Crystal Quartz and Fishtail Projectile Points: Considerations on Raw-Material Selection by Paleo South Americans

Hugo G. Nami

➤ **Keywords**: Fishtail Points, Toolstone Procurement, Uruguay

"Fishtail" or "Fell" projectile points (ca. 11,000–10,000 RCYBP) show a broad continental distribution from Central America to the southern tip of South America. Since the end of the 19th century they have been found in the eastern part of the southern cone of South America, particularly in the Republic of Uruguay (Figueira 1892). Most specimens were made using excellent toolstone, typically flint-like materials, although some were made on other types of rock, among them quartz (Figure 1).

My recent field work and the studies of private collections have led to the discovery of new finds and new information about the Paleoindian lithic technology in the Negro River basin in the central part of Uruguay. There the Arroyo Cacique site (AC) has yielded a significant number of latest-Pleistocene finds (Nami 2007: Fig. 4). Several recent visits to the site have yielded new Paleoindian artifacts, among them several made on glass-like crystal quartz. The first of these is a Fishtail point (27.5 mm long, 18.8 mm wide, 7.8 mm thick) showing signs of strong resharpening and fractures from use (Figure 1A). A flake starting at the tip, probably produced by impact, eliminated a great part of the blade. The blade does not have enough mass to warrant resharpening and for this reason was probably discarded. This is a common occurrence among other Fishtail points from South America (Nami 1998, 2000). The second quartz artifact is a broken bifacial specimen (Figure 1B), probably an early-stage biface (26.8 mm long, 27.5 mm wide, 11.2 mm thick); the third is a piece of debitage of translucent crystal quartz.

An additional quartz artifact has been recovered from Collares, an archaeo-

Hugo G. Nami, CONICET-Instituto de Geofísica "Daniel A. Valencio," Departamento de Ciencias Geológicas, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad de Buenos Aires, Ciudad Universitaria (Pabellón II), Buenos Aires (C1428EHA), República Argentina; e-mail: hgnami@fulbrightmail.org

Research Associate, Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, D. C.

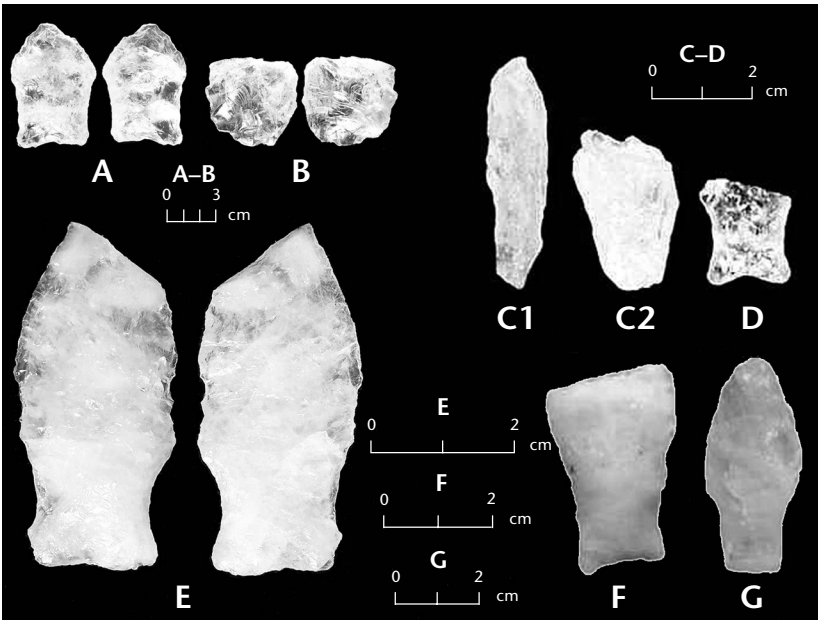

Figure 1. Quartz raw material and Fell points from Uruguay and crystal quartz artifacts from Arroyo Cacique. **A,** Fishtail projectile point; **B,** bifacial artifact; **C,** nodules of crystal quartz; **D,** Fishtail projectile-point stem found at Collares; **E,** Arroyo Molle Quintero (white and translucent quartz); **F–G,** Laguna Negra and Santa Lucía (milky glass quartz).

logical locality also located in the middle Negro River basin, Uruguay. At Collares, a number of surface and buried sites are being eroded by fluvial action. The artifact in question is the stem fragment of a Fishtail point made on glass-like translucent crystal quartz (22.0 mm long, 19.0 mm wide, 6.5 mm thick). One face is fluted; the opposite face has short pressure-flaked scars along its lateral margins and base (Figure 1D). There are impurities in the rock, which a fissure crosses transversally. AC and Collares stems were carefully abraded along both edges, a common feature of Fell points.

A recent survey of Collares along the eroded shorelines of Rincón del Bonete Lake identified outcrops of pebbles of varied lithology and size, as well as isolated pieces of quartz crystals (Figure 1C), providing a local source of raw material for the prehistoric population. There are also small nodules of glass-like crystal quartz at AC. These resources support the procurement model proposed for the Pali Aike area, indicating that Fell hunter-gatherers readily recognized local raw materials for making stone tools (Nami 1994, 2007:167). Certainly suitable rocks for stone tools manufacture have subtly different workability qualities (Callahan 1979: 16, Jones 2009). Despite some fissure problems, good crystal-quality quartz is brittle, not tough, and can be worked like glass or obsidian (Jones 2009).

In Uruguay, Fell points made using diverse varieties of quartz have been found at several places: Urupez (Meneghin 2004, Nami 2007: Fig. 7b); Arroyo

Molle Quintero, Durazno department (Fig. 1E); Laguna Negra, Rocha department (Fig. 1F), and Santa Lucía river (Fig. 1G). In other parts of South America, Fell points made of quartz have been found on Margarita Island, Venezuela (Personal observation 2007); Monte Caseros, Corrientes, Argentina (Nami 2007: Fig. 1c); and Rio Grande do Sul, Brazil (Schobinger 1974). Translucent crystal quartz has been found at Tagua-Tagua 2, Chile (Núñez et al. 1994); Pampa de Cupisnique, Perú (Chauchat et al. 1998); and Villa del Dique, Córdoba, Argentina (Schobinger 1974: Fig. 6). The use of crystal quartz has been identified in assemblages dated about 11,000–10,000 RCYBP from Caverna da Pedra Pintada, Brazil (Roosevelt et al. 1996). The widespread use of translucent crystal quartz by Paleo South Americans suggests that raw material was not selected solely for its optimal flaking qualities and economical considerations. Other social and cultural considerations—esthetic or ideological?—suggest that its attractive glass-like translucency might also have been a factor in its choice.

I am indebted to Museo Nacional de Historia Natural y Antropología de Uruguay for having sponsored my archaeological research in Uruguay; A. Toscano, Director of the museum, for his support; A. Florines for his constant support, help, and counsel in different aspects of this research; V. Carbalho, J. and S. Bálsamo for their kind help during the trips to Collares and AC. They were also very kind for allowed me to study their collections; U. Meneghin provided the pictures illustrated in Figure lF–G, and M. Meneghin helped me improve the figure; CONICET and UBA for supporting my archaeological research in the Río Negro basin; special thanks to Ted Goebel for his constructive comments and Betty Meggers for editing my English.

References cited

Callahan, E. 1979 The Basics of Biface Knapping in the Eastern Fluted Point Tradition. A Manual for Flintknappers and Lithic Analysts. *Archaeology of Eastern North America* 7(1):1–180.

Chauchat, C., C. Gálvez, R. J. Briceño, and S. Uceda C. 1998 Sitios arqueológicos de la zona de Cupisnique y margen derecha del Valle de Chicama. *Travau de L´Ínstitut Français d´Etudes Andines*, Lima, pp. 113.

Figueira, J. H. 1892 Los Primitivos Habitantes del Uruguay. *El Uruguay en la Exposición Histórica Americana de Madrid*, pp. 121–219, Imprenta Artística de Dornaleche y Reyes, Montevideo.

Jones, S. 2009 Quartz Tool Technology in the Northeast Georgia Piedmont. *Experiments and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan* (edited by H. G. Nami), Ediciones de Arqueología Contemporánea, Buenos Aires, pp. 501–80, (in press).

Meneghin, U. 2006 *Consideraciones sobre dos registros radiocarbónicos (C-14) en el yacimiento Urupez, Maldonado, Uruguay*. Fundación Arqueología Uruguaya, Montevideo.

Nami, H. G. 1994 Paleoindio cazadores-recolectores y tecnología lítica en el extremo sur de Sudamérica continental. Arqueología de cazadores-recolectores: Límites, casos y aperturas, ed. J. L. Lanata and L. A. Borrero, *Arqueología Contemporánea* 5: 89–103.

——— 1998 Technological observations on the Paleoindian artifacts from Fell's cave, Magallanes, Chile. *Current Research in the Pleistocene* 15:81–83.

——— 2000 Technological Comments of some Paleoindian Lithic Artifacts from Ilaló, Ecuador. *Current Research in the Pleistocene* 17:104–07.

——— 2007 Research in the Middle Negro River Basin (Uruguay) and the Paleoindian Occupation of the Southern Cone. *Current Anthropology* 48(1):164–74.

Nuñez, L., R. Casamiquela, V. Schiappacasse, H. Niemeyer, and C. Villagrán 1994 Cuenca de Taguatagua en Chile: El ambiente del Pleistoceno y ocupaciones humanas. *Revista Chilena de Historia Natural* 67: 503–19.

Roosevelt, A. C., M. Lima Da Costa, C. Lopes Machado, M. Michab, N. Mercier, H. Valladas, J. Feathers, W. Barnett, M. Imazio da Silveira, and A. Henderson 1996 Paleoindian cave dwellers in the Amazon: the peopling of the Americas. *Science* 272, 373–84.

Schobinger, J. 1974 Nuevos hallazgos de puntas "Colas de Pescado" y consideraciones en torno al origen y dispersión de la Cultura de Cazadores Superiores Toldense en Sudamérica. *Atti del XL Congresso Internazionale degle Americanisti* 1: 33–50, Genova.