

Cueva de las Manos (Cave of the Hands), Perito Moreno, Argentina. The art in the cave is dated between 13,000 and 9,000 BP (Before Present), stenciled, and mostly left hands are shown. Source: Wikimedia Commons at https://tinyurl.com/3cit9ax9.

igration is one of the most human stories. From the very beginnings of our species in Africa, the movement of populations from one region to another, the challenges and opportunities presented by new landscapes, and the encounters with other populations (or the strangeness of truly unpeopled places) have been among the primary threads running throughout our history. There are as many particular histories of migration as there are communities of people. Even for those groups whose traditions do not include memories of intercontinental movements, very few claim to be living at the very point of origin and relate histories that include movement from one place to another, legends of journeys and heroes' quests, and knowledge of the world beyond the confines of their communities. At some point in the future, it is possible that humanity will reach out beyond the limits of our "pale blue dot," to quote the great Carl Sagan, and find whole new worlds to explore.

Within the reach of recorded history, very few isolated islands have been discovered that had no previous human occupation, but nearly every habitable patch of land on our planet was reached long before the arrival of written documents. This means that we must turn to the discipline of archaeology to learn new things about the migration of people around the world before the development of writing. I say "new things," since the aforementioned oral traditions of every population on the planet can tell us a great deal about how people relate to their past, what knowledge has been inherited from their ancestors, and the persistence of cultural memory from one generation to the next. However, these legacies are about the transmission of knowledge rather than the addition of new information. It is in this capacity that a scientific examination of the past can enhance our understanding of where our ancestors came from, where our "siblings" went, and how we collectively comprise the human family.

The question of origins for the indigenous populations of the New World has been of interest to non-indigenous people ever since the lands of North and South America were recognized as not being the "Indies," as mistakenly proposed by Christopher Columbus. This is the source of the European term for the First Nations people of North and South America—"Indians"—a term that is now the subject of a great deal of discussion within our own societies about its use, both within and outside of indig-

enous communities themselves.² Where did the people encountered by Columbus and later invading European explorers and settlers come from? Their presence could not be easily squared by reference to existing texts or holy books available to the Europeans. Their languages were not closely related to any from Europe, the Mediterranean, Africa, the Middle East, or South Asia.³ Their material culture was very distinct from all these, and their own histories contained no explicitly identifiable description as far as the Europeans were concerned. The mystery began to take shape.

The greed of many colonial period Europeans was matched only by racism on the part of substantial numbers of Europeans. They attempted in various ways to explain the presence of complex societies in the Americas by various references to Old World societies. The Phoenicians, lost Welsh princes, and other fantasies were called into service to explain the achievements of engineering, art, and technology of the First Nations people of the Americas, further muddying the waters as to the ultimate origin of their ancestors. It has been less than 100 years since American scholars even acknowledged that there was a human presence in the Americas for more than a mere 3,000 years. It was not until 1926 that a site in Folsom, New Mexico—first discovered by an African-American cowboy by the name of George McJunkin—was excavated by researchers from the Denver Natural History Museum and established that humans had been present in North America at least as far back as the end of the last Ice Age.⁴ Since then, discoveries at Clovis, New Mexico, and hundreds of other sites across North America revealed a record of a big game-hunting people thriving across the continent at the very end of the last Ice Age. It seemed as if the answer had been found and that these spear-wielding hunters of mighty "megafauna" were the first ancestors of contemporary indigenous communities of the New World.

This would be the story for decades, one displayed in dioramas across the Americas: fur-clad hunters carrying Clovis point-tipped spears (Figure 1), traversing icy plains following herds of mammoth and bison across a land bridge between eastern Siberia and Alaska, and then south through an ice-free corridor into the Americas.⁵ It was a compelling story that accounted for much of the available information at the time. As so often happens, clean explanations are often confounded by the addition of new







Figure 1: Clovis points from the Rummels-Maske Site, Iowa, USA. Source: Wikimedia Commons at https://tinyurl.com/2e2f9kkv.

information. Beginning in the closing decades of the twentieth century, and accelerating rapidly as the twenty-first century dawned, discovery after discovery began to hammer at this now apparently overly simplistic model. New sites, new analyses, and new understandings of everything from sea level rise to ancient human DNA began to illuminate a much larger, more complex, and fascinating history of how the first people arrived in the Americas.⁶

This flood of new information over the past twenty-five years has uncovered evidence of a different kind—and route— of migration, one driven less by ideas of "Manifest Destiny" and the "conquest" of new lands. 7 This newer idea has, in fact, more in common with more sophisticated ideas about what prompts population movements. Climate change, sea level rise, and displaced populations are among the issues that animate many discussion about our modern age, and are implicated in many new models for the origins of Indigenous communities of the Americas. At the end of the last Ice Age (or Pleistocene), dramatic changes in Earth's climate resulted in the collapse of continental glacial systems, and their rapid melting beginning after about 18,000 years ago—where modern scholars place the late Glacial Maximum—after which glacial conditions begin to rapidly deteriorate. For populations living along the coasts and rivers of the world, this shift would have been noticeable, especially in low-lying areas and offshore islands.8 As the pace of change accelerated, previously inhabited areas would have not only suffered significant coastal erosion and flooding, but whole ecosystems would have collapsed and ceased to provide adequate subsistence resources. The combination of these two factors would almost certainly have resulted in the displacement of populations on a global scale. Since humans are nothing if not survivors, the most common response of the most directly affected communities would have been to move, to migrate in search of a new home that could support their families and communities. 10

Given that no empirical evidence drawn from the sciences of genetics, archaeology, or linguistics can support a crossing of the Atlantic at this early date, and the first crossing of the South Pacific was a feat not accomplished for many thousands of years later by either the ancestors of today's Polynesian peoples or native South Americans, we are left with a North Pacific route of entry. 11 It should be noted that the land bridge between Siberia and Alaska did, in fact, exist, and was home to both people and a whole ecosystem. It was known as the "mammoth steppe" until it disappeared beneath the waves as the massive continental glaciers melted and sea levels rose by at least 130 meters (80.8 miles) from their low-stand approximately 18,000-20,000 years ago.12 The coastal peoples of the northwest Pacific would have been among the first to experience ecosystem disruption and displacement by rising sea levels. The newer model, that of a coastal route of migration, suggests that these people, having already established communities prior to the end of the Pleistocene and taking advantage of many thousands of years of experience and traditional knowledge of the sea and watercraft, were able to disperse along the north Pacific Rim (see map spread on pages 18 and 19), seeking new homes. One direction of their dispersal would have eventually led them south and into what we today refer to as the Americas. While it is probable that some pioneering groups may have arrived earlier, it is clear that there is a huge increase in the





Lake Baikal, Siberia, Russia ~40,000 years ago

Hokkaidō, Japan ~30,000 years ago



Illustration of Beringia (the Bering Straits land bridge) 20,000 years ago.

Source: The National Park Service website at https://www.nps.gov/articles/aps-17-1-4.htm

Okinawa, Ryūkyū Islands, Japan Sakitari Cave 23,000 years ago; Yamashita-Cho Cave, Nara City 36,000 years ago



Sakitari Cave fishhook, Okinawa, Japan. Source: *Ryūkyū Shimpo* website at https://tinyurl.com/v5fwc7b6.

Lubang Jeriji Saléh Cave East Kalimantan, Borneo 40,000 years ago

South Sulawesi, Indonesia 45,500 years ago



45,500 year old South Sulawesi cave painting of a pig. Source: Screen capture from the video Oldest Cave Art Found in Sulawesi on YouTube at https://tinyurl.com/5ebjfejr.

New Ireland and Papua, New Guinea 50,000 years ago



number of archaeological sites in the Americas after about 14,650 years ago, when one of the first major pulses of meltwater raised sea levels globally by nearly eighteen meters (59 feet) in only 500 years. ¹³ Importantly, this was not the beginning of massive changes, merely a massive event that we are able to detect geologically as being a major inflection point in the process of deglaciation. Earlier arrivals are to be expected, as in many migrations both past and present, but it is likely that this massive event drove large numbers of people to look for new homelands.

While sites such as Page-Ladson in Florida, Paisley Caves in Oregon, and several sites in Texas have radiocarbon dates that place them slightly after this event, the majority of the recent finds have been along the Pacific Coast of the Americas. The well-known site of Monte Verde in Chile, for example, holds the distinction of being the first archaeological site widely accepted by the scientific community to be of pre-Clovis age. Continued discoveries of sites in British Columbia in western Canada, especially the recent ancient village site on Triquet Island, almost annually push back the age of the oldest sites along the Pacific Coast, while finds along the Pacific Coast of Mexico have provided further insights into the maritime technologies of the early coastal communities in the Americas. ¹⁴ The oldest firmly established occupation of the Americas has been discovered at the site of Cooper's Ferry in what is today western Idaho. 15 A direct line up the Columbia River to the location of the site links it to the Pacific Coast. No mere handful of flakes or dubious context mars the incredibly well-documented dataset produced by this site. Caches of tools, animal remains, hearths, and well over 100,000 undisputed artifacts make this site, dated to almost 16,000 years old, the current standard for research into the Pleistocene of the Americas. Given that at this time, the "ice-free corridor" through the continental glaciers then covering northern North America had not yet opened, the only route available for the Cooper's Ferry people would have been along the coastal margin of the continent. That being said, there is nothing in the technology employed by the people who inhabited the banks of the Salmon River (a tributary of the Columbia River) 16,000 years ago that necessarily speaks of a coastal way of life. Understandably, by the time these ancestral First Nations people reached this spot deep in the North American continent, they would not have need for many of the accoutrements of a coastal people.

Having mentioned that the disruption of climate change was likely one of the major factors in driving the migrations into the Americas, it is also worthwhile to discuss some of the factors that could have *enabled* people to accomplish such a grand feat. While keeping in mind that all these events

Gaadu Din Caves Haida Gwaii, 13,100 years ago Triquet Island, BC, 14,000 years ago

▲ Calvert Island, BC, 13,000 years ago ▲ Quadra Island, BC, 10,000 years year ago

- Paisley Caves, OR, 14,300 years ago
 - Cooper's Ferry, ID, ~16,000 years ago

▲ Dent Site, Weld County, CO, ~13,000 years ago

Folsom, NM, ~12,400 years ago

Debra L. Friedkin Site, TX, 15,500 years ago

Page-Ladson Site, FL 14,200+ years ago

Channel Islands, CA 13,000 years ago

Cedros Island, Baja, CA 13,100 years ago

Espiritu Santo Island, Baja, CA ~12,500 years ago

It is clear that there is a huge increase in the number of archaeological sites in the Americas after about 14,650 years ago, when one of the first major pulses of meltwater raised sea levels globally by nearly eighteen meters (59 feet) in only 500 years.

described predate the development of agriculture or any domesticated animals other than humanity's faithful companion, the dog, the participants would have necessarily practiced a hunting and gathering way of life. 16 A widely held principle is that hunter and gatherer subsistence practices require extensive knowledge of available raw material resources, landscapes, animal behavior, weather patterns, plant pharmacology, and general "nature lore." This knowledge is passed on from generation to generation and forms the most critical means by which foraging populations are able to survive and even thrive in sometimes-harsh conditions that can be untenable for agriculturally based communities. While models for migrations into the Americas often talk about the *possibility* of movements or habitation given environmental parameters, it is whether actual human communities are able to take advantage of particular environments that enables their settlement. While the empirical data for the capacity to hunt large game in the Americas was discovered nearly 100 years ago, it has only been in the last decade that evidence for the technologically sophisticated exploitation of marine environments has come to light, some of it on a remote desert island off the Pacific Coast of northwest Mexico (Figure 2 on page 21).

Isla Cedros, Baja California, is a very high (nearly 1,400 meters/4,000 feet in elevation), rocky island with abundant natural springs that is surrounded by an incredibly rich marine environment, provided by both the north Pacific California/Kuroshiro current and localized upwelling of deep



Ice Age fishhook from Isla Cedros. Photo by the Author.

▲ Quebrada Jaguay, Peru 13,000 years ago

Huaca Prieta, Peru 14,500 years ago

Quebrada Tacahuay, Peru 12,800 years ago

Monte Verde, Chile 14,500 years ago

One aspect of generating a coherent picture of the initial migration to and settlement of the Americas is a consideration of the points of origin for the migration into the New World.

ocean water.¹⁷ A long, rich archaeological record has been documented there by Mexican and American researchers working under the aegis of the Instituto Nacional de Antropologia of Mexico and several American universities. Beginning in 2009, intensive investigation of several early sites, already known at the time to contain deposits older than 10,000 years, both pushed back the age of occupation to at least 13,000 years ago and discovered an even more important piece of information: sophisticated and well-crafted fishhooks made from marine mussel and abalone shell (Figure 3). These highly specialized pieces of technology—only useful for catching one kind of animal, along with extensive evidence for the production of fiber and and cordage (for use as fishing line and nets)—firmly established these very early people as being highly focused on the use of marine

resources. Additionally, far from being a minor component of the economy, marine animals were identified from at least thirty different taxa (populations) of fish, sea mammals, sea turtles, sea birds, crustaceans, and mollusks. Despite the presence of both deer and rabbits on the island, only trace amounts of their remains have been recovered to date. All this combines to paint an image of a very focused, sophisticated, and dedicated maritime way of life. Finally, a Terminal Pleistocene occupation in the Americas that could demonstrate, in an incontrovertible way, the human capacity to occupy and exploit the resources of coastal environments in North America in a fashion unlikely to be practiced by "new arrivals" to the watery margins of the continent was realized. Other sites in Baja California have also produced evidence for shell fishhooks, but thus far, none are securely dated

as old as those from Isla Cedros. Some other sites had been identified in other regions, notably Alta California, Peru, and Chile, but none has yet produced an artifact assemblage as clearly specialized as that from Baja California. Research continues in Baja California and elsewhere as this article goes to press that may further push back the antiquity of specialized maritime technologies in the Americas, but turning to the larger question, where did this knowledge come from? Was it developed locally, or was at least some portion of the fund of knowledge utilized by these people brought with them from homelands far from the arid shores of northwest Mexico?

One aspect of generating a coherent picture of the initial migration to and settlement of the Americas is a consideration of the points of origin for the migration into the New World. For most of the history of research, the maps have shown arrows with their bases firmly affixed within Russian Siberia. The presumption is that the snowy plains of the interior of the Asian mainland, somewhere in the vicinity of Lake Baikal, would have been the ancestral homelands for the mammoth hunters of the Pleistocene Great Plains of North America. This may not have been the case, given all the other new twists in this saga of pioneers, displaced populations, migrations, and virgin horizons. Given that the populations located closest to the North American continent would have been those along the coast, and given that populations of similarly equipped hunter-gatherers were living in areas like Hokkaidō in northern Japan, it is entirely plausible that at least some of the early migrants came not from the snowy interior of Siberia, but from the coasts and islands of the western Pacific. In fact, recent discoveries in



View of Isla Cedros. Source: Screen capture from the video Isla Cedros by Conservación de Islas on YouTube at https://tinyurl.com/47f5ybsv. © Archivo GECI/J.A. Soriano y Javier Gongora

Indonesia and Japan may indicate a connection to the migration by way of maritime traditions deeply rooted in the region. Especially at the site of Sakitari Cave on the island of Okinawa in southern Japan's Ryūkyū archipelago, evidence has been discovered that demonstrates that the sophisticated, watercraft-building, and fishhook-making people in Baja California were not the first to practice such a lifeway.¹⁹ As early as 26,000 years ago, similar technologies were being employed on the western side of the Pacific Rim. These people on Okinawa appear to have manufactured the earliest examples of single-piece shell fishhooks and continued to do so up until the end of the last Ice Age, when it appears that sea level rise and environmental disruption led to the abandonment of many smaller islands in the region.²⁰ So perhaps, if not necessarily directly, these widely distributed populations with deep histories on the islands and coasts of East Asia demonstrate clearly that the capability to conduct a coastal migration at the end of the last Ice Age was not only humanly possible, but geographically positioned in the ideal place to contribute some of their people, their knowledge, and their culture to waves of migration into the Americas beginning after 18,000 years ago.

It is more than simply saying that there were people geographically positioned at the appropriate time. It is more than saying that somewhere in the world, there were people technologically capable and possessed of a set of traditional ecological knowledge that would have made a coastal migration feasible. It is more than saying that there were documented events of broad impact that would have forced people into movements of dispersal.²¹ It is even more than saying that we have people occupying geographic

Other sites in Baja California have also produced evidence for shell fishhooks, but thus far, none securely dated as old as those from Isla Cedros.

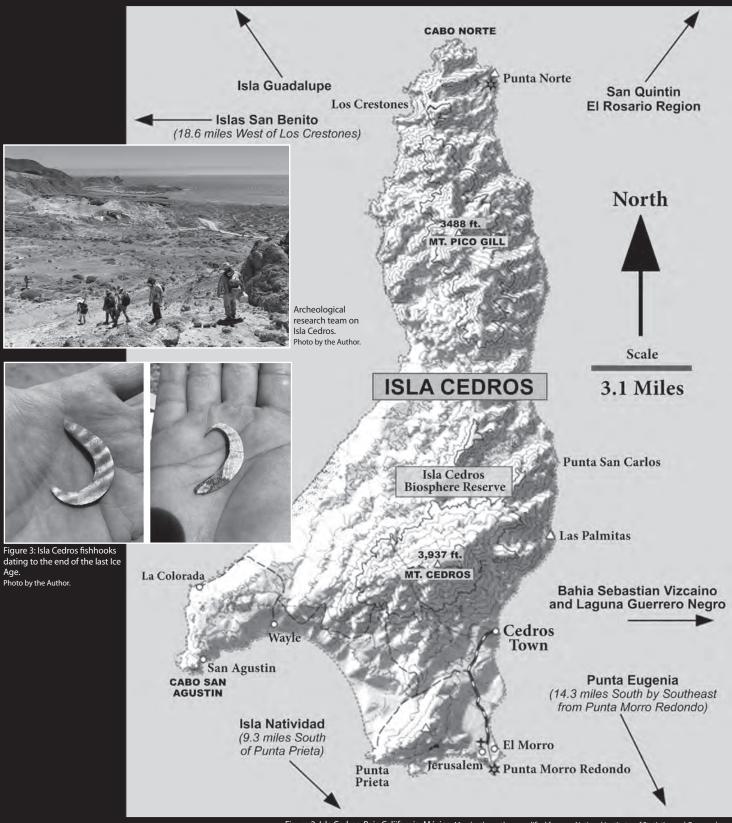


Figure 2: Isla Cedros, Baja Caliifornia, México. Map by the author, modified from an National Institute of Statistics and Geography (INEGI) chart.

It stretches the boundaries of credulity to imagine that people were present in the Americas for 100,000 years without creating archaeological sites, when everywhere else on the planet shows evidence for their presence.

spaces *postarrival* that would have been most attractive to people following a coastal/maritime way of life (Figure 4). It is even more than simply saying these are among the earliest documented occupations in their regions. It is more than saying that the interior route, to the east of the Rocky Mountains of North America, was unavailable (for a variety of reasons) prior to around 14,000 years ago.²² It is all these together. When we combine the sets of information that are currently available and a fair application of logic and Occam's razor—which states that the explanation that requires the fewest number of assumptions is most likely to be correct—we come close to an understanding that strongly suggests an interesting picture.²³ Not only was the route south from Beringia into the Americas along the coastal margin, but it is increasingly likely that some of the migrants had points of origin and/or cultural affiliations derived from communities along the margins of the western Pacific in what is today Japan and the South China Sea.

Can we say for certain that no humans entered the Americas prior to the Terminal Pleistocene? Proving a negative is one of the most difficult enterprises, but what we can say is that the ancestors of today's First Nations are almost certainly descended from this Terminal Pleistocene migration. Even older occupations than those detailed here have been claimed by some researchers, such as a proposed occupation at 25,000 BP at Chiquihuite Cave in the Mexican state of Zacatecas, or several proposed sites in Brazil with ages in excess of 20,000 years.²⁴ These have yet to be fully evaluated to the satisfaction of the international community, but if the history of science teaches us anything, it is to not be dismissive of claims until they are fully and adequately examined. While occupations of the Americas predating the occupation of the North Pacific Rim are unlikely, the possibility of new discoveries is one of the things that animates researchers in any field of study. Some recent claims have even suggested that humans arrived in the Americas as far back as 130,000 years.²⁵ These claims are highly problematic, since—based on currently available data—this would mean that these hominins would not have been behaviorally modern humans, which only appear in the archaeological record after about 70,000-80,000 years ago. Again, there is no empirical data to suggest that the ancestors of today's First Nations people of the Americas were anything other than fully modern Homo sapiens. Additionally, if people were here in the Americas that long ago, what happened between 130,000 years ago and the explosion of population that resulted in the creation of hundreds of archaeological sites all over both North and South America by the end of the Pleistocene 11,650 years ago? It stretches the boundaries of credulity to imagine that people were present in the Americas for 100,000 years without creating archaeological sites, when everywhere else on the planet shows evidence for their presence. Pushing back dates by a few centuries, even a millennia or two, identifying locations where the earliest pioneers arrived, is part of the research, but is actually not even the biggest question. If what we are really trying to understand is the long-standing question of "where did the ancestors of the Indigenous peoples of the Americas come from?," then we must create a coherent history that explains all the accepted data in the most parsimonious fashion possible. That history is one that must be tied to the larger picture of global human migrations, settlement, traditions, and



Figure 4: Coastal/Maritime way of life (Victor Molina and crew of small fishing launch, Isla Cedros, Baja California). Source: Photo by the author.

heritage. It is not a story only about the Americas, but about the ways in which all our collective histories emerge, run their courses, intertwine, diverge, and coalesce. ■

NOTES

- 1. Beau W. Rowlands, "Ships at St. Helena, 1502–1613," Wirebird: The Journal of the Friends of St. Helena 28 (2004): 5-10.
- Srinivas Aravmudan, "East Indies and West Indies: Comparative Mispprehensions," Anthropological Forum 16, no. 3 (2006): 291-309; Charles C. Mann 1491 New Revelations of the Americas before Columbus. [Appendix A. Loaded Words] (New York: Knopf, 2005)
- 3. Mark A. Sicoli and Gary Holton, "Linguistic Phylogenies Support Back-Migration from Beringia to Asia," *PLoS ONE* 9, no. 3 (2014).
- 4. Kenneth L. Feder, Frauds, Myths, and Mysteries: Science and Pseudoscience in Archaeology. 9th ed. (New York: Oxford University Press, 2018); Vance T. Holliday, "Geoarchaeology and the Search for the First North Americans," Geoarchaeology 3 (2021); Douglas Preston, "Fossils and the Folsom Cowboy," Natural History 106, no. 1 (1997): 16-21.
- Todd A. Surovell, Spencer R. Pelton, Richard Anderson-Sprecher, and Adam D. Myers, "Test of Martin's Overkill Hypothesis using Radiocarbon Dates on Extinct Megafauna," PNAS 113 (2016): 886-891.
- Jin Sun, et. al. "Post-last Glacial Maximum Expansion of Y-chromosome Haplogroup C2a-L1373 in Northern Asia and its Implications for the Origin of Native Americans," *American Journal of Physical Anthropology* 174 (2021): 363-374.
- 7. David B. Madsen, ed. "Colonization of the Americas before the Last Glacial Maximum: Issues and Problems," in *Entering America: Northeast Asia and Beringia Before the Last Glacial Maximum* (Salt Lake City: University of Utah Press, 2004): 1-26; Todd J. Braje, et. al, "Fladmark 40: What Have We Learned about a Potential Pacific Coast Peopling of the Americas?," *American Antiquity* 85, no. 1 (2020): 1-21.
- Qin Li, et al., "Large-scale Vegetation History in China and its Response to Climate Change Since the Last Glacial Maximum," *Quaternary International* 500: 109-119; David B. Madsen, ed. "Colonization of the Americas before the Last Glacial Maximum: Issues and Problems"; Kunda Dixit, "The New Refugees," *New Statesman* 138 (4972): 26
- Charles Geisler and Ben Currens, "Impediments to Inland Resettlement under Conditions of Accelerated Sea Level Rise," Land Use Policy 66: 322-330.
- 10. Sujatha Byravan and Sudhir Chella Rajan, "Sea Level Rise and Climate Change Exiles: A Possible Solution," *Bulletin of the Atomic Scientists* 71, no. 2 (2015):21-28.
- 11. Thomaz Pinotti and Fabricio R. Santos, "Genetic Evidence against a Paleolithic European Contribution to Past or Present Native Americans," *PaleoAmerica* 6 (2020): 135-138; Michael J. O'Brien, et al., "On Thin Ice: Problems with Stanford and Bradley's Proposed Solutrean Colonization of North America," *Antiquity* 88 (2014): 606-624; Alexander G. Ioannidis, et al., "Native American Gene Flow into Polynesia Predating Easter Island Settlement," *Nature* 583 (2020): 572-577.
- 12. Marcel Polling, et al., "Multiproxy Analysis of Permafrost Preserved Faeces Provides an Unprecedented Insight into the Diets and Habitats of Extinct and Extant Megafauna," *Quaternary Science Reviews* 267 (2021); Yusuke Yokoyama, et al. "Rapid Glaciation and a Two-step Sea Level Plunge into the Last Glacial Maximum," *Nature* 559 (2018): 603-607.
- 13. Qin Li, et al. 2019.
- Michael R. Waters, "Late Pleistocene Exploration and Settlement of the Americas by Modern Humans," Science 365 (2019): 6449; T. D. Dillehay, The Settlement of the

Americas: A New Prehistory (New York: Basic Books: 2000); Tom D. Dillehay, et al., Science 320: 784-786; Todd J. Braje, et al. American Antiquity 85: 1-21, and Fujita, et al., "Advanced Maritime Adaptation in the Western Pacific Coastal Region Extends back to 35,000–30,000 Years before Present," Proceedings of the National Academy of Sciences, 113, no. 40 (2016): 11184–11189.

- 15. Loren G. Davis, et al., "Late Upper Paleolithic Occupation at Cooper's Ferry, Idaho, USA~16,000 years ago," Science 365 (2019): 891-897. Loren G. Davis, et al., Response to a Review of "Late Upper Paleolithic Occupation at Cooper's Ferry, Idaho, USA, ~16,000 years ago" by Fiedel et al. PaleoAmerica 7 (2020): 43-52.
- Rachael Lallensack, "Ancient Genomes Heat up Dog Domestication Debate," Nature 4, 2017.
- 17. Matthew R. Des Lauriers, et al., "Chapter 14: The Pacific Rim Origins of the New World Ancestral Populations," Proceedings of the Out of Eurasia International Conference, Teotithuacan, Mexico, 2020 (2021): 165-177, Okayama University, Japan; Matthew R. Des Lauriers, et al., "The Earliest Shell Fishhooks From The Americas Reveal Fishing Technology Of Pleistocene Maritime Foragers," American Antiquity 82, no. 3 (2017) 498-516.
- 18. Harumi Fujita and Amira F. Ainis, "Traditions of Early Human Groups in Baja California and Possible Routes for the Peopling of the Peninsula," Western North American Naturalist 78, no. 3 (2018): 285-301; Matthew R. Des Lauriers, et al., 2017; T. D. Dillehay, The Settlement of the Americas: A New Prehistory (New York: Basic Books, 2000).
- 19. S. O'connor, et al., "Pelagic Fishing at 42,000 Years Before the Present and the Maritime Skills of Modern Humans," Science 334 (2011): 6059, 1117–1121; M. Fujita, Yamasaki, et al., "Advanced Maritime Adaptation in the Western Pacific Coastal Region Extends Back to 35,000–30,000 Years before Present," Proceedings of the National Academy of Sciences 113, no. 40: 11184–11189.
- Y. Nakazawa, "On the Pleistocene Population History in the Japanese Archipelago," Current Anthropology 58 (2020): S17.
- 21. Melissa K. Nelson and Dan Shilling, eds., Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustatinability (New York: Cambridge University Press, 2018); Thomas P. Lepperd and Curtis Runnels, "Maritime Hominin Dispersals in the Pleistocene: Advancing the Debate," Antiquity 91 (2017): 510-519.
- 22. Holliday, "Geoarchaeology and the Search for the First North Americans."
- 23. Robin Derricourt, "Getting 'Out of Africa': Sea Crossings, Land Crossings and Culture in the Hominin Migrations," *Journal of World Prehistory* 19 (2020):119-132.
- 24. Ciprian Ardelean, et al., "Evidence of Human Occupation in Mexico around the Last Glacial Maximum," *Nature* 584 (2020): 87-92 and Eric Boëda, et al., "A New Late Pleistocene Archaeological Sequence in South America: The Vale da Pedra Furada (Piauí, Brazil)" *Antiquity* 88 (2014): 927-955.
- 25. Gary Haynes, "The Cerutti Mastodon," Paleo America 3 (2017): 196-199.

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