

## English summaries

### **Raimund Zbigniew Radacki: New research on Pomeranian castles – (Supplement to Radacki: *Mittelalterliche Burgen in Pommern* [Mediaeval castles in Pomerania], Warsaw 1976**

Some 40 years after his *Erfassung der mittelalterlichen Burgen Pommerns* [Survey of mediaeval castles of Pomerania], published in Poland as a dissertation in 1976, the author felt it would be time to review his earlier interpretations, supplement it with recent research findings and re-classify individual castles/sites. The author presents an exemplary review in catalogue form of fortifications of the Knights of St John, the Knights Templars, the Teutonic Knights and 'minor' castles. There was a regular schedule of research into Pomeranian castles as part of an academic programme between 1956 and 1993 when the competent state department of conservation workshops was wound up. Since then large-scale measures have been possible only if the relevant authorities have sufficient money available. New findings are now available for Wildenbruch and Sonnenburg (Knights of St John) and Quartschen and Rörchen (Knights Templar). The author's 1976 publication ignored the castles of the Teutonic Knights because of their very marginal relevance to castle-building in Pomerania. The author provides an up-to-date survey of the castles of Hammerstein, Küstrin, Driesen and Zantoch, together with a number of farms owned by the military orders, and concludes with a discussion of four 'minor' castles: those of Kallies, Böck, Neuwedell and Gülzow.

### **Rüdiger Bernges: The military use of early loopholes in German castles**

In contrast to Britain, no fundamental research has been carried out in German-speaking countries into the effectiveness of loopholes. In view of the early adaptation of French and British slit-type loopholes in Alsace and Southwest Germany from about the mid-13th century, the author carried out practical experiments at selected castles – Ortenberg, Spesburg, Hoh-

Andlau, Landsberg-West, Birkenfels (all in Alsace), Gräfenstein and Neu-Leiningen (Palatinate) and Pfalzgrafenstein and Schönburg (Middle Rhine) – using, firstly, a traditional longbow and, secondly, a crossbow to examine the effectiveness and usefulness of loopholes at those castles.

The aim of the experiment was to test the extent to which a person using either bow from the loopholes could effectively counter a potential attack. In particular, the author wanted to find out whether a target outside the loophole could be hit with accuracy and what area could be covered with the bow (angle of fire). This led to further questions: were the loopholes designed with a clear plan in mind; was the archer behind the loophole safe from enemy fire and, indeed, what properties should a loophole possess to enable it to be used to best purpose? The results were somewhat surprising, although not unexpected. The very narrow loopholes at Gräfenstein and Neu-Leiningen could not be used effectively with either type of bow. A longbow could be used with great difficulty at Birkenfels, Hoh-Andlau and Landsberg-West, although this was not true of the crossbow. However, the crossbow could only fire in a straight line out of the loophole; i.e. there was only a very limited angle of fire. Only at Spesburg were the loopholes really suitable for the bow. Given the clearly successful design of the castle, the results at Ortenberg were positive. The view expressed by various authors that loopholes were often of only symbolic importance, as a means of expressing the aspirations of the nobility, is supported by the experiments (and confirmed by similar experiments in Great Britain). Another interesting finding is the fact that cross-shaped loopholes were not specifically designed for crossbows, but merely served to widen what would otherwise be a seriously restricted angle of fire.

In the medium and long term the author will be establishing a database of loopholes to enable conclusions to be drawn about the way in which they developed. This study is the first step in this direction. The results, together with an interpretation, additional illustrations and scale drawings can be found on the author's webpage under <http://www.binsy.org>.

### **Wilfried Pfefferkorn: Loopholes at Rechberg castle**

The castle of Rechberg is on a spur of the Hohenrechberg near Schwäbisch Gmünd in the Swabian Jura. It was founded in the early 13th century and the first documentary evidence dates from the mid-14th century. The donjon burned down after being struck by lightning in 1865 and has been a ruin ever since. Rechberg is a castle with no loopholes in the donjon, but loopholes on the more recent outer works (14th to 16th centuries). The article seeks to document and, if possible, date the loopholes. The author starts by describing the different types: 'slits splayed inwards', 'stirrups', 'slits splayed outwards', 'keyholes' and 'special types'. The 'keyhole' type can be subdivided into those without any recognisable provision for wooden supports, those where slits have subsequently been cut to introduce a wooden support and those with recesses for such supports, which had clearly been present from the beginning, i.e. had formed part of the wall.

The article then discusses the individual building components with loopholes, with particular emphasis on the gatehouse because it can be dated dendrochronologically to 1438/39.

The author then shows that the sixteen stirrup loopholes present in this building were clearly original features. It is therefore appropriate to use them as a means of dating other parts of the castle. Furthermore, none of the sixteen has any 'structural fittings' for wooden supports, and hence it can be concluded that at the time the gatehouse was built firearms played no part at the Rechberg. The article then discusses in detail all the loopholes present at the castle.

The author summarises his research as follows:

- the sixteen stirrup loopholes in the gatehouse date from 1438/39;
- other stirrup loopholes are present elsewhere in the castle, but because of the workmanship they must be regarded as of a later date,
- the other loopholes elsewhere in the castle cannot be dated precisely,
- but the slit type (splayed inwards) is the oldest form.