

## Literatur

### 2013-12-04 Amerika

ADOVASIO 1997

J. M. Adovasio & D. R. Pedler, *Monte Verde and the antiquity of humankind in the Americas*. *Antiquity* **71** (1997), 573–580.

The Smithsonian Institution Press (with a patience one no longer expects of a scholarly publisher) early this year issued the second volume of Toni Dillehay's monograph on Monte Verde, in far southern Chile—8 years after the first volume (Dillehay 1989; 1997). What is the standing of the site? Is it the long-sought-after proof of a 'pre-Clovis' human presence in the Americas? And if it is, why is it by the southern tip of the Western Hemisphere, rather than close to its northern portal from Siberia?

ADOVASIO 2005

J. M. Adovasio & D. R. Pedler, *A Long View of Deep Time at Meadowcroft Rockshelter*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas (College Station 2005), 23–28.

Since the initiation of excavations in 1973, Meadowcroft Rockshelter has borne levels of visibility and notoriety far out of proportion with its relatively modest physical dimensions. By turns praised, vilified, and ignored in scholarly debate, Meadowcroft Rockshelter nonetheless remains one of the best candidates for the oldest locus of human occupation in North America and the longest record of human occupation in the Western Hemisphere. Whatever its antiquity, the site is widely viewed as the most carefully excavated and extensively documented site of its kind in North America. This contribution summarizes the history of work at Meadowcroft and assesses the implications of that work for the archaeology of Pennsylvania and North America.

BALTER 2008

Michael Balter, *Ancient Algae Suggest Sea Route for First Americans*. *science* **320** (2008), 729.

BECK 2010

Charlotte Beck & George T. Jones, *Clovis and Western Stemmed, Population migration and the meeting of two technologies in the Intermountain West*. *American Antiquity* **75** (2010), 81–116.

The Intermountain West is rarely included in discussions of the North American Paleoindian record, largely because there is so little evidence for Clovis in that region. What has been ignored in these discussions is the presence of an early record in the region associated not with Clovis, but with a different technology, the main diagnostic of which is the large, contracting stemmed projectile point. Dates associated with this technology are comparable to the earliest Clovis dates on the Plains. An examination of the spatial and temporal distributions of Clovis diagnostics suggests that elements of this technology arrived relatively late in

the Intermountain West, apparently the termination of a diffusion (or migration) process that began in the southern Plains or Southeast, moved northward along the Rocky Mountain front, and eventually onto the Columbia Plateau. We argue that initial colonization of the intermountain region most likely involved groups moving inland from the Pacific coast carrying a non-Clovis technology, which was already in place by the time Clovis technology arrived.

#### BONNICHSEN 2005A

ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)).

#### BONNICHSEN 2005B

Robson Bonnichsen & Bradley T. Lepper, *Changing Perceptions of Paleoamerican Prehistory*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 9–19.

The articles presented in this volume make it abundantly clear that there is now a substantial evidentiary record from First American sites in North and South America supporting the view that the Americas were peopled before the appearance of Clovis. The Clovis-first model productively guided research for more than three decades, but it now has been falsified. The demise of the Clovis-first model leaves a void that challenges model builders to construct new Paleoamerican origin models that will encompass the wealth of archaeological and paleobiological data presented by the contributors to this volume. This is an exciting time to be studying the peopling of the Americas.

#### BONNICHSEN 2005C

Dennis Stanford, Robson Bonnichsen, Betty Meggers & D. Gentry Steele, *Paleoamerican Origins, Models, Evidence, and Future Directions*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 313–353.

Following the discovery of “Paleolithic” projectile points associated with Ice Age animals near Clovis, New Mexico, scholars made the assumption that these artifacts were used by descendants of ancient hunters who migrated “out of Asia” across the Bering Land Bridge and traversed an ice-free corridor to populate the Americas. This unilineal theory of New World origins became so rooted in scientific and public thinking that it evolved into “fact” without the benefit of proof. This paper assesses the progress of more than three quarters of a century of research focused on resolving the questions of the peopling of the Americas and concludes that there is sufficient evidence of multiple migrations to rule out the unilineal “Clovis-first” descent theory.

The growing body of new interdisciplinary data has currently resulted in three colonizing scenarios to replace the Clovis-first model. These models include: multiple terrestrial migrations across Beringia into the Americas; expansion around the North Pacific Rim by Southeast Asian paleo-mariners; and a westward extension of Paleoeuropean sea mammal hunters exploiting the North Atlantic ice margin.

We conclude that while these or even combinations of these models are logical possibilities to be tested, at present they only have minimal empirical supporting evidence.

We also examine variations in technology against a chronological framework to assess the existence of multiple cultural patterns that represent adaptations to the varied environments and dramatic climate changes encountered as the First Americans dispersed across the Western Hemisphere. These patterns include a long-lived megamammal bone-flaking technology that extended from Eurasia across Beringia and southward into North America as far as the Valley of Mexico. An early unifacially flaked stone tool pattern is common in South America and lasts until the beginning of the Holocene. This pattern is poorly represented in North America. The “signature” pattern of the Americas is the bifacially flaked stone projectile point.

While the bifacially flaked pattern is most common and diverse in North America, it also occurred southward to the very tip of the South American Cone. From its earliest occurrences, this pattern is so variable in technology and form that we considered the variations co-traditions, many of which overlapped time and space. These include pre-Clovis (Cactus Hill, Meadowcroft, and Page-Ladson), Clovis, Nenana, Goshen/Plainview, Western Stemmed points of North America, and El Jobo, Fishtail and Paján points of South America. At present it is ambiguous if these co-traditions represent regional adaptations or have independent origins.

We conclude that the scientific database, though growing, is currently insufficient to explain the intricate web of social, biological, and environmental interactions that over untold millennia evolved into modern Americans. Therefore, it is imperative to study and preserve every important archaeological discovery if we ever hope to achieve an understanding of the rich story of the peopling of the Americas.

Unfortunately, the Native American Graves Protection and Repatriation Act (NAGPRA), which was intended to balance the interest of Native Americans, scientists, and the public, may in fact make it difficult to acquire critical data in the future. Satisfactory regulations have not been developed to insure fair and objective decisions regarding study of Paleoamericans, and many federal agencies and institutions have returned remains that have little if any affiliation with modern tribal groups. This situation became apparent with the discovery of the Kennewick Man, a Paleoamerican who died as a result of a violent confrontation over 9,000 years ago. The Corps of Engineers decided to summarily give Kennewick Man's remains to the local tribes for burial even though preliminary studies strongly suggested they were not related. Fortunately, this did not happen and Kennewick Man's contribution to the history of the First Americans will be preserved for the time being.

State and federal agencies as well as tribes and the general public should understand that many different tribal groups as well as non-Indians have a common heritage with prehistoric people such as Kennewick Man. Or, in the case of lineal extinction, there may be no living descendants. To accurately identify prehistoric social groups and understand their relationships to one another as well as to modern tribes, we need to develop and use new technologies and methods to test alternative hypotheses using scientific methods. By constructing better descent models and following rules of evidence, we can accurately resolve conflicts of ethnic and social affiliation. Certainly, because theoretical, technological, and analytical innovations will occur, it is imperative to hear the “Ancient Ones” who have patiently waited to tell the stories of their times and lives through the archaeological record.

DICKINSON 2011

William R. Dickinson, *Geological perspectives on the Monte Verde*

*archeological site in Chile and pre-Clovis coastal migration in the Americas.* [Quaternary Research](#) **76** (2011), 201–210.

Discovery of the Monte Verde archeological site in Chile overturned the previous consensus that the first Americans into the New World from Asia were the makers of Clovis projectile points, and rejuvenated the hypothesis that migration through the Americas occurred largely on portions of the Pacific continental shelf exposed by Pleistocene drawdown in eustatic sea level. The postulate of travel along a paleoshoreline now hidden underwater is an attractive means to posit pre-Clovis human movement southward from Beringia to Chile without leaving traces of migration onshore. Geologic analyses of the Pleistocene paleoenvironment at Monte Verde and of the morphology of the potential migration route along the continental shelf raise questions that have not been fully addressed. The periglacial setting of Monte Verde may call its antiquity into question and the narrowness of the Pacific continental shelf of the Americas makes it unlikely that people could travel the length of the Americas without impacting ground still onshore and no farther inland than Monte Verde itself. Geological perspectives on Monte Verde and coastal migration jointly suggest that the Clovis-first hypothesis for peopling the New World may have been abandoned prematurely.

Keywords: Chile | Clovis | Coastal migration | Continental shelf | Geomorphology | Glacial geology | Monte Verde | Pre-Clovis

#### DILLEHAY 1988

Tom D. Dillehay & Michael B. Collins, *Early cultural evidence from Monte Verde in Chile.* [nature](#) **332** (1988), 150–152.

The entry of the first Asians into the New World is generally thought to have occurred no earlier than 12,000 years ago. Recent archaeological evidence from South America suggests that the migration from Asia to North America might have taken place much earlier. This evidence comes from the Brazilian site of Boqueirao do Sitio da Pedra Furada, with a long cultural sequence possibly extending as far back as 32,000 yr BP, and the Chilean site of Monte Verde. This latter site has one well-documented cultural episode radiocarbon dated at 13,000 yr BP and another possible one at 33,000 yr BP. We report here two carbon-14 dates from charcoal taken from cultural features associated with the older materials of  $\approx 33,000$  yr BP. These findings provide additional evidence that people colonized the Americas much earlier than was previously thought.

#### DILLEHAY 1989

TOM D. DILLEHAY (Hrsg.), *Monte Verde – A Late Pleistocene Settlement in Chile, Vol. 1 Palaeoenvironment and Site Context.* Smithsonian Series in Archaeological Inquiry ([Washington 1989](#)).

#### DILLEHAY 1991

Tom D. Dillehay & Michael B. Collins, *Monte Verde, Chile, A comment on Lynch.* [American Antiquity](#) **56** (1991), 333–341.

A recent review by Lynch of late Pleistocene sites in South America is impaired by numerous errors and misrepresentations. Although Lynch omits several important sites and often selectively uses data to support his own position, this comment addresses his review of the Monte Verde site in Chile. Although Lynch has not visited Monte Verde and has inspected few artifacts from the site, he questions the Pleistocene association of artifacts and the “hand of humans” in the site. Lynch’s interpretations are refuted on the grounds that he is unfamiliar with the site, that he reviewed obsolete publications, and that he often misrepresented material in

these publications. The archaeological evidence for late Pleistocene human activity at Monte Verde is reviewed in terms of the site stratigraphy, chronology, and artifacts.

#### DILLEHAY 1992

Tom D. Dillehay, Gerardo Ardila Calderón, Gustavo Politis & Maria da Conceicao de Moraes Coutinho Beltrão, *Earliest Hunters and Gatherers of South America*. *Journal of World Prehistory* **6** (1992), 145–204.

Traditional syntheses of the archaeology of the late Pleistocene period in South America have focused primarily on the peopling of the continent by North American cultural groups and on identifying associations among regional sites. This focus has tended to ignore the widespread culture diversity of the period and the possible effects of different paleolandscapes on human migration and colonization, such as the presence of unglaciated tropical and temperate environments in the northern lowlands, the gateway to the interior. The earliest known cultural assemblages are characterized by various unifacial and bifacial lithic industries that may represent regional processes reminiscent of an Archaic lifeway. The major archaeological sites and associated artifact assemblages are examined in terms of regional and continental patterns of environmental and cultural change. Results suggest that the Pleistocene archaeological record of South America must be explained in its own terms and that the events and processes producing this record either occurred earlier than previously thought or are very different from those in North America.

Keywords: human colonization; Pleistocene; hunter-gatherers; South America; lithic analysis; paleoecology; animal extinction; Andes; Amazonia

#### DILLEHAY 1997

TOM D. DILLEHAY (Hrsg.), *Monte Verde – A Late Pleistocene Settlement in Chile, Vol. 2 The Archaeological Context and Interpretation*. Smithsonian Series in Archaeological Inquiry (Washington 1997).

#### DILLEHAY 1999

Tom D. Dillehay et al., *On Monte Verde: Fiedel's confusions and misrepresentations*. (Lexington 1999). <http://www.uky.edu/Projects/MonteVerde/>.

Dillehay-1999.pdf

Tom D. Dillehay, Michael B. Collins, Mario Pino, Jack Rossen, Jim Adovasio, Carlos Ocampo, Ximena Navarro, Pilar Rivas, David Pollack, A. Gwynn Henderson, Jose Saavedra, Patricio Sanzana, Pat Shipman, Marvin Kay, Gaston Munoz, Anastasios Karathanasis, Donald Ugent, Michael Cibull and Richard Geissler

A more detailed response to Fiedel was not written at the time of his review, because the editors of *Discovering Archaeology* limited us to 700 words. The editors of *Discovering Archaeology* would not publish the long response provided below. Since Fiedel's review was published in *Discovering Archaeology* and avoided peer review, we have been unable to make this reply available through conventional avenues (i.e., technical scientific journals). In addition, Fiedel's factual and interpretive errors are so numerous, the response we've had to produce to rebut him is prohibitively long for most journals. Thus, this website.

## DILLEHAY 2008

Tom D. Dillehay, C. Ramírez, M. Pino, M. B. Collins, J. Rossen & J. D. Pino-Navarro, *Monte Verde: Seaweed, Food, Medicine, and the Peopling of South America*. [science](#) **320** (2008), 784–786.

s320-0784-Supplement.pdf

The identification of human artifacts at the early archaeological site of Monte Verde in southern Chile has raised questions of when and how people reached the tip of South America without leaving much other evidence in the New World. Remains of nine species of marine algae were recovered from hearths and other features at Monte Verde II, an upper occupational layer, and were directly dated between 14,220 and 13,980 calendar years before the present ( $\approx$ 12,310 and 12,290 carbon-14 years ago). These findings support the archaeological interpretation of the site and indicate that the site's inhabitants used seaweed from distant beaches and estuarine environments for food and medicine. These data are consistent with the ideas that an early settlement of South America was along the Pacific coast and that seaweeds were important to the diet and health of early humans in the Americas.

## FAGUNDES 2008

Nelson J. R. Fagundes et al., *Mitochondrial Population Genomics Supports a Single Pre-Clovis Origin with a Coastal Route for the Peopling of the Americas*. [American Journal of Human Genetics](#) **82** (2008), 583–592.

Nelson J. R. Fagundes, Ricardo Kanitz, Roberta Eckert, Ana C. S. Valls, Mauricio R. Bogo, Francisco M. Salzano, David Glenn Smith, Wilson A. Silva Jr., Marco A. Zago, Andrea K. Ribeiro-dos-Santos, Sidney E. B. Santos, Maria Luiza Petzl-Erler & Sandro L. Bonatto

It is well accepted that the Americas were the last continents reached by modern humans, most likely through Beringia. However, the precise time and mode of the colonization of the New World remain hotly disputed issues. Native American populations exhibit almost exclusively five mitochondrial DNA (mtDNA) haplogroups (A–D and X). Haplogroups A–D are also frequent in Asia, suggesting a northeastern Asian origin of these lineages. However, the differential pattern of distribution and frequency of haplogroup X led some to suggest that it may represent an independent migration to the Americas. Here we show, by using 86 complete mitochondrial genomes, that all Native American haplogroups, including haplogroup X, were part of a single founding population, thereby refuting multiple migration models. A detailed demographic history of the mtDNA sequences estimated with a Bayesian coalescent method indicates a complex model for the peopling of the Americas, in which the initial differentiation from Asian populations ended with a moderate bottleneck in Beringia during the last glacial maximum (LGM), around  $\approx$ 23,000 to  $\approx$ 19,000 years ago. Toward the end of the LGM, a strong population expansion started  $\approx$ 18,000 and finished  $\approx$ 15,000 years ago. These results support a pre-Clovis occupation of the New World, suggesting a rapid settlement of the continent along a Pacific coastal route.

## FIEDEL 1999

Stuart J. Fiedel et al., *Monte Verde Revisited, Confusion and Contradictions*. [Discovering Archaeology](#) **1999**, Special Report, 1–23.

Stuart J. Fiedel, Tom D. Dillehay, Mario Pino, Jack Rossen, Carlos Ocampo, Pilar Rivas, David Pollack, Gwynn Henderson, Michael B. Collins, Frederick H. West, David J. Meltzer, Vance Haynes, David G. Anderson, J. M. Adovasio, Robson Bonnichsen & Ken B. Tankersley

#### FIEDEL 1999B

Stuart J. Fiedel, *Older than we thought, Implications of corrected dates for Paleoindians*. [American Antiquity 64 \(1999\), 95–115](#).

Radiocarbon dates for the terminal Pleistocene are about 2,000 years too young. Furthermore, because of significant carbon perturbations that are manifest as plateaus or abrupt jumps in age, radiocarbon dates of ca. 12,500 to 10,000 B.P [14C] must be critically evaluated. The first successful human colonization of the Americas occurred not 11,500 but about 13,500 years ago. This basic chronological revision has important implications for models of Paleoindian colonization, population expansion, and genetic and linguistic divergence.

#### FIEDEL 2000

Stuart J. Fiedel, *The Peopling of the New World, Present Evidence, New Theories, and Future Directions*. [Journal of Archaeological Research 8 \(2000\), 39–103](#).

The prevailing archaeological consensus on Paleoindian origins and colonization of the Americas has been shaken by recent wide acknowledgment of pre-Clovis occupation at Monte Verde, Chile, and by claims that ostensibly non-Mongoloid skeletal remains might represent a precursor population. Recent mitochondrial DNA studies have been interpreted by some as indicating an earlier and more complex peopling of the continent. This paper reviews the current archaeological and biological evidence, in America and northern Asia, for the origins of Native Americans, assesses models of the colonization process in the light of new data and a revised chronology, and suggests avenues for future research.

Keywords: Paleoindian; Clovis; migration routes; peopling; colonization; Late Pleistocene; America; Northeast Asia.

#### FIEDEL 2005

Stuart J. Fiedel, *Rapid Clovis Colonization of the Americas, Chronological Evidence and Archaeological Analogues*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 97–102.

Paleoindians of the Clovis culture colonized the Americas within 600 years or less (ca. 15,500-12,900 CALYBP). The archaeologically attested movement of Thule whale hunters from Alaska to Greenland between A.D. 900 and 1050 is an analogous case of rapid long-distance expansion. Climate change and inter-societal competition may have spurred migration in both cases. Thule Inuit replaced precursors of the Dorset culture throughout the Arctic; if there were pre-Clovis people in the Americas, they were replaced by Clovis in North America, and by makers of Clovis-derived fishtail points in South America.

#### GEORGE 2005

Debra George, John Southon & R. E. Taylor, *Resolving an anomalous radiocarbon determination on mastodon bone from Monte Verde, Chile*. [American Antiquity 70 \(2005\), 766–772](#).

Previous 14C determinations obtained on two segments of a single mastodon bone recovered from Monte Verde, Chile, were highly discordant, differing by more than 5,000 years. Because of the significance of this site in discussions concerning the earliest peopling of the Western Hemisphere, additional 14C and new d13C values have been obtained on organic fractions isolated from both segments. The

constituent amino acid profiles indicate that both bone segments retain significant amounts of protein (mostly collagen) residues. Four accelerator mass spectrometry-based  $^{14}\text{C}$  values obtained on total amino acids and ultrafiltered gelatin fractions – two from each segment – are statistically identical and indicate an age of 12,460 ( $\pm 30$ ) BP for the mastodon. This value is concordant with  $^{14}\text{C}$  values obtained on other culturally affiliated organics associated with the MV-II levels at this site.

#### GOODYEAR 2005

Albert C. Goodyear, *Evidence for Pre-Clovis Sites in the Eastern United States*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 103–112.

Over the past 25 years, a number of archaeological sites in eastern North America have manifested evidence of human occupations dating earlier than 11,500 RCYBP. These sites include Meadowcroft Rockshelter, Penn.; Cactus Hill, Va.; Saltville-2, Va.; and Topper, S.C. Except for Topper, pre-Clovis (earlier than 11,500 RCYBP) remains were encountered incidental to conducting normal research. Topper was intentionally tested for the possibility of pre-Clovis remains. This paper is a brief review of the geological contexts, dating, and artifactual evidence of these sites. Collectively, they indicate a late-glacial time range of approximately 12,000 to 16,000 RCYBP. Technologically, Meadowcroft Rock-shelter and Cactus Hill are the most similar, with evidence of bifacial points, unifaces, and prismatic blades. Although probable bone and ivory artifacts are present, lithics at Saltville-2 are expedient and minimal, making comparisons difficult. Topper, which is a chert quarry, is distinctive in that it has no evidence of bifaces and is dominated by small flake tools with an emphasis on burin-like tools. More geoarchaeological fieldwork is needed to target landforms that possess sediments deposited from 18,000 to 12,000 RCYBP. The Southeast may be a good place to prospect for these sites, given its milder climate during late-glacial times. The purpose of this paper is to present briefly archaeological evidence of human occupation of the eastern United States prior to 11,500 RCYBP, the conventional pre-Clovis temporal boundary. Four sites are reviewed for their artifacts, geological contexts, and dating. While questions, reservations, and rejections exist within the profession concerning some or all of these sites, nevertheless it is believed that they sufficiently meet these criteria and thus constitute evidence.

#### GRUHN 1991

Ruth Gruhn & Alan L. Bryan, *A review of Lynch's descriptions of South American Pleistocene sites*. [American Antiquity](#) **56** (1991), 342–348.

The description of major South American Pleistocene sites by Lynch (1990) contains significant errors and omissions. The artifact assemblage at the Colombian site of Tibit6, dated at  $11,740 \pm 140$  B.P., is much larger than indicated by Lynch and well represents the Abriense industry, which features small unifacially retouched flake tools and core tools, with no stone projectile points. Lynch did not describe the 1976 stratigraphic profile at the Venezuelan site of Taima-Taima, and he failed to refer to the evidence for butchering of the juvenile mastodon with which an El Jobo projectile point fragment and a utilized flake were associated directly. The descriptions of Brazilian sites also feature serious mistakes. For the site of Alice Boër, Lynch overlooked a thick sterile stratigraphic unit (Bed IV) that intervenes between Bed III, with its thermoluminescence dates as early as  $10,970 \pm$



1020 B.P. and radiocarbon dates as early as  $14,200 \pm 1150$  B.P., and the artifact-bearing surface of Bed V. For Lapa Vermelha, Lynch failed to indicate that several artifacts were recovered from an older cemented cave fill that yielded radiocarbon dates of 22,410 B.P. and  $> 25,000$  B.P. Lynch's description of the site of Toca do Boqueirido da Pedra Furada does not correspond to eyewitness reports, and his description of the nearby Toca do Sitio do Meio was incomplete and confused. Finally, in his description of the stratigraphy of the Patagonian site of Los Toldos, Cueva 3, Lynch misquoted and misconstrued the original reports, which indicate clearly the stratigraphic priority and integrity of the Level 11 industry. For accurate descriptions of early South American archaeological sites, readers are urged to examine the original sources.

#### GRUHN 2005

Ruth Gruhn, *The Ignored Continent, South America in Models of Earliest American Prehistory*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 199–208.

The venerable Clovis-first model of the peopling of the Americas was testable: It could be disproven by evidence of archaeological sites older than Clovis, or contemporary with Clovis but significantly different in character. South American archaeological sites presented such evidence, but they were long ignored or discounted. The history of development and entrenchment of the Clovis-first model in North America was a strong contributing factor. This paper discusses the treatment of three early South American sites—Taima-taima, Tibitó, and Monte Verde—by supporters of the Clovis-first model. A review of other early South American sites demonstrates that by the time of the Clovis horizon in North America, all major environmental zones of the southern continent were already occupied by well-adapted populations maintaining diverse subsistence systems and distinctive technologies unrelated to Clovis. Evidence from South America has not only disproven the Clovis-first model; it shows that the standard North American evolutionary model is inappropriate for the southern continent, for the earliest complexes are Paleoarchaic in character, not Paleoindian. North American models may be confounded by South American data once again, if evidence for South American sites earlier than 20,000 yr B.P. is verified.

#### HAMILTON 2007

Marcus J. Hamilton & Briggs Buchanan, *Spatial gradients in Clovis-age radiocarbon dates across North America suggest rapid colonization from the north*. [PNAS 104 \(2007\), 15625–15630](#).

A key issue in the debate over the initial colonization of North America is whether there are spatial gradients in the distribution of the Clovis-age occupations across the continent. Such gradients would help indicate the timing, speed, and direction of the colonization process. In their recent reanalysis of Clovis-age radiocarbon dates, Waters and Stafford [Waters MR, Stafford TW, Jr (2007) *Science* 315:1122–1126] report that they find no spatial patterning. Furthermore, they suggest that the brevity of the Clovis time period indicates that the Clovis culture represents the diffusion of a technology across a preexisting pre-Clovis population rather than a population expansion. In this article, we focus on two questions. First, we ask whether there is spatial patterning to the timing of Clovis-age occupations and, second, whether the observed speed of colonization is consistent with demic processes. With timedelayed wave-of-advance models, we use the radiocarbon record

to test several alternative colonization hypotheses. We find clear spatial gradients in the distribution of these dates across North America, which indicate a rapid wave of advance originating from the north. We show that the high velocity of this wave can be accounted for by a combination of demographic processes, habitat preferences, and mobility biases across complex landscapes. Our results suggest that the Clovis-age archaeological record represents a rapid demic colonization event originating from the north.

Early Paleoindian | wave of advance | landscape complexity | hunter-gatherers | Late Pleistocene

#### HAYNES 2005

C. Vance Haynes, Jr., *Clovis, Pre-Clovis, Climate Change, and Extinction*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 113–132.

The route for initial peopling of the Americas is not known in spite of recent opinions to the contrary. A coastal route and the ice-free corridor route are still working hypotheses that need further testing. Clovis progenitors are also hypothetical. However, prevailing biases suggest a coastal route to the exclusion of an ice-free corridor route, and Clovis originating from an unproven pre-Clovis population in the Americas. Presented here are data to suggest that an ice-free passage during the Allerod warm period may have extended from the unglaciated Yukon Plateau to the Pelly Valley to the Liard Valley to the interior Plains of Canada in time for people of the Nenana complex in Central Alaska between 11,800 and 11,500 KCYBP to move to the Great Plains and become progenitors of the Clovis complex by 11,500 KCYBP. Whereas Clovis expansion throughout North America coincides with extinction of Rancholabrean fauna at about 10,890 KCYBP, “black mat” stratigraphy indicates the event was too sudden to have been caused by either human predators alone or climate change alone. Instead a combination of predation, drought, and the Younger Dryas deepfreeze may have been the cause of the Rancholabrean termination.

#### JACKSON 2007

Donald Jackson, César Méndez, Roxana Seguel, Antonio Maldonado & Gabriel Vargas, *Initial Occupation of the Pacific Coast of Chile during Late Pleistocene Times*. [Current Anthropology](#) **48** (2007), 725–731.

The record of the initial settlement of South America has significant geographical gaps, especially along the Pacific coast. The study of small sites with brief occupation spans can open windows on high-resolution contexts in which associations and activities are clear. Through the use of a program designed to identify lacustrine Pleistocene environments in which the initial human populations would presumably have settled, Quebrada Santa Julia, a site attesting to human presence dating to 13,000 calibrated years BP, has recently been located on the semiarid coast of Chile. It is the only known Paleoindian site with fluted projectile points in unambiguous association with extinct megafauna on the Andean Pacific coast. It represents a small lakeside camp with a brief occupation span in which multiple activities, including the processing of prey transported from a nearby location, were conducted. The present of extralocal lithic raw materials argues for movements into the interior, as has been suggested for other early settlements in the Andean region. Notwithstanding its proximity to the littoral, the site has not yielded any evidence of the exploitation of marine resources.

#### JELINEK 1992

Arthur J. Jelinek, *Perspectives from the Old World on the habitation of the New*. [American Antiquity](#) **57** (1992), 345–347.

Despite the much briefer period of research and many fewer archaeologists involved, there is now clear and incontrovertible evidence of human occupation in Australia at a period significantly earlier than can be documented with comparable evidence from the New World. An explanation of the differences in the present record between these two regions that relies on an insufficient study of situations favorable to the preservation of earlier material in the New World seems inadequate in light of the total accumulated evidence.

#### JODRY 2005

Margaret A. Jodry, *Envisioning Water Transport Technology in Late-Pleistocene America*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 133–160.

Human use of watercraft dates back at least thirty thousand years and some researchers propose that this technology enabled the peopling of Australia closer to fifty thousand years ago. Due to the vagaries of preservation across millennia, direct evidence of Paleolithic rafts or boats is lacking despite other data substantiating their use. Archeologists infer the existence of Paleolithic watercraft from indirect evidence such as the transport of stone across bodies of water that separate locations where raw stone was acquired from places where it was used and discarded (i.e., obsidian gathered from islands inaccessible from the mainland without the use of boats). This article takes as its starting position the likelihood that watercraft technologies were among transportation and mobility options employed during early explorations and settlements of the Americas. While early colonisation models increasingly envision possible maritime travel, they are relatively mute on possible uses for watercraft as aids in inland exploration, mobility, and settlement. This paper draws ideas from examinations of ethnographic and archaeological records to provide a springboard for expanding mobility models beyond their present tendency to view pedestrian travel as the dominant, if not nearly exclusive, mode of inland movement in late-Pleistocene America.

#### LYNCH 1990

Thomas F. Lynch, *Glacial-age man in South America? A critical review*. [American Antiquity](#) **55** (1990), 12–36.

This paper is an attempt to place the dispute about early man in South America in historical context and to review the most convincing and important evidence that has been put forward. Essentially no skeletal remains either in North or South America – have survived recent scrutiny and direct dating by accelerator mass spectrometry (AMS) and small CO<sub>2</sub> counters. Only a handful of North American sites still are considered likely to be pre-Clovis, but the concept of an earlier, generalized hunting-and-gathering adaptation remains popular. In South America the pre-Paleoindian sites of the 1960s and 1970s are reevaluated and found to present only weak or negative indications of early occupation. Recently discovered sites in Brazil and Chile are examined critically, and the evidence is questioned. The results of this survey and evaluation suggest that we still lack the absolutely certain case that would be necessary to support the hypothesis of glacial-age occupation. Moreover, the probability of demonstration is seen to decrease, rather than increase, as the Paleoindian horizon increasingly is defined with more certainty

while only equivocal cases are marshalled for an Archaic-like pre-Paleoindian stage. In summarizing prehistory, archaeologists should depend more on unambiguous and replicated cases, rather than on regional exceptions. More interpretive caution is needed, especially where there are possibilities of mixture and secondary deposition. Natural processes often mimic cultural patterns, confusing the positive identification of informal hearths and simple artifacts.

#### LYNCH 1991

Thomas F. Lynch, *Lack of evidence for glacial-age settlement of South America, Reply to Dillehay and Collins and to Gruhn and Bryan*. [American Antiquity 56 \(1991\), 348–355](#).

Dillehay and Collins (1991) and Gruhn and Bryan (1991) claim that my review (Lynch 1990) was impaired by errors and misrepresentations, yet they identify only one significant error—the too-early date attributed to Toca do Sitio do Meio. Inspection of the sources shows that my article contained no misrepresentations of the public record available to me at the time of writing. Selective use of sources is necessary in a review of this scale. A careful reading of the primary sources, as well as the other papers cited, will show that I have not misquoted, misconstrued, or taken statements out of context. We are dealing with differences of interpretation and emphasis. There is no such thing as an “obsolete publication,” at least until the information in it has been retracted formally. Understandably, Gruhn and Bryan have been zealots for their pre-Paleoindian cause. Hardly neutral or dispassionate, they have over-reacted to my bringing the other side forward.

#### MELGAR 2013

César Méndez Melgar, *Terminal Pleistocene / early Holocene <sup>14</sup>C dates form archaeological sites in Chile, Critical chronological issues for the initial peopling of the region*. [Quaternary International 301 \(2013\), 60–73](#).

[QuatInt301-060-Supplement1.pdf](#)

A review of <sup>14</sup>C information for archaeological sites in Chile between 13,000 and 7000 BP assesses the consistency of information on the early settlement of the region. Results explore geographical distribution, contextual reliability, repeatability and cultural association of this assemblage of dates. Chronological trends are discussed through the use of averaged calibrated occupational events based on contextual and statistical data. The use of this database constitutes the framework for discussing critical issues such as the first consistent human presence, regional temporal peopling differences, the chronological data supporting consistent use of littoral environments, and the coexistence/interaction of extinct faunas and humans. Research biases and current unsolved questions are raised in order to formulate a future agenda for improving chronological data for the human occupation of the Pleistocene-Holocene transition in Chile.

#### MELTZER 1989

David J. Meltzer, *Why don't we know when the first people came to North America?* [American Antiquity 54 \(1989\), 471–490](#).

The question of when the first people came to North America defies consensus. Data from an array of fields would seem to narrow the number and timing of migrations, but that evidence is at best circumstantial and cannot be used to constrain what is strictly an archaeological matter. Advocates of a pre-12,000 B.P. human population assert that their evidence is valid and is rejected by skeptics only because of deep-set historical biases. That assertion is not well-founded. If

a bias exists, it is in the assumption that there were only three discrete migrations, the earliest of which was Clovis. The possibility that these migrations were not discrete episodes involving small founding populations, but instead may have been migratory dribbles spread over thousands of years, has implications for understanding the variation evident among modern descendant populations and the archaeological variability of Clovis. The possibility that there were early, pre-12,000 B.P. migrations that may have been wholly unrelated to Clovis and failed, may have equally important implications for why we don't know when the first people came to North America.

#### MELTZER 1997A

David J. Meltzer et al., *On the Pleistocene antiquity of Monte Verde, southern Chile*. [American Antiquity](#) **62** (1997), 659–663.

David J. Meltzer, Donald K. Grayson, Gerardo Ardila, Alex W. Barker, Dena F. Dincauze, C. Vance Haynes, Francisco Mena, Lautaro Núñez and Dennis J. Stanford

The potential importance of the Monte Verde site for the peopling of the New World prompted a detailed examination of the collections from that locality, as well as a site visit in January 1997 by a group of Paleoindian specialists. It is the consensus of that group that the MV-II occupation at the site is both archaeological and 12,500 years old, as T Dillehay has argued. The status of the potentially even older material at the site (MV-I,  $\approx$ 33,000 B.P.) remains unresolved.

#### MELTZER 1997B

David J. Meltzer, *Monte Verde and the Pleistocene Peopling of the Americas*. [science](#) **276** (1997), 754–755.

#### ORTLIEB 2011

Luc Ortlieb, Gabriel Vargas & Jean-François Saliège, *Marine radiocarbon reservoir effect along the northern Chile–southern Peru coast (14–24°S) throughout the Holocene*. [Quaternary Research](#) **75** (2011), 91–103.

Through an extensive sampling and dating of pairs of associated shells and charcoal fragments combined with reanalysis of all the available previous data, we reconstruct the evolution throughout the Holocene of the regional marine radiocarbon reservoir effect (DR) values along the northern Chile–southern Peru area (14°–24°S). After elimination of the cases in which the terrestrial component yielded older ages than the marine shells to which they were associated, the study is based upon data from 47 pairs of associated marine and terrestrial material.

Our results suggest major changes in both the magnitude and variability range of DR during the whole Holocene Period: (1) between 10,400 and 6840 cal yr BP, high values ( $511\pm 278$  yr) probably result from a strengthened SE Pacific subtropical anticyclone and shoaling of equatorial subsurface waters during intensified upwelling events; (2) between 5180 and 1160 cal yr BP, lower values ( $226\pm 98$  yr) may reflect a major influence of subtropical water and diminished coastal upwelling processes; (3) during the last  $\approx$ thousand years, high values (between  $355\pm 105$  and  $253\pm 207$  yr) indicate an increased influence of  $^{14}\text{C}$ -depleted water masses and of ENSO. For the early twentieth century a DR value of  $253\pm 207$  yr was calculated.

Keywords: Radiocarbon reservoir effect | Holocene | Paleoceanographic circulation | Upwelling | Southeastern Pacific | Peru | Chile

#### OWSLEY 2005

Douglas W. Owsley & Richard L. Jantz, *Nearsightedness in Paleoamerican Research, Historical Perspective and Contemporary Analysis*. In: ROBSON BONNICHSEN, BRADLEY T. LEPPER, DENNIS STANFORD & MICHAEL R. WATERS (Hrsg.), *Paleoamerican Origins, Beyond Clovis*. Peopling of the Americas ([College Station 2005](#)), 289–294.

Both increased analytical capability and compilation of an extensive reference database for morphometric research enable the testing of old ideas versus new theories regarding the origin of the First Americans. Measurements from four ancient skulls—Browns Valley, Minnesota Woman, Spirit Cave, and Wizards Beach—are compared with corresponding data for 34 population samples including nine Native American groups from the western half of North America. The craniofacial morphology of Browns Valley and Minnesota Woman are quite similar; together with Spirit Cave, they fall outside the range of variation of all modern groups, especially that of American Indians. This interpretation is very different from the traditional view of relatedness and close morphological similarity championed by Hrdlička more than half a century ago. Historical perspective focusing on differing interpretations of Minnesota Woman reaffirms the need for farsightedness in determining the disposition of ancient remains in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). Preservation of culturally unaffiliated human remains for future study is essential for advancing knowledge of ancient American prehistory.

#### SUROVELL 2000

Todd A. Surovell, *Early Paleoindian women, children, mobility, and fertility*. [American Antiquity 65 \(2000\)](#), 493–508.

If we take the archaeological record at face value, the colonization of unglaciated North America appears to have been very rapid. The highly consistent dating of Clovis archaeological sites (11,500–10,800 B.P.) suggests that this continent was populated within a matter of centuries. To explain the spatial and temporal scales of this phenomenon, it is necessary to invoke both high mobility and high fertility rates during the initial colonization process. However, it is widely believed that it is maladaptive for mobile foragers to have large numbers of offspring due to the costs of transporting those children. Thus, the archaeological record presents us with a paradox. Using a mathematical model that estimates the costs of raising children for mobile hunter-gatherers, this paper asks the question—is high mobility compatible with high fertility? It is concluded that high mobility, if defined as the frequent movement of residential base camps, is quite compatible with high fertility, and that early Paleoindians could indeed have been characterized by high reproductive rates. Therefore, it is quite possible that the Americas were populated very rapidly by highly mobile hunter-gatherers.

#### TAYLOR 1999

R. E. Taylor, C. Vance Haynes Jr., Donna L. Kirner & John R. Southon, *Radiocarbon analyses of modern organics at Monte Verde, Chile, No evidence for a local reservoir effect*. [American Antiquity 64 \(1999\)](#), 455–460.

Radiocarbon measurements have been obtained on contemporary plant samples collected at the site of Monte Verde, Chile, to examine the possibility that a local  $^{14}\text{C}$  reservoir effect impinges on the accuracy of the  $^{14}\text{C}$  values obtained on previously recovered archaeological samples. The  $^{14}\text{C}$  activity of the modern plants

do not reveal any offset from expected contemporary  $^{14}\text{C}$  values and thus provide no support for a major postulated reservoir effect at least for the recent past. Although there is, at present, no direct means of measuring potential  $^{14}\text{C}$  reservoir offsets in the late Pleistocene for this region, we are not aware of any current data that would indicate that there have been major changes during geologically recent times.

#### TUROSS 1995

Noreen Tuross & Tom D. Dillehay, *The Mechanism of Organic Preservation at Monte Verde, Chile, and One Use of Biomolecules in Archaeological Interpretation*. [Journal of Field Archaeology](#) **22** (1995), 97–110.

Monte Verde, a habitation site in southern Chile, is the source of exceptionally well-preserved organic materials. The depositional and chemical circumstances that led to the persistence of this unique assemblage included an anoxic, reducing environment protected by an overlying peat layer and a silica gel-rich substrate. Utilizing the immunological techniques of ELISA assays and Western blots, a subset of lithic artifacts was tested for blood traces. Geochemical analysis of the soil matrix provided the necessary comparative data for assessing the biological etiology of the residue extracted from these tools. One tool was found to be positive for hemoglobin, and was convincingly above both the chemical and geological background of the immunological assays. These findings complement the archaeological interpretation of the site.