

Early Scandinavian archeology: Thomsen, Nilsson and Worsaae

Magnus Pharao Hansen

The archeology practiced by the Scandinavian prehistorians of the early 19th century saw an early development of several concepts that would come to serve as a methodological basis for the mature discipline of archeology.

Among the developments of that period we find:

- The concept of pre-history as a period distinct from the historical period but which can nonetheless be studied scientifically.
- an established understanding of how to construct arguments about the stages and cultural changes that occurred in prehistoric societies.
- The first chronological system for dating prehistoric finds: the three-age system of European prehistory, soundly based on analyses of material evidence.
- The introduction of the concepts of archaeological context and relative dating by means of stratigraphy and comparison of 'closed finds'.
- The rejection of oral and written tradition as a necessarily helpful explanatory context for finds, and the insistence that archaeological evidence speaks for itself.
- First glimpses of the experimental method in archeology - the use of experiments to gain knowledge about prehistoric material production and use.
- A new analytical approach to using collections of artifacts to establish chronologies of prehistoric periods.

The role of Christian Jürgensen Thomsen (1788 - 1865)

In 1816 Thomsen was headhunted to curate Danish Royal Commission for the Collection and Preservation of Antiquities' first exhibition. He probably knew of the Three-age model of prehistory through the works of Lucretius, Vedel Simonsen, Montfaucon and Mahudel, and decided to sort the material in the collection chronologically. Before Thomsen,

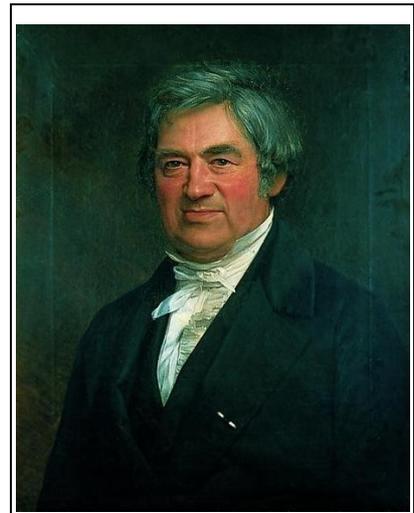


Illustration 1: Contemporary painting of C. J. Thomsen

this might have been done by mechanically sorting the materials according to their materials or the level of craftsmanship they displayed, but as the proveniences of many of the materials were known, he could see that crude artifacts were sometimes found with fine ones and metal artifacts with artifacts of stone. Rather than take a simple technological or evolutionary approach, he realized that the actual task was to find out in which periods the artifacts had been made. He decided to map out which kinds of phenomena coöccurred in deposits and which did not, as this would allow him to discern any trends that were exclusive to certain periods. In this way he discovered that stone tools were found in connection with amber, pottery, glass beads, whereas bronze was found with both iron and gold, but silver was only found in connection with iron. He also found that bronze weapons did not coöccur with iron artifacts - so that each period could be defined by its preferred *cutting* material. He also found that the types of grave goods varied between burial types so that stone tools were found in relation to uncremated corpses and stone-chamber tombs, bronze weapons and lurs (a particular kind of bronze trumpet) in relation to stone-cist graves, and iron in relation to chamber tombs in barrows. While his detractors asked rhetorically why there was no "glass age," Thomsen could simply reply that that beads of glass were found in all three periods, but

bowls of glass only in the Iron Age .

To Thomsen the find circumstances were the key to dating, and as early as 1821 he wrote in a letter to fellow prehistorian Schröder that, "[n]othing is more important than to point out that hitherto we have not paid enough attention to what was found together," and, the next year, that "[we] still do not know enough about most of the antiquities either ... only future archaeologists may be able to decide, but they will never be able to do so if they do not observe what things are found together and our collections are not brought to a greater degree of perfection" (Gräslund 1987:23)

Categories	Stone age	Bronze age	Iron age
Stone	x		
Bronze		x	x
Iron			x
Copper		x	
Gold		x	x
Silver			x
Amber	x		
Pottery	x	x	x
Glass bowls			x
Glass beads	x	x	x
Bronze lurs		x	
Tutuli		x	
Stone-chamber tombs	x		
Stone-cist graves		x	
Chamber tombs in barrows			x
Uncremated corpses	x	x	x
Cremated corpses		x	x
Cinerary urns		x	
w. awls tweezers and knives			
horse buried in grave			x

Cooccurring phenomena described by Thomsen in "Guide". Figure adapted from Gräslund (1987:21)

This analysis emphasizing coöccurrence and systematic attention to archaeological context allowed Thomsen to build a chronological framework of the materials in the collection and to classify new finds in relation to the established chronology, even without much knowledge of its

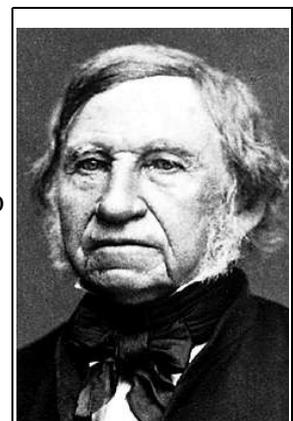
provenience. In this way, Thomsen's system was a true chronological system rather than an evolutionary or technological system (Gräslund 1987:22, 28). His chronology was established by 1825 (Gräslund 1987:19), and visitors to the museum were instructed in his methods. Thomsen also published journal articles and pamphlets in which he emphasized the importance of the find circumstances for later interpretation and dating (Gräslund 1987:24). Finally, in 1836, he published the illustrated monograph *Guide to Northern Antiquity* in which he put forth his chronology together with comments about which things occurred together in finds.

Like previous antiquarians, such as Winckelmann (Trigger 2006:57-8), Thomsen did pay attention to stylistic analysis as well, but he used his chronological framework as evidence that stylistic developments had taken place, not the other way round.

While Heizer (1962) is undoubtedly right in his assertion that Thomsen did not independently invent the three-age model, he was the first to be in a position to actually prove it by evidence. He was the first person to have at his disposal such a wide material consisting of collective finds from a large relatively homogeneous culture area, and he was the first to develop it into an actual chronological system rather than a speculative evolutionary model (Gräslund 1987:29).

The role of Nilsson (1787 - 1883)

The Swedish Professor of Zoology Sven Nilsson foreshadowed modern archeology in his interest in prehistoric subsistence patterns. He was also the first to use his own experiments with flint knapping as a way to determine whether flints were natural or man-made. He argued in favor of the use of ethnographic analogy in understanding the primitive



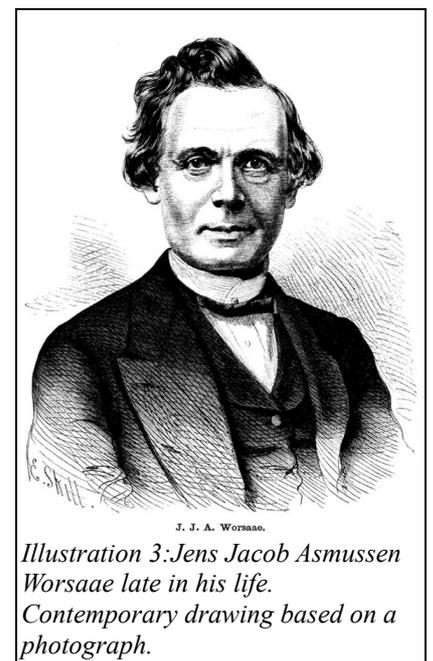
*Illustration
2: Photograph of Sven
Nilsson, Professor of
Zoology*

cultures of the past: "...It should also be clear that the only method to appropriate *secure* and *total* knowledge about all these tools, about the way they were shafted and used, as about the tasks on which they were utilised etc., is to investigate whether such stone tools are still in use by contemporary, wild peoples, and to examine how they work with them." (Nilsson 1866 cited in Fahlander 2004:190)

Nilsson was influenced by the French paleontologist Georges Cuvier who had been among the first to notice that other animals than the ones we know existed in the deep past. He did not believe in evolution, but attributed their passing to cataclysmic events. In the same way Nilsson, in his work *The Primitive Inhabitants of the Scandinavian North*, divided Scandinavian prehistory into periods of hunting and fishing, pastoralism, agriculture and civilization, each connected with different peoples immigrating into Scandinavia and driving out the previous ones. Neither, Nilsson nor the Danish prehistorians, saw the succession of stages as cultural evolution, but as being due to cultural diffusion from more developed peoples elsewhere in Europe. (Nicklasson 2008) Nilsson also had an important influence on the acceptance of the three-age model in Scandinavia outside of Denmark.

The role of Worsaae (1821 - 1885)

As a young man, Jens Jacob Asmussen Worsaae came to work as a volunteer in the Danish National Museum, and was trained in Thomsen's methods of dating. He also became a prolific fieldworker, excavating in many parts of Denmark, and providing Thomsen with many new closed finds to support the three-age division.



More than Thomsen, Worsaae reacted against the then-prevalent view of prehistory in Denmark. This view was championed by the historian Suhm who operated with a proto-historic period called “the legendary age”. According to Suhm, this period could be studied by studying the Old Norse myths and legends, and Suhm interpreted Norse gods and mythical figures as the kings and leaders of prehistoric peoples. Worsaae rejected this view of prehistory as mere euhemerism, and maintained that prehistory was a period not to be studied by historians, but by archeologists. To him the knowledge that can be obtained about prehistory will necessarily be qualitatively different from the knowledge we can have about historic periods (Gjerløff 1999).

In the mid 19th century amid Danish-German political tension Norwegian scholar and nationalist Peter Andreas Munch provided the Germans with arguments for invading Denmark by suggesting that Denmark had originally been settled by Germans. Dispelling the arguments, Worsaae maintained that the prehistoric peoples of the archaeological records could not be identified with any modern peoples because of the sheer timescale involved (Rowley-Conwy 2006). Similarly, when a peat-bog mummy was found in southern Denmark, historians were quick to suggest that it was Queen Gunhild, mother of the first Danish King known from the chronicles. Worsaae again rejected the notion, arguing that, based on the archaeological context, the mummy would be at least 500 years older than the first historic records (Gjerløff 1999).

Using the studies of prehistoric subsistence of Nilsson and those of the Danish geologist, Johannes Japetus Steenstrup, who had studied the changes in prehistoric forestation, Worsaae began to explore the limits of what can be known about prehistory. In that period of scholarship those who could even grasp the concept of prehistory were hard pressed to imagine that cultural developments *within* the three ages could be discerned. Through excavations of stone-

age sites, Worsaae saw that there were distinct trends of coöccurrence: a period with simple tools, signs of hunting and fishing and with dog bones as the only evidence of domestic animals. This period was associated with the discovery of "kitchen middens": enormous piles of waste produced by oyster-eating foragers, sometimes as much as ten meters high and a hundred meters long. Worsaae commented in his diary that "these enormous piles of oyster shells must represent the remains of meals eaten by stone age people" (diary entry September 1850 - Gräslund 1987)

A second subset of the Stone Age deposits showed signs of animal husbandry and agriculture associated with dolmen-burials. Following the analyses of prehistoric subsistence by Nilsson he proposed that it could be shown that the stone-age had been divided into a foraging period and an agricultural period. He also recognized that finds from caves in France predated even the Danish foraging stone-age period, and so he was perhaps the first to envision the division between Paleolithic, Mesolithic and Neolithic periods which were only given their names by Lubbock in 1865 (Gräslund 1987:38). Worsaae became the mentor of a new generation of archaeologists such as Müller, Bruzelius, Hildebrand and Montelius, who followed his lead, but who developed even better methods for establishing chronologies through controlled excavations. (Gräslund 1987)

Trigger describes how earlier attempts of envisioning prehistory had been stopped by forceful reactions from the church and the biblical literalist preference for a short chronology. In Denmark this didn't happen. Maybe this was because Danish theology was already fairly liberal at that time, and the most important theologians such as N.F.S. Grundtvig were themselves interested in the early heathen history of Denmark and following the archaeological advances with interest . But probably also because Danish prehistory, even when correctly is not nearly as

deep as elsewhere in Europe (all Stone Age deposits are post-glacial) and so does not conflict with a short, biblical chronology.

The Scandinavian prehistorians and Europe:

The Scandinavian archeologists did not work in isolation from the rest of Europe. On the contrary, Thomsen and Worsaae had large networks of colleagues. Worsaae corresponded with Daniel Wilson the Scottish (Scots is the dialect) inventor of the English word 'prehistory' (Rowley-Conwy 2006), and Thomsen invited German prehistorians who doubted the validity of his three-age model to come and see his collection and judge the evidence for themselves. (Gräslund 1987:26) Worsaae also recognized that finds elsewhere in Europe predated the earliest Danish finds.

In 1869, Copenhagen hosted the 4th European Archeological conference with 370 participants from 17 different countries, the first three conferences had been set in Neuchatel, Paris, and London. Worsaae presided over the meeting set in the aftermath of Denmark's defeat by Germany in 1864, which, among other tragedies, had resulted in the loss of two of Denmark's largest collections of prehistoric artifacts to Germany. He opened by paying tribute to his predecessor, the deceased Thomsen, and to the prehistorians Nilsson and Lisch who had both actively participated in promoting Thomsen's three-age model. Among the topics discussed were the diffusion of cultural traits from Europe into Scandinavia, and the young Swede Oscar Montelius presented his theories. The importance of Darwin's model of evolution and its relevance for prehistoric studies was also a hot topic for discussion (Wiell 1999).

The precarious situation of Danish politics after the 1864 defeat ironically provided an impetus for Danish prehistoric studies. Danish National poet Hans Peter Holst famously stated

that “What has been outwards lost must be inwards regained”, meaning that the territorial losses should be set off by national consolidation. The late 19th century saw an increased public interest in prehistoric studies and an equally increased public expenditure. Since this period the Danish Royal family has been important patrons of Archaeology, some its members even participating in digs as far away as Egypt, and archaeology has generally been well endowed by public funding.

It must be concluded that the Scandinavian contribution to the early development of archeology in Europe was important. The significance to archeology of the realization that prehistory is a period distinct from history and to be studied accordingly can hardly be overestimated. Worsaae's insistence on separating the study of prehistory from the discipline and methods of the discipline of history were instrumental in establishing archeology as a distinct academic discipline in Scandinavia. Likewise, Thomsen's realization that the context of finds are as important as the finds themselves has been of vital importance to modern archaeological practices. Rather than for the three-age model, Scandinavian archeologists should be remembered for their contributions to making the archeology an evidence-based science with its own distinct modes of argumentation that can establish chronologies of prehistoric developments and supply us with information about past societies' ways of life.

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