

Lothar Sperber, **Studien zur spätbronzezeitlichen Chronologie im westlichen Mitteleuropa und in Westeuropa**. Monographien des Römisch-Germanischen Zentralmuseums, volume 136. Publisher Schnell und Steiner, Regensburg 2017. 334 pages with 120 black and white illustrations.

This volume represents an important contribution to Bronze Age chronology and is certainly a valuable tool for all who deal with that period. The book is not to be seen as the final product of the author's research but as a preliminary analysis and a base point for his main subject (pp. IX; 1, also 299): hoards (German: »Depot«) of the North Upper-Rhineland between Worms and Speyer in the period of 1100 until 800 B. C. (phases Late Bronze Age Ia = Bz D1 until Late Bronze Age IIIb2 = HAB 3b). Such a crucial issue as the Late Bronze Age Chronology of the Western European regions has not been widely discussed since the nineteen-eighties. In this context he positively assesses the work of Mireille David-Elbiali and Cynthia Dunning (Quad. Annu. Ist. Stud. Civiltà Italiche e Mediterraneo antico del Consiglio Naz. ricerche 1, 2004, 53–80) summarising the Late Bronze Age chronology of Switzerland. The aim here is to produce a revision, criticism, and summary of the relative and absolute chronology of the period within the frame of the wider region of Western Europe.

As reference frame for the absolute chronology of Western Europe the dendrochronological data from Switzerland is employed. As these data must

be approached regionally, the potential of a relative chronology based on detailed typological studies is engaged, primarily of metal objects.

The book starts with the chronological and typological analysis of knives (Pfahlbaumesser) and solid hilted swords (chapters A, pp. 3–38 and B, pp. 39–106).

In the next part, the absolute chronology of the Late Bronze Age sub-phases (chapter C, pp. 107–202), the absolute chronology itself (chapter D, pp. 203–232) and a synchronism with Müller-Karpe's chronological (relative) system (chapter E, pp. 233–240) are discussed. In the final chapter (F, pp. 241–298), the problem of synchronising the core study area with other West European regions is considered: the Atlantic and Urnfield cultures, the Iberian and British Late Bronze Age.

The knife types are dated according to absolute dates derived for the Swiss knife group, which is used as a terminus post or ante quem for the knives in other regions. The relative chronology is given by the reconstruction of the typological development of the artefact type. The same procedure is applied to the swords. Both artefact types are then brought together with the supra-regional types of palstaves and with other items of material culture in each region: pottery, fibulae, pins et cetera.

Thus, groups of contemporary artefacts are integrated in a new chronology, thus creating the type set of each sub-phase (Chapter C).

Within this system, the Atlantic and British Late Bronze Age hoards are also included, which close the chronological-typological net of the Late Bronze Age in Western Europe.

Finally, the phases of typological development, supported by the dendrochronological Swiss scale, are divided into sub-phases of fifty to seventy years (p. 299): Late Bronze age Ia (B D1) corresponds to 1330–1260 B.C., LBA Ib (B D2) to 1260–1200 B.C., LBA IIa (Ha A1) to 1200–1140 B.C., LBA IIb (Ha A2) to 1140–1080 B.C., LBA IIc (Ha B1a) to 1080–1020 B.C., LBA IIIa1 (Ha B1b) to 1020–960 B.C., LBA IIIa2 (Ha B2) to 960–900 B.C., LBA IIIb1 (Ha B3a) to 900–850/840 B.C., and LBA IIIb2 (Ha B3b) to 850/840–800/780 B.C.

Such a chronological system is supposed to be valid both in relative and in absolute terms, although some more detailed regional studies would be welcome (pp. 299–300).

A large quantity of literature has been collected and studied, and this monograph took literally dozens of years to be written (with some breaks caused by personal work duties), and the tremendous amount of work is clearly mirrored in the text and detailed analyses.

It is perhaps unfortunate, therefore, that the reader may, at first glance, be left with the impression that, given the luxury of the Swiss dendro-

nological data, it has been chosen to ignore all the available radiocarbon data. It may have been better to make some comments thereon, however brief, and to proffer an explanation for their general exclusion from his analyses. Indeed, an initial explanation and theoretical presentation of the method that he advocates would probably have been helpful. This would have permitted to adopt a more critical approach to the methodology and the results and could have led to a final discussion of why, where, and in which circumstances this particular model may not be valid, or at which points it may be weak.

Although this study has undoubtedly produced worthwhile results, such chronological-typological systems do provoke some doubts. In the first place, the almost regular division of the sub-phases, each fifty up to seventy years long, raises scepticism. It appears to mirror the assumption that typological development in material culture is a simple linear function. Thus the assertion that sub-phases of such regular length are the result of typological-chronological analyses does, perhaps, require more justification than has been offered.

Nowadays, typological definition of archaeological cultures or the definition of an archaeological culture as a typological group is often heavily criticized (i.e. P. Květina, *Archeologie smyšlené identity. The Archaeology of Fabricated Identity. Archeologické Rozhledy* 62, 2010, 629–660), therefore the conclusions presented require argument within a broader framework, using every method available.

The implicit assumption that the typological development of each artefact came off as a result of the same mechanisms and at constant speed, while expedient, is open to criticism. Some types of artefacts, and even the individual objects themselves could be used in different regions and by different societies during shorter or longer time spans, or even in different periods. The mechanisms causing their rejection from the living culture, and the process of their entry to the archaeological record could have varied significantly, given different criteria on what should accompany a burial, what should be deposited in hoards, what could be left in a settlement, what was lost, et cetera.

The fact that a large region with a large number of sites and artefacts has been investigated could smooth the data in such cases but only to the extent of averaging the results.

These criticisms should not be taken as a condemnation of the typological method but as a plea for its extension and integration within the wider field. These results would be even more valuable, useful and more widely accepted if other methods and data were seen to have been taken into consideration. Radiocarbon dates should obviously

be used, and the comparison of both methods is also important. Perhaps some statistical methods dealing with the grouping of artefacts or the creation of networks could also be used.

Albeit work is defined a preliminary study, the fact that his chosen region, far from being hermetically closed, was connected with other areas should perhaps have been viewed more as an opportunity. The inclusion of chronological systems from other regions, even those beyond the defined area could be highly beneficial. The chronological systems of the Carpathian region, South-East Europe and others could work as calibration frames. Even more so, because many of the artefacts are so widespread that they can even be identified in regions connected to historical chronological systems.

It would also be helpful if the nature of material culture and technological change had been addressed more directly. Acknowledging that they are not linear functions moving in one direction but are regionally, chronologically, and technologically irregular processes caused and stimulated by many different factors (i. e. T. Mannoni in: L. Lavan / E. Zanini / A. Sarantis [eds.] *Technology in Transitions*. A. D. 300–650 [Leiden and Boston 2007] 44–58) would allow to explore the potential weaknesses of his model and, thereby, make it more robust in application.

Despite the huge amount of work, which has been provided, the result seems to offer an idealized picture of material culture development. The groups of related artefacts appear to have been analysed as largely separate from the historical, economic, environmental, and social contexts in which they were created and used. The desire to fix the chronological frame entirely understandable, to create a typological »clock« or »ruler« useful in any part of the studied area is understandable, but, in the long run, the reader needs to be convinced that, despite any of the predictable difficulties, it will work.

I am sure that the author is well aware of all the aspects I have mentioned, and of others, which could be usefully applied to his results, and will not overlook them when it comes to the future publication of his research of the Northern Upper-Rhineland hoards, which I am looking forward to read.