

Elisabeth Krieger, **Die Wachttürme und Kleinkastelle am raetischen Limes**. With a contribution by Thomas Becker. *Limesforschungen. Studien zur Organisation der römischen Reichsgrenze an Rhein und Donau*, edited by Römisch-Germanische Kommission des Deutschen Archäologischen Instituts, volume 20. Publisher Gebr. Mann, Berlin 2019. 431 pages, 268 plates, 12 tables, 91 figures, 2 maps.

This two-volume publication with a weight of 3450 gram is a slightly modified version of the PhD thesis completed by the author at the University of Cologne in 2014–2016. The book starts with introductions written by C. Sebastian Sommer (editor of the *Limesforschungen*), Thomas Fischer (‘Doktorvater’ of the author) and the author herself. The introductions are followed by the 220-page main text, the 177-page catalogue with a summary of the available data of 272 watchtowers and eleven small forts (fortlets) and a concordance list of the cata-

logue. This volume concludes with an appendix by Thomas Becker on the animal bones from an excavation in 1970 of Watchtower 12/77 and an appendix with a detailed description of the excavation at the site of Watchtower 14/20. The second volume contains a large number of original drawings and sketches from the documentation of the research of the Reichs-Limeskommission (RLK) as well as plates from the volumes of *Der Obergermanisch-Raetische Limes des Roemerreichs (ORL)* published between 1894 and 1937. These are supplemented with recently edited airborne laser scans, photographs and drawings of finds.

In the first chapter, the author gives a brief overview of the research history of the 167 kilometers long Raetian Limes, which goes back to the sixteenth century. The research of individuals (until the beginning of the nineteenth century), historical associations (nineteenth century), the RLK (1892–1937) and the modern institutionalized archeology (after the Second World War) are successively reviewed. The following chapter explains the existing vision on the provincial and imperial border in the first and the first half of the second century A. D. and the phased development of the Raetian Limes from circa A. D. 160 until the end in the spring of A. D. 254. In the next, very short chapter, the topographical location of the Raetian Limes is roughly explained. The two maps on page 34 (the first of which is incorrectly numbered) give a good impression of the spatial layout of the limes.

In the next chapter, the largest with one hundred and thirteen pages, the author discusses the (archaeological) sources. Overall, the text is interesting in the sense that it critically discusses the existing research about the Raetian Limes since the last decade of the nineteenth century. However, the lack of numbering the chapters and the (sub)paragraphs makes it more complicated than necessary for the reader to understand the structure of the book, especially in this chapter. First, the illustrations of watchtowers on the Column of Traian, the Column of Marcus Aurelius and some building inscriptions are discussed. Next, the documentation of the RLK and the published data in the ORL are discussed. The author critically summarizes all available sources on the watchtowers and small forts along the Raetian Limes. She observes that not all parts (‘Strecken’) of the Raetian Limes have been investigated in the same way by the RLK. It also seems that there are important deviations between the research documentation of the RLK and the derived (simplified) publications in the ORL. The deviations concern the documentation on the localization of the watchtowers, the buildings themselves and their relationship to each other, and to the construction (dimensions, wall thickness, construction joint, interior and entrances).

The author therefore considers it very important for future research to include, in addition to the published volumes of the ORL, the original documentation of the RLK.

This part is followed by an analysis of the (archaeological) research carried out over the past decades. In particular, the airborne laser scans made since 2007 in the preliminary stages of the designation of the ORL as a UNESCO World Heritage site ›Frontiers of the Roman Empire‹ have helped the author to gain a better understanding of the design of the Raetian Limes and the current conservation status. For example, several watchtowers found during the RLK inventory are no longer visible in the landscape. On the basis of lines of sight, the author makes proposals for the locations of as yet unknown watchtowers and corrects previously assumed locations. From the known locations of the watchtowers, she further observes that the Roman surveyors were familiar with the relief rich landscape in which the limes was laid out. Based on an analysis of height differences and sightlines in the landscape, she then comes to the conclusion that not all watchtowers were of the same height. Most of the wooden and stone watchtowers had a reconstructed height of 5,5 to 7,6 meters; the others varied in height between 7,8 and 12,0 meters. This would imply that most watchtowers probably had only two floors, and not three as can be seen in many artist impressions and reconstructions from the last decades. The author then summarizes the results of research carried out in recent decades: magnetometric prospecting, electrical resistance measurements, research with ground radar, analyses of aerial photographs and four small-scale excavations. She then briefly discusses the archaeological research conducted. Archaeobotanical research is lacking in the research area.

Many of the finds made during the RLK's research appear to have been lost and are only superficially described. A separate paragraph successively deals with coins, militaria, horse harness (very little), jewelry and clothing accessories, household goods, toilet utensils, tools, building materials, pottery and other finds. The finds assembly gives to some extent a picture of everyday life of the soldiers in and near the watchtowers, and occasionally points to the presence of women.

Some of the described finds are depicted in the second volume. However, for some of them a question mark must be placed on the dating: an iron shovel (plate 6.4, presumably dates much younger), a shield-boss rivet (plate 112.2, is a button that can be dated around 1600), and a possible bone skate (plate 194.2) are not from Roman times. The small number of militaria is explained by the author assuming that the soldiers took everything of value when they abandoned the watchtowers.

However, the absence of metal detectors during RLK's research seems to be a much better explanation.

The next chapter discusses the archaeological features and wall remains found. First, the unclear indications for a fence of wickerwork (or planks) are discussed. Then, all architectural clues for the wooden palisade (oak) and the younger, approximately four feet wide and ten feet high stone limes wall are listed. At the beginning of the limes wall, an altar was found that was dedicated to the border god, the *finis*. The wall appears to be made up of stones found in the region. This fits well with the analysis of the Airborne laser scans on which quarries were found in the immediate vicinity of the various watchtowers and the wall. Where necessary, openings for streams and small rivers were provided in the wall. The function of the so-called ›Stützpfiler‹ on the inside of the wall remains unclear. In eleven places, remnants of passages in both the palisade and the wall were usually found near a stone watchtower. With the exception of the Limestor Dalkingen, little is known about these passages. More or less parallel to the palisade and the wall, remnants of a paved road have been found in several places, but evidence is lacking in many other locations.

Along the entire border, wooden watchtowers protected by a ditch stood six to nine meters behind the palisade. The main structural elements of the watchtowers consisted of four heavy posts, which were founded in deep pits at the corners. It is not always clear how the walls were constructed. At some watchtowers, clues were found for wattle-and-daub walls, while others are believed to have been constructed from planks or beams. Archaeological indications of the height of the watchtowers, entrances, windows, a surrounding gallery, the roof or internal layout have not been found. In a part of the limes, instead of watchtowers, remains of five wooden so-called ›Blockhäuser‹ have been found, which were also surrounded by a ditch. These two-story structures were all based on a construction of horizontal beams, and probably also functioned as watchtowers.

After the wooden watchtowers had fallen into disrepair, they were replaced by stone ones. Of these, 105 locations are known. With an average ground surface of five to about five and a half meters, these watchtowers were slightly larger than their wooden predecessors. In some places, the wall remains have been preserved up to a height of one and a half meter. The towers were covered with stucco on the outside. Same as with their wooden predecessors, archaeological indications of height, appearance and furnishing are lacking. The limes wall, erected a little later, is in all cases connected to the northern front of the watchtowers. The

eleven known small forts with a surface of 225 to 400 square meters are usually integrated in the row of watchtowers. Several lime kilns have been found in the immediate vicinity of several watchtowers and small forts, but a certain date in Roman times is missing.

The next short chapter deals with the reconstruction of wooden and stone watchtowers. In the two short chapters that follow, the builders (building inscriptions are missing), the occupation (auxiliaries) and the function of the limes are discussed. The layout of the Raetian limes appears to be mainly determined by the landscape. Overall, the limes with its buildings represents a control strip in the periphery of the province Raetia and forms a visible component of the political and administrative outreach of Rome. The main function of the watchtowers was to control the border line, but also to a large extent to maintain the limes constructions itself. The soldiers in the watchtowers were supported by the units stationed in the small forts.

In the final chapter, all the data presented in the previous chapters are used to correct and supplement the existing knowledge about the phased development of the Raetian Limes:

- (1) Construction of the wooden watchtowers and an unpaved limes road (one large project).
- (2) Simultaneously or shortly thereafter the construction of the wooden palisade (A. D. 160–165/166).
- (3) Replacement of the wooden watchtowers by stone ones and some small forts (one large project).
- (4) Very shortly afterwards the construction of the limes wall (circa A. D. 200).
- (5) Further development of the limes road.
- (6) Construction of new stone watchtowers and alterations to others.
- (7) Replacement of several watchtowers by small forts.
- (8) The end of the Raetian Limes in the spring of A. D. 254.

However, based on the data collected in this book, no detailed statements can ultimately be made about the phasing of the Raetian Limes. Therefore, according to the author, the outlined phasing is a proposal for further discussion.

In this book, the author succeeds in demonstrating that the published data in the ORL's volumes are not always consistent with the results of the underlying research of the RLK. In addition to the data found before the Second World War, she successfully used the results of recent geophysical prospecting, airborne laser scans and aerial photographs to paint a solid and nuanced picture of the available knowledge about the watchtowers and small forts along the Raetian Limes. In this respect, this publication is a valuable handbook for anyone who wants

to read a summary of the results of the archaeological research on this part of the Roman limes over the last 130 years. At the same time, the knowledge gathered in this book offers many opportunities to compare it with that of other parts of the thousands of kilometers long limes of the Roman Empire. For the future, the author sees opportunities to further supplement this knowledge. Especially small-scale research with limited research questions in the context of monitoring the management of this World Heritage site offers opportunities to acquire new knowledge about the Raetian Limes.

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