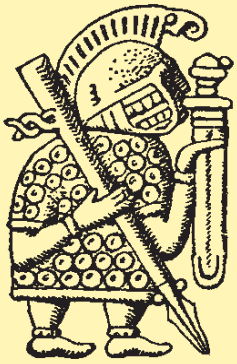

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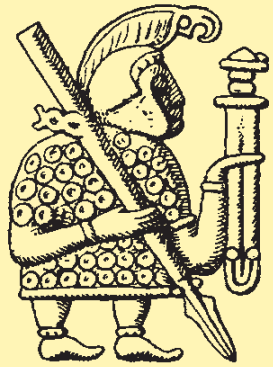

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Errett Callahan (1937–2019) and his impact on Swedish archaeology

Errett Callahan passed away in May 2019. As members of the Swedish archaeological community who have worked with Callahan and have benefitted from his expertise and his experience during a period of 30 years in a number of projects, we wish to remember and pay tribute to Callahan's interactions with Swedish archaeologists and knappers and delineate the impact he has had on Swedish archaeology.

In his book *Neolithic Danish Daggers. Vol. II: A Manual for Flintknappers & Lithic Analysts* (2016, p. 247), he comments that this was the inspiration for his lifelong search for making a similar dagger. During the last 30 years of his life Callahan made 250 dagger replicas, meticulously recording the parameters involved in the knapping and saving much of the debitage he produced (Callahan 2016). His interest in daggers led him early on to Scandinavia to carry out detailed examinations of archaeological examples in museum collections in Sweden and Denmark including the Danish National Museum in Copenhagen, Denmark, and in Sweden at the Swedish History Museum in Stockholm and the Historical Museum in Lund. A general interest in past cultures, lithic experimentation and lithic analysis lay close to his heart and his interest in daggers was part of this.

Thus, in 1979 during his first stay in Denmark, flint daggers were not his sole focus. This first summer in Scandinavia Errett organized the first international flint seminar at Lejre Research Center in Denmark. Twelve flintknappers from USA, Holland, Germany, Denmark and Sweden took part in the seminar that came to change the course of Stone Age research in Scandinavia. The aim with this first workshop, besides replicating flint daggers, was to study the production of Late Glacial Bromme and Mesolithic blades and Neolithic square-sided axes (Callahan 1980).

This was the first of a total of eight trips to Scandinavia he undertook between 1979 and 2006. Errett applied many of the principles he delineated in his master's thesis (Callahan 1979) in planning and carrying out this seminar and in his subsequent scientific collaborations in the region. Characteristic of all his work was the ambition to do rigorous and replicable practical trials in order to shed light on archaeological questions. This philosophy had major consequences for the development of lithic analysis in Scandinavian archaeology, mainly in Sweden and Denmark. One of his major contributions to the more theoretical aspects of experimental archaeology was his development of the idea of production stages and its archaeological and cognitive consequences. Here he built upon ideas first verbalized by Holmes in the late 19th century and still relevant today (Holmes 1894).

In 1980 Noel Broadbent and Kjel Knutsson, researchers affiliated with Uppsala University, took part in a conference on experimental archaeology at the British Museum in London. Errett Callahan was invited to talk about his experiences with experimental archaeology in the US. Since experimental archaeology had become part of research and education at Uppsala University a few years earlier (Knutsson 2011; Apel & Knutsson 2006), Errett was invited to give a series of demonstrations and workshops for graduate and undergraduate students in Uppsala. This marked the beginning of collaboration between researchers and students at Uppsala University covering a period of more than 20 years.

Errett returned to Scandinavia in 1981 and organized the second international flint seminar at Lejre Research Center, Denmark. Eleven lithic specialists from Denmark, Sweden, Germany, France, Switzerland and Scotland were invited. The focus was to replicate Scandinavian Neolithic four-sided flint axes. Deborah Olausson, then a PhD student at Lund University, was invited to this seminar and the experience proved to be pivotal for her PhD research (Olausson 1981; 1983a). Callahan's legacy has greatly influenced her subsequent research, which has focused on tacit knowledge, crafting, and craftsmanship.

In connection with his second visit to Lejre in 1981, Errett was invited to carry out flintknapping demonstrations at Lund and Uppsala univer-

Fig. 1. Errett Callahan knapping in Uppsala in 1981.

sities. Callahan's demonstrations inspired students in both universities, ultimately resulting in PhD dissertations in which replication is an important method and questions about practical knowledge are central. In Lund this is manifested in PhD dissertations about textile production (Andersson 1999), Bronze Age flint knives (Högberg 2009), pottery crafting (Botwid 2016) and bronze technology (Nilsson in prep); in Uppsala, Mesolithic and Neolithic blade technology and burial customs (Knutsson, H. 1995), exotic raw material (Taffinder 1998), flint daggers (Apel 2001); and stone axes (Lekberg 2002; Sundström 2003); and in Stockholm, Mesolithic quartz technology (Lindgren 2004).

At Olausson's request, Errett carried out timed experiments replicating square-sided Neolithic axes of flint and groundstone in 1983. These data were used in her dissertation (Olausson 1983b). The same year a project funded by the Swedish Research Council for Research in the Humanities and the Social Sciences was launched at Uppsala University: "Lithic Technology and Stone Tool Function in the Stone Age Central Sweden". The project was headed by Helena Knutsson and Jackie Taffinder and Errett was hired as a lithic specialist. His work for the project resulted in a book characterized by his systematic experiments and data recording. The book's aim was to define the flaked lithic reduction systems in operation in Middle Sweden during the Mesolithic and early Neolithic (Callahan 1987).

Under the direction of Helena and Kjel Knutsson, students at the Institute of Archaeology in Uppsala built an experimental educational and research station outside Uppsala, the "Länna Project" 1981–1985. During his stay in Sweden in 1984 , while he was working on his book on lithic technology in Central Sweden, Errett was hired to work on the construction of this site, together with other experimentalist from Denmark, (mainly those he had met in Denmark in 1981) (Knutsson & Knutsson 1984; see also Knutsson 2004; 2011 for a short description of the work).

After he completed the book about lithic technology in eastern Central Sweden, Errett was once again invited to work in Sweden, now within another educational and research project (the "Flaten Project") headed by Kjel Knutsson at the Swedish History Museum in Stockholm. The project aimed to lay the foundation for a public mediation of prehistory using practical demonstration (Knutsson 1991). The context was the reconstruction of an Early Neolithic farmstead. Errett was responsible for the lithic reconstructions focusing on the production and use of ground stone axes and the reconstruction of edged tools made of quartz. His work resulted in an often-referenced paper on quartz technology (Callahan et al. 1992). The study of the production and use of ground stone axes later came to be used as an experimental background and reference material for two PhD students working on axes as testimonies of social interaction during the Early Neolithic in central Sweden (Sundström & Apel 1998; Apel 2001; Sundström 2003.

In 1992 Errett was invited by Helena Knuts-

Fig. 2. Errett Callahan knapping in Uppsala in 2003.

son, then a PhD student at the Institute of Archaeology at Uppsala University, to participate in the work with her PhD (Knutsson 1995). In the dissertation the habits and cultures of mobile hunter-gatherers and settled farmers were investigated, focusing on material solutions of different states in everyday life. Among other things, day-to-day practices and burial customs, evidenced by lithic industry, were compared. Callahan's job was to analyse the prismatic blade technology of the Middle Neolithic Battle Axe culture (Callahan 1995, pp. 225–237). Based on this knowledge and the analysis on the blade technology of the contemporaneous Pitted Ware Culture, Knutsson demonstrated that the two Middle Neolithic lithic traditions represented different contexts, the blades and their production and use acting as a proxies for the mentalities of two separate prehistoric groups, one related to a farming community, the other to a group of people living as hunter-gatherers. That same year Errett was awarded an honorary doctorate at Uppsala University.

Meanwhile, Errett's interest in the reconstruction of the Scandinavian Late Neolithic daggers continued. During his summer stay in Sweden in 1992, in a conversation with Jan Apel and Kjel Knutsson, which took place at Ofvandahl's Café in Uppsala, "The Dagger Project" was born. The project was launched by a minor grant from King Gustaf VI Adolf's Foundation for Swedish Culture. Errett and Jan spent the summers of 1993 and 1994 at The Lejre Research Center, replicat-

ing Type IV daggers and documenting the production process. In Denmark they worked and discussed with other flintknappers such as Jacques Pelegrin and Torbjörn Petersen. The following year Apel joined Callahan at his Cliffside workshop in Lynchburg, Virginia to continue the work (Callahan & Apel 2011; Callahan 2016). This work became pivotal for Apel's PhD dissertation on Late Neolithic society (Apel 2001), where the dagger technology was used as a proxy for craft specialisation and its social consequences in Late Neolithic southern Scandinavia. Errett was a surprise guest at Apel's dissertation defence in 2001, where he presented an accurate reconstruction of a Neolithic Type IV dagger in obsidian to the defendant. In 2003 Errett presented his work with Type IV dagger replication at the Symposium "Skilled Production and Social Reproduction" at Societas Archaeologica Upsaliensis (Callahan 2006). This is a visual summary of his 25 years of experimental research into the production of prestigious, Type IV Late Neolithic daggers. It thus provides an advance glimpse at many of the premises and conclusions found in his dagger book, published ten years later.

In 2004 Callahan, Olausson and Apel met in the Lejre Reseach Center to draw up plans for a publication on the production of Type IV Danish daggers. Applications for funding for the work were submitted to several agencies during the period 2004 to 2006; all were unsuccessful. In spite of this, work on the book project continued with infrequent meetings in Scandinavia and the US until the book was finally published (Callahan 2016). The aim of the book is to elucidate and present a model for how the most elaborate Late Neolithic daggers were made and the method is experimental archaeology.

Errett Callahan has told John Whittaker "I happen to love knapping feverishly" (Whittaker 2004, p. 245). But this love did not cause him to lose sight of the goal of applying information gained from his knapping to archaeological questions. Errett Callahan was a rarity in that he combined a practical ability for highly skilled knapping with a desire to apply his skills to archaeological problems. Thus, he was both a practitioner and a theoretician. Also, he was passionate about passing on his practical know-how; he has estimated that he has taught more than 1000 knappers (personal communication, June 2003). In our experience, this ability to verbalize his practical skill so as to pass it on to learners is unusual in the knapper community. Certainly, Swedish archaeology has benefitted, and continues to benefit, from its association with Errett Callahan and the unique insights he has provided into our lithic heritage.

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