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SØREN H. ANDERSEN (ed.), Tybrind Vig. Submerged Mesolithic Settlements in Denmark. With contributions by Bodil Bratlund, Kjeld Christensen, Hans Dal, Kasper Johansen, Lise Bender Jørgensen, Claus Malmros, Ole Nielsen, Kaj Strand Petersen, Kirsten Prangsgaard, Kaare Lund Rasmussen and Tine Trolle. Jutland Archaeological Society Publications Vol. 77. Moesgård Museum. The National Museum of Denmark. Jutland Archaeological Society, Højbjerg 2013. € 49,85. ISBN 978-87-88415-78-0; ISSN 0107-2854. 527 Seiten mit zahlreichen Abbildungen in schwarz-weiß und Farbe. Aquarell von Fleming Bau.

Some books are sincerely looked forward to. At long last they appear and stir excitement among colleagues. So is just the case with the concluding volume on the pioneer investigations of the submerged Ertebølle locations in Tybrind Vig, in Little Belt off the west coast of Danish Funen. This exceptional material has been slightly known through previous publications, while this main oeuvre has for various reasons been under production for many years. Together with the monograph on the submerged Ertebølle settlement of Ronæs Skov in Gamborg Fjord (S. H. ANDERSEN, *Ronæs Skov. Marinarkæologiske undersøgelser af kystboplads fra Ertebølletid* [Højbjerg 2009]) it closes the publication of two long-standing underwater excavations of Ertebølle sites beneath Little Belt. Earlier books have appeared on the submerged sites Møllegabet I and II off the island of Ærø, South Denmark (p. 12). “Tybrind Vig. Submerged Mesolithic Settlements in Denmark” has a Foreword and two main parts. S. H. Andersen, project manager and author in charge, gives a general overview in the Foreword (pp. 7–9) on the background and organisation of the investigations and of the development of the main publication. Numerous co-operators from Denmark and abroad and various institutions were involved in the project: archaeologists, maritime archaeologists, specialists in several other sciences, as well as amateur archaeologists and scuba divers (“Scuba” is “Self-Contained Underwater Breathing Apparatus”). Part 1 (pp. 11–341) takes up seven chapters and a Conclusion, a list of artefacts and references. The chapters are written by Søren H. Andersen except Chapter 5, a specialist contribution on pottery by Kirsten Prangsgaard. Andersen’s informative survey says that it quickly turned out that Tybrind Vig was a unique location comprising well-preserved dwelling sites with constructions and all “paved with artefacts” (p. 11), lots of organic materials together with non-water-rolled flints. An overview of the discovery and environment together with the excavations, methodological aspects, stratigraphic conditions, and dating, artefacts, economy and settlement structures are given in careful detail. For a long time artefacts had been found on the shore, but Tybrind Vig was in fact discovered by scuba divers in a competition launched by the magazine *Hjemmet* in 1957. The scope was on who could find Denmark’s oldest Mesolithic settlement. But it all became a disappointment. No finds older than the already known Ertebølle were made, and the sites were almost forgotten for 20 years. Erosion exposed new finds, and improvement in scuba dive equipment evolved. Danish underwater archaeology therefore had its earnest start with Tybrind Vig in the end of the 1970s. The main scientific argument for an investigation was yet that Ertebølle sites in SW Denmark were lacking and the well-known sites in mainly North Jutland (e. g. the

onymous site Ertebølle) therefore had no comparable sites in other parts of the country. Besides, Tybrind Vig provided an opportunity to investigate an Ertebølle settlement located midway between North Jutland and North Germany with *inter alia* the Late Mesolithic and Early Neolithic sites in Satrup Moor. Further, extremely good conditions for the preservation of wood-related technologies were prospected. A large-scale investigation was consequently well prepared.

Geological explanations to why SW Danish Ertebølle sites are underwater, are due to postglacial eustatic and isostatic activity causing the land to start tilting about a NW-SE axis, and thus leaving the sites in North Denmark on a coast line 60 m above sea level and in the S and SW on a submerged coastline 10m below sea level (p. 13 f.). An exciting result of the project is a reconstruction of the Atlantic coastline (Fig. 1.4). Around 4000 BC the Little Belt area was a fjord landscape with the comparatively large Ertebølle location situated at a shallow cove in the Tybrind Vig, periodically sheltered by a reef. A stream had its outlets in the cove, and *in situ* finds of alder (*Alnus*) date to the settlement period, and indicate an alder carr in the inner cove. There is an offshore shellbank mixed with hazelnuts and acorns, and covered by *gyttja*, but this is rather an accumulation, not a Kitchen-midden. Four different settlements are found, one of them indicated in the reef (Fig. 1.6). There are two horizons of settlement, one Early Ertebølle (5300–4700 BC) and one Middle and Late Ertebølle (4700–4000 BC), characterized as sedentary. The latest phase is signified also by typical Ertebølle pottery. The Tybrind Vig area seems to belong to a north-south oriented network of contacts. Some finds point to contact to the sites in Schleswig and Holstein, *inter alia* the closeness in pottery types, some wooden objects, and the dominance of flat-flaked axes in both areas. Significant is not least the wheat-sheaf motif used on various materials all along the network line (p. 313 ff.).

Part 2 (pp. 343–527) takes up ten main chapters written by specialists on particular materials and methods. All of the chapters are illustrated and all of them, except the final one, have references. Kasper Lambert Johansen writes on wooden stakes and rods (pp. 343 ff.), mostly hazel, horizontally embedded in the *gyttja*. Ole Nielsen takes up break patterns in simple bone points (pp. 349 ff.); Kaj Strand Petersen writes on geological conditions in the time of the settlement as revealed by marine molluscan fauna (pp. 355 ff.) and Kaare Lund Rasmussen on radiocarbon dates from Tybrind Vig (pp. 363 ff.); Kjeld Christensen writes on dendrochronological analysis of oak trunks from Tybrind Vig (pp. 365 ff.). This is an extraordinary rich material of subfossil trunks, or drowned forests. Further Claus Malmros writes on utilisation of wood at Tybrind Vig 5400–4000 BC (pp. 377 ff.), following up Lambert Johansen's previous discussion. Malmros discusses various ways of using wooden stakes. Wood for burning on a hearth is known, but we also get to know about the fascinating fishing weirs with (repaired) fish traps of wood, fishing technology like leister prongs, and fragments of woven (wicker) fish traps (drawing of the fishing tools in Fig. 6.1, p. 296). Although the Tybrind Vig fish weirs are not intact, unlike those known in the Halsskov area (pp. 384 ff.), they are well preserved. Still Tybrind Vig has yielded the most extensive and important North European wood assemblage to date. It includes also dug-out boats, accompanied by paddles with painted and carved geometric ornaments, *inter alia* in *split representation*, bows, helms for tools and weapons. Next, Lise Bender Jørgensen presents the textile remains, and this chapter also has three Appendices. Appendix A is written in German by Udelgard Körber-Grohne on the botanical classifications of the textile materials; Appendix B and C by Anne Marie Rørdam and Bente Lorentzen are on microscopic investigations of samples of textile fragments, and of fibres from the textiles (pp. 393 ff.). Tine Trolle writes on human and animal bones from Tybrind Vig (pp. 413 ff. with Appendix A).

Most remarkably an inhumation grave was located *in situ* on the sea bed. It was orientated N–S and set in sandy clay. Prior to the investigation, human bones, as well as animal bones, had been collected on the shore. The excavation revealed a female skeleton; an individual aged 14–16 years in a double grave with an infant (pp. 415 ff., Fig. 4). Both of them were laid on their backs, child's

head at woman's armpit, and they were placed in a pit a little too narrow for the adult's body. Among interesting, but not surprising, details is that the woman was mainly subsisting on a marine diet (p. 423). This result confirms yet the consistency of results known from a number of earlier ^{13}C -analyses in skeletons, while it first of all is in accordance with the marine environment of which the woman in all probability had been a living member. The female skeleton, 145 cm long and underdeveloped, indicates that this woman would have been unable to carry a child, and therefore most likely is not its mother. The question arises however if the immature body of the young woman could have been the very reason why she might have carried a stillborn child and/or which caused her to die in childbirth? The kid is possibly placed in a post-delivery position on the woman's front. An asset to the project is that available methods of age judgment are compared. Combined they suggest the age of the infant to be between new born and four months (p. 418 f.).

This grave is a defined spatial context with much and ambivalent information. A further problematisation would therefore have been wished for, and there are no definite methods by which to make firm conclusions on (absence of) biological closeness. Further, the spinal position of the adult body and the co-burial with a child in a shallow pit show parallel features to a customary Atlantic period burial practice with different genders and ages in co-burials. Fairly comparable examples are Vedbæk and Skateholm, still encouraging discussions on Atlantic period norms and rules in double graves.

In a next chapter Bodil Bratlund writes on a wild boar shoulder blade with an arrow wound from the location (pp. 497 ff.), indeed a rare demonstration of hunting in prehistory. This seems to have been found in a boar that was hit. The point must have been broken, and the boar survived the injury for several months, Bratlund estimates. The wound is analysed in detail and compared to other finds of bones with healed wounds, of which a small number is known. A concluding and recapitulating section on the marine-archaeological investigations 1978–87 is written by amateur archaeologist and scuba diver Hans Dal (pp. 505 ff.). Through his first-hand knowledge about diving and underwater sites, the reader gets a detailed and informative survey of the discovery, of process, techniques, complications and the general conditions for carrying out scientific work in a submerged site.

The Tybrind Vig investigations were a genuine pioneer work in North European underwater archaeology, technically and methodologically and to material results. Impressing was the occasion of recording stratigraphic conditions, extremely problematic in submerged sites. Underwater archaeology gained in methodological advancement and so also in scholarly establishment. The project has been a team-work in line with a well-established Danish model at its best, namely a team of different specialists together with amateurs. Fascinating is not least the high number of well-preserved wooden materials indicating the status, usefulness and importance of wood technology to the Late Mesolithic. Together with other traces of resources and economy they yield further knowledge about the importance of fishing to the Ertebølle economy. Together they also add to a variance of Late Mesolithic economy, and confirm and tone the aquatic profile of Ertebølle. Analyses of charred crust from pottery likewise deliver mainly marine results, together with some indications of plant products. Food and other supplies are likewise taken from hunted animals, as indicated by bones and already well-known tool types of the phase. Animals are represented by *Cervinae* and wild boar, animals typical to the Atlantic phase, together with bones from animals who were more frequent in a preceding period, like aurochs, elk and wild horse, but ^{14}C -dated to the settlement period. Domestic dog was found, while birds are scarcely represented.

Exceptional and most interesting are some new artefact types. They include cord, rope and textiles all manufactured of fibres of willow and lime. Techniques are akin to basket technique and to varieties of couching "*buttonhole stitching*" or to "*looping on a foundation*". It is remarkable that such

techniques are known already in Atlantic times, and in some versions are still practiced today. The diversity in the use of wood is underlined by these new items. The volume is a high quality production, richly illustrated, chapter by chapter with black/white and colour photos, drawings, diagrams, tables, and with a suggestive water colour depicting night leistering by Fleming Bau (Fig. 3. 104), adjacent to a picture of the same activity effected in an indigenous North American context (Fig. 3. 105). Most valuable is the extensive space granted to illustrations of the new and exceptional find materials, wooden objects and the textiles. All of these generous descriptions and illustrations jointly give a rich picture of a site in the Ertebølle epoch. Stimulating is that there is something ambivalent and therefore complex in the picture of the settlement. On the one hand can be visualised a snapshot of a pleasant shallow cove with adjoining vegetation and fish weirs, and one could imagine a deer resting under a tree at safe distance from the site. There are canoes, together with people and dogs living and working in the settlement. A couple of canoes leave the seaboard for fishing and adventure, paddling towards some seabirds sailing aloof on a thermal. There is peace, and the weather is nice with a zephyr cooling the burning sunshine. On the other hand can as well be imagined a conflicting image, namely an attack by a wild boar on a child or a dog. Whoever of them escaped, but the boar was finally shot in the shoulder blade. And about the undersized young woman in the grave – despite the apparently good and abundant diet in the setting she was of weak health. The health aspects again problematise our discussions of the ambiguous relationship between scientific analyses and our interpretations of social conditions. It settles the fact that these are issues with no simple answers. On this background questions must be asked in which environment the woman initially might have grown up, as well as on the value of the diet the Tybrind Vig area exposes, a diet we presently embraced as a most favourable one to health. This micro-example reveals a problematic relationship to follow up. Finally, there is also an ominous water edge flooding the dwelling and leaving the ground wet and uncomfortable. Possibly the settlement was left at last because of inundation, although people seem to have been coping with it for a long time.

While imagination is easily stimulated by the spectacular site and its well-preserved finds, many other questions rise. For example, who are the people and how did they co-operate and socialise; which were, except environmental conditions, the dynamic influences of social life? To make a few points of discussion, it can be stated that just like the project-organisation itself, the book is a product of a recognised Danish tradition. In this tradition the reader is presented with a comprehensive survey of the site and the environment, of the investigation and the find materials, all of the various methods used, and of conclusions on materials, cultural group and dates. In cognisant scholarship this thorough presentation of sources and methods is necessary as well as expected. But when it comes to the next step, the human and social interpretations, the reputable Danish tradition ceases its efforts. It usually leaves less space for social analyses and is consequently subject to critical discussions from scholars situated in a more analytical and problematising tradition. References are anyhow to ethnographic and anthropological models when interpersonal and social explanations are suggested in Tybrind Vig communities – regrettably they are but obsolete. These are models widely used by archaeologists but long since criticised for preserving myths and biases about social conditions, such as gender, organisation of activities and of life at large. Therefore, what we were initially informed about becomes too obvious when we are presented with social interpretations: much of this work was written decades ago. Andersen does himself return clearly to this issue in the Conclusion to Part 1, when he asks about future directions in research into submerged sites. Among issues he suggests is a need to develop new theoretical models on settlements, subsistence and social structure (p. 323). But this assertion is already well-known from earlier Danish publications on Stone Age conditions (e. g. in B. V. ERIKSEN, *Stenalderstudier. Tidligt mesolitiske jægere og samlere i Sydskandinavien* [Højbjerg 2002]), while no innovative social analyses hitherto appeared.

If we look next door, much inspiration is to be found in studies of subsistence as well as in burial contexts. We remember that already in 1984 Kristina Jennbert took up an inventive approach to early Ertebølle contexts, when she discussed knowledge of early cultivation as linked to women who moved from the Continent to South Scandinavia by spouse exchange (K. JENNBERT, *Den produktiva gåvan. Tradition och innovation i Sydskandinavien för omkring 5300 år sedan* [Lund/Bonn 1984]). More recently Late Mesolithic contexts are informed by gender-critical and social-identity theories with a basis of analysis in burial contexts (J. STRASSBURG, *Shamanic Shadows. One Hundred Generations of Undead Subversion in Southern Scandinavia, 7000–4000 BC* [Stockholm 2000]; and L. NILSSON STUTZ, *Embodied Rituals and Ritualized Bodies. Tracing Ritual Practices in Late Mesolithic Burials* [Lund 2003]). These neighbouring scholars represent innovative social approaches valuable to analyses of settlements as well as to burial contexts. They would therefore have had much to add to interpretations of Danish contexts.

So one more lack of expectation is added as we realise that “Tybrind Vig”, this forerunner investigation, has escaped the possibilities of current cultural and social approaches to people, animals, relationships, communities, daily activities and environment.

But so far with negative – however reasonable – criticism! Instead of regretting untaken occasions I will at once suggest an extra look at the many opportunities. One exciting challenge to a dynamic interpretation stays in the paradoxical picture of the environment; affluent and calm, but threatened by wild boars and vulnerable to inundation. But the main possibilities are in the investigation, documentation and the analyses which are so thoroughly, professionally and detailed carried out that it bids a huge space for scholars who want to take a new look at the materials from an up-to-date human and social research approach. The magnificent materials from tools, natural resources and animals really have the potential to new interpretations of relationships between humans and animals (beyond animals as prey) and between nature and culture on many levels. The materials documented in Tybrind Vig also show us that we must follow up the attention to organic materials together with attention to the evidences of a wide-ranging use of resources in Late Mesolithic economies.

The Tybrind Vig volume is an exciting and edifying read. This review has focused on a few and notable issues, as well as on a few challenges. Methods of investigation and analysis developed by the project are innovative and generally applicable to other submerged contexts. Besides, there is an extensive further potential in the record produced by the project. To take on current analytical approaches to the social conditions is an obvious suggestion for future investigations of submerged settlements. Obvious is moreover that the find materials from Tybrind Vig will stay a profound source to upcoming research on how to approach humans, their confidant as well as prey species, and their shared natural and social conditions in a noticeable Ertebølle setting.

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