

SOUTHBOUND

Late Pleistocene Peopling of Latin America

 **SPECIAL EDITION**
Current Research in the Pleistocene

SOUTHBOUND

Late Pleistocene Peopling of Latin America

Editors

**Laura Miotti - Mónica Salemme
Nora Flegenheimer - Ted Goebel**

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Michael R. Waters, General Editor
Ruth Gruhn, Series Editor



**Center for the Study
of the First Americans**
Department of Anthropology @ Texas A&M University



Mónica Marcovich

SOUTHBOUND: LATE PLEISTOCENE PEOPLING OF LATIN AMERICA

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Contents

Introduction

The Debate at the Beginning of the 21st Century on the Peopling of the Americas
Laura Miotti, Nora Flegenheimer, Mónica Salemme, and Ted Goebel 3

Part 1 Peopling Models and Bioanthropology

[Argentina] The Impact of Early Man Debates on Argentine Archaeology around 1900
Irina Podgorny 9

[South America] GIS Model of Topographic Accessibility to South America
Lucía Magnin, Diego Gobbo, Juan Carlos Gómez, and Antonio Ceraso 13

[South America] South America 18,000 Years Ago: Topographic Accessibility and Human Spread
Laura Miotti and Lucía Magnin 19

[Colombia] A Review of the Early Peopling and Cultural Diversity of Colombia during the Late Pleistocene
Francisco Javier Aceituno 25

[South America] Native Male Founder Lineages of South America
Virginia Ramallo, Marina Muzzio, María R. Santos, Josefina M. B. Motti, Laura S. Jurado Medina, Claudio M. Bravi, and Graciela Bailliet 29

[Colombia] Dental and Craniofacial Diversity in the Northern Andes, and the Early Peopling of South America
Miguel E. Delgado-Burbano 33

[Chile] The Bioanthropological Evidence of a ca. 10,000 CALYBP Ten-Individual Group in Central Patagonia
Omar Reyes, César Méndez Melgar, Francisco Mena, and Mauricio Moraga . . . 39

[Chile] An Appraisal of Human Remains from Pali Aike Cave (Magallanes, Chile): Inferences about Demography and Mortuary Practices during the Early Holocene
G. Lorena L'Heureux and Tom Amorosi 45

Part 2 Archaeology of Early South Americans

[Brazil] The Itaparica Technocomplex: The First Conspicuous Settlement of Central and Northeastern Brazil from a Technological Perspective
Antoine Lourdeau 53

[Southern SA]	Exploring Morphometric Variations in Fishtail Projectile Points from Uruguay, Pampa, and Patagonia <i>Carola Castiñeira, Judith Charlin, Marcelo Cardillo, and Jorge Baeza</i>	57
[Argentina]	Variability of Triangular Non-Stemmed Projectile Points of Early Hunter-Gatherers of the Argentinian Puna <i>Salomón Hocsman, Jorge G. Martínez, Carlos A. Aschero, and Alfredo D. Calisaya</i>	63
[Argentina]	Patterns of Cultural Transmission in the Manufacture of Projectile Points: Implications for the Early Settlement of the Argentine Puna <i>Rodolphe Huguin and Federico Restifo</i>	69
[Argentina]	Evidence of Early Human Burials in the Southern Argentinian Puna <i>Jorge G. Martínez</i>	75
[Chile]	Procuring Quartz Crystal in Latest-Pleistocene/Early-Holocene Sites in Northern Semi-arid and Mediterranean-Central Chile <i>César Méndez Melgar and Donald Jackson</i>	79
[Southern SA]	Human Occupation in the Northern Argentine–Chilean Central Andes during the Early Holocene <i>Valeria Cortegoso, Víctor Durán, Silvina Castro, Alejandra Gasco, Gustavo Lucero, and Diego Winocur</i>	83
[Argentina]	Human Occupation of the Central Mountains of Argentina during the Pleistocene-Holocene Transition (11,000–9000 RCYBP) <i>Diego E. Rivero</i>	87
[Argentina]	Lithic Technology at Campo Laborde, an Early-Holocene Megamammal Hunting Site in the Pampean Region (Argentina) <i>Pablo G. Messineo</i>	93
[Argentina]	Early Settlements in Eastern Tandilia, Buenos Aires Province, Argentina: Archaeological Contexts and Site-Formation Processes <i>Diana Mazzanti, Gustavo Martínez, and Carlos Quintana</i>	99
[Argentina]	Early Settlers and Their Places in the Tandilia Range (Pampean region, Argentina) <i>Natalia Mazzia and Nora Flegenheimer</i>	105
[Argentina]	Broken Stone Tools from Cerro El Sombrero Cima (Tandilia Range, Argentina) <i>Celeste Weitzel</i>	111
[Argentina]	The First Occupations of the El Trebol Site during the Pleistocene-Holocene Transition (Nahuel Huapi Lake, Patagonia, Argentina) <i>Adam Hajduk, Ana M. Albornoz, Maximiliano J. Lezcano, and Pablo Arias Cabal</i>	117
[Argentina]	Formal Variability in Fishtail Points of the Amigo Oeste Archaeological Site, Somuncurá Plateau (Río Negro, Argentina) <i>Darío Hermo and Enrique Terranova</i>	121
[Argentina]	Geochemical Sourcing of Obsidian Fishtail Points: Studies for the Somuncurá Plateau (Río Negro, Argentina) <i>Laura Miotti, Enrique Terranova, Ramiro Barberena, Darío Hermo, Martín Giesso, and Michael D. Glascock</i>	127
[Argentina]	The Use of the Form: Functional Analysis of Lower Component Artifacts from Piedra Museo (Santa Cruz, Argentina) <i>Virginia Lynch, Darío Hermo, and Myrian Álvarez</i>	133

[Argentina]	New Data on Exploited Pleistocene Fauna at Piedra Museo (Central Plateau of Santa Cruz Province, Argentina) <i>Laura Marchionni and Martín Vázquez</i>	139
[Argentina]	Variability in Lithic Technological Strategies of Early Human Occupations from the Central Plateau, Santa Cruz, Argentina <i>Fabiana Skarbut</i>	143
[Argentina]	Technological and Functional Analysis of Pleistocene Components from La María Locality, Santa Cruz, Argentina <i>Manuel Cueto and Alicia Castro</i>	149
[Argentina]	Heat Treatment of Lithic Artifacts in Early Sites from the Central Plateau of Santa Cruz (Argentina) <i>Ariel D. Frank</i>	155
[Argentina]	Initial Human Exploration at the Southern End of the Deseado Massif? <i>Nora Viviana Franco, Pablo Ambrústolo, Natalia Cirigliano, and Luis Alberto Borrero</i>	159
[Argentina]	A Fossil Shark Tooth in Early Contexts of Cerro Casa de Piedra 7, Southwest Patagonia, Argentina <i>Alicia Castro, Alberto Luis Cione, María Teresa Civalero, and Mariana De Nigris</i>	165
[Argentina]	Early Occupations in Tierra del Fuego and the Evidence from Layer S at the Imiwaia I Site (Beagle Channel, Argentina) <i>Ernesto Luis Piana, Atilio Francisco Zangrando, and Luis Abel Orquera</i>	177

Part 3 Paleoenvironments of Latin America

[México]	A New Pleistocene-age Archaeological-Paleontological Deposit in Santiago Chazumba, Oaxaca, México: An Initial Appraisal <i>Joaquín Arroyo-Cabres, Ramón Viñas-Vallverdú, Xose Pedro Rodríguez, Albert Rubio, Jordi Rosell, Alejandro López-Jiménez, and Irán I. Rivera-González</i>	179
[México]	Extinct Birds and Early Humans in the Basin of México <i>Eduardo Corona-M</i>	183
[Argentina]	Late Quaternary Ecosystems and Humans in Northern Patagonia: New Results from Cueva Huenul 1 (Neuquén, Argentina) <i>María de la Paz Pompei, Ramiro Barberena, M. Eugenia de Porras, Karen Borrazzo, Agustina A. Rughini, and Adolfo F. Gil</i>	187
[Argentina]	Diatom Analysis in Santa Cruz Central Massif (Patagonia, Argentina): Preliminary Results <i>Marilén Fernández and Mónica Salemm</i>	191
[Argentina]	Early Human Occupation and Environment South of the Deseado Massif and South of Lago Argentino (Argentina) <i>María Virginia Mancini, Nora V. Franco, and George A. Brook</i>	197

Author Index	201
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General Index	203
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Part 3

Paleoenvironments of Latin America

Late Quaternary Ecosystems and Humans in Northern Patagonia: New Results from Cueva Huenul 1 (Neuquén, Argentina)

María de la Paz Pompei¹, Ramiro Barberena², M. Eugenia de Porras³, Karen Borrazzo⁴, Agustina A. Rughini⁵, and Adolfo F. Gil⁶

► **Keywords:** Human ecology, northern Patagonia, late Quaternary

The Cueva Huenul 1 (CH1) archaeological site has one of the first sequences of stratified sediments dating to the late-Pleistocene/early-Holocene transition in the northern end of Patagonia (Figure 1). Preliminary stratigraphic and chronological data previously reported define two sets of layers separated by an erosive unconformity. The late-Pleistocene layers (units VIII–V), mainly composed of fossil dung, are bracketed between dates of $13,844 \pm 75$ and $11,841 \pm 56$ RCYBP; the Holocene layers (units IV–I), composed of aeolian sediment, are bracketed between dates of 9531 ± 39 and 1416 ± 37 RCYBP (Barberena et al. 2010). The 9531 ± 39 date comes from a hearth directly on top of the unconformity and therefore is evidence for the earliest human presence at CH1. In this paper we report the results of a preliminary palynological and archaeological study of the stratigraphic units spanning the Pleistocene-Holocene transition

**PART
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¹FCNyM-Universidad Nacional de La Plata, La Plata, Argentina; e-mail: mapaz_pompei@yahoo.com.ar

²CONICET-IMHICIHU, Saavedra 15, 5th (1083), Buenos Aires, Argentina; e-mail: ramidus28@gmail.com

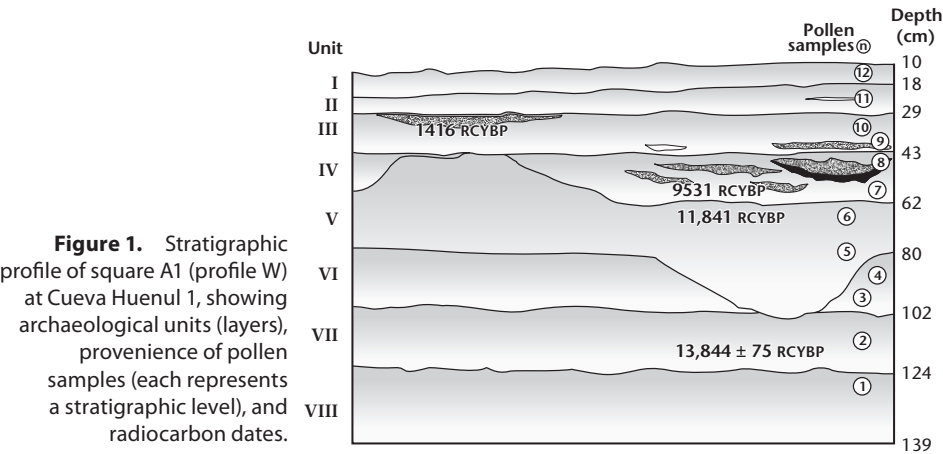
³Centro de Estudios Avanzados en Zonas Áridas (CEAZA), La Serena, Chile; e-mail: meugenia.deporras@ceaza.cl

⁴CONICET-IMHICIHU, Saavedra 15, 5th (1083), Buenos Aires, Argentina; e-mail: kborrazzo@yahoo.com.ar

⁵FFyL-Universidad de Buenos Aires, Buenos Aires, Argentina; e-mail: agustinarughini@yahoo.com.ar

⁶CONICET-Museo de Historia Natural de San Rafael, Parque M. Moreno (5600), San Rafael, Mendoza, Argentina; e-mail: adolfogil@arqueologiamendoza.com

(units VIII–IV, Quadrat A1, 2 x 1 m). The excavation was done using 10-cm extraction levels (the stratigraphic units discussed here correspond to extraction levels 8–5).



Ecosystems: The Contribution of Palynology

CH1 is located near the Patagonia-Monte ecotone dominated by transition shrub steppes mainly composed of Verbenaceae, Asteraceae subf. Asteroideae, *Larrea*, *Prosopis* and *Prosopidastrum*. The fossil pollen record of CH1 was interpreted assuming that the Patagonia-Monte ecotone migrated in the past in response to climatic changes (in temperature and precipitation). Therefore the predominance of Patagonian-like vegetation implies colder and wetter conditions, whereas Monte-like vegetation is just the opposite.

Preliminary pollen analysis of CH1 suggests that shrub and grass-shrub communities were present around the cave since 13,800 RCYBP. Even though the pollen assemblages show no major plant community changes since then, some differences in composition are evident. Between ca. 13,800 and 9500 RCYBP, the pollen assemblages indicate the presence of a Patagonian grass-shrub steppe integrated with shrubs (*Schinus*, *Lycium*), dwarf shrubs (*Nassauvia*, *Ephedra*), and grasses, which at present lie between 2000 and 2200 masl, suggesting colder local conditions than present. During the last 1500 years, however, the pollen record indicates the presence of a Monte-Patagonian transition shrub steppe dominated by *Schinus*, *Lycium*, Asteraceae subf. Asteroideae, Verbenaceae, and dwarf shrubs and grasses in minor proportions similar to the modern vegetation, suggesting that present environmental and climatic conditions prevailed.

The Archaeological Record

Table 1 lists the proportions of lithic and faunal materials. Figure 2 graphically displays their relative presence throughout the CH1 sequence (including the late-Holocene layers). We introduce the presence of small carnivore scats measured by weight as a proxy to evaluate the intensity of human occupation of the site. Units VIII and VII did not yield any lithic artifacts or bone remains.

The lithic assemblage of the units VI–IV (extraction levels 8–5) includes 119 artifacts, of

Table 1. Lithic assemblages from the Pleistocene-Holocene transition levels in CH1.

Artificial level	Level 5 (50–60 cm)	Level 6 (60–70 cm)	Level 7 (70–80 cm)	Level 8 (80–90 cm)	Level 9 (90–100 cm)	Total
Stratigraphic unit	Unit IV	Unit V	Unit VI	Unit VI	Unit VI	
Lithic artifacts	100 (84%)	7 (5.9%)	10 (8.4%)	2 (1.7%)	0	119 (100%)
Faunal remains	108 (65.9%)	32 (19.5%)	17 (10.4%)	5 (3%)	2 (1.2%)	164 (100%)
Carnivore coprolites	315 gr.	562 gr.	428 gr.	123 gr.	20 gr.	1428 gr.

which 87% (N = 104) are made of obsidian; XRF analysis of a sample of lithic artifacts recovered from the site verifies that the chemical composition matches local Huenul obsidian (Barberena et al. 2011). Basalt (N = 8), chert (N = 6), and chalcedony (N = 1) toolstones are also present.

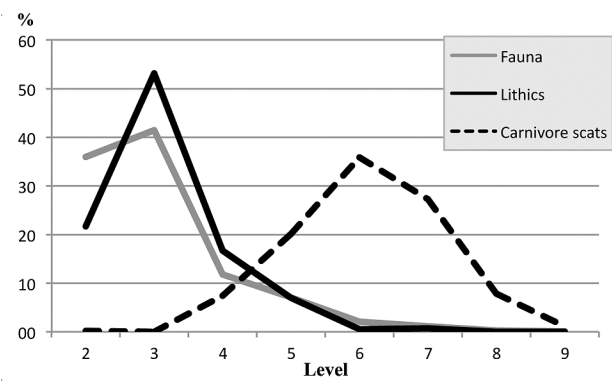


Figure 2. Incidence of bones, lithics, and carnivore scats (scats measured by weight) at Cueva Huenul 1.

Most artifacts of the assemblage (N = 100) come from early-Holocene level 5. Late-Pleistocene levels 8–6 yielded 19 artifacts in a different sedimentary context.

Flakes and debris constitute the largest part of the assemblage (98.3%, N = 117), complemented by the presence of two obsidian cores. No tools were recorded. Of all the artifacts, 93% (N = 111) are smaller than 15 mm and 80% (N = 95) of the assemblage do not show cortex, which suggests the predominant activity was late stages of lithic reduction (i.e., tools were sharpened or resharpened here and discarded elsewhere).

A large part of the faunal assemblage, like the artifact assemblage, comes from level 5. Of the total faunal assemblage, 66.5% (N = 109) consist of undetermined bone fragments; ca. 20% of the assemblage are guanaco bones with helical fractures, indicative of human processing (confirmed by the presence of six bone flakes). Most of these guanaco bones come from early-Holocene level 5 (unit IV). Finally, 13% of the bones are those of small mammals, including plates of Dasypodidae.

Conclusions

The preliminary palynological analysis shows no major changes in plant communities. Grass-shrub communities have been present since 13,800 RCYBP. Between ca. 13,800 and 9500 RCYBP the pollen assemblages indicate a Patagonian grass-shrub steppe, which suggests colder conditions. This is consistent with the results of the analysis of the small-mammal as-

semblage from CH1, revealing relative taxonomic stability during the Pleistocene-Holocene transition (Fernández et al. 2011). We suggest this testifies to the high ecological resilience of the Monte ecosystem.

Archaeological evidence indicates very brief human occupation of the cave during the early Holocene: The negative correlation between the incidence of archaeological materials and carnivore scats confirms the low intensity of human presence. The lithic assemblages suggest that the site served as a workshop and that tools were discarded elsewhere. The evidence is consistent with a strategy of provisioning individuals.

The earliest date for human presence in CH1 is consistent with data available for northern Patagonia, which cluster after 10,000 RCYBP. The macro-regional dataset shows a brief temporal pulse when human occupations are first recorded at a number of distant places. This may suggest human settlement radiated to ecologically marginal regions from areas colonized earlier.

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