Initial Human Exploration at the Southern End of the Deseado Massif?

Nora Viviana Franco[1]*, Pablo Ambrústolo*[2]*, Natalia Cirigliano*[3]*, and Luis Alberto Borrero*[1]

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Lithic artifacts, in conjunction with other evidence, provide useful information about the way in which humans have explored and occupied the Patagonian landscape.

According to Borrero (1994–95) exploration implies the initial radiation to new land and displacement of individuals or groups following less resistant natural routes, with repeated, widely separated camping places. As a result new territory can be incorporated. In the long run this process is one of slow expansion of human home ranges. The incorporation of new land, however, implies the operation of variable learning processes (e.g., Rockman 2003). The velocity of incorporation of new land will vary according to the degree of homogeneity between the new and original environments and other factors (see for example Steele and Rockman 2003). This is why the problem of exploration and incorporation of new land should be addressed at a regional or macro-regional scale.

Lithic characteristics are analyzed taking into account expectations derived from the perspective of technological organization and ethnoarchaeological information (Binford 1978, 1979). To do this, the structure of lithic resources should be known (Ericson 1984). Expectations for the early exploration of new land include: a) utilization of raw material of less quality than the one regionally available, except when excellent-quality raw material

[1] CONICET (IMHICIHU), University of Buenos Aires, Saavedra 15, 5° piso, Capital Federal (C.P. 1083), Argentina; e-mail: nvfranco2008@gmail.com laborrero2003@yahoo.com

[2] CONICET – UNLP, Museo de Ciencias Naturales, Paseo del Bosque S/N, La Plata, Argentina; e-mail: pambrustolo@hotmail.com

[3] CONICET (IMHICIHU), Saavedra 15, 5° piso, Capital Federal (C.P. 1083), Argentina; e-mail: naticirigliano@hotmail.com

was immediately available (see Meltzer 1989); and b) discard of bifacial artifacts or bifacial flakes (basically last manufacturing stages) made on non-immediately available raw materials (Borrero and Franco 1997, Franco 2002).

The case of La Gruta 1 (previously La Gruta, lagoon 2, cave 1), located in the southern part of the Deseado Massif north of the Chico River (Figure 1, Franco et al. 2010a, 2010b) is presented here. A 1x1-m test pit produced dates corresponding to the Pleistocene-Holocene transition, between ca. 10,845 and 10,477 RCYBP (Franco et al. 2010a). The dated samples consist of small charcoal concentrations located at different places and depths within the lower deposits. Three of the dates were processed from the same charcoal concentration (indicated in Figure 2), one from a different lab [10,790 ± 30 RCYBP (UGAMS-7538)] that is consistent with those previously published.

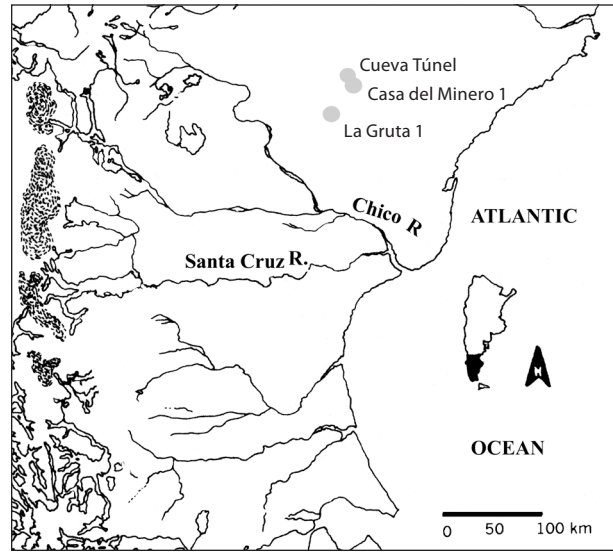

Figure 1. Location of sites mentioned in text.

The study of the lithic artifacts indicates the existence of activities related with late manufacturing stages, including tool resharpening and bifacial reduction (Franco et al. 2010a). Artifacts made on two varieties of obsidian (black and gray) were recovered. Geochemical data for south Patagonia suggest that both come from Pampa del Asador (Stern 1999, 2000), some 158 km to the northwest.

Both the location of the site—in the cliff wall of a closed depression that contains a seasonal lagoon (Franco et al. 2010b)—and the characteristics of the artifacts suggest that the site is functionally specific.

Archaeological sites dating to the Pleistocene-Holocene transition have been identified ca. 60 km north of the area, in the Deseado Massif (e.g., Paunero 2009; Paunero et al. 2007). The earliest sites are Casa del Minero 1 and Cueva Túnel (Paunero 2009, Skarbun 2009). Other sites further north in the same Massif include Piedra Museo AEP-1 and Los Toldos Cave 3 (e.g., Cardich et al. 1973; Miotti and Cattaneo 2003).

Figure 2 indicates the earliest dates obtained in southern Deseado Massif, ca. 11,000 RCYBP.

As mentioned above, the distance between the two areas with early dates is ca. 60 km which, according to ethnographic information, is within the home range of hunter-gatherers living at these latitudes (Kelly 1995). It must also be noted that there is variation in the availability of raw material for lithic tools near Casa del Minero 1 and Cueva Túnel which, in comparison with that recorded near La Gruta 1, is of better quality (Franco et al. 2012). This can be used to suggest that the earliest deposits of La Gruta 1 correspond to a logistical occupation in the context of human exploration of new space. We consider this occupation as being related to nearby places in the north. Supra-regional evidence shows that this is a time at which radiation was actively taking place, probably in accordance to a general warming trend (e.g., Mancini 2009; Tonello et al. 2009). More extensive sampling in La Gruta area and the intermediate area to the north is needed to test this hypothesis.

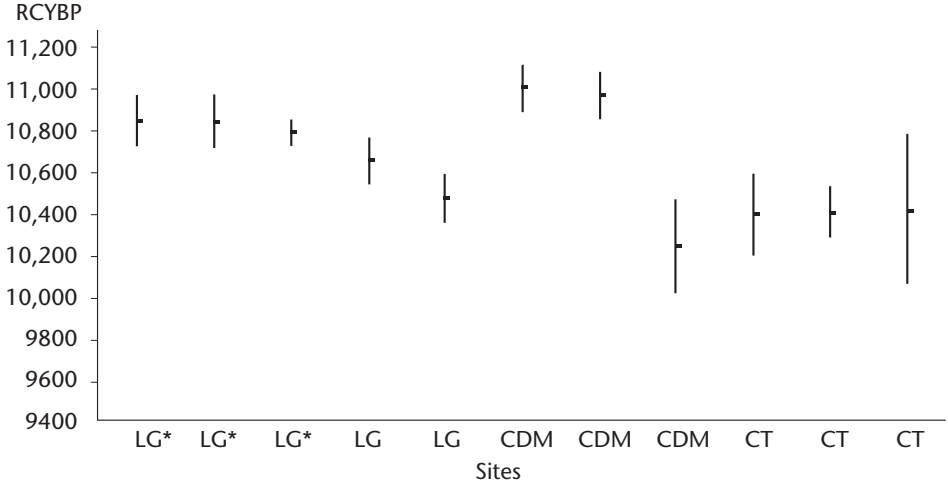

Figure 2. Early radiocarbon dates from the southern Deseado Massif, with two standard deviations (**LG,** La Gruta 1; **CDM,** Casa del Minero 1; **CT,** Cueva Túnel). Asterisks refer to samples from the same charcoal concentration.

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