A human exploitation of obsidian in Pre-Hispanic Tenerife, Canary Islands, Spain: A preliminary result of obsidian sourcing based on pedestrian survey and geochemical analysis

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The Canary archipelago comprises seven major islands located approximately 27 –29 degrees N, stretching for 490 km on the eastern Atlantic, off the shore of northwestern North Africa. Tenerife, the highest and largest volcanic island among the Canary Islands was occupied by the indigenous people called the Guanches, until the 15th Century when the Spanish colonizers arrived. In November 2016, a group of the authors have conducted a pedestrian survey of obsidian outcrops and archaeological sites on the surface of Tenerife, as well as an observation on excavated obsidian artifacts from major archaeological sites at the Tenerife Archaeological Museum. The purpose of this research was to investigate the human exploitation of obsidian to elucidate how the Guanches survived in this active volcanic landscape during the Pre-Hispanic times. Island of Tenerife provides an ideal setting to address this research question, because of its unique biogeographic settings: diverse ecological zones characterized by northern humid region and southern dryland, and altitudinal difference created by Mt. Teide (3718m asl) in the middle of the Island. The survey was conducted at the southern dryland (“barranco”) of Tenerife, and we identified a total of 32 artifact scatters, principally consisting of obsidian artifacts, pot sherds, and marine shells. Among the surface scatters, 29 of them have obsidian artifacts. Besides these archaeological surface scatters, we also located three obsidian outcrops: Tabonal Negro (a part of phonolitic dome in Mt. Teide), Tabonal los Guanches (northern skirt of Mt. Teide), and Chalco de Viento (north coast). Some obsidian artifacts were collected for further geochemical study of obsidian and hydration measurements. Besides, obsidian artifacts from Estacas 1 and Guargacho were also sampled for comparison. Among these samples, we specifically chose 11 samples from a combination of surface localities, excavated archaeological sites, and obsidian outcrops. In this paper, we report a preliminary result of EPMA and Laser ICP-MS analysis of these obsidian samples. The result will provide a variation in geochemical signatures of obsidian and an implication of Pre-Hispanic human use of obsidian in Tenerife.

Keywords: Canary Islands, Tenerife, pedestrian survey, obsidian, EPMA, L-ICP-MS

