

Coda

DNA and the Recovery of History

The Hebraic Indian theory structured discussions of American origins from the earliest moments of European arrival in the western hemisphere through the establishment of the United States. For three centuries, the theory emerged periodically as a central concern for those interested in deciphering the continents' human history; and for three centuries it also diminished in the face of competing ideas. By the middle of the nineteenth century, though, this boom-and-bust cycle had ceased. Following the publication of *The Book of Mormon* in 1830, the theory's popularity declined among other Christian sects. It is possible that the Church of Jesus Christ of Latter-day Saints' full embrace of the Hebraic Indian theory rendered it unpalatable to other Christians, but it is equally possible that the theory's failure to produce the gathering of Israel accounts for its ultimate rejection by most US Protestants. Historical contingencies, too, might explain reduced interest in the theory: as the United States ramped up its efforts to remove Native populations from its borders and then collapsed into civil war at midcentury, the question of human origins faded into the background of national concern.

As it receded from the religious and political landscapes, the Hebraic Indian theory also began to fall out of scientific discourse. These developments are not entirely distinct; as the theory's religious urgency subsided in the face of Indian Removal and the Civil War, and as its prophetic power weakened over time, so, too, did the need for its verification. The theory appears as little more than a footnote in late-nineteenth-century discussions of Native American origins, and by the twentieth century it is nearly gone—gone, that is, until it emerges anew with the sequencing of the human genome. A largely dormant discourse for over a century, the Hebraic Indian theory was reinvigorated by the discourse of DNA at the end of the twentieth century, and, this coda will

suggest, its influence reverberates through these new endeavors to trace the history of human life on earth.

The study of human genetics has developed rapidly since 1953, when Francis Crick and James Watson published their discovery of the molecular structure of DNA: the double helix. Crick and Watson's work built on that of other scientists, most notably Rosalind Franklin and Maurice Wilkins, who pioneered the use of x-ray diffraction to produce the image of DNA that would allow Watson and Crick to determine its shape. Twenty years later, the biochemist Fred Sanger developed a technique for mapping the order of nucleobases in long sections of DNA, which set the stage for the sequencing of the human genome.¹ In the last decade, that sequencing has become both more efficient and less expensive. In the updated 2017 introduction to his study of human genomics, *The Journey of Man*, the geneticist Spencer Wells writes that when he initially wrote his book in 2002, "the first human genome had only recently been sequenced—the culmination of over a decade of concerted work by an international consortium of scientists. The cost of doing so totaled more than \$3 billion. . . . Starting in around 2007, though, new methods of sequencing DNA—termed 'next generation sequencing'—made it economically feasible to expand our study of human genetic variation exponentially."² These methods had such a drastic impact on the field that by 2016, Wells notes, it became "possible to sequence an entire human genome in a few days at a cost of roughly \$1,000."³

The ability to map DNA quickly and at a low cost has made it possible for private companies to offer a range of genetic tests, which in turn has generated a surge in genetic data collection, as millions of people have submitted genetic material for testing.⁴ The notion that information about human history in general and individual lineage in particular can be discerned from the pattern of nucleobases inside each of us undergirds this new industry. Where the human past once seemed the domain of historians and archeologists, it now has entered the world of genomic science.

Though DNA testing often is described as an objective, material process concerned with the empirical study of nucleotides within human cells, it is inseparable from broader conversations about human history, race, and religion. As Priscilla Wald puts it, "Retelling the story of human migrations is in fact the chief aim of population genomics," and

thus the field of human DNA research cannot be entirely distinguished from earlier discourses regarding the origin of human life.⁵ At the heart of efforts to sequence the human genome lies a set of questions bearing sacred and secular weight: Where did we come from? How did we get here? Who was here first? Whose history matters? And where does history reside? Is it in the stories we tell or the records we keep? Is it in our bodies? Is it in the ground? These questions are at once ephemeral and material; they reverberate in religious and cultural discourses in myriad ways, and they often form the basis for governmental policies that determine the course of individual lives. This has been perhaps most pressingly the case in efforts to sequence the DNA of Native American populations. In the most comprehensive study of the cultural phenomenon of “Native American DNA” written to date, Kim TallBear notes that scientific attempts to answer questions about migrations to the Americas are deeply embedded within the history of colonialism and the emergence of whiteness as a racial category. “Native American DNA could not have emerged as an object of scientific research and genealogical desire,” she reminds readers, “until individuals and groups emerged as ‘Native American’ in the course of colonial history.”⁶

Colonial history not only shapes the design and interpretation of DNA ancestry tests but also creates the desire for such tests. The idea that Native and indigenous American populations are discrete, and that their “origin story” can be told apart from the stories of other peoples, is itself a product of a historically bound, colonial imagination. The continents and hemispheres we currently experience as distinct, in geography and history, were not always so. The drive to trace migration into the western hemisphere from the eastern hemisphere itself presumes both a temporal and a spatial relationship between the continents that only has been possible for a relatively brief period of human history.

Genomic efforts to isolate and describe DNA markers in Native American populations are not that far removed from early modern and Enlightenment efforts to faithfully describe cultural practices that promised to reveal the hemisphere’s history even as they were imagined to be disappearing. If a colonialist perspective undergirds the hope of discovering “New World” origins in DNA studies, so too does an urgent sense of impending loss. As TallBear puts it, “It is the arrival of the settler in 1492 and many subsequent settlements that frame the search

for Native American DNA before it is ‘too late,’ before the genetic signatures of the ‘founding populations’ in the Americas are lost forever in a sea of genetic admixture.”⁷ For both the scientists collecting DNA samples and the consumers seeking information about their own genomes, the possibility of recovering a “lost” lineage always is in play. The notion of “mixing,” TallBear usefully reminds us, “is predicated on the notion of purity.” Genetic markers associated with indigenous and Native American populations often appear in popular discussions of DNA as traces of the past preserved in the bodies of those who carry them. TallBear writes, “Standing where they do—almost never identifying as indigenous people themselves—scientists who study Native American migrations turn and look back over their shoulders with a desire to know the ‘origins’ of those who were first encountered when European settlers landed on the shores of these American continents.” The discourse surrounding that search for origins often contributes to the ongoing erasure of actual Native American peoples through the creation of a pernicious synecdoche in which “Native” genes perform the work of Native American vanishing through admixture. It also links the study of Native American DNA to the search for the lost tribes of Israel.

The hope that the lost tribes and other Hebraic groups might be discovered somewhere in the human genome hovers at the margins of origins-oriented genetic mapping, and sometimes it even moves to the center. This has been true of genetic studies conducted beyond the western hemisphere, as well as of those in the Americas. Perhaps the most prominent efforts to locate “Jewish” origins in the DNA of different populations have been conducted by the British historian Tudor Parfitt. The most famous of these is Parfitt’s study of the Lemba people, who mainly live in Zimbabwe and South Africa. Oral histories among the Lemba describe an ancient migration from Judea led by a figure named Buba, and Parfitt observed what he believed to be customs related to Judaism within that population.⁸ In 1996, Parfitt began Y-chromosome DNA testing of Lemba men, hoping to determine whether they shared genetic material with people known to originate in what currently is called the Middle East. Specifically, he was looking for genetic markers associated with a group often referred to as the “kohanim” (and sometimes as “Cohen Jews”), a subset of the Jewish population with a family tradition of Priestly (i.e. Levite) descent following the male line. The

testing Parfitt organized revealed the presence of such markers among some Lemba men. “As a result of these and other studies,” Parfitt writes, “it is now widely believed that the Lemba are of Jewish origin, and that this has a scientific basis.”⁹

This assertion is not without controversy, as Parfitt’s correlation of certain genes with “Jewishness” is debatable. For my purposes here, the most telling aspect of Parfitt’s work with DNA testing is that it has been accompanied by ethnographic descriptions of the Lemba people that, frankly, could have been written by Thomas Thorowgood or James Adair. A 1999 *New York Times* article by Nicholas Wade—himself the author of a hotly contested book about race and genetics—opens its description of Parfitt’s DNA study by noting that the Lemba “practice circumcision, keep one day a week holy and avoid eating pork or piglike animals, such as the hippopotamus.”¹⁰ Written 350 years after Thorowgood’s *Iewes in America*, Wade’s article about “Jewish” ancestry begins by identifying the same old cultural markers: circumcision, a sabbath, and dietary restrictions. These practices, his piece suggests, have been preserved in Lemba culture just as “Priestly” DNA has been preserved in their chromosomes. (It doesn’t seem to matter to Wade that a hippopotamus is not a pig.) Now, though, these observations of cultural similarity are accompanied by a new kind of “scientific” proof. If ethnography and biblical exegesis are not sufficient standards of evidence in the twentieth century, then DNA promises to fill in the gaps. Where explorations above and below ground have failed to locate the lost tribes, genomic science will succeed.

In the specific context of the Americas, DNA testing among Native American populations has had the most potentially unsettling consequences for the Church of Jesus Christ of Latter-day Saints, because its main scripture, *The Book of Mormon*, asserts a Hebraic ancestry for indigenous Americans. In 2002, the anthropologist Thomas Murphy—a member of the Church—examined the genetic information available about Native American populations at that time and concluded, “While DNA shows that ultimately all human populations are closely related, to date no intimate genetic link has been found between ancient Israelites and indigenous Americans, much less within the time frame suggested by the Book of Mormon.”¹¹

Murphy would build on this argument in subsequent publications and eventually team up with former Latter-day Saint Simon Southerton,

who produced perhaps the most scathing rebuke of the Church using genetic studies. His book, *Losing a Lost Tribe: Native Americans, DNA, and the Mormon Church*, aims to debunk *The Book of Mormon's* narrative history through molecular biology. Explaining his interest in the topic, Southerton writes, "I encountered research into molecular genealogy that compelled me to compare what I thought I knew religiously with what I knew from my training in science. . . . [F]or fellow Mormons who believe American Indians and Polynesians are largely descended from ancient Israelites, the recent findings of science may compel them, as I was compelled, to re-evaluate their thinking."¹² The "recent findings" to which Southerton refers are the genomic studies that Murphy assessed, which found genetic similarities among indigenous American and Asian populations, rather than with groups associated with the Middle East. "The DNA evidence supports the morphological evidence," he writes, "of a close relationship between Native Americans and Mongoloid peoples from Asia," further arguing that the "reason for this is that human morphology is largely predetermined by DNA."¹³

Although Southerton treats DNA as a neutral commodity that can be objectively described, his work is freighted with the kind of racialist assumptions that Wald has identified in both scientific and popular accounts of genetic research. "The stories about ancestry that emerge from population genomics can be incomplete and misleading," she notes. "Yet they inform many of the assumptions through which researchers constitute self-identified race and ethnicity as proxies. . . . Genomic stories have thus reconstituted the biological basis of race as a central question in scientific research and public discussion at the moment when, according to population geneticists, cultural and reproductive intermingling are recombining genomic profiles at unprecedented rates, hence the threatened 'disappearance' of some genetic markers."¹⁴

Southerton's tautology—that DNA proves morphology, which in turn points to DNA—is not uncommon in the popular rhetoric of population genomics, and the field bears an uneasy relationship to the history of racial science. "The scientific and public accounts of genomic medicine and human migration," Wald warns, "risk infusing the genomic creation story with the authority of science and the history of racism."¹⁵ But as I hope this book has demonstrated, there always also is a third player at work in the endeavor to recover the history of human migration: reli-

gion. If the quest for human origin stories never can be separated from the history of racism in the aftermath of colonialism, neither can it be untangled from the complex web of creation stories that has underpinned centuries of cultural contact.

Though Southerton certainly is concerned with making genetic science accessible for a popular audience, his book mainly is organized around a stark critique of the Church of Jesus Christ of Latter-day Saints, and it marshals the language of science to undercut a theology. “It seems among the obstacles facing the Church,” he writes, “the real stumbling block is not . . . the fact that there is no evidence for a Hebrew influence in Mesoamerica, or the preponderance of Asian DNA among living Native Americans and Polynesians. The real challenge comes from a failure to confront the evidence and state what it means for the church.”¹⁶

Since the publication of his book and Murphy’s articles, the Church has addressed questions of how DNA research relates to its foundational narrative. In a 2006 essay for the *FARMS Review*, the journal of the Foundation for Ancient Research and Mormon Studies at Brigham Young University, David G. Stewart (a medical doctor who is not a geneticist) addressed the work of Murphy and Southerton directly. Although he does note the existence of “research demonstrating considerable homology between modern Native American, Mongolian, and southern Siberian DNA, as well as a seeming lack of homology between modern Jewish and Native American DNA,” Stewart asserts that “closer examination demonstrates that modern DNA evidence does not discredit traditional Latter-day Saint beliefs and that the views of critics are based on nonfactual assumptions and unsupportable misinterpretations of genetic data.”¹⁷

Stewart’s rejoinder to Murphy and Southerton hinges on a notion of genetic variation among “Hebrew” and “Jewish” populations. “Mitochondrial DNA studies have had little success in linking different Jewish groups,” he asserts, “leading geneticists to discount mtDNA as a reliable means of ascertaining ‘Jewish’ roots.”¹⁸ DNA studies that focus on maternal lines (as mtDNA studies do), Stewart argues, will produce deceptive results. “Joseph’s wife Asenath, daughter of Potipherah, priest of On,” he writes, “is the ancestral mother of the tribes of Ephraim and Manasseh (Genesis 46:20). While her genealogy is unknown, there is no reason to believe that her mitochondrial lineage or that of her descendants, including the Lehtes [Hebraic people who migrate to the

Americas in *The Book of Mormon*], would have matched that of the tribe of Judah. The presence of mtDNA types in Native Americans that do not match those found in modern Jewish groups is fully consistent with both Book of Mormon and Bible accounts.”¹⁹

In this line of reasoning, biblical genealogy augments DNA study, and scientific research is brought into line with religious reasoning. Stewart concludes his rejoinder with a savvy note about the limits of scientific knowledge in any historical moment. “It is fascinating to consider,” he writes, “not only how frequently science has changed its pronouncements, but also the societal amnesia that leads each new theory to be proclaimed as fact as definitively as those it supplanted.” Even as he deploys the language of empirical science in the service of his religious argument, Stewart warns readers that secular reason always is in flux: “The real test of our insight as scientists and of our discernment as Christians,” he concludes, “is not in our acknowledgment of past findings that are already widely accepted, but in our ability to correctly identify present truths.” This is perhaps not bad advice, even for those who do not accept his broader claims about American origins. But it is advice that demonstrates the deep intertwining of the secular and the religious in the field of human genomics. The search for DNA strands never is completely divorced from the search for a genesis.

Because genetic testing that runs counter to *The Book of Mormon*’s historical claims has the potential to undermine its theological authority, the Church has approached the question of Native American DNA directly. The Church’s official website, churchofjesuschrist.org, hosts a page entitled “Book of Mormon and DNA Studies” (which, incidentally, makes no mention of Murphy or Southerton). “Although the primary purpose of the Book of Mormon is more spiritual than historical,” the site asserts, “some people have wondered whether the migrations it describes are compatible with scientific studies of ancient America. The discussion has centered on the field of population genetics and developments in DNA science. Some have contended that the migrations mentioned in the Book of Mormon did not occur because the majority of DNA identified to date in modern native peoples most closely resembles that of eastern Asian populations.”²⁰ In response to the suggestion that there is no conclusive evidence of a Middle Eastern origin for indigenous American populations, the site notes that “the Book of Mormon . . . does not claim that the peoples it

describes were either the predominant or the exclusive inhabitants of the lands they occupied. In fact, cultural and demographic clues in its text hint at the presence of other groups.” As I discuss in this book’s fourth chapter, that is true: the book leaves open the possibility of other peoples and other migrations. What is more, the site’s writers contend, “Nothing is known about the DNA that Lehi, Sariah, Ishmael, and others brought to the Americas. Even if geneticists had a database of the DNA that now exists among all modern American Indian groups, it would be impossible to know exactly what to search for.” If genomic studies do not align with *The Book of Mormon’s* narrative, in other words, that is the case because the information required for such alignment has been lost forever. For skeptics such as Southerton, this might seem a convenient loophole in the Church’s main narrative. For believers, though, it is an explanation that allows theology and genomics to coexist.

The Church of Jesus Christ of Latter-day Saints attempts to solve the theological problem DNA poses to its scriptural record by highlighting parts of *The Book of Mormon* that imply other migrations to the Americas and by noting that no genetic material from populations described in the book is available for comparison, but for some believers these explanations ring hollow. There have been efforts among some Church members to find a genetic link between the Hebrew peoples described as migrating to the Americas in *The Book of Mormon* and contemporary Native Americans. The FIRM Foundation, for example, is an organization that describes itself as being “dedicated to showing forth evidence for the Book of Mormon in order to provide Church members with well-researched information enabling them to powerfully and respectfully defend its historicity and thus its truthfulness—with the ultimate goal of bringing people unto Christ.”²¹ Perhaps the most important phrase in this mission statement is “well-informed,” by which is meant scientific as well as scriptural research. In its list of goals, the organization promises “to conduct research in a multiplicity of scientific and scholarly fields of endeavor which may provide secular support for the historicity of the Book of Mormon—including, but not limited to such disciplines as genetics, archaeology, climatology, anthropology, history, religion, geography, linguistics, mythology, meteorology, astronomy, metallurgy, architecture, ancient texts, Jewish customs, zoology, agronomy, oceanography, geophysics, etc.”

In many respects, FIRM Foundation participates in a long tradition of combining secular and religious reasoning to affirm a story of American origins. Like many of the writers considered in this study, this organization combines investigatory methods and pushes at the boundaries of what constitutes “scientific” or “secular” evidence. “Jewish customs,” for example, is not a scholarly field, per se, but it sits in this list alongside natural science disciplines such as genetics and climatology, as well as other scholarly fields (history, linguistics, anthropology) and fields more specifically concerned with topics related to *The Book of Mormon*, such as religion and the study of mythology and ancient texts. On the one hand, this list might seem an epistemological hodgepodge; on the other, though, it might seem an ideal realization of academic interdisciplinarity. For members of FIRM Foundation, the truth of *The Book of Mormon* is inseparable from its historical claims, and those claims, the organization asserts, are about North America. It is thus no surprise that “genetics” is the first discipline to appear on this list, as the foundation asserts wholeheartedly that Native Americans share a genetic link to ancient Hebraic peoples.

The primary genetic argument made by FIRM Foundation is that the presence of what is termed “haplogroup X” in the DNA of a small percentage of Native Americans proves a link between indigenous American and Middle Eastern populations. A haplogroup, to put it very simply, is a cluster of gene variants inherited together from a single parent. “Haplogroup X” is an umbrella term for a set of related variant clusters that are found in humans inhabiting a variety of regions on earth. It is relatively rare, but it has wide geographic range. One of the haplogroup X variants has been identified in the mitochondrial DNA of several different populations, including a small minority of Native Americans and Europeans, and some inhabitants of the Middle East, Siberia, and North Africa. The identification of this haplogroup, and the fact that it does not tend to appear in Asian populations outside of a small region of Siberia, has formed the basis for arguments favoring a Hebraic origin for Native Americans. A new annotated edition of *The Book of Mormon* assembled by FIRM Foundation members makes this argument plainly. “It is significant,” the edition’s editors write, “that DNA studies have shown that some of the Native American Nations have mtDNA lineages traced to both Egypt and the regions of northern Israel.”²² This position is much

stronger than that taken by the Church itself, which mainly has argued that there is no clear way of testing *The Book of Mormon's* veracity using DNA technology. For the members of FIRM Foundation, DNA and the presence of a haplogroup in both North America and the Middle East offer conclusive proof that the book's history is true.

My aim is not to take a position on the proper interpretation of DNA science—that truly would be outside the scope of my expertise. What I wish to point out, though, is that these debates over the origins of human life in the western hemisphere, though they deploy new empirical methods and different kinds of data, are not entirely divorced from the centuries of debates that have preceded them. Just as the search for the lost tribes of Israel stretched first across and then into the globe, the search for Hebraic Americans today has migrated from the body's surface—its morphology, its enactment of cultural practices, its movement in space—into the cells of those who might bear the promise of scriptural prophecies. In this way, DNA joins a long line of empirical methodologies that believers hope will reveal a sacred truth.

Even beyond the study of “Native American DNA” and efforts to locate a Hebraic trace within it, the popular discourse of human genomics frequently blurs distinctions between the secular and the sacred. Wells's *Journey of Man*, for example, opens its discussion of genetics and human history with an epigraph from Genesis: “So God created man in his own image, in the image of God created he him; male and female he created them. And God blessed them, and God said unto them, Be fruitful and multiply.”²³ The study of DNA, Wells suggests, is the study of creation, and his scientific endeavor is organized around the Genesis myth. He gives the name “Eve” to “the female ancestor of everyone alive today, who lived in Africa around 150,000 years ago,” and he suggests that genetic evidence of this singular ancestor raises the question “of where Eve actually lived—Where in Africa was the Garden of Eden?”²⁴ It is not good for Eve to be alone, so Wells introduces “Adam” into his discussion of male genetic lines. Acknowledging the limits of current DNA testing models in the recovery of a universal human lineage, for example, Wells writes, “We hit a barrier when we trace back into the past beyond a few thousand generations—there is simply no more variation to tell us about these questions of very deep history. Once we reach this point, there is nothing more that human genetic variation can tell us

about our ancestors. We all coalesce into a single genetic entity—‘Adam’ in the case of the Y-chromosome, ‘Eve’ in the case of [mitochondrial DNA]—that existed for an unknowable period of time in the past.”²⁵ The DNA sequencing projects Wells describes in his book are complex, and they have emerged out of decades of empirical study and scientific experimentation. Nonetheless, the journey undertaken in his book is to a mythical garden in a sacred text. Wells’s methodology is new, but his conclusions are old. Looking for the past in a string of nucleotides, Wells ends where he began: in Genesis.

A sacred past serves as the structuring metaphor for Wells’s DNA study, but popular genomics is equally invested in human destiny. Wells concludes by asserting that genetic mapping is a moral imperative. “Each of us is carrying a unique chapter, locked away inside our genome,” he asserts, “and we owe it to ourselves and to our descendants to discover what it is.”²⁶ Although Wells does not explicitly state what “our descendants” stand to gain from our genomic information, his conclusion suggests that DNA information is needed to secure humanity’s future. “One responsibility that we neglect at our peril,” he writes, “is self-discovery.”²⁷

Written in 2002, *Journey of Man* does not precisely outline the “peril” in question; the book merely ends on this suggestive note. A 2016 episode of the PBS series NOVA, entitled “Great Human Odyssey,” however, renders the danger at which Wells hints in more concrete terms. Combining information about recent archeological and genomic studies with dramatic reenactments of historical migrations, “Great Human Odyssey” contends that human beings’ superior adaptability has allowed the species to flourish in diverse environments for millennia. But that adaptability, the show suggests, may fail in the face of climate change. In the opening sequence, Donald Johanson—the paleoanthropologist who discovered the fossil remains known as “Lucy”—asserts, “Globally, everyone is *Homo sapiens*, if we’re united by our past, united by our present, we’re certainly united by our future.”²⁸ The idea that a common destiny awaits all humans is both scientific and teleological in the program, as depictions of contemporary cultures presumed to share survival techniques with “our ancestors” are juxtaposed with analyses of “ancient DNA” to show how humans historically have adapted to extreme environments to survive. “Our powerful mind got us this far, but what lies ahead?” the narrator asks ominously, as shots of geneti-

cists working in labs fill the screen. “Will we continue to evolve, or will the *Homo sapien* line die out with us?” The answer to this question, the episode’s conclusion suggests, lies in the past. “We are the single most adaptable creature,” Johanson asserts in the end. “We can sit on top of a rocket and shoot ourselves into space. We are incredibly adaptable. That is, hopefully, our salvation.” In the story of evolution, in the trajectory of human genomics, lies the hope not only of human survival but also of human salvation. Indeed, the two are one and the same.

Although DNA testing is a new development in the study of human biology, the rhetoric of genetic ancestry—whether produced by geneticists or churches or critics of churches—fits (at times uncomfortably, at times perhaps too comfortably) into a longstanding discourse about the origins and dispersal of human life on the globe. With its emphasis on the recovery of “lost” histories and “vanishing” lineages, contemporary population genomics is not all that different from earlier attempts to trace the origins of the western hemisphere’s earliest people. The notion that empirical information, impassively collected and faithfully recorded as data, will produce a revelation regarding human origins has structured four hundred years of discussions about American populations and their roots. The genealogical thread traced in this book is rhetorical rather than genetic, but it traces back from DNA testing to colonial imaginings of the edges of the known world. In the case of the Hebraic Indian theory, to unveil a biblical past for Native peoples is to inaugurate a glorious Christian destiny. In the recovery and restoration of lost tribes lies the hope of the future.

As method after method has failed to produce such discovery, new avenues of inquiry have opened. If ethnography fails to find Hebraic peoples in North America, perhaps geography will locate them at the North Pole. That failing, geology may lead the way into the earth, or perhaps astronomers will locate them on a distant planet. And if the universe fails to deliver them, perhaps they will be found deep inside us all, churning within our mitochondria, replicating themselves until the time of their return is revealed. In the absence of a complete scriptural record, and without the capacity to either see the full panorama of the universe or comprehend the full range of human history, those concerned with population origins will have to content themselves with collecting data, looking over their shoulders, and waiting for answers.