A World Revealed by Language: A New Seri Dictionary and Unapologetic Speculations on Seri Indian Deep History

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Comcáac quih Yaza quih Hant Ihíip hac: Diccionario Seri-Español-Ingles, compiled by Mary Beck Moser and Stephen A. Marlett. Illustrated by Cathy Moser Marlett. Published by Plaza y Valdés Editores, Mexico City. 947 pages. ISBN: 970–722–453–3.

The philosopher Ludwig Wittgenstein once mentioned that to imagine a language was to imagine a form of life (Wittgenstein 1953: 19). A comprehensive dictionary of any language exemplifies Wittgenstein's point, but none more than the trilingual dictionary of the Seri language compiled by Mary Beck Moser and Steven Marlett. The work represents more than fifty years of research and over thirty years of living with the Seris in El Desemboque, Sonora, Mexico, in connection with the Summer Institute of Linguistics of the Wycliffe Bible Translators. The entries are in Seri, Spanish, and English, making the work of value to speakers of all three languages.

The roughly six hundred Seris are already using the dictionary. Outsiders visiting them would be well advised to use it as well. The authors included Seri consultants at every step of the compilation. Seris reviewed the entries, suggesting changes and additions. Part of the dictionary's usefulness lies in its incorporation not merely of single-word or phrase translations, but also of sentences or short paragraphs typically generated by Seris. This is critically important, since meanings are frequently so complex that a simple word-by-word translation simply will not do. As Moser and Marlett have realized,

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languages are vehicles by which cultural meanings are conveyed in text and context (Brown and Vibert 2003). Languages are not a neutral medium but remain fluid, ever changing, and holophrastic. In them, single words can connote different processes, allowing a speaker to compress a multitude of meanings into a single word (Sable 2006: 169). We cite an important entry as an example of this depth of understanding: *hant* and its meanings are many and conceptually complex. The first reading is

> *Hant* 1. tierra. earth, dirt, land. *Hant com ihtsáailxim, hast hax hax cooxp oo zo hyooho*. Escarbé en la tierra y encontré una punta de flecha muy blanca. I dug in the dirt and found a very white arrowhead.

The entry continues with four other readings of the same word. In addition to the above, *hant* can also be translated as (1) "mundo," world; (2) "lugar," place, as in the English expression "Where do you live?"; (3) "año," year, or time when speaking about tomorrow, or next year; as well as (4) "tiempo," weather or climatic conditions. This single Seri word encompasses their universe: dirt, place, earth, world, weather conditions, and time.

But this is only part of the meaning of *hant*. Moser and Marlett follow with nine pages of entries in which *hant* combines with dozens of other modifiers with varied meanings to describe everything from a burrowing owl, a daddy-long-legs arachnid, a waterhole, a campsite, or a submerged reef, to the end of the world, and even the creator of the world. Some interpreters may conclude from these multiple meanings of a single word that the Seri language lacks the semantic complexity of other languages, since Seris (who refer to themselves as *Comcáac*) do not have specific and distinct terminology for concepts and uses that one finds in, say, Indo-European languages. We, however, see this linguistic shading as reinforcing for every Seri speaker the depth to which his or her identity is tied to the landscape. We also see the linguistic complexity of *hant* as a reminder to Seris of the connection and interdependence of all things in the natural world (Sable 2006; Cajete 2006; Brown and Vibert 2003).

Our reasons for this belief are not merely academic. Students of the Seri agree that they are distinct from all other peoples, not merely in their language (which is unrelated to any other), but in their way of life. Other indigenous groups of Mexico's northwest—Guarijíos, Pimas,

Mayos, O'odham, Yaquis, and the extinct Ópatas—share many cultural and linguistic characteristics with one another, but almost none with the Seri. So who are these people who call themselves Comcáac, and we call Seri?

Linguists formerly classified the Seri language as vaguely related to a Yuman language once spoken in Baja California and around the mouth of the Colorado River. Students of the Seri language no longer accept these older connections. They recognize that the Seri language is a linguistic isolate—it demonstrates no apparent connection with any language in the United States or Mexico. This isolation itself distinguishes Seris sharply from other peoples. Their language is sui generis, either because all speakers of related languages have long since vanished, or because their tongue is of such antiquity that no connections with other languages have been documented. We believe the same can be said for many of their customs and myths.

How long have the Seris lived in the gulf coast region of the Sonoran Desert? Quantitative linguistic techniques are of no assistance for dating the longevity of the Seris' settlement on the Gulf Coast or hinting at their origins. DNA studies seem to relate them genetically to the Warao Indians of Venezuela and perhaps to some groups in Argentina (Infante et al. 1999), indicating the Seris' ancestors may have been part of an original wave of "founder" migrants into the "New World." But these similar gene strings may simply demonstrate that genetic structures may vary under the influence of environmental factors (the other peoples inhabit similar coastal ecosystems) rather than resulting solely from ancestral connections transmitted through mitochondrial DNA. In another study researchers comparing Seri genetic distances to those of twenty-nine other Western Hemisphere populations in order to trace their migration patterns detected connections to early Paleolithic people of northeast Asia (Alaez et al. 2002). The conclusions are tentative but tantalizing.

Due to the Seris' extreme isolation until the eighteenth century, they never suffered the wholesale attacks on their lands experienced by native peoples in the surrounding areas. Their lands were not arable, were nearly devoid of water, and had no exploitable deposits of gold or silver, and their numbers were insufficient to make slave raids worthwhile. In a nutshell, to the European mind they contained nothing of real value. Seris were mercilessly persecuted beginning in the early eighteenth century, and their population dipped into the low two hundreds during the late 1910s with the arrival of cattle ranching along the Sonoran coast. Yet they

never had occasion to defend their culture and language per se. While most cultures of the Americas were being uprooted by the European juggernaut, the Seris that survived military and paramilitary attacks continued to practice their way of life in isolation, living off the land and sea as their ancestors had done for thousands of years. Attempts at reducing them to missions were only temporarily successful and ultimately complete failures. Fortunately for us, the Seris have been isolated from the outside world for so long, holding out in their desert refuge that their language, traditional knowledge systems, and "cultural spirit" have never been completely broken, minimized, or Europeanized. Ópatas and their close relatives to the east, probably sixty thousand strong at the time of Contact, have vanished along with their language. Seris endured. Their numbers are perhaps one-third the number at Contact. Their language and way of life are largely intact.

Moser and Marlett's dictionary gives the best insight of any work published into the Seris' worldview and illustrates that it is impossible to separate their talking and thinking from their knowledge of the air, the land, and the sea. The Seris' intimacy with nature puts them in a class by themselves among peoples of northwest Mexico and the Southwestern United States in terms of quantifiable knowledge of their environment—plant, animal, mineral, topographical, and climatic. Most of the Seris with whom we have been acquainted—men and women—know their seaside desert home intimately—every dune, outcrop, reef, cliff, ravine, wash, and knoll, and the life that lives therein. Seris have place-names for at least 176 locations along the coastline of Tiburón Island *alone* (Luque Agraz and Robles Torres 2006). Compiling a dictionary of this type requires a deep recognition of that knowledge. Moser previously collaborated with botanist Richard Felger on their 1985 book *The People of the Desert and Sea,* documenting the Seris' use of native plants, but the *Diccionario Seri* illustrates even more comprehensively the degree to which all aspects of the Seri language reflect their vast repertoire of environmental consciousness, their sophisticated taxonomy of nature. Moser and Marlett have furthermore taken great pains to include the Seris' voluminous inventory of place-names, with literally hundreds of entries. Many dozens of such names apply specifically to precise locations on Tiburón Island. These are not merely labels. They represent markers, symbolic and real expressions of the Seris' geography, history, and worldview.

Seris' vast corpus of knowledge concerning nature and their lands endows them with an uncanny geographical, meteorological, and cosmological cognitive map of their homelands, replete with a lengthy

repository of stories and songs associated with each place or event (Hills 2000; Hine 2000). Both of us have had occasion to spend many hours with Seris in the *monte* ("the bush") on the mainland and on Tiburón Island, and we marvel at the scope and complexity of their insight and awareness. Seris seem able to pinpoint with astounding accuracy individual plants, rock outcroppings, crevices, and even sunken reefs well offshore, each capable of revealing "secrets" not only about this or that place, cluster of plants or fish, deposits of special clays or stones of a certain hardness, etc., but also why and how these things are related, and how each one affects the other (Monti 2003). Their knowledge of the Gulf of California, the Midriff Islands, Baja California, and lands within Sonora evokes images of constant discussions, of men and women, old and young, telling and retelling stories of these geographical locations, specific dangers, seasonal changes, and locations of resources through the use of myths, legends, stories, and particularly, songs.

Nearly all Seris are familiar with hundreds of songs and have a musical repertoire so vast as to defy belief. Sons of the late José Astorga, who is often credited with founding the ironwood carving industry, reported that at a puberty festival in the early 1980s he sang for more than thirty-six hours without repeating a song (Yetman 2000). Furthermore, most of the Seris seemed quite familiar with the songs he sang, as well as with hundreds of other songs—some traditional, some his own, yet others "owned" by other singers from other families. Seri songs are an integral part of an oral history in which tales are sung about every conceivable event, thing, place, condition, historical fact, or story one can imagine. You name it and the Seris have a song for it. Even today, after so many elders we knew in the late sixties and seventies have died, youngsters still sing these traditional songs. At a festival in 1969 Yetman recorded several songs sung by the grand old Seris Jesús Morales and Chico Romero, both of whom died in the mid-1970s. Hills replayed this recording for younger Seris in the mid-1980s. They not only recognized the voices with ease, but also were able to sing along with the recording. This younger generation of Seris and their successors maintain and reproduce the Seri message, and it is through the strength of their language that their traditions and way of life are being perpetuated. Seris do incorporate terms from other languages and concepts from other people in the same way that they incorporate technological innovations from outsiders, but always on their own terms and nearly always with their own stamp on the innovations. To this day they make a sharp distinction between Seris and non-Seris, between that which is Seri and that which is not.

We are convinced that the information contained in Moser and Marlett's dictionary—and it is vast—could not have been derived from a people with only a recent history of occupation along the Sonoran coast of the Gulf of California. Seris have been there for at least two thousand years (Bowen 1976), but more than likely for thousands of years longer than that. They may represent the last vestiges of those early coastal migrants who marched or paddled their way into the New World along the Pacific coastline having left northern Japan or the coast of Kamchatka as early as fifteen to twelve thousand years ago, as many archeologists are now suggesting (Koppel 2003).

Locating the Seris in the world of several millennia ago requires speculation, but it is not arbitrary speculation. We respect the Seris' intellectual synthesis enough to take their stories seriously, as they do. If humans were living in southern Chile 12,800 years ago at Monte Verde (Dillehay 1984), and were of the same migration route that included ancestral Seris, part of that migration, or a different wave could easily have splintered off into Baja California and found a home in the rich ecological zone of the Midriff region of the Gulf of California, still considered one of the richest coastal ecological zones on earth. (Álvarez-Borrego 2002: 41). We can envision some of this early wave of migrants from northeastern Asia reaching Cabo San Lucas after moving south along the Pacific coast, shaking their heads as they faced, for the very first time, the endless sea stretching south from the tip of Baja California. At that point they could simply have turned, headed up the eastern coastline, and explored the gulf coast of the peninsula, soon discovering the feasibility of island hopping from Baja California to the Sonoran coast in the region of the Midriff, where distances between islands and mainland did not exceed 8 km (5 miles) due to lower ocean levels before the great ice sheets melted (Fedje 2000). This rich marine habitat of shallow bays, mangrove estuaries, and tidal sloughs fits all of the ongoing models of dispersal theories for primitive peoples for both the Old and New Worlds (Bulbeck 2007; Sauer 1963), and probably accounts for why the early Seri immigrants settled in this region along the Sonoran Coast from Guaymas in the south to Puerto Lobos in the north.

Once those early migrants arrived on the Sonoran coast they may have stayed, or some may have continued their trek south to Central America, finally arriving in South America more than ten thousand years ago. Those who stayed survived rather well, living off the wealth of the Midriff coastline where ten thousand years ago fresh water was much more plentiful, summers were cooler, winters were wetter,

and sea levels were much lower than they are today (Van Devender 2002).

The Seris, inveterate storytellers, refer to their ancestors as "giants," those mythical and lost people they say are responsible for scattering countless thousands of eggshell pottery shards and other cultural fragments along ancient pathways and up and down the coast, and for teaching the Seris what they know today about their natural world. In their stories, Seris refer to two groups of giants that peopled their lands long ago. One group, huge in stature, they call *hant ihiyáxi comcáac,* "land its edge people" (Griffen 1959; Bowen 1976; Felger and Moser 1985). These beings lived in Baja California and on occasion ventured to Tiburón Island and the nearby Sonoran shore by "walking" across the gulf in a few steps. Chroniclers of the Seris, beginning with the Jesuit Adam Gilg in 1692 have consistently remarked upon the Seris' penchant for telling stories of their history. More than three hundred years ago they were telling the world about these giants (DiPeso and Matson 1965: 50).

The second group of giants, *xica coosyatoj,* were large in stature but small in comparison to the "edge people." According to Seris, they lived along the Sonoran mainland and on Tiburón and San Esteban Islands in much the same locations as the Seris themselves lived at the turn of the twentieth century. It was these giants to whom the Seris attribute eggshell pottery, gyratory crushers for grinding mesquite beans, lip plugs, and other lost cultural artifacts (Bowen 1976). They were called "thing singers" because their speech was said to be "musical" or "singing talk" (Bowen 2000; Felger and Moser 1985). The last of these people lived on San Esteban Island and perhaps on San Lorenzo Island in the middle of the Gulf of California (Bowen 2005). Thing singers figure prominently in Seri songs and stories.

Seri traditions state that one group of large giants, "land its edge people," lived south of present-day Kino Bay, probably on the broad Plains of San Juan Bautista between Kino and Guaymas, an area that formed a vast mesquite bosque at the time of European contact and until it was felled to make way for agriculture in the 1960s. Their songs and stories relate that these proto-Seris were forced to flee that area as floodwaters inundated the land. The source of the flooding is unclear. Seri refer to it simply as the "Great Flood" or "The Flood" (Felger and Moser 1985: 102, 107). The giants fled north to the Sierra Bacha, a steep granitic coastal range between El Desemboque and Puerto Libertad. There the floodwaters rose so high that the giants were unable to

escape and drowned. After the floodwaters receded, the giants' bodies gradually morphed into boojum trees (*Fouquieria columnaris*), the only such colony found on the mainland. The tall, thin boojums were former giant men, and the shorter, squat ones, female.

This story is noteworthy for two reasons. First, the flood was associated with rising seawater and was the biggest of all the floods. The Seri word for "flood" [*xepe*] *cojoz* is associated with the word "sea" (*xepe*) and "to flee, or run away" (*cojoz*). Second, this story offers not only a convenient explanation for the existence of the disjunctive population of the Sierra Bacha boojum trees (all other boojums are confined to Baja California), but also for the fate of the giants who once lived here.

Since plant ecologists first noted boojums in this isolated Sonoran Desert range, they have puzzled over their presence there (Humphrey 1974). Boojums possess a peculiar affinity for the granite substrate and climatic conditions present in the Sierra Bacha and propagate well there, far from their probable evolutionary origins in Baja California, but nowhere else on the Mexican mainland. According to Robert Humphrey, their existence in that single spot on the Sonoran coast may be due to hurricanes that transported their light, airborne seeds from Baja California and deposited them in that favorable environment, or they could conceivably constitute a relict population from the time when Baja California was connected to the mainland. But there is another, more intriguing explanation: the giants may have carried plants or seeds across the gulf and planted them (Bowen, Felger, and Hills 2004). The Seris have a long tradition of burying an infant's placenta and "marking" the burial location with a cactus or other plant (M. Moser 1970; Felger and Moser 1985). They also have an oral tradition of translocating dry-root plants from one region to another with the intention of marking a placental burial (Nabhan 2002; Yetman and Búrquez 1996). It is not possible to determine how far back in time this tradition goes, but it would not surprise us if one of the first placental markers was a tiny boojum tree brought to the Sonoran coast from Baja California in the pocket of one of the first giants, the "edge people," in anticipation or celebration of a birth, not only to provide the child a "touchstone" in this new land, but to remind them whence they came.

These "people" arrived either by boat or on foot, quite possibly from Baja California. For centuries the Seri and their ancestors have been skilled boatmen, regularly plying their way among gulf islands and between the two coasts. But another intriguing possibility remains: Seri conversations about their origins and about floods suggest that the giants could actually

have walked across the gulf on a regular basis. Twelve to ten thousand years ago immense amounts of the Earth's water was tied up in glaciers. At that time water levels in the Gulf of California were about 400 feet (roughly 120 m) lower than they are today, making passage from Baja California to Sonora far simpler. Estimates of sea levels during this time period vary and are difficult to pinpoint because of local factors such as isostatic rebound from the reduction of ice weight on the earth (Pacific Northwest), isostatic depression (compression) from the addition of increased water weight on a sinking sea bottom (in the Gulf of California), and local tectonic and volcanic activity that may have raised or lowered land levels. Other traumatic local changes in ocean levels were the result of abrupt freshwater megafloods from glacier-dammed lakes such as Agassiz, Livingstone, or Missoula when their ice dams breached, releasing tens of thousands of cubic kilometers of fresh water into the sea (north Pacific, North Sea, Arctic Ocean, and Gulf of Mexico) in a matter of months, or of massive ice sheet collapses off the coast of Antarctica (Broecker 2006; Teller and Leverington 2002; Fedje 2000; Blanchon and Shaw 1995).

As we have seen, Seri stories refer to great floods. The only widespread "great" flood documented in this region was this gradual rise in worldwide sea levels between twelve thousand and eight thousand years ago as a result of global warming at the end of the Wisconsinan glacial period. Based on the evidence found in ice core samples from Greenland, sometime between 12,000 and 12,050 BP temperatures rose between six and seven degrees Celsius within a fifty-year period, setting off the current interglacial period (Calvin 2006). The warming climate resulted in the melting of the great Laurentide Ice Sheet, nearly 2 km thick, that covered nearly all of Canada and much of the northern United States. The warming also produced melting in the Cordilleran Ice Sheet of northwestern North America, the Greenland Ice Sheet, and ice from Antarctica. All together the melting released twelve million cubic *miles* more ice than exists today (Adovasio and Page 2003: 46), and as we have suggested, raised sea levels more than 400 feet (120 m) in the Gulf of California. This rise had profound effects on peoples residing in the gulf region at that time, where the rising waters would have disrupted established patterns of subsistence: the higher levels in the gulf must have made life more difficult for the giants, or proto-Seris, who had been accustomed to a far narrower gulf, narrower inter-island passages, and vast, gently sloping continental shelves.

Between 10,000 and 8,000 BP sea levels rose at "catastrophic rates" according to geologists, rapidly enough, in fact, to cause destruction

of low-lying ecosystems and force the evacuation of human settlements (Blanchon and Shaw 1995; Teller and Leverington 2002). Especially affected were shallow areas at the mouths of major river systems and along the continental shelf. Prior to the rapid glacial melting, ice-sheet collapses, and cataclysmic draining of massive glacial lakes such as Lake Agassiz, it would have been possible for someone to walk across the Gulf of California 100 km *south* of the present Colorado River delta. The northern gulf is relatively shallow due to massive deposition of sediments transported there during the last five million years or so by the Colorado River as it gouged out the Colorado Plateau to form the Grand Canyon: what the plateau lost, the gulf gained as the river relocated many hundreds of cubic miles of rock, depositing it in the form of silt and sand. The "giants" living in Baja California twelve thousand to ten thousand years ago might have found it possible to walk across the Gulf from Puertocitos in Baja California to Puerto de Lobos in Sonora, crossing the Colorado River delta much closer to Seri lands than is possible now (map 1).

At the same time, the lower level of the sea meant that people were most likely living along the mouth of the Río Sonora at least 40 km *west* of Kino Bay. Tiburón Island would have formed a peninsula of the mainland instead of an island, jutting out into the gulf at Willard Point. The shallow waters between Kino Bay and the south end of Tiburon Island today fluctuate between only 40 and 70 feet in depth (L. Johnson, personal communication 2007). The greatest distances between the islands in the Midriff region at that time would have been only 8 km, making crossings by boat easier than what Seris accomplished rather handily one hundred years ago when they were still crossing the gulf in handmade reed boats.

The sea rose as much as 2 to 3 m in a single generation between 10,000 and 9,000 years ago (Fedje 2000), much to the consternation of anyone living along a gently sloping coastline. People residing in the vicinity of Kino Bay would have been profoundly affected, since that section of the gulf is also shallow due to ancient delta deposits from the Río Sonora. This "flooding" would have forced any coastal dwellers, particularly those between Kino Bay and Guaymas, to relocate to the east and north as the rising waters inundated their former settlements. It must have been a formative time for storytellers who witnessed in their own generation spectacular landscape changes that, in turn, forced rapid alteration of time-tested hunting and gathering practices. This was a time to remember, a time for stories and song. Whether or not these


CALIFORNIA
River
ARIZONA
Mexicali
Colorado
Tucson
Colorado River Delta
GRAN DESIERTO
SIERRA PINACATE
Sonoyta
Río Sonoyta
UNITED STATES
MEXICO
Puerto Peñasco
Nogales
Hypothetical sea level 12,000 to 10,000 years ago, 400 feet below current sea level
Río Concepción
Río Magdalena
Puertocitos
200 ft
Puerto de Lobos
SONORA
400 ft
Puerto Libertad
SIERRA BACHA
Río Sonoyta
Angel de la Guarda Island
El Desemboque
BAJA CALIFORNIA
MIDRIFF ISLANDS
Playa Noriega
Río Bacuachite
Tiburón Island
Punta Chueca
Río Sonora
Hermosillo
Punta Willard
Kino Bay
Pelican Island
PLAINS OF SAN JUAN BAUTISTA
San Esteban Island
San Lorenzo Island
200 ft
Guaymas
400 ft
N
0 10 25 50 75 100 km
0 5 10 20 30 40 50 60 miles

Map 1

rapid ecological changes, including substantial changes in hunting and fishing ranges, forced the Seris into conflict with other aboriginal peoples is almost impossible to determine. However, six distinct bands of Seris developed over time, some in conflict with others, and this differentiation into semi-competing groups may well represent a response to disruption of traditional hunting and gathering patterns (E. W. Moser 1963).

We place considerable stock in stories the Seris tell of their history, narratives they relate with confidence and consistency. We acknowledge the difficulty of relying on oral history to interpret historical events of antiquity, yet we view long oral traditions as valuable sources of history (Mason 2000; Echo-Hawk 2000; Schaafsma 2004; Moodie, Catchpole, and Abel 1992). Both Baja California and Sonora had human populations twelve thousand to ten thousand years ago. Archeologists refer to them as Clovis, Malpais, or San Dieguitos peoples. The dates associated with these peoples are controversial: Hayden has Malpais culture as early as 40,000 BP, while others, including Rogers, place them as far more recent (Aschmann 1952; Robles Ortiz and Manzo Taylor 1972; Hyland and de la Luz Gutiérrez 1996; Heilen 2002). The Seris' oral histories represent a plausible historical record, and while this may constitute a long reach, they take on added significance when one couples their ancient land tenure with the prodigious memories that preliterate peoples possess, which they reinforce through song, story, and poetry. While the particulars of events fade with time, preliterate people tend to repeat the salient themes as stories, assuring that singular events are not forgotten but remain stored metaphorically, as it were, in a cultural memory. The events themselves coalesce into legends and myths but carry with them the presumption that they are based on real occurrences.

Two examples that strengthen our oral history arguments are taken from Canada and Indonesia. In Canada, government officials must consider myths, legends, songs, and long-held stories when determining "legal" rights to land use. In 1997 in the *Delgamuukw v. British Columbia* case regarding land use, the Canadian courts relied on oral history to help establish traditional fishing rights to an inland lake in ruling for Delgamuukw, a member of the Gitsikan/Wetsowetin nation. The oral history related an ancient story of a giant bear charging down a mountain slope many years ago, causing so much havoc that aboriginal people were forced to leave the area for years before they could return to these fishing grounds. Geological investigations revealed that the "giant bear" was a huge landslide that occurred three thousand years ago. The ancient stories enshrined a historical occurrence.

Another oral history that goes back much farther takes place on the island of Flores in Indonesia, where villagers have long related stories about a small "upright walking creature with a lopsided gait, voracious appetite, and soft, murmuring speech." Villagers refer to this little animal as *ebu gogo,* "the grandmother who eats anything." Scientists long believed the term referred to a macaque monkey. In October 2004 a team of researchers discovered the remains of a small human (*Homo floresiensis*) that stood only a meter in height and lived on the island twelve thousand years ago, (Wong 2006). The myths of the people of Flores had a basis in fact.

The Seris speak of a second flood that may account for the smaller giants, the "thing singers," with whom contemporary Seris say they share many traits (M. B. Moser, personal communication 2004). We interpret this flood in a more regional context. Early anthropologists, ever searching for links, related the Seris culturally and linguistically to the Yuman tribes that presently live around the mouth of the Colorado River. Those connections now seem tenuous at best. In the introductory pages of the Seri dictionary Moser and Marlett note that the evidence cited for a Seri-Yuman connection "during all of the 20th century [is] very slim and rather weak. The conclusion, therefore, at least for the present, is that Seri is a language isolate" (p. 14). The evidence does not preclude the Seris from having frequented lands peopled by Hokan (Yuman) speakers, however. They may even have arrived before the Hokans.

The historic and geological basis for this second flood may be the radically changing water levels of prehistoric Lake Cahuilla in the below-sea -level depression now home to the Salton Sea. For millennia the Salton Depression was simply the northern extension of the Gulf of California. The delta of the Colorado River, however, produced sufficient sediments to form a broad dam in a roughly east-west direction, cutting off the Salton Depression from the gulf. Over millennia its waters evaporated and the depression dried out, leaving a sink separated from the Colorado River by a ridge only a few meters higher than the normal flow of the river. For thousands of years the rise and fall of the Colorado River deposited sediments that formed massive dam-like structures in the delta perpendicular to the river's flow. Eventually, these berms would grow high and thick enough to divert the river westward into the Salton Trough. The river's course would change and its waters would empty into what we now call the Imperial Valley, which lies below the current sea level. During these diversions the Gulf of California would receive little or no inflow from the Colorado River. Years or decades later, usually fol-

lowing a particularly wet winter and spring snowmelt in Colorado and Utah, extraordinary runoff would overwhelm and breach the sediment dams, scouring out a new channel and returning the river to the Gulf of California. Water levels in Lake Cahuilla would abruptly drop to sea level and any remaining waters would mostly dry up from evaporation in the blisteringly hot, hyperarid environment. This cycle has occurred innumerable times, but traceable events happened at least three or four times between 100 BC and AD 1580 (Wilke 1976), or perhaps between AD 695 and AD 1580 (Waters 1981). At its maximum Lake Cahuilla covered more than 5700 km², extending from the delta in Mexico to present-day Indio 161 km north, with a maximum depth of 95 m in the center and a width of more than 56 km (Buckles and Krantz n.d.; map 2). At other times it would dry up. Terraces clearly visible above the present Salton Sea bear testimony to the lake's former size. These are a remnant of the last diversion that took place in 1905 when the Colorado breached its banks due to human error and poured into the Salton Depression, partially filling the basin and forming the Salton Sea, a 1,000 km² body of water.

The large but rare floods related to the Colorado River/Lake Cahuilla sequence were clearly of great significance to residents of the region. Those witnessing the abrupt release of several hundred cubic kilometers of water over a few weeks' time would be inclined to relate the experience to anyone who would listen. Of such stuff are "second flood" myths constructed.

Archeologists refer to the early people who lived in the region of the upper gulf ten thousand or more years ago as the Malpais and San Dieguitos (Heilen 2002; Hayden 1976). Dating these cultures has been controversial, but most interesting to us are the artifactual connections attributed to these two groups of people, one living around the shores of Lake Cahuilla and the second living southeast of the Colorado River delta in the Sierra Pinacate volcanic region.

The Pinacate/Gran Desierto in northwestern Sonora lies within the hottest and driest region on the North American continent. Over a lifetime of research, archaeologist Julian Hayden observed and documented an assemblage of artifacts there similar to those one finds today scattered over Seri country and much of the low desert of southwestern Arizona and northwestern Mexico: sleeping circles; gyratory crushers (which resembled a stone mortar with a tapered hole chipped in the center; fig. 1); and middens laden with hastily or casually formed scrapers, gouges, and chipped shell implements (Hayden 1969; Bowen 1976). With the


MOJAVE DESERT
Palm Springs
Indio
CALIFORNIA
SALTON TROUGH
COACHELLA VALLEY
Salton Sea
PREHISTORIC LAKE CAHUILLA
COLORADO DESERT
Colorado River
ARIZONA
YUMA DESERT
IMPERIAL VALLEY
ALGODONES DUNES
Mexicali
Yuma
Gila River
Hardy River
Modern Colorado River
Colorado River Delta
UNITED STATES
MEXICO
GRAN DESIERTO
SIERRA PINACATE
BAJA CALIFORNIA
SONORA
GULF OF CALIFORNIA
Puerto Peñasco
Puertocitos
N
0 10 25 50 75 100 km
0 5 10 20 30 40 50 60 miles

Map 2

Figure 1

exception of the gyratory crushers the artifacts were roughly shaped, utilizing minimal effort. The crushers were most likely tools for separating mesquite seeds from the pods. The seeds were then ground into flour for making breads and gruel. Shaping the crushers required great skill and effort, which means their owners valued them highly.

Gyratory crushers have turned up throughout northern Sonora, but they are found in abundance only in the Pinacate region in the northwestern part of the Mexican state of Sonora. Isolated crushers have been found within the Seris' traditional range: one near the village of El Desemboque (Felger and Moser 1985: 340), one north of Guaymas (Hayden 1969: 160), another on the eastern slopes of Tiburon Island (Hills 1973: 103), and one at Tecomate on the north end of Tiburón Island (fig. 2; S. Hayden, personal communication 2006). A few have turned up on the western slopes of the Sierra Madre along the Moctezuma and Bavispe Rivers, the eastern limits of historic Seri roamings.

The Seris have no recollection of using the crushers, nor do they use traditionally formed stone metates. Instead, for generations they used two flat stones or mortars formed in bedrock for grinding mesquite flour. But when shown a photo of a gyratory crusher, they instantly recognized it as an implement for grinding, describing such a tool as *xapocj iya,* "metates his," another *archaic* Seri word (Felger and Moser 1985: 340). The Seris attribute the tools to the giants they call thing singers, asserting that the ancient ones tied these large stone crushers to their belts or slung them over their shoulders bandolier-like, as body armor (Felger and Moser 1985: 340).

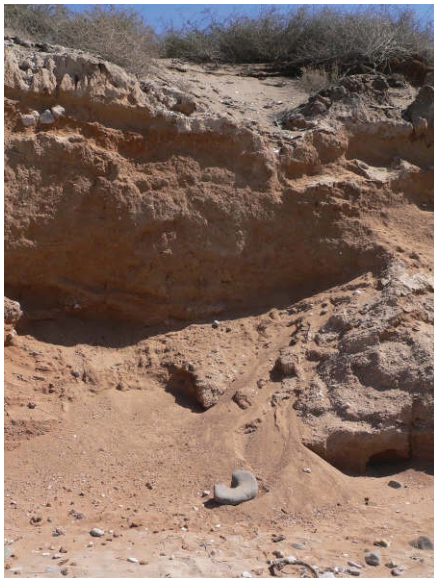

Figure 2

By roughly AD 1150 the people who used gyratory crushers either departed from the region or abandoned the use of them in the Pinacate area (Hayden 1969: 160). This disappearance coincides with the onset of the Medieval Drought that produced chaos among agricultural peoples of the Colorado Plateau. Another group of people called the Patayan may have arrived between seven hundred and one thousand years ago. (Hayes and Hayes 2006: 50) They appear to have lived primarily around the fluctuating shores of Lake Cahuilla, where they eked out a living with minimal technology. We find it significant that the Seri word for the north wind is *haaha* (*haitáapa*), or "true-wind," which, they tell, was the first wind to blow. The Seris have a complex lexicon for the many winds that blow in this area (Hills 2004), but *haaha* is the only wind that has a name connoting a specific value: truth, or first in origin. All the other names for winds are descriptive. Could this mean that the "true area" from which the ancestors of the Seris originated (at least one group of giants) lay to the north, and that they had left that land of disruptive flooding, simply heading south along the shore singing their songs to the beat of clanking stone metates dangling from their bodies?

We may never be able to determine when the ancestral Seris arrived on the Sonoran coast, whether they came from Baja California as an early or later wave of primordial immigrants, or as an earlier or later group

venturing southward from the northern gulf. In either case, given their extraordinary familiarity with their habitat, their genetic and linguistic isolation, the deep persistence of their culture, the unvarying consistency of their myths, and their enduring presence on the land, the Seris make excellent candidates for representing founders, the primordial Amerindians, the legitimate "first" people, who lived and adapted to a changing desert world. The Seris may well be the direct descendents of the true first Americans.

Moser's and Marlett's work is an outgrowth of the evangelical imperative of Summer Institute of Linguistics (SIL) International, a sister organization of Wycliffe Bible Translators (Wycliffe International), a faith-based organization for which Mary Beck Moser and the late Edward Moser translated the Bible into Seri.

In the context of historical missionizing to Indians, this work takes a distinct position. Jesuits, during their roughly 150 years of mission building in the northwest of New Spain endeavored, with limited success, to learn and document the languages of their charges (for example, Lombardo 1702). Their results illustrate the rather disappointing linguistic abilities of most of the various Jesuit priests in Sonora. Franciscans, who replaced the Jesuits after the expulsion of the latter from the Western Hemisphere in 1767, for the most part viewed native languages as vestiges of paganism that needed to be rooted out, and consequently little effort was made to learn or record native languages (Barbastro 1793: 120; Ebright and Hendricks 2006: 57–58, 71).

In contrast to these early missionizing attempts, SIL International has been extraordinarily successful in documenting native languages of the world, albeit with some controversy. Although a tacitly evangelical effort is a strange bedfellow to preserving native cultures, SIL International has translated almost two thousand native languages in service to their ultimate goal of fulfilling "the Great Commission" of bringing all people, of all nations, to Christ.

Although this dictionary has its roots in an organization with a Christian worldview, its scholarship and research are exemplary, surpassing all previous attempts, whether religious or academic in nature, to record the Seri language. In compiling the Seri dictionary, Moser and Marlett have cast spotlights on history, prehistory, and genetics. Their work also represents a lifetime of building understanding between Seri, Spanish, and English speakers, for whom this work is of immeasurable importance, and bestows upon the Seris political legitimacy in Mexico.

We first visited Seris in 1968. Both of us have spent sufficient time with them to build a basic stock of terms, to count, and to utter platitudes. Our modest accomplishments have made clear to us the extreme difficulty of mastering the Seri language—and the intensity of work, linguistic skill, and decades of concentrated work required to compile a dictionary of the scope of Moser and Marlett's production. The dictionary is surely not complete. The Seri language, like all languages, is continually changing, and Seris constantly reveal previously unrecorded insights; but the corpus of knowledge found in this dictionary transcends that of any comparable work to date, and shows us that the Seri language is still alive and filled with traditional ecological knowledge that required generations to accrue.

Whatever its origins, this dictionary is a magisterial work. ✣

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