The Effects on Ancient Maya Society of the Catastrophic Holocene-epoch Eruption of Ilopango

Geological Setting and Eruption of Ilopango Volcano

The Ilopango Volcano, located in central El Salvador, has experienced numerous explosive eruptions over the past two millennia. One of these volcanic events was the eruption of Ilopango Volcano. Although the dating and effects are still under discussion [1], this eruption occurred in the 5th–6th centuries AD and is well known as the most catastrophic New World eruption during the Holocene [2]. For several decades, many scholars have argued that the Ilopango eruption resulted in severe sudden environmental and social changes in bordering regions, including the Zapotitán Valley, with many sites being abandoned for at least half a century or even a few centuries. Recent archaeological investigations of San Andrés in the Zapotitán Valley located 45km from Ilopango Volcano, however, provide new insights and hypotheses regarding human responses to its catastrophic eruption.

Volcanic Disaster and Construction of Monumental Architecture

Based on archaeological evidence at San Andrés, hypotheses that the construction of monumental architecture was the motivating force behind the recovery process from the catastrophic natural event. One team examined the platform of Structure 5, the largest monumental architecture at the site, which consists of a 38m-tall pyramid on top of a 7m-tall platform, approximately 90m from north to south by 80m from east to west. In general, Maya monumental architecture consists of a typical pyramid-like structure. Excavations revealed at least three construction phases of the platform of Structure 5, each of which wasarrêt of architecture, which was constructed on top of volcanic ash layers of apopao. 64m thick spread out in the eruption of Ilopango Volcano. This massive architecture was covered by adobe construction. Previously, it was considered that this temple architecture was not spread over several decades or centuries after the catastrophic eruption. However, the monumental architecture between the Ilopango ash and the adobe architecture indicates that ancient people returned to the Zapotitán Valley more rapidly than previously thought.

Social Networks as a Mitigation Strategy

Networks are highly important socioculturally in studies of ancient societies. At the same time, I highlight the importance of interregional and social networks to mitigate or overcome the damage of natural disasters. Establishing and maintaining broader social networks contributes to mitigating impacts over time and building resilient societies.

In the case of San Andrés, the massive architecture mentioned above is key evidence in identifying support for the affected society from other regions. Generally, in the southeastern Maya region (present-day El Salvador), both material and household architecture consisted of similar materials—like adobe brick and mud plaster. Therefore, the architecture that was constructed after the eruption should be regarded as significantly different, because people needed new concepts, techniques, and labor organization for their construction activities. Furthermore, ceramic types also dramatically changed after the eruption. Implications that these new construction support from another social group. One considers Qintjetá, located about 160km west of San Andrés, a settlement demonstrating similar architectural components. Another possibility is Copán, one of the most powerful dynasties in the Classic Maya realm, because San Andrés is considered to have been a satellite center of the Copán dynasty.

Conclusion

In summary, the study of Ilopango’s eruption and its impact on ancient Maya society are crucial for understanding the dynamics of social interactions and resilience to catastrophic events. The research highlights the importance of interregional and social networks in overcoming the challenges posed by natural disasters.