

Current Evidence and Radiocarbon Chronology from the Santa Julia Late-Pleistocene Settlement in the Semi-arid Coast of Chile (31° 50' S)

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Santa Julia (LV. 221) is a late-Pleistocene site (ca. 13,000 CALYBP), whose evidence suggests a briefly occupied hunter-gatherer camp associated with resources provided by a small lake basin near the Pacific coast (Jackson et al. 2007). This water body was probably trapped by a dune field since 16,000 CALYBP, as suggested by an analogous system ca. 9.5 km south (Jackson 2002), lasting until 2690 ± 40 RCYBP (Beta-216693), when the actual ravine where the site lies was formed and its drainage began. The 2690 RCYBP assay was obtained from the highest organic sediment stratum (layer 3, peat) of the 10.4 m profile that exposes the sedimentary sequence. During the late Pleistocene, hunting resources within the basin were probably abundant and diverse (mastodon, giant sloth, native horse, paleocamelids, extinct deer), as suggested by bone assemblages at several Pleistocene sites within the region (Méndez et al. 2004; Núñez et al. 1994) and evidence gathered along the ravine.

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A multidisciplinary team, including archaeologists, geologists, ecologists, and conservators, has conducted ongoing research at the Santa Julia locality, concentrating on the exposed profile. Its main sedimentary sequence shows 38 sand and peat intercalated strata. At the base of the profile (layer 38), excavations exposed *Mylodon* sp. remains without any cultural association within a 50-cm-thick sandy sublayer. Overlying layer 37 is a fine-grained organic black peat yielding the late-Pleistocene human occupation. The rest of the sequence is mainly a culturally sterile deposit, whose only human evidence is suggested by thin charcoal episodes, probably from wood-clearing episodes throughout the Holocene. The top sandy layer (ca. 10 m above the late-Pleistocene level) exhibits a discrete Inka-aged occupation, with evidence of shellfish gathering, decorated and utilitarian pot sherds, and a TL date of 580 ± 60 CALYBP (UCTL-1740).

Three field seasons from 2004 through 2006 unearthed a total area of 27 m², revealing an undisturbed primary context only 5–8 cm thick. In situ *decapage* excavations yielded mainly lithic instruments and extinct fauna associated with a hearth. The lithic assemblage was composed of three stone types. The least are immediately available coarse-grained pebbles only marginally modified. These are followed by a medium-quality local siliceous tufa (Galarce 2002), mainly in the form of large unretouched and marginally retouched flakes. Edge morphology, angles, and retouch type (when present) classify them as butchering instruments used to cut and disarticulate prey. Most abundant are small bifacial chipping debris and microdebitage of quartz crystal spatially concentrated, therefore suggesting a knapping area. Additionally, excavations exposed a bifacial fragment and fluted projectile point blank manufactured on this lithic resource. Bones are rare within the excavated context; as yet only native horse (*Equus* sp.) is represented. In a central area, a ca. 1-m-diameter hearth is mainly associated with the local siliceous tufa instruments. This has been preliminarily interpreted as a processing and discarding area.

Owing to the exceptional preservation of the site, some pieces of wood were recovered, including a ca. 20-cm-long sharpened piece. Direct AMS dating of this wood instrument (feature 4) yielded an age of $11,060 \pm 80$ RCYBP (Beta-215090). Another hearth charcoal sample yielded an AMS age of $11,090 \pm 80$ RCYBP (Beta-215089). Both dates confirm initial chronology proposed for the context (Jackson et al. 2007); added to previous radiometric assays, they show a combined 2- σ range within 13,350 and 12,880 CALYBP. Currently, in the wider region of central Chile, only the Taguatagua 1 (TT1) site (Montané 1968) and the second level of the Quereo (QII) site (Núñez et al. 1994) lie within the time span of Santa Julia. It is worth noting that even if there are differences in the sites' functions (LV 221 being a brief camp, and TT1 and QII being initial processing sites), each location is associated with stable water bodies (of different sizes) which congregated megaherbivores (Núñez et al. 1987).

Santa Julia's precise stratigraphic and spatial resolutions illuminate the discrete activities conducted at an open-air camp during the late Pleistocene. Its undisturbed stratigraphy and coherent ¹⁴C assays yield reliable data for integrating the site into the wider discussion of the initial settlement of the South American Pacific coast. Current evidence suggests hunter-gatherers at

this latitude, moving towards hunting resources around lake systems, carried long-lasting curated artifacts and manufactured processing instruments with locally available stones.

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References Cited

- Galarce, P. 2002 Cazadores-Recolectores Tempranos en la Costa Sur del Semiárido: Aprovechamiento y Procesamiento de Recursos Líticos. Unpublished undergraduate thesis. Departamento de Antropología, Universidad de Chile, Santiago.
- Jackson, D. 2002 Evaluating Evidence of Cultural Associations of *Mylodon* in the Semiarid Region of Chile. In *Where the South Winds Blow*, edited by L. Miotti, M. Salemme and N. Flegenheimer, pp. 77–81. Center for the Study of the First Americans, Texas A&M University, College Station, Texas.
- Jackson, D., C. Méndez, R. Seguel, A. Maldonado, and G. Vargas 2007 Initial Occupation of the Pacific Coast of Chile during Late Pleistocene Times. *Current Anthropology* 48(5):725–31.
- Méndez, C., D. Jackson, and R. Seguel 2004 Narrowing the Spatial Range of Megafaunal Distributions on the Semiarid Coast of Chile. *Current Research in the Pleistocene* 21:109–10.
- Montané, J. 1968 Paleo-Indian Remains from Laguna Taguatagua, Central Chile. *Science* 161:1137–38.
- Núñez, L., J. Varela, and R. Casamiquela 1987 Ocupación Paleoindia en el Centro Norte de Chile: Adaptación Circumlacustre en las Tierras Bajas. *Estudios Atacameños* 8:142–85.
- Núñez, L., J. Varela, R. Casamiquela, and C. Villagrán 1994 Reconstrucción Multidisciplinaria de la Ocupación Prehistórica de Quereo, Centro de Chile. *Latin American Antiquity* 5:99–118.