. Distribution of Deby points in Eastern Europe shown by hatching. Arrows indicate direction of influence in Stage One contacts with Pontic area and Stage Two with Danubian farmers.

young due to the possibilty of physical contamination. Sample 2482 is slightly in error due a change in laboratory parameters. Thus two dates may be used for the Janislawice culture: 7250 and 7140 bp.

The results from Deby 29, especially the discovery of the domesticated animal bones, make it possible to discuss the economy of the Janislawice cultu[illegible] terms of food production in the period 5300-[illegible]00 b.c. In the sixth millennium, animal herding appears to be known to many different Mesolithic communities. Sheep-goat domestication is reported from Mesolithic France (Roussot-Larroque 1981).The presence of domestic sheep-goat, pig, and cattle bones at sites such as Matvieyev Kurhan (Krizevskaja 1981), Kamennaia Mogila, Frontovoye I, Tash-Air, or Samil Koba (Telegin 1985) confirms the knowledge of animal breeding among the populations of the Upper Crimea, Kukrek, and Grebeniki cultures.

The origins of the early Neolithic Soroki group of the Bug-Dnester culture (Danilenko 1969) in which the breeding of cattle and pigs played an important role are dated to the second half of the sixth millennium. Connections between these areas may also be seen in comparison of the lithic assemblages as discussed above. One result of these contacts was the appearance of flint artifacts characteristic of the Black Sea zone at the sites of the Janislawice culture, but the most important was the inspiration in new ways of getting food. Influences from this region led to important changes in the Janislawice economy and the utilization of domesticat[illegible]nimals.

Si[illegible]or the time being Deby 29 is the only site of the Janislawice culture where traces of domestication have been found we cannot determine precisely the scale of the economic transformation. But even now it seems possible to distinguish two stages of in the neolithization of Mesolithic communities in the basins of the Odra and the Vistula (Fig. 3): an older stage, Black Sea stages during the second half of the sixth millennium b.c., and the classical, Balkan stage connected with the appearance of linear pottery. The contact with the Black Sea zone acquainted the people of the Janislawice culture with animal husbandry and certain lithic artifacts characteristic of the Pontic area.

It seems that the arrival of the Danubians was of no great consequence for the further evolution of the Janislawice culture whose population was already acquainted with the productive economy.

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MESOLITHIC RESEARCH IN WESTERN GERMANY

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Research on the Mesolithic in Western Germany has been relatively limited, particularly compared to other archaeologically known time periods. There is no recent synopsis available on the Mesolithic of this country; even an updated geographic overview of the known sites is lacking. During the past few years a number of new studies have been published on various specific and regional Mesolithic topics (e.g., Duvensee and Federsee bogs). But in the absence of recent studies treating a wider region, however, one is still forced to go back to older studies for synthetic information on the Mesolithic on the country as a whole (e.g., Schwabedissen 1944).

This short paper is intended to provide an overview of published regional maps and data on the Mesolithic in Western Germany. Seventeen regions (naturally defined landscapes) are distinguished here (Fig. 1). For each region, the primary references are listed which treat the Mesolithic in the area, e.g., by providing a site map. Site maps are available for most individual regions. For several regions such maps covering the whole area are lacking: the Schwarzwald, the upper Main area and the Bavarian Forest. Due to the incompleteness of published data, it is not yet possible to estimate the number of individual surface sites, nor even the number of excavated sites. Furthermore, most site maps include only data for the whole Mesolithic time span, without specifying more details in terms of chronology or traditions.

The list below may also illustrate the state of regional Mesolithic research in Western Germany.

(Translated by N. Arts)

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2. Metzger-Krahé 1977: Fig. 1
3. Gramsch 1973: map 1-9
4. Arora 1976:Fig. 3, 4, 5, & 6; Arora 1977: Fig.1/p. 192
5. Schwarz-Mackensen 1978: Fig. 1
6. Grote & Freese 1983: Fig. 1/p. 20
7. Narr 1968: Fig. 1-11
8. Gendel 1984: various Figs.; Gob 1979: Fig.2/p. 217; Gob 1985: Fig. I & 2, p. 27-28
9. Rozoy 1976: Fig. 1/p. 1451; Rozoy 1978: Fig. 173
10. Veil (Ed.) 1978: Fig. 4/p. 22-23
11. Fiedler 1983: Fig. 41/p. 55
12. Feustel 1961: Fig. 1/p. 41
13. Löhr 1982:Fig. 1/p. 313; Löhr 1984: Fig. 1/p. 12
14. Spier 1987: Fig. 1; Ziesaire 1983: Fig. 19/p. 43
15. Cziesla 1986: Fig. 1/p. 6; Cziesla 1987: Fig. 1
16. Freund 1963:166-167
17. Hahn 1983: Fig. 233/p. 391; Taute 197\ Fig. 34; Taute 1975: Fig. 1/p. 65

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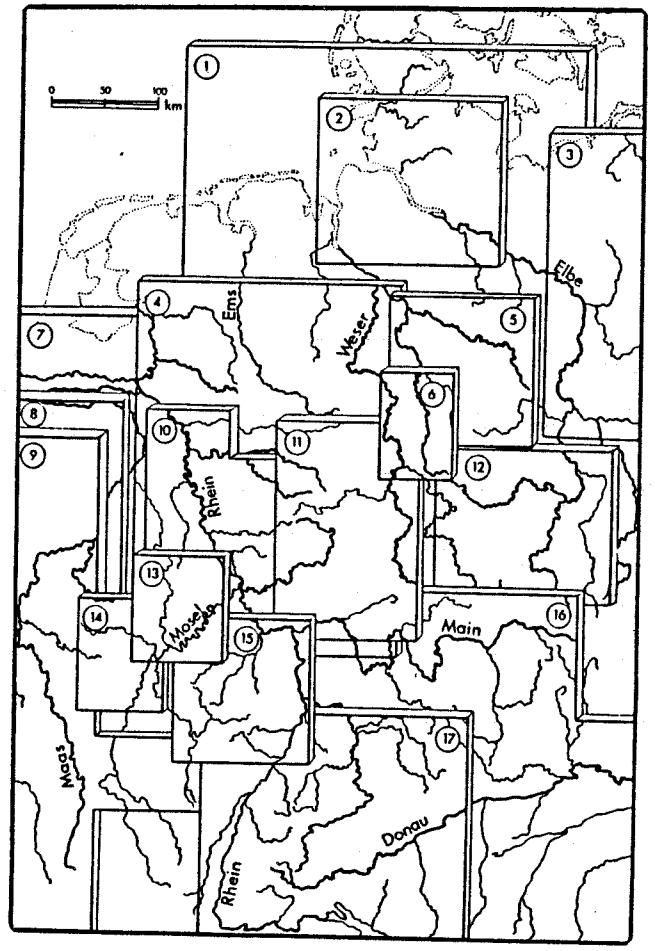
Figure 1: Regions of Western Germany.



THE EARLY SETTLEMENT OF SCOTLAND: RHUM: THE EXCAVATIONS

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The island of Rhum lies off the west coast of Scotland. Today it is mountainous and barren. Kinloch is the only sheltered landfall on the island and is now the only permanently inhabited settlement. The site at Kinloch was discovered in the summer of 1983 during ploughing. The excavated site is situated in one of the larger pockets of fertile land, at Kinloch at the head of Loch Scresort on the E coast (Fig. 1). It lies between 11 m and 15 m above sea level.

Archaeological excavations started in 1984. The aims of the first season were to examine the distribution and content of the material within the field, to assess the survival of associated features and to obtain, if possible, datable material. To this end, one percent of the field was excavated in a series of 38 quadrats each of four square metres. This revealed the detailed distribution throughout the plough-zone of a microlithic scatter, up to a density of nearly 2000 pieces per square metre (Fig. 2). A number of features were uncovered, all apparently associated with the scatter. An attempt was made to locate prehistoric features outside the scatter but none were found. A minimum area for the site would be in the order of 4500 m^2.

Samples of carbonized hazelnut shells from one of the small pits within the scatter were used for two radiocarbon determinations. At 8590 ± 95 b.p. and 8515 ± 150 b.p. (GU-1873 and GU-1874), these provided the earliest dat-

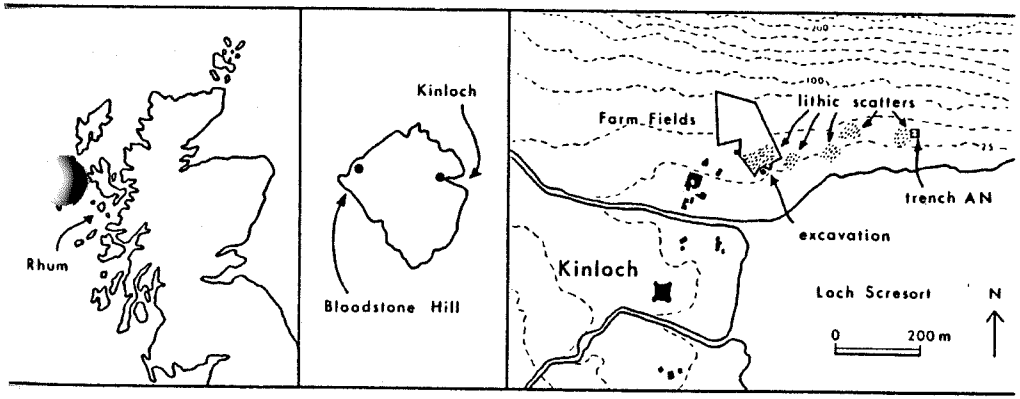

Fig. 1. Kinloch, Isle of Rhum: location of excavations.

ed evidence, so far, associated with an artifact assemblage from Scotland.

The features exposed in 1984 were large hollows, small pits and potential postholes. In 1985 excavation examined these and other features (Wickham-Jones and Pollock 1986). Although encouraging, this investigated only a small proportion of the site and the trenches were too small to make sense of the features uncovered. In 1986 a larger trench (ca. 450 m^2) was opened across an area of better survival in order to look for horizontal patterning.

Here preserved in a slight hollow, complex traces of settlement were uncovered: infilled pits and hollows, arcs of stakeholes and a curving timber slot (Fig. 3). The features are identified in the stony subsoil by a dark, highly organic fill, rich in lithic artifacts and other stones. Sadly, bone is not preserved and post-depositional processes mean that any stratification of the fills has gone.

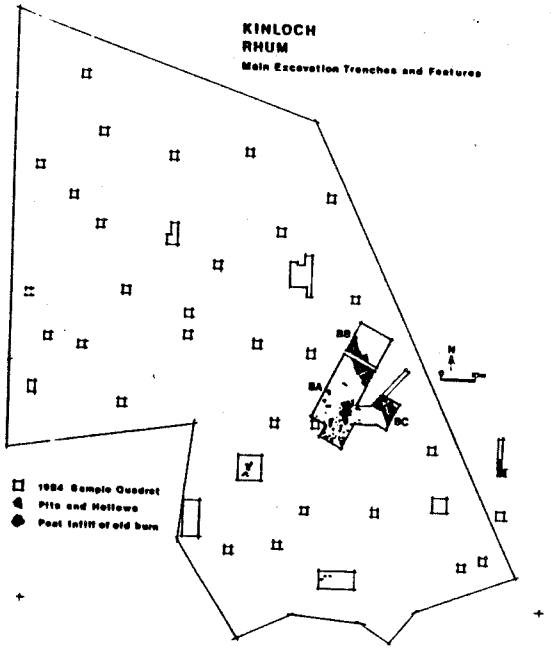

Fig. 2. Kinloch, Isle of Rhum: location of main trenches, 1984-86.

In the time available many features were not excavated, merely planned and photographed with their fills intact (Wickham-Jones and Pollock 1987). At the moment it is unlikely that major excavation on the site will continue.

The artifacts recovered are primarily a lithic assemblage of around 170,0[illegible] pieces. The raw material is entirely local origin: a hydrothermal chalcedony loosely termed bloodstone, supplemented with some local agate, quartz, siliceous limestone and flint. Much of the assemblage is knapping debris with both platform and bipolar cores. There are a number of regular flakes and blades and a variety of retouched pieces. The majority of these are microliths, all based upon narrow blades. The larger retouched pieces consist mostly of scrapers with a few borers and edge retouched pieces.

In addition to the flaked lithics a number of hammerstones of varying shapes and sizes were recovered and there are a dozen pieces of worked pumice.

A large body of environmental data has been recovered from both the site and its surroundings. Inland from the site there was heather moorland, similar to that of today. In places, light tree cover included hazel, birch and willow: there is no evidence of extensive forest cover on the island. Samples from the site reflect the disturbing influence of the human population. Nettles grew in abundance; use of the nearby sea strand, amongst other areas, is suggested.

Twenty radiocarbon determinations have now been obtained from deposits associated with the project (Table 1). Nine date the mesolithic settlement to a thousand year period between the mid-seventh and mid-sixth millennia b.c. Eight relate to the environmental analysis and three are associated with neolithic activity in the third and late second millennia bc.

Artifacts from the site appear to be typical of those which define the later mesolithic of the British Isles, they also show certain similarities with those of early sites in the north of Ireland such as Mount Sandel (Woodman 1985). As yet little is known about the earliest post-glacial settlement of Scotland, increased fieldwork, particularly in the remoter areas is u[illegible]ntly needed.

Acknowledgements

Many, many people are involved with the project. They are too numerous to thank individually but to them all our great thanks are due. We should like to single out Ann Clarke to whose untiring effort much of our success is owed.

Sponsors of the Rhum Excavation Project to 1986

Scottish Development Department (Historic Buildings and Monuments Directorate); Royal Museum of Scotland; Nature Conservancy Council; Robert Kiln Charitable Trust; Russell Trust; Society of Antiquaries of Scotland; George Morton Ltd.; Savacentre (Edinburgh).

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Table 1. Kinloch, Isle of Rhum: The Radiocarbon Determinations

	Years bp	Trench-Context	Material	
1.	8770±90	base of pollen core	peat	HAR-6608
2.	8590± 95	AD upper fill of pit (D5)	chrrd hazelut shell	GU-1873
3.	8560±75	AJ upper fill of pit (J2)	as above	GU-2040
4.	8515±190	AD upper fill of pit (D5)	as above	GU-1874
5.	8310±150	BA fill of slot	as above	GU-2150
6.	8080±50	BA fill of pit	as above	GU-2146
7.	7925±65	AG fill of pit	as above	GU-2039
8.	7880±70	BA fill of hollow	as above	GU-2147
9.	7850±50	BA fill of pit	as above	GU-2145
10.	7800±75	base of peat monolith	peat	GU-2062
11	[illegible]70±50	BA fill of hollow	charred hazelnut shell	GU-2149
12	[illegible]0±90	peat monolith:139-141 cm	peat	GU-2108
13.	[illegible]300±60	peat monolith: 119-121 cm	peat	GU-2107
14.	4725±140	AD fill of late pit (D7)	charred hazelnut shell	GU-2043
15.	4660±70	peat monolith: 89-91 cm	peat	GU-2110
16.	4260±70	AM environmental sample	peat	GU-2106
17.	4080±60	BA midden type debris	wood	GU-2148
18.	3945±60	AG base of slopewash	wood	GU-2041
19.	3890±65	AG burn fill/pot + lithix	wood	GU-2042
20.	3340±80	peat monolith: 59-62 cm	peat	GU-2109

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Fig. 3. Kinloch, Isle of Rhum: trench BA, plan of features after removal of topsoil.

A STATISTICAL ANALYSIS OF MESOLITHIC TOOL DISTRIBUTIONS

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This paper presents results of a discriminant function analysis (DFA) of tool type configurations from some of the larger Mesolithic sites in England and Wales, as defined by number of artifacts recovered (Castleford 1987).

One of the few attempts to treat differential tool type configurations, (which for want of a better term I shall call "technature," as in the technological signature of a site) in Mesolithic sites is Mellars' (1976) analysis of settlement patterns and technological variability. Following on from this I tested the hypothesis that there would be significant differences between the technatures of coastal and inland sites.

My (non-random) sample was drawn from Bonsall's (1977) Gazetter of Mesolithic Sites in England and Wales. Artifact counts from 89 sites having at least 1000 recorded artifacts extending across at least seven categories of tool types employed in the Gazetteer were used in the analysis: axe (all varieties), blade/flake, core, microlith, microburin, scraper, graver, pick, pebble mace head and "other" (a miscellaneous category). Parenthetically, it is interesting to note that only one pebble mace head was recorded among these 89 sites and it was excluded from the analysis. Perhaps the enigmatic function of this artifact is linked to its apparent association with smaller sites (as defined by artifact totals).

I then coded the location of the sites using the arbitrary criterion of 10 km distance from the coastline as interior, n=51, or coastal, n=38.

Discriminant function analysis is a technique for statistically differentiating two groups of cases (inland/coastal in this case) by weighting and linearly combining the discriminating variables (numbers of each tool type) so as to maximize the separation of the two groups. Providing that the group variables permit, this results in a single dimension in which each group will be clustered at each end. Discriminant function analysis was done on a computer with SPSSx DISCRIMINANT software. A full account of the technique is available in Klecka (1980).

A histogram of the results is shown in figure

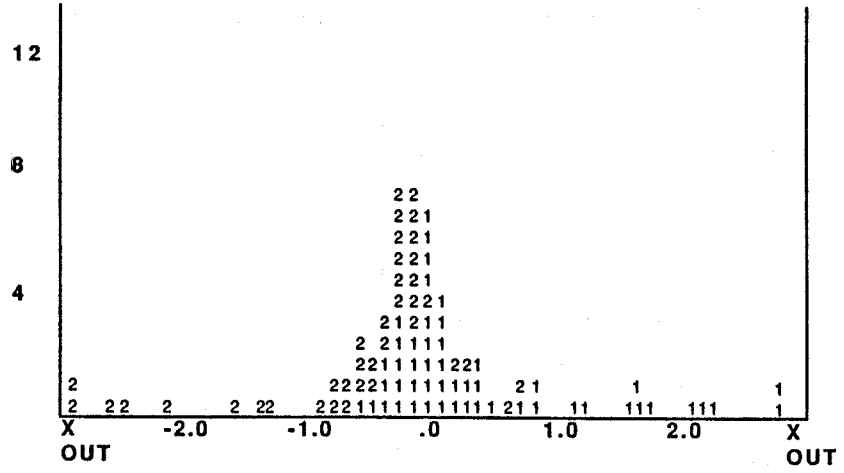

Fig.1 Histogram of results.

1. Quite a reasonable degree of separation between coastal and interior technatures has been detected by the analysis. Although it would be quite difficult to infer much meaningful separation within the central portion of the curve, the outliers are of interest. Individual sites can be identified by reference to individual discriminant scores and their position within the distribution curve.

The majority of coastal sites in the left-hand tail of the curve are situated on the southern and southwestern coasts of England and belong generally to the later Mesolithic. In contrast, the majority of the outliers on the right-hand tail are early inland Boreal sites, with the site to the extreme right being Star Carr. This clearly indicates that the greatest technological differences, as far as tool type inventories are concerned, are to be found between early Boreal interior sites and lat Atlantic coastal sites.

It was also possible to ascertain which of the tool types were the better discriminants. They turned out to be, in ranked order, "Other" (the miscellaneous category), microburins, cores, gravers, axes and picks. Blades/flakes, scrapers and microliths were not statistically significant discriminants. Because of the generally unknown constituents of the miscellaneous category, subsequent investigation is precluded until these can be examined further.

As a form of methodological control, the analysis also compared the statistical relationship between actual group membership, and the overall statistical profile of the group. In other words it assessed the percentage of site classifications as coded by me with the predicted group classifications derived from the statistical analysis. A table of "correct" classifications is given below in Table 1. It may be noted that over 75% of both coastal and interior sites can therefore be discriminated in terms of artifact configurations.

Table 1. Discriminat Function Classification Results. Percent of grouped cases correctly classified = 77.5%.

		Predicted Group	
		Interior	Coast
	ActualGroup	n	
Interior	51	39	12
		(76.5%)	(23.5%)
Coast	38	8	3
		(21.5%)	(78.9%)

These results have to be seen in the light of how valid are the data and the methodology. But, questions of validity aside, it does seem that configurations of tool types in a large sample of sites may be useful information in the question of ecological and environmental correlates of settlement patterns. In this instance there would seem to some support for the idea that there was indeed a coastal-interior distinction in the Mesolithic, as suggested by Binford (1968) and Palmer (1980).

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Book Reviews

Hunters in Transition.
Mesolithic Societies of Temperate Eurasia and Their Transition to Farming

Marek Zvelebil (editor)
1986. Cambridge University Press.
204 pp, 1 plate, 13 tables, 47 diagrams.
$49.50.

Reviewed by

T. Douglas Price
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Table of Contents:

Due recognition has been given in recent years to the early Holocene and the period known as the Mesolithic. Extensive field and laboratory studies over the last two decades have greatly revised our understanding of this time. A number of important volumes and papers on the subject have appeared, re-writing the traditional views of the Mesolithic as a period of cultural degradation. More importantly from a theoretical perspective, the spread of farming from southwest Asia is no longer readily attributed solely to migrating farmers; indigeneous hunter-gatherers are now often viewed as active participants in the process.

The Zvelebil volume is good summary of current thought and information on this dynamic time and the change that was the introduction of farming. *Hunters in Transition* is intended to demonstrate (1) that the Mesolithic of the "temperate zone" is different from that of the nuclear area of the Near East, and (2) that similar adaptations appeared in both areas during the early Holocene (p. 1). [This apparent contradiction is not addressed in the volume.] But the book is really about the introduction of

the Neolithic - domesticates, pottery, and village life - into Europe and about how that introduction took place.

The volume is organized in two parts (1) the Mesolithic context of the transition to farming - a series of more generalizing, perhaps more theoretical, and definitely less memorable papers, and (2) regional studies, with summaries of the transition to agriculture in seven areas of the temperate zone. Eight authors survey a broad region covering most of Europe and much of Asia [China unfortunately is not included]: the Mediterranean (J. Lewthwaite), Atlantic Europe (Zvelebil and P. Rowley-Conwy), Central Europe (J.K. and S.K. Kozlowski), Eastern Europe and west-central Asia (P.M. Dolukhanov), the southern Urals (G. Matyushin), and Japan (T. Akazawa).

There is a pronounced bilateral disparity in the papers in this volume. Articles by Eastern Europeans tend to be compendiums of environmental and archaeological data with an orientation toward lithic typology. Papers by Western European authors (six chapters) are largely theoretical, contemplating the place of the Mesolithic in the universe. Both approaches have strengths and weaknesses.

Zvelebil's introduction and first chapter set the tone for the volume with a history of the concept of Mesolithic and current views of the transition to agriculture. Unfortunately he also provides a confusing definition of the term Mesolithic with statements such as "the Mesolithic describes a historical development based on reconstruction from archaeological data; a particular condition in the evolution of human culture, which did not occur prior to the evolution of *Homo sapiens sapiens* and which is also different from ethnographically known hunter-gatherers". The term is also to be limited to northern regions of the Old World and not to used to represent a chronological stage. Such a definition appears unworkable, even in the papers in the present volume.

In a subsequent paper, Rowley-Conwy makes a useful distinction: pottery is the criteria for "Neolithic" in Eastern Europe, while in the west, it is the presence of domesticates. The absence of definitional consistency has led to much of the confusion that accompanies an understanding of the transition to the Neolithic in these areas. Rowley-Conwy further discusses recent refinements in the horizontal and vertical frameworks that define the chronological and spatial components of the Early Holocene.

Slavomil Vencl from Czechoslovakia argues the traditional view, that the transition to agriculture involved the gradual penetration of the European interior. Evidence for this position is the spread of leptodolichomorphic anthropogenic characteristics, the fact that the potential for growth is much greater for farming populations, and that the initial colonization of temperate Europe was likely to pass unchallenged because local Mesolithic groups occupied different ecological zones than the incoming farmers. This evidence, however, is no more compelling than recent arguments for the indigeneous adoption of domesticates. Chronological resolution in many of the areas under consideration is no better than 300 to 500 years during the crucial interval in this transition between foraging and farming. Until more data and finer time intervals can be examined we cannot adequately address the actual nature of the transition, whether involving indigents or immigrants.

Lewthwaite, in a subsequent chapter, points to the difference in the Mediterranean Basin between an abrupt eastern and a gradual western transition to food production. Zvelebil and Rowley-Conwy review a series of sites and emphasize the fact that the introduction of agriculture was delayed, rather than accelerated, along the coastal margins of Atlantic Europe. This contrasts sharply, however, with the very early appearance of Cardial ceramics and domesticates along the shores of the Mediterranean. Such an opposition likely reflects the submergence of early shorelines rather than the absence of early farmers in Atlantic Europe. The adoption of agriculture in the northern stretches of Atlantic Europe is argued to correlate with a decline in traditional aquatic resources. There is, however, little substantive evidence for this decline.

Papers by J.K. and S.K. Kozlowski, P.M. Dolukhanov, and G. Matyushin provide important chronological and artifactual information on early Holocene from Central Europe to Central Asia. Much of this data has not previously been synthesized and is of particular note for an English-reading audience.

The volume is a useful survey. Unfortunately the limitation in scope to the temperate zone of Europe and Asia constrains a perspective on the broader processes of culture change in the early postgla- It is in part for this reason that the volume ...ounts little theoretial insight on the transition to agriculture. More specifically, models, definition, and terminology is at times suspect. The model for a three stage transition to agriculture - an availability phase in which less than 5% of flora and faunal remains are from domesticates, a substitution phase (5 - 50% of remains are domesticates), and a consolidation phase (with greater than 50%) - is arbitrary in the extreme and of little justification in a study of agricultural adoption. Most of the authors in the volume fortunately do not attempt this device.

The Mesolithic represents a time of important change and developments in technology, resource use, organizational complexity, and sedentism. Of that there is no question. Questions can be raised however with regard to other concepts employed by Zvelebil - "time-stressed activities", "the original industrial revolution", "storage" and "status differentiation". There is virtually no evidence of substantial storage at any Mesolithic site. Status differentiation and inheritance has been argued for only one very late cemetery (Olneostrovski Mogilnik) and that unusual case is likely the result of di...ential preservation rather than ascribed position.

The question of agricultural transition ultimately becomes a proxy vote, for or against colonists, by the authors of the papers in the volume. The electorate is split, largely along geographic lines. In his final summary, Zvelebil takes the obvious middle path and votes for both colonists and indigeneous adaptation. Certainly the spread of agriculture to the temperate zone of Europe and Asia was a complex process that occurred over several millennia and involved both new ideas and in a few instances new folks.

An earlier version of this review appeared in *Antiquity*, 1987

A CORRECTION

In the article *Direct Radiocarbon Dating of the Viste Burial, Coastal Norway*, by Anne Karin Hufthammer and Christopher Meiklejohn, that appeared in Volume 7, Number 1, several sentences were inadvertently deleted in the editing process. Page 7, paragraph 3, should read "The skeleton was believed to have been wholly within the Mesolithic shell midden Layer II. However, its relationship to overlying Layer III with Neolithic through Migration Period finds is unclear, and the possibility of an intrusion cannot be excluded on archaeological grounds. No specific stratigraphic section associated with the skeleton has ever been published. The previously available ^{14}C dates confirmed that Layer II contained Mesolithic materials but with the intrusion of Neolithic elements (4320±170 bc, T-2665; 2580±90 bc, T-2667) (Indrelid 1978). Dates for the underlying Layer I were indicative of a purely Mesolithic deposit (5900±120 bc, T-2664; 5830±130 bc, T-2668) (*ibid*).
From the above base it was clear that a direct dating of the skeleton itself was necessary in order to establish the age of the skeleton. This has now been done by A.K. Hufthammer. The result is a clear indication of the Mesolithic affinity of this skeleton. Perhaps surprisingly the result is closer to the previous results for underlying Layer I, than for the shell midden, Layer II..."

Announcements

International Round Table:

The Neolithization of the Alpine Region

29 April - 1 May 1988
Brescia

Some 30 specialists have responded to the second circular to take part in an International Round Table on the Neolithization of the Alpine Region which will also include some papers on the Final Mesolithic aspects of the region. The official languages of the round table will be English, French, and Italian. For more information contact Paolo Biagi, Via Solferino 11, I-25122, Brescia, Italy.

Preliminary Program

29 April AM: Opening of the Round Table
General Themes including J.K. Kozlowski, Les modalitès de la Néolithisation: à l'est et à l'ouest des Alpes & S.K. Kozlowski, The preneolithic phenomenon in the Alpine region
29 April PM: *Local Excavations*
30 April AM: *Environmental Studies*, including R. Clark, Faunal remains from Mesolithic and Neolithic sites, and M. Cremaschi, Environmental Changes in the soils of the mountain regions of Northern Italy during the Early Holocene
30 April PM: *Regional Studies*
1 May AM: *Discussion* and *Conclusions*

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Computerized Scholars Directory

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CONFERENCE REPORTS:

FLINTKURSUS 1987 KØBENHAVN

by

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A very interesting flint workshop took place in Copenhagen between March 23rd and April 3rd, 1987 at the Forhistorisk-Arkœologisk Institut of the University of Copenhagen. A formal name of Flintkursus 1987 København was assigned to this project, which in fact, was an intensive course in various approaches to the study of Final Paleolithic and Mesolithic stone artifacts, combined with a series of lectures presenting Scandinavian and Sub-Baltic current research on the later Stone age. The workshop was one of a series known as Nordic Researchers Courses and probably the first one on prehistory. It was financed by Nordisk Ministerrådd (The Nordic Council of Ministers). The Flintkursus 1987 was conceived and meticulously organized by Erik Brinch Petersen (Matiskainen 1987, Ryberg 1987).

This unusual seminar brought together 20 students (5 from Denmark, 3 from Finland, 5 from Norway, and 7 from Sweden), who were already graduated and employed junior prehistorians or students nearing graduation, as well as 14 lecturers and teachers. In each Nordic country the participants had been selected among a number of applicants by a senior archaeologist specialized in Stone Age prehistory.

The backbone of the workshop was four classes taught almost daily. These were the following:

1. Chipped stone typology by Erik Brinch Petersen, Forhistorisk-Arkœologisk Institut, University of Copenhagen;
2. Flint knapping by Jaques Pelegrin, Préhistoire et Technologie, Centre National de la Recherche Scientifique, Meudon, France;
3. Refitting of flint artifacts by Sheila Coulson, Oldsaksamlingen, University of Oslo, Norway, and;
4. Analysis of microtraces of wear by Kjel Knutsson (quartz), Institutionen för Arkeologi, University of Uppsala, Sweden, and Peter Rasmussen (flint), National Museum, Copenhagen.

The students were subdivided into four groups of five. After a morning lecture attended by all participants, every group separately would take two hours of each class proceedir from one to another. Usually, the class began with necessary explanation or demonstration by the teacher after which the students would be assigned practical tasks in flint knapping, microscopic observation, refitting or typological classification.

Lunches were served at the Institute and after a relatively short post-lunch break a number of lectures were given until 6 p.m. The following common dinners were a pleasant social occasion for an informal get-together. They took place at various restaurants downtown. Rarely additional lectures would be given after the dinner.

In the weekend two excursions were made. The first, on the 28th of March, took the participants to Stevns Klint, a massive chalk exposure with beds of flint; to an Iron Age road; to the provincial museum of Nykøbing Falster; as well as to the reservation of Frejlev Forest where hundreds of well preserved prehistoric

barrows, dolmens and passage graves could be seen. The second, on Sunday, took us to the well-known Vedbœk fjord, where a number of sites, among them Vœnget Nord (Price and Brinch Petersen 1987) was shown, as well as the small, elegant Søllerød Museum which houses an exceptionally beautiful and informative Mesolithic exhibition based upon finds from Vedbœk. The day ended with a remarkable boat trip from Vedbœk to Nyhavn, a picturesque part of the harbor of Copenhagen.

A number of lectures gave general introduction to the subjects taught in classes or offered detailed presentation of important prehistoric sites. A few lectures, on the other hand, produced an overview of late Stone Age prehistory of the Nordic countries and adjacent territories.

After the general introduction and formalities, a so-called flint-test was conducted. This was a blind-test, with a number of flint artifacts being passed around, in order to test the ability of the participants. Or rather, to let them test themselves. The specimens comprised various tools, diagnostic types of flakes, raw materials, replications, even some natural "products", etc. After the test, each piece was described and discussed in public. During this, some terminological problems appeared to have a greater importance than expected. So, a flint-test can really be recommended as a good means - at least at the initial stage - of bringing archaeologists together, because it so clearly stresses the degree of common knowledge and underlines basal, terminological differences. At this occasion another unexpected result was the recognition of some provincialism in the knowledge of other archaeological find materials than what are strictly local, even within an area like Scandinavia.

The introductory series began with a lecture on geology of flint read by E. Håkonsson, University of Copenhagen. The lecture concentrated on Stevns Klint, a type locality for the study of flint formation, as well as an important site where the boundary between Mesozoic and Cenozoic beds should be studied in detail. Stevns Klint was to be seen on the next Saturday.

After the lecture on the geology of flint, Erik took over introducing the students to physical characteristics of certain flint varieties in Denmark and to the most important typological elements of flint artifacts. Elementary principles of flint artifact illustration were also discussed. Peter Vemming Hansen, of the Museum Falsters Minder, helped with the later subject.

Professor emeritus C.J. Becker, formerly head of the Institute, University of Copenhagen, tackled a subject which raised lots of controversies among Danish geologists and prehistorians, namely the question of pin-pointing the sources of particular types of flint. A unique comparative collection of flint sampled from primary deposits in Denmark is kept at the Institute; it provides an excellent starting point for further studies on this subject.

Kjel Knutsson presented his findings concerning changes in microtopography of quartz artifacts resulting from use. Quartz is a very demanding subject for microwear analysis, yet it is one of the most popular stones in prehistoric Sweden, Norway and Finland; therefore the importance of developing a reliable methodology in this field.

Jaques Pelegrin followed with a very interesting lecture on typology, technology and replication of chipped stone artifacts in which a number of basic questions were attacked from various angles including, e.g. child psychology and stone artifact traditions, etc.

Later in the day Sheila Coulson gave her personal view on refitting. What, in fact, is refitting and what purpose it could be used for, once a number of refits have been established.

Peter Rasmussen ended the introductory series with a synopsis of microwear studies from its pioneer work to the latest developments, stressing the difficulties and traps so much dotting the field.

More specific subjects followed in the next series of lectures. Vagn Mejdahl, Nordic Laboratory for Thermoluminiscence Dating, Risø National Laboratory, Roskilde, Denmark, told the audience all about the TL dating of burnt flint, a difficult and highly risky enterprise. Erling Benner Larsen, Preservation School, Copenhagen, tackled quite a sensitive problem,

i.e. the recording and study of polished flint surfaces with the help of silicone.

On the following day Sheila Coulson recalled her and Brigitte Skar's remarkable refitting experiences at Høgnipen, an early Holocene site in Southeastern Norway (Skar and Coulson 1985; 1986) which lead to quite well founded behavioral interpretations of the site. Kjel Knutsson told the audience of his explanation of the Neolithic sites of Bjurselet in Northern Sweden, at this occasion dealing only with the quartz fraction of the assemblage. Peter Rasmussen looked at behavioral interpretation of archaeological sites from the angle of his experiments with arrowheads, i.e. their replication, hafting, shooting and finally examining the resulting microtraces of wear.

The next day was marked by the lecture of Bjarne Grønnow, the National Muesum, Copenhagen, known from his excellent work on prehistoric and recent caribou hunting in Greenland (Grønnow 1986; Grønnow et. al. 1983). Bjarne let the participants hear about what is known of Stone Age tools of Greenland and not surprisingly - alas as anywhere else - there are a lot of things that are still not known. The highlight of the lecture, however, was a series of beautiful slides of hafted stone tools (knives, burins, end scrapers, etc.) of the Saqqaq culture (2400-1000 B.C.) which had been miraculously preserved by permafrost.

Vœnget Nord at Vedbœk struck once again when Erik recalled the whole story of that admirably worked site which recently received so much deserved prominence (Price and Brinch Petersen 1987).

We believe that a more easy going program of excursions was really needed by the end of the first week of the seminar, for another load of classes and lectures were in stock. And - indeed - they came. The serious stuff was there from the beginning. The senior author aired his pessimism about gnostic values of "old" and "new" archaeologies in four lectures presenting Final Paleolithic and Mesolithic of Sub-Baltic territories, flint and flint mines in Poland, as well as the review of multi-level and multi-unit, Final Paleolithic and Mesolithic site of Calowanie on the Middle Vistula, in Poland.

Stephan Veil of Niedersächsisches Landesmuseum in Hannover, GBR, gave in two lectures the results of the recent excavation of two small. but very interesting Ahrensburgian sites and retraced his strategies, goals and effects of refitting tools at Gönnersdorf, on the Rhine.

Professor C.J. Becker was kind enough to present a synopsis of his well known work on Senonian flint mining in northern Jutland (Becker 1959). The latter lecture was matched, on the other hand, by a presentation of an extensive and elaborate typology of Danish Neolithic flint axes given by Keeper Poul Otto Nielsen, National Museum 1st Dept., Copenhagen. The junior author, as well, had a chance to make the audience familiar with his work on a Neolithic flint processing workshop of tiny size at Saxhøj, Lolland, Denmark.

The last day of Flintkursus 1987 was an easy one. The participants were given a tour of prehistoric Denmark, as exhibited in the National Museum, and then shown the unusual grave of eight from Strøby Egede on the peninsula Stevns, Zealand. The grave was excavated in autumn 1986 and is attributed to the final part of the Ertebølle culture. The extracted burial is now analyzed and being prepared for future exhibit in the local museum of Køge (Brinch Petersen 1987). This exceptional tour was guided by Erik who is still clearly in love with the eight dead bodies from the Late Mesolithic.

Then followed a short visit to the dynamic computer department of the National Museum, where work is in progress with putting all registered prehistoric information (c.120,000 sites in Denmark) on computer file. The advanced system, various maps and prints were instructively presented by Henrik Jarl Hansen.

A small, ad hoc, organized display of Final Paleolithic and Mesolithic artifact assemblages from Denmark and Schleswig-Holstein was also prepared at the Institute for those who wanted to admire and handle cores, blanks and tools from the very classic sites of the area.

Another little exhibition, also set up for the occasion, was arranged in the National Museum by keeper Poul Otto Nielsen, showing a complete series of Neolithic flint axes from Den-

mark, again with all chronological stages and typological variants being represented.

Later on, a brief table ronde discussion on flint knapping, typology and technology took place. It was immediately followed by a public evaluation of Flintkursus 1987, the last formal element of the workshop.

In the evening, common wining and dining at the Institute had been a good starter for those who saw the small hours of the next day in a very crowded jazz club in the old town of Copenhagen. By then, most of the students and lecturers were already striken by a vicious strain of flu, which was rumored to have been brought to the seminar by one of the Finnish participants.

The senior author, already an old man, has had a chance - or just misfortune - to see quite a number of workshops, summer schools, seminars, etc. The Flintkursus 1987 København was an exceptional one. Thoughtfully prepared, it offered an intensive training in most recent lab techniques concerning flint artifacts and gave an overview of regional prehistory, as well as introducing many of the students to a number of previously unknown, however important individual sites.

Finally, the workshop also gave a chance to young Scandinavian Stone Age specialists to know each other much better than it has ever been possible at a short professional conference.

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Recent Publications

Andersen, S. H. and E. Johansen. 1986. Ertebølle Revisited. **Journal of Danish Archaeology** 5:31-61.

The investigations at the Ertebølle type site has offered a wealth of new information. We have seen that this kitchenmidden is not only a midden (accumulation of shell fish), but a mixture of food waste and activity areas. These areas have been in use for long periods of time. This indicates a rather stable settlement system.

If we add to this the possibility of some graves, we have all the ingredients which scholars normally use to define settlement sites in a Mesolithic sense. The only feature which is lacking is houses.

It rises the obvious question: Is the shell midden the living area? The observations on the distribution of flint debitage and ash horizons clearly demonstrate that huts have not been positioned on top of the shell midden. Several other facts which support this observation are the lack of living space and the uneven surface. The information attained thus far, suggests that the people have been living *outside* of the midden, but have performed the main part of their daily routines on the midden.

Today, there seems to be two possible answers to this question. Firstly, there is still a possibility that people have been living behind the midden. In this case, we do not have any defineable traces of houses. Secondly, the hut(s) may have been standing *beside* the shell dumps (Meechan 1982:116) and then later on were covered by deposits as the general layout of the site shifted its position along the coastline. This hypothesis is supported by the presence of well built stone fireplaces positioned on the subsoil under the midden layers and the frequency of cultural remains at the very bottom of the kitchenmidden.

A final solution to this question is one of the future tasks connected with studies of the Danish Køkkenmøddinger.

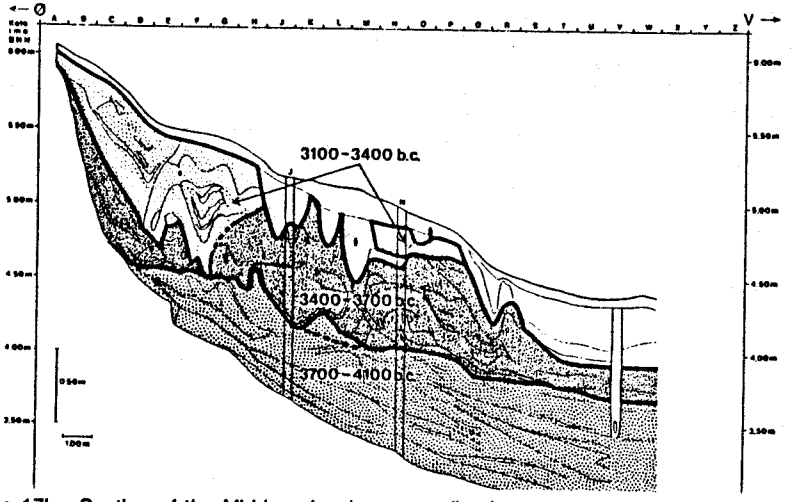

Figure 17b. Section of the Midden showing generalized sequence based on c-14 datings. Orla Svendsen del. (From Andersen and Johansen. 1986).

Accorsi, C.A., M. Bandini Mazzanti, Paolo Biagi, L. Castelletti, M. Cremaschi, L. Leoni, and M. Pavarani. 1987. Il sito Mesolitico Sopra Fienile Rossino Sull'Altipiano di Cariàdeghe (Serle-Brescia). Aspeti pedostratigrafici, archeologici, antracologici e palinologici. **Natura Bresciana** (Ann. Mus. Civ. Sc. Nat., Brescia) 23:239-292.

The Mesolithic station of Sopra Fienile Rossino is situated at the northern edge of the Cariadeghe karstic upland, some 12 km northeast of Brescia, at an altitude of 925 m a.s.l. The excavation of the site was carried out in 1970, 1979, and 1980. It produced a buried structure containing a "posthole" 92 cm deep, which was dated to 4860±70 b.c. (BIn-3277). The flint assemblage, almost completely chipped from locally available raw material, is attributable to the Late Mesolithic Castelnovian Culture. Typical artifacts recovered during excavations include subconical narrow bladelet cores, trapezoidal arrowheads, and notched bladelets. The stratigraphic sequence shows that the station was probably settled between late summer and early spring as shows by the presence of carbonized hazelnut shells. Its location, very close to a middle altitude pass, might indicate that hunting activities were practiced at the site. Pollen and charcoal analysis indicate that a mixed oak wood cover was established during the Vth millennium b.c., in a period of slope stability. Erosional and colluvial phenomena began during the Sub-boreal and Sub-Atlantic periods caused by the human impact on the landscape. The area inhabited by the mesolithic communities was later settled only during the XVth century AD as revealed by a radiocarbon date obtained from beech charcoal recovered at - 50 cm. A more recent occupation is attested by a charcoal pit mainly composed of chestnut charcoals discovered at -10 cm.

Biagi, Paolo. 1985. Neue Aspekte zur Neolithisierung Norditaliens. **ZfA Zeitschrift fur Archäologie** 19: 11-22. Berlin.

Biagi, Paolo. 1986. Stazione Mesolitica a Lonato (BS), Località Case Vecchie. **Natura Bresciana** (Ann. Mus. Civ. Sc. Nat., Brescia) 22:179-190.

The author describes the Mesolithic assemblage recovered along the shores of a small intermorainic basin located a few km southeast of Lonato in the province of Brescia. It is mostly attributable to the Castelnovian, early Atlantic period, even though typologically earlier types such as hypermicrolithic scalene triangles and lunates are present in the surface collection. A short discussion of the other finds and stations known today in the area concludes the article.

Biagi, Paolo. 1987. Observations on the late Neolithic of Northern Italy. **Natura Bresciana** (Ann. Mus. Civ. Sc. Nat., Brescia) 23:293-297.

The author considers the problems connected with the late IVth-early IIIrd millennia b.c. in northeastern Italy that marks the transition between the final aspects of the Square Mouth Pottery Culture and the Chassey and later Lagozza traditions. Some considerations are also made about the first Copper Age groups which made their appearance in the Po Valley during the mid IIIrd millennium b.c.

Bjerck, Hein Bjartmann. 1986. The Fosna-Nøstvet Problem. A Consideration of Archaeological Units and Chronozones in the South Norwegian Mesolithic Period. **Norwegian Archaeological Review** 19(2): 103-121.

The Tapes transgression has distorted the archaeological record, especially in the Western Norwegian Mesolithic Period. The concept of two distinct archaeological units, the 'Fosna culture' and the 'Nøstvet culture', is mainly based on a 'false contrast' in the archaeological material, created by the transgression. A three-phase model, similar to the provisional chronological framework for south-eastern Norway, is indicated by the analysis of traditional typological elements in 16 lithic assemblages, ca. 9500-6000 years B.P. the *Fosna Tradition*,, older than ca. 9000 years B.P., is essentially unchanged from earlier descriptions. The *Early Microblade Tradition*, ca. 9000-7000 years B.P., is dominated by Nøstvet elements, yet some Fosna elements are present. Blade cores and blades appear to be chronologically significant. The *Late Microblade Tradition*, ca. 7000-5200 years B.P., does not include Fosna elements. Abundant bipolar cores is an important characteristic. An independent analysis of blades and blade technology shows a gradual continous change throughtou the entire Mesolithic period. Consequently, the interpretive significance of precise chronological boundaries between archaeological units is questioned. Regional differences and diffuse transitions make traditions, phases, etc. unsuitable as units in a basic chronological framework. The use of Blytt-Sernander chronozones is therefore recommended. (Comments and the author's reply appears in **Norwegian Archaeological Review** 20(1): 31-42.

Coulson, S. 1986. Refitted flint nodules from Songa Telemark. **Universitets Oldsaksamlingen Årbok 1984/1985.**

Enghoff, I.B. 1986. Freshwater fishing from a Sea-Coast Settlement - the Ertebølle *locus classicus* Revisited. **Journal of Danish Archaeology** 5: 62-76.

Gramsch, Bernhard. 1987. Ausgrabungen auf dem mesolithischen Moorfundplatz bei Friesack, Bezirk Potsdam. **Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam** 21:75-100.

Seit 1977 werden auf einem altmesolithischen Moorfundplatz bei Friesack, Bezirk Potsdam (DDR), ausgrabungen durchgeführt. Die Station liegt im Warschau-Berliner "Urstromtal", das mit fluvioglazialen Sanden ausgefüllt is un heute weitgehend eine Niedermoordecke trägt. Zur Zeit der Besiedlung war die Topographie durch flachwellige Sandflächen und verlandende Gewässer bestimmt. Der einstige Wohnplatz is eine Sanderhebung, an dessen Ostund Südseite ein Flachsee lag.
Die ausgegrabungenen Bereiche der subaquatischen "Abfallzone" am Rande des Gewässers bestehen aus mehr oder weniger humosen Sanden, Mudden, und Sanden. Bestimmte Lagen stehen im direkten Zusammenhang mit den Anwesenheiten des Menschen, während derer Wind und Oberflächenwasser Sande vom Hügel in die Gewässerrandzone transportieren konnten. Das ergab eine vielgliedrige Abfolge von Sedimenten. Nach Sedimentanalyen, palynollgischen Untersuchungen und Radiocarbondatierungen lassen sich folgende Besiedlungsperioden erfassen:

1. Mittleres Präboreal (ca. 7750 - 7500 v.u.Z.)
2. Spätpräboreal/Übergang zum Boreal (ca. 7400 bis 7200 v.u.Z.)
3. Frühborel (7100 - 6850 v.u.Z.)
4. Endboreal/Altatlantikum (6200 - 5000 v.u.Z.)

Die Funde umfassen artefakte aus Feuerstein, Stein, Knochen, Geweih, Zähnen, Holz, Rinde, und Bast. Die Stratigraphie ermöglicht eine differenzierte chronologische Gliederung des Fundmaterials. Bemerkenswert sind vor allem die zahlreich erhaltenen Artefakte aus organischen Stoffen, u.a. geschäftete Knochenspitzen, Geweihhacken und -fassungen mit hölzernem Schaft, eine Stienkeule mit Holzschaft, Bruchstücke von Pfeilen und speeren, Wickelbrettchen, einer Holzmujlde, ein Rindenbehälter sowie fragmenten von Netzen und Stricken. Die meistendieser Gegenstände stammen aus den Horizonten der dritten Besiedlungsperiode. Unter den zahlreichen Resten der Jagdbeute sind Hirsch, Reh, und Wildschwein am häufigsten. Bemerkenswerte Anteile an der Nahrung hatten auch Biber und Sumpfschildkröte.
Die Sedimente lassen auch die Okkupationsfrequenz während der Siedlungsperioden erschliessen, insgesamt etwa 50 Besiedlungen. Vom Präboreal bis zum Frühboreal lag nach den Geweihfunden die Sidelungssaison jeweils im Frühjahr, während der Platz im Spätboreal/ Altatlantikum wohl im Herbst aufgesucht wurde. in der dritten Siedlungsperiode bestanden wahrscheinlich Lager grösserer Sozialeinheiten, vorher und später waren dagegen nur kleinere Menschengruppen anwesend. Bis zum Frühboreal war offen bar die Jagd die Hauptaktivität der Nahrungsbeschaffung, in der letzen Siedlungsperiode sind auch reichlich Haselnüsse gesammelt worden. Umwelt kommt palynologisch in Indizien für synanthrope Berbreitung nitrophiler Pflanzen zum Ausdruck.

Mellars, Paul. 1987. **Excavations on Oronsay. Prehistoric human ecology on a small island.** Edinburgh University Press.

The tiny island of Oronsay in the Inner Hebrides now has a permanent place in the Atlas of world prehistory. For six hundred years, in the fifth millennium B.C., small groups moved seasonally from coastal site to coastal site, harvesting the rich supplies of fish, crustaceans, and seals that abound around the rocky shores of the island. Its shell middens have yielded uniquely interesting informatin about these mesolithic times and people.
With the sole exception of Star Carr, the Oronsay sites have produced the largest collection of organic remains - both faunal remains and artifacts - from any British Mesolithic site, and the largest collection of human bones from stratified mesolithic contexts. The period of occupation represents a crucial and hitherto little-understood phase of British prehistory, just before the Mesolithic/Neolithic transition. Again the data relate not to a single site but to a closely related group that reveals an integrated, seasonally differentiated settlement system.
This report, on six seasons' work between 1970-1979, lays great stress on the paleoecological aspects of the excavations: ancient geography, coastal environment, pollen, vegetation history, sedimentological analysis, land snail faunas, storm frequencies, mammal and human bone assemblages, as well as on the five chief excavations.

Petersen, K.S. 1986. The Ertebølle 'køkkenmødding' and the marine development of the Limfjord, with particular reference to the Molluscan Fauna. **Journal of Danish Archaeology** 5:77-84.

Price, T. Douglas. 1987. The Mesolithic of Western Europe. **Journal of World Prehistory** 1: 225-305.

Recent investigations of prefarming adaptations during the Mesolithic period in early Holocene Europe have led to significant revision of traditional views. A number of innovations and changes occur, particularly toward the end of the Mesolithic, that permit this time to be described as both dynamic and extraordinary. Permanent settlement and the use of domesticated animals, exchange, and perhaps cultivated plants and monumental tombs characterize a number of later Mesolithic adaptations. The transition to the Neolithic is now regarded as the result of in situ developments in most areas of Western Europe, as Mesolithic groups slowly adopted pottery, cultigens, and other characteristics of farming villagers. In this paper, questions regarding chronology, nomenclature, and the definition of terms are addressed initially. Changes in European environments at the close of the Pleistocene and during the Early Postglacial are considered in terms of major impacts on human adaptation. The central focus of this study is a survey of the Mesolithic in Ireland, Britain, the Netherlands, Belgium, France, Portugal, Spain and Italy. Recent research projects in these areas are discussed in terms of new approaches and results. An overview of developments in these countries is also presented, emphasizing the transitions from the Paleolithic and into the Neolithic. Concluding remarks address future directions in Mesolithic research.

Skar, B. and S. Coulson, 1985. The Early Mesolithic Site of Rørmyr II. A Re-examination of one of the Høgnippen Sites, SE Norway. **Acta Archaeologica** 56: 167-183.

Skar, B. and S. Coulson, 1986. Evidence of Behaviour from Refitting - A Case Study. **Norwegian Archaeological Review** 19 (2): 90-102.

A re-examination of the lithic remains from the preboreal site of Rørmyr II by means of the method of refitting has shown that the site represents the remains from a single occupation. In this article the authors focus on various behavioural aspects recognized within three contemporaneous activity areas on the site. Furthermore, the idiosyncratic knapping characteristics of the poeple who produced the material will be discussed. By distinguishing between the various types of refits represented, in addition to examing the implications of the typological inventory, the site of Rørmyr II has been characterized as a short-term hunter's camp-site, and not as a specialized hunting station.

Straus, Lawrence Guy. 1987. Terminal paleolithic and early mesolithic research at Abri Dufaure, Southwest France. **Munibe (Antropología y Arqueología)** 39: 611-65.

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