A Study of Quarrying Site for the Stone Walls of Osaka Castle from the Perspective of a Practicing Stonemason: An Ethnographic Approach to Unravel Early Modern Granite Quarrying Techniques

MATSUDA Mutsuhiko

This article takes an ethnographic approach to elucidate the granite quarrying techniques and working systems in medieval and early modern times, which have been examined mainly from an archaeological perspective. Although granite quarrying techniques and relevant knowledge have been passed down to the present generation of stonemasons, they have received little attention in previous studies, which have mainly focused on archaeological remains and artifacts. Therefore, this article outlines basic granite quarrying techniques based on an interview with a practicing stonemason as well as his findings from the field study conducted with him in Shōdo Island to examine the quarrying site for the stone walls of Osaka Castle.

The basic granite quarrying techniques are explained from the following six perspectives: (i) anisotropy of granite; (ii) assessment and treatment of cracks; (iii) stone cutting position; (iv) size of wedges and spacing of wedge holes; (v) shape of wedge holes; and (vi) lines of wedge holes and their directions. With regard to the quarrying site for the stone walls of Osaka Castle, the stonemason mentioned the following three points: (i) the wedge holes are large and spaced close together, regardless of the size of the stone required; (ii) the short sides of the bottom of the wedge holes are unreasonably long; and (iii) the coexistence of high- and low-quality wedge holes implies a mix of skilled and unskilled workers.

The above-mentioned information given by the practicing stonemason contributes to the analysis and interpretation of archaeological remains and artifacts related to granite quarrying. More importantly, this approach will open a new avenue for collaboration between ethnography and archaeology.

Key words: granite, quarrying, knowledge, technique, quarrying site for the stone walls of Osaka Castle