

GEOPARKS AND GEOSTORIES

Ideas of Nature Underlying the UNESCO Araripe Basin Project and Contemporary “Folk” Narratives

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Abstract: This article analyzes two sets of narratives that describe the area contained within the United Nations Educational, Scientific, and Cultural Organization's (UNESCO) Araripe Basin Geopark, the first such geological preserve in the Americas. The first group includes scientific-sounding accounts of fossils, sediments, and geological formations. The second is a series of “folk” stories that describe the sacred geography of a part of the northeastern Brazilian backlands best known for their economic backwardness and religious mysticism. Although at first glance the two sets of narratives appear wholly divergent, both treat the natural world as ancient, fluid, composed of interrelated elements, mysterious, and deeply worthy of protection. These shared conceptions have important policy implications in strategizing a sustainable tourism that will preserve the region's geological and cultural heritage while bringing economic benefits to the local population.

Detailed scientific descriptions of fossils, sediments, and tectonic movements that shape geological formations with complicated Latinate names; stories of enchanted orchards that appear and disappear, stones on which holy figures write at will with an outstretched finger, and petrified creatures left over from the time of Noah's ark that will one day resume their rudely interrupted lives—both sets of narratives describe the area contained within the UNESCO Araripe Basin Geopark. In 2006, the park became the first of these geological preserves to be established in the Americas. Located in the Cariri, a part of the northeastern Brazilian backlands, this fossil-rich tableland occupies an area of approximately three thousand square miles.

At first glance, the two groups of stories appear so divergent in terms of both language and conception that they would seem to be describing not a single rocky landscape but completely separate planets. And yet, despite real and often dramatic differences, the narrative clusters—one primarily composed of academic-sounding documents including charts, maps, and photos; the other comprising

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generally oral, “traditional” stories—reveal similarities far beyond those that first meet the eye. Therefore, although it would be possible to write at length about divergences, here I stress the far less obvious and deeply important links.

The following pages show how both sets of narratives treat the natural world as ancient, fluid, composed of interrelated elements, mysterious, and deeply worthy of protection. Both recognize the special character of a portion of northeastern Brazil called the Cariri after the native residents whom early Portuguese colonists encountered. Long known to specialists as a paleontological treasure trove, this oasis set amid the sunbaked backlands, or *sertão*, is also regularly described as *um grande celeiro da cultura popular*, or “a great storehouse of popular culture.”

The two groups of stories share conceptions of nature that are of more than academic interest. They have policy implications of deep importance in strategizing a sustainable tourism that will preserve the region’s geological and cultural heritage while bringing economic benefits to the local population—the primary goal of all UNESCO geoparks.¹ A successful policy must include not just well-to-do outsiders with environmental interests (the so-called ecotourists, who constitute the target audience for the overwhelming majority of geoparks) but also a multitude of much poorer religious visitors.

These pilgrims, or *romeiros*, pour into the Cariri each year to honor a Roman Catholic priest named Padre Cícero Romão Batista (1844–1934), who has long functioned as an unofficial saint.² It is they who constitute the bedrock of the “local” population to which the UNESCO program guidelines repeatedly refer. It is also they who have been excluded over the centuries from political power and from a long line of development projects mounted in their name. The following pages suggest that seemingly unrelated accounts of nature can be “translated” or made mutually intelligible through a highlighting of their underlying similarities. In addition, they insist that the chances for the success of the Araripe geopark will hinge on alliances made possible through such translations.

Here, I am not simply underscoring the well-documented benefits of including local populations as stakeholders in environmental projects. Rather, I am asserting the ways in which the systematic recognition of underlying similarities in different types of literary texts can highlight potential areas of cooperation. In the Cariri, as in many other places, cultural aspects are all too likely to serve as decorative add-ons to “the real business” of economic advancement and scientific preservation. However, the active participation of local populations—made possible through an awareness of those shared features highlighted in the two sets of stories—offers hope that the Araripe geopark will succeed and thereby become a model for future geoparks in the Americas.

1. For a fuller description of the geoparks program, see relevant portions of the UNESCO Web site (<http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/geoparks/>). Requirements for participation in the program include a management plan designed to foster socioeconomic development, a demonstration of “methods designed to conserve and enhance geological heritage,” and “joint proposals submitted by public authorities, local communities and private interests.”

2. For an introduction to Padre Cícero and the Juazeiro pilgrimage, see Della Cava (1970), Barros (1988), and Braga (2008). Not just a religious leader, Padre Cícero served as mayor of Juazeiro for more than fifteen years and was elected third vice-governor of Ceará.

THE ARARIPE GEOPARK

Founded in 2001, the UNESCO program defines a geopark as “a geographical area where geological heritage sites are part of a holistic concept of protection, education and sustainable development” (UNESCO 2010, 3). The great majority of these parks are located in Europe and Asia (primarily China). Because the Araripe project remains the only such site in Latin America, it faces particular challenges. Some of these stem from long-standing problems associated with the region’s economic backwardness (two-thirds of the population earns less than 50 percent of the minimum monthly wage).³ Other challenges reflect the lack of the sorts of readily accessible regional support networks in which most of the UNESCO program’s approximately sixty other members participate.⁴

The Araripe geopark includes nine separate “geosites” (originally called “geotopes”) that are primary foci of interest. Chosen in part for their varied geological attributes, these focal points also highlight different human histories. The Cariri Formation, for instance, contains the oldest sediments (as opposed to bedrock) of the basin. The Missão Velha Formation offers a number of striking examples of fossilized wood, whereas the Crato Formation is rich in laminated limestone containing fossils of many types. As for history, although the present-day municipal district of Missão Velha was the first point of entry for European settlers (the *missão* refers to a Capuchin mission founded in 1752), it remains a largely rural enclave. In contrast, the much newer city of Juazeiro is a densely populated commercial hub. The small town of Santana do Cariri (in the Crato Formation) is known for its quarries (and related fossil trafficking), as well as its impressive Museum of Paleontology. Crato and Barbalha, the site of various nineteenth-century sugar plantations, are still home to regional elites.

This article concentrates on that granite hilltop which most people call the Horto (“orchard” in Portuguese), located on the outskirts of Juazeiro. This geosite of the Juazeiro Basement Complex is the best-known and most politically sensitive of the locations. Part of the Serra do Catolé, a group of mountains that rise above the densely populated flatlands, this imposing hilltop provides a panoramic view of Crato, Juazeiro, and Barbalha, once largely autonomous cities that increasingly comprise a single metropolitan area where around four hundred thousand people currently reside.⁵

Juazeiro is the economic and demographic hub of the Cariri. A political divi-

3. These and other revealing statistics appear in regional assessment document P099369 produced by the Ceará Regional Economic Development Project, accessible at O Ceará, Governo do Estado do Ceará (<http://www.cidades.ce.gov.br/pdfs/2-Sumario-Executivo-Versao-Ingles.pdf/view>).

4. The International Geoparks Program had seventy-seven members in twenty-five countries as of October 2010. The European parks, which constitute the majority of the program’s membership, have their own subnetwork. There are presently twenty-four geoparks in China and one in Malaysia. The Stonehammer Geopark in Canada (approved in 2010) is the first geopark in North America. UNESCO offers secretariat support for supervision and coordination of application procedures and standards; member sites are presently pressing for recognition of the program as a legal entity.

5. Official Instituto Brasileiro de Geografia e Estatística (IBGE 2007) statistics give Juazeiro an official population of 242,139 persons in 2007. Crato has 111,198 and Barbalha 50,386. The unofficial figures, which reflect the massive influx of migrants into the outskirts of Juazeiro, are considerably higher.

sion within the state of Ceará, the Cariri occupies a major portion of the Araripe Basin—a geographical area that also cuts across the states of Piauí and Pernambuco. The city is best known throughout the Northeast and Brazil for the ongoing pilgrimage that turned a dusty hamlet into the second-largest urban center in the state of Ceará. This pilgrimage began in 1889 as a response to a remarkable event (the apparent transformation of the communion host into the blood of Jesus Christ in the mouth of a *beata*, or lay nun, who received it from the hands of Padre Cícero). This event coincided with a moment of great social and economic uncertainty (the transition from a long-standing empire to a new republic) intensified by the threat of drought.⁶

The Roman Catholic Church's angry rejection of miraculous claims involving Padre Cícero only solidified support for him among many northeasterners. His followers were often denied access to the sacraments because they had named a child after the priest or continued to insist on wearing a rosary with his image around their neck.⁷ Today, as the children and grandchildren of early pilgrims continue to make the journey to Juazeiro, the church has come to see Padre Cícero as its best defense against an increasingly powerful Pentecostal Protestantism.⁸

For geologists, the Horto is a crystalline outcropping with igneous components—a lake bottom that rose up in the course of violent tectonic movements millions of years ago. Its weathered summit is one of the oldest geological markers of a region that offers a rare record of the breakup of the ancient continent of Gondwana (or Gondwanaland) during a crucial period of Earth's evolution.⁹ Although the Araripe Basin as a whole is best known for its breathtakingly well-preserved fossils, the Horto's geological fame resides in initially quite ordinary-looking granite patches that turn out to be as much as 600 million years old. Although the fossils date back to the much later Early Cretaceous period (a mere 120 million–70 million years ago), the Horto represents part of the foundations of a vast, rocky basin that would later teem with aquatic and terrestrial life-forms.¹⁰

For the present-day pilgrims who flood into Juazeiro, the Horto is a magical or sacred space. Few of these visitors fail to visit the enormous statue of Padre Cícero, second only in size to Rio's Christ the Redeemer, which stands atop the summit. Although the Horto is only one of various locations associated with the priest, Padre Cícero's thwarted attempt to construct a soaring church there in the late 1890s imbues it with particular force. National television networks' coverage of the pilgrimage has made images of the Horto familiar to many Brazilians. Far

6. See Della Cava (1970, 32–40) and Forti (1999). At least 2 million people died, and many millions more were displaced, in the last major drought and ensuing smallpox epidemic in 1877–1879.

7. The image of Padre Cícero was on one side of the medal; the image of the Virgin Mary in her guise as Our Lady of Sorrows, patron saint of Juazeiro, on the other.

8. Numbers for the pilgrimage vary from between slightly more than 1 million to 2 million persons. Part of this variation reflects year-to-year differences involving climate (good versus bad harvests), economic conditions, and the presence of elections. This wide variation also reflects the absence of any sort of official census.

9. *Gondwanaland* is the term used for the southern portion of the supercontinent of Pangaea. The Araripe documents use this older denomination for what is now usually referred to as Gondwana.

10. For an introduction to the paleontological history of the Cariri, see Martill (1993) and Martill, Bechly, and Loveridge (2007).

more than just a local landmark, it has become an increasingly common symbol of a region that is both materially poor and imaginatively rich.¹¹

POINTS OF CONTACT AMONG SCIENTIFIC AND FOLK NARRATIVES

The narratives under consideration here fall into two categories. Those in the first group are scientific-sounding and development-oriented accounts, often accompanied by photos expressly commissioned for this project. One of the two most important of these documents is the original application to UNESCO (*Application Dossier Araripe Geopark* 2005), submitted by the government of the state of Ceará with primary input from the Regional University of the Cariri (Governo do Estado do Ceará 2005). The other key text, *The UNESCO Araripe Geopark: A Short Story of the Evolution of Life, Rocks and Continents [Araripe Geopark, Ceará, Brasil, uma pequena história da evolução da vida, das rochas e dos continentes]* (Herzog, Sales, and Hillmer 2008) summarizes much of the information in the application for a more general public.¹² There are also a number of other, often considerably shorter publications based on these two primary documents and an unofficial blog that provides ongoing information on the geopark and larger environmental concerns.¹³ Today, news and up-to-date documents appear on the official Web site (<http://www.geoparkararipe.org.br>), which is under the auspices of the Regional University.

These accounts of the Araripe project include stunning photographs by Daniel Roman. Although the photographic images' most obvious purpose is to illustrate points made in these generally very academic-sounding texts, they stand apart from more expository charts and diagrams in their often-haunting grandeur. This grandeur, which springs in part from their careful omission of imperfections (no rusted pipes or Coca-Cola bottles) has made them the focus for various geopark-related exhibitions.¹⁴

These photos, along with descriptive text, also appear in two slender picture albums (Sales Costa Filho 2008a, 2008b). Several of the images are readily acces-

11. For a summary of conceptions of the Brazilian Northeast prevalent in Padre Cícero's time, see Mezezes (1995). A more recent overview is available in Ernst (2007). The region comprises approximately 18 percent of the national territory and around 30 percent of the total population.

12. The authors of the dossier are André Herzog (then rector of the Regional University of the Cariri), Alexandre Sales (a sedimentary geologist who served as director of the university-affiliated Museum of Paleontology in Santana), Gero Hillmer (a German geologist active in the European geoparks program), and José Sales Costa Filho (an architect and urban developer). The first three individuals are the authors of the second book. Daniel Roman, a professional photographer who is the son of José Sales Costa Filho, took the pictures for the publications. Because the dossier was submitted to UNESCO in English, and both publications are available in English as well as Portuguese, I have used the English translation.

13. The blog *GeoPark Araripe* (<http://www.geoparkararipe.blogspot.com>) is organized by José Sales Costa Filho. It should be read in tandem with the official Web site of the Araripe Geopark and the associated bilingual Geopark News documents (<http://www.issuu.com/geoparkararipe/>). The geopark also has a Facebook page and Twitter presence.

14. One such showing, held at the imposing Dragão do Mar, or "Sea Dragon" arts and museum complex, coincided with an international geopark symposium sponsored by the state of Ceará's Secretariat for Urban Planning (Secretaria de Cidades) in 2008.

sible on the aforementioned blog. Although the pictures clearly represent in some ways a third, graphic language, I consider them a special part of the first group rather than a separate category. My judgment reflects the fact that they were taken expressly to illustrate the formal documents already cited and to bolster the geopark's scientific and touristic ends. Although I will point out the tensions that sometimes occur between the words and images, the two remain tightly intertwined (see figures 1–3).

The second group of narratives includes orally transmitted stories told by pilgrims and pilgrim-residents as well as printed (*cordel*) versions of these. Even though they can be extremely varied in their details, the tales tend to rework recurring themes. I have based my discussion on nearly five hundred hours of stories that I recorded in the late 1970s and early 1980s, together with new research conducted during 2004–2008 (see Slater 1986, 1991, 2006). The early work concentrated on the stories' place within a still largely "traditional" culture. The later research concerns the relationship between present-day versions of these superficially unchanging stories and the larger social, economic, and environmental transformations that the tales both reflect and help shape.

As already noted, the two groups of narratives reveal five principal points of contact. All of the stories tend to see the natural world as ancient, fluid, composed of interrelated elements, mysterious, and deeply worthy of protection. Both groups of narrators (a term I use here to include authors of printed texts) are convinced that the natural world they are describing is astonishingly old. Each stresses this world's ongoing transformation. The two also share a vision of nature as composed of profoundly codependent life-forms. Finally, both groups see the Araripe Basin as replete with mysteries that must be shielded from a rising tide of environmental destruction.

The two groups of narratives are by no means homogeneous. The divergences within each group are sometimes noteworthy, and the many divisions separating "scientific" from "traditional" narratives are immediately clear. One group of narratives is destined for an educated, often international public. The other is the property of "local" populations at the bottom of the social hierarchy in a region long associated with a particularly oppressive brand of *coronelismo*.¹⁵ Although Western science tends to transform nature into an object of study separable from social and religious values, "traditional" stories about the natural world often underscore the strong, if enigmatic, ties between these.

Unlike the contrasts between a grammatically correct, written language and a highly colloquial, often oral form of expression, which are obvious from the outset, important links between the stories are considerably less apparent. More often than not, these underlying ties remain invisible to narrators, who may dismiss the other set of stories as unintelligible or frankly alien. However, as already noted, it is precisely these less obvious unifying features that hold out potential for coordinated action and a new sort of alliance between northeastern elites and

15. Although this system involving rule by local strongmen was common throughout Brazil during the Old Republic, it was particularly strong in the northeastern interior. For an introduction, see Leal (1977).

the bulk of the region's population. This sort of alliance would allow the Horto and the geopark to bolster UNESCO's desire to use this project as a launching pad for other geoparks in the Americas—a strategy obvious in plans for an initial Pan-American Geoparks and Geotourism Conference that took place in Juazeiro in November of 2010.¹⁶

The first step to success in the case of the Horto is wide-scale official recognition of the oral stories' emphasis on the pilgrimage as a telluric phenomenon. If this journey underscores the importance of a distinctly northeastern brand of "folk" Catholicism, it also marks a continuing human encounter with actual rocks, earth, and water that began with the region's indigenous peoples. A newly accepting Catholic hierarchy seeks to underscore Padre Cícero's identity as a *filho da igreja*, or "loyal son of the church," through a formal "rehabilitation" process that seeks to restore the priestly orders suspended in 1894.¹⁷ However, the priest's followers are apt to see him as a *filho da terra*, or "native son."¹⁸ As this land's *dono*, or "abiding owner," he wields power not just over the region's people but also over the natural world. Fortunately for a geopark in need of local allies, the Padre Cícero of "traditional" stories is in many ways a force of nature as much as he is an emblem of moral and religious beliefs.

POINTS OF CONTACT: NATURE'S ANTIQUITY

The single most immediately obvious characteristic of the Araripe geopark as it appears in scientific descriptions is its dazzling antiquity. Accounts of the changes in a vast lake-lagoon system once spanned by land bridges regularly refer to periods of time largely beyond the scope of human imagining. The authors of these narratives repeatedly conjure up the fitful, drawn-out process through which Africa and South America slowly parted company. The Aptian-Albian and Cenomanian periods of the Araripe ecosystems last for 4 million to 6 million years; swarms of tiny *Dastilbe* fish leave "thousands or millions" of traces of their existence in the Crato Formation's limestone and in "the coeval and similar sediments" located in present-day Gabon and Equatorial Guinea (Herzog et al. 2008, 27). Fossil fish that regularly show up in the Araripe Basin may reveal common ancestors who lived in Africa some 350 million years ago. That the continents that would emerge from the breakup of Gondwana could be described as "new" or "modern" reinforces a sense of Earth's unfathomable antiquity. To run a fingertip over the image of granite boulders in the Horto that date back 600 million years

16. Potential new members include geo-organizations in Rio Grande do Sul (Paleorrota), the Pantanal (Bonito), Minas Gerais (Quadrilátero), as well as sites in Chile and Venezuela. For a discussion of these Brazilian geological sites, see Nascimento 2010.

17. The bishopric of Crato recently mounted a formal campaign for the restoration of Padre Cícero's priestly orders, which the church suspended in 1894. In addition, the Church of Our Lady of Sorrows was declared a minor basilica in 2008, a title that carries special ceremonial rights conceded by the pope. For a commentary on the "rehabilitation" and emergence of Padre Cícero as a new icon in the church, see Sanchis (2007).

18. Sanchis (2007, 21–22) briefly mentions the "ecological" aspects of the devotion: "O 'povo,' na Terra, antes do Céu: a ecologia" (The "people," on Earth, before [they are] in heaven: ecology).

is to experience a sensation of immensity that only underscores the inadequacy of finite measurements.

The challenge to ordinary conceptions of time created by mind-boggling statistics finds a complement in photographs of the Horto. Unlike shots of a number of the other geosites, which feature verdant hills and sparkling waterfalls, the great majority of these images suggest more elemental beginnings. One of the most striking of these photos stretches across two pages of the glossy album titled *The Araripe Geopark*. While the left side shows a densely-populated city set on a green plain, the right is entirely focused on a single boulder. In contrast to the bushy, drought-resistant trees that surround the distant city, this massive rock sits behind a tangled clump of spiny, almost-leafless trees. Irregular patches of bronze lichen provide a somber contrast to the bright white buildings in the background (figure 1).

The visual message that the Horto is not just very old but also primal reinforces textual descriptions of its “crystalline” foundation, said to date back from the Proterozoic and/or Paleozoic era (Herzog et al. 2008, 30). Other shots of weathered granite spheres piled atop one another accentuate the notion of this hilltop as the bedrock of the Cariri and the New World. The stark monumentality of the hilltop sets it apart from other geotopes whose lush array of ferns and waterfalls is decidedly more welcoming. This starkness also underscores the idea that human habitation represents a last-minute addition to a long-unfolding sedimentary

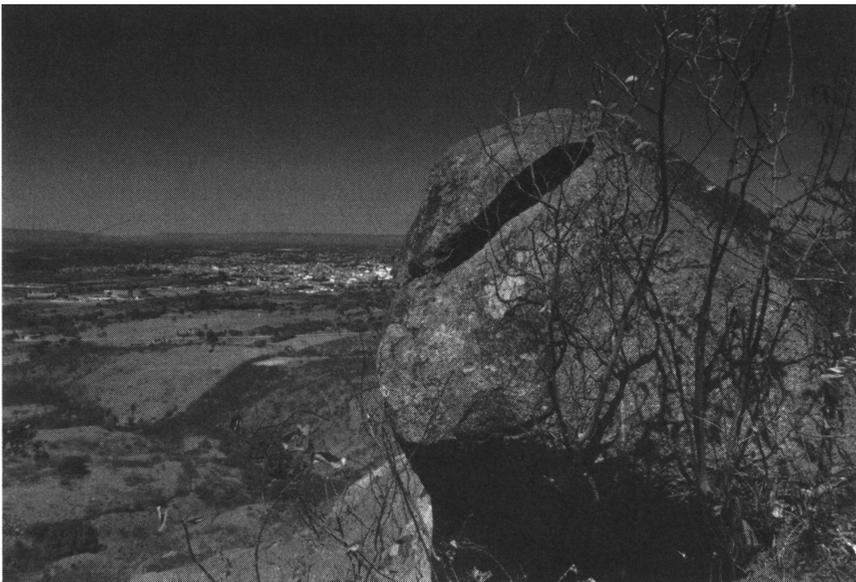


Figure 1 The ancient granite hilltop of the Horto with the city of Juazeiro do Norte in the background. Courtesy of Daniel Roman.

process. In one of the few photos of the Horto that feature buildings, these similarly miniature structures cling to the very top of the hillside like a thin icing atop an enormous, rocky cake.

Nature's unmistakable antiquity finds echoes in accounts of the Horto by pilgrims and pilgrim-residents (those visitors who come to live in Juazeiro but continue to insist on their identity as *romeiros*). These narrators' sense of the Horto's antiquity is less likely to find expression in statistics than in direct, sometimes seemingly fantastic assertions of its imperviousness to time.

Storytellers' frequent description of Juazeiro as the New Jerusalem and the comparison of particular landmarks to others in the Holy Land (the Salgadinho River is the River Jordan, the Horto is the Garden of Gethsemane, and so on) are, in part, an insistence on the supposedly ageless nature of the backlands city that only began emerging in the late nineteenth century. Tales that associate Juazeiro with the biblical Jerusalem extend its roots into a mythic past that is even older than the remote prehistory on which the scientific documents insist.

Pilgrims' fixation on the biblical past does not mean that they lack all knowledge of more recent northeastern Brazilian history. Stories involving Padre Cícero and the Horto are often rich in firsthand details. Many accounts of the "war" or insurrection of 1914, in which Juazeiro fought off government forces bent on subordinating it to neighboring Crato, have been handed down from participants in the conflict (for a detailed study of the war of 1914, see Camurça 1994). Recent historical equivalents of the fossil record, remnants within the Horto of an actual defensive wall erected on the eve of the invasion, reinforce these stories' roots in actual occurrences.

Stories concerning Padre Cícero's trip to Rome in 1898 and accounts of his attempts to construct a church based on the Milan Cathedral in the Horto are other good examples of tales firmly rooted in historical events.¹⁹ Often, however, stories that begin as accounts of a particular occurrence balloon into more general assertions of Padre Cícero's powers and of Juazeiro's timelessness. "Pois é, este Juazeiro do meu Padrinho é como ele, que não tem começo ou fim," says one older pilgrim from the state of Alagoas as she looks down over Juazeiro from the hilltop she first visited as a child. "O Juazeiro é mais antigo do que o próprio tempo; aqui a gente vê onde o Adão e Eva andaram ainda antes do que Deus pensou em criar a serpente."²⁰

One of the most widely repeated of these stories that mingle ideas concerning the Horto's antiquity with convictions about Padre Cícero's long-standing powers over nature focuses on a worker named Manuel Germano. When the man tumbles to his death from the scaffolding of the Horto church, Padre Cícero proceeds to revive him. The priest then asks if he wants to go straightaway to heaven or resume his life on the earth. The tale leaves no doubt about the man's loyalty

19. Padre Cícero undertook the almost nine-month trip in an unsuccessful attempt to have Pope Leo XIII reinstate his priestly orders.

20. Woman, born Águas Belas, Alagoas, 1937, laundress, no formal schooling (interviewed November 12, 1982): "So then, my Padrinho's Juazeiro is like him, it doesn't have a beginning or an end. Juazeiro is older than time itself; here we see where Adam and Eve walked even before God thought to create the serpent."

to both the priest and his family. However, it is once again an affirmation of the elemental powers that the priest's followers invest both in him and in Juazeiro. "Aí," explains one storyteller by way of conclusion:

o meu Padrinho perguntou para ele se ele queria voltar para a terra ou se queria seguir para o céu. Manuel Germano olhou para ele e disse, "Oh, meu Padrinho, eu quero viver. Pois o céu é muito lindo, mas tenho meus filhos a criar e o Sr. para servir." Então o meu Padrinho Cícero disse, "Muito bem" e Manuel Germano se levantou e voltou ao trabalho. Pois quem tem poder sobre o vento e a chuva manda até nos mortos. E o mistério do meu Padrinho vem do começo dos tempos, viu? Assim que todo mundo quer chegar aqui.²¹

POINTS OF CONTACT: NATURE AS A CONSTANTLY EVOLVING PROGRESSION OF EVENTS

Astonishing in its age, the world that appears in scientific descriptions of the Araripe geopark project is also remarkable in its constantly evolving nature that goes beyond random movement to constitute a particular trajectory. The fact that these changes leave a record subject to reconstruction and interpretation by contemporary humans endowed with a capacity for careful observation allows the present to be seen as "to some degree, the key to the past" (Herzog et al. 2008, 60). Thanks to the tantalizing wealth of the fossil record, this evolutionary process is particularly obvious in the Cariri, which is home to a wealth of ancient creatures, including the world's oldest bee.

All of the science-based texts are full of a sense of movement. Millennia may come and go in a single sentence. "The history of the basin is closely linked to the Upper Jurassic through the Lower Cretaceous period when the continents South America and Africa—the former western Gondwanaland—slowly broke apart due to the creation of seafloor, therefore forming the northern part of the South Atlantic Ocean," one of the narratives asserts (Herzog et al. 2008, 21). Following sections of the book build on this theme of constant motion in more recent eras.

Accounts of the geopark are full of references to an ongoing succession of life-forms in which new species continue to develop. "During a period of about 10 million years, flowering plants and pollinating insects developed a close, symbiotic relationship that triggered an enormous diversity of newly evolving insects and angiosperm species," the authors of *UNESCO Araripe Geopark* explain (Herzog et al. 2008, 53). These species then undergo new transformations in which their legacy remains visible to the discerning eye. Long-extinct spiders, for instance, assert their continuing presence in myriad descendants ranging from tiny, crablike creatures to tarantulas. Likewise, at the same time that the giant fishes *Axelrodichthys araripensis* and *Mawsonia gigas* evoke far older, still-surviving coelacanths, they open the way to the emergence of primitive amphibians. The

21. Man, born Palmeira dos Índios, 1961, resident of Juazeiro for thirty years, carpenter, four years' formal education (interviewed August 1, 2005). "So then, my Padrinho asked him if he wanted to return to Earth or if he wanted to keep traveling to Heaven. Manuel Germano looked at him and said, 'Oh, my Padrinho, I want to keep on living. Heaven is very pretty, but I have my children to raise and you to serve.' So my Padrinho Cícero said, 'Very well,' and Manuel Germano got up and went back to work. For he who commands the wind and rain also has power even over the dead. And the mysterious power of my Padrinho comes from the beginning of time, see? That's why everyone wants to come here."

sailplane-like pterosaurs—of which the Araripe Basin is home to more than a third of all known fossils—are marvelous in their own right. However, their bony wingspans are all the more worthy of attention for the clues they offer in regard to the development of modern birds.

If individual species change over time, so does the land itself. During some epochs, the Araripe Basin reveals direct links to saline sources; in other periods, it is largely cut off from the Atlantic Ocean and its array of emerging marine life-forms. As the tectonic movements to which it is subject create and destroy habitats, they may spur the appearance of new life-forms that incorporate selected features of far older plants and animals. The existence of Gondwana vegetation patterns that go back 150 million years within a host of present-day ferns confirms the close relationship between them and their vanished predecessors. That multitude of reptiles, insects, amphibians, and birds that has survived within the National Araripe Forest—a pioneering government-mandated set-aside established in 1946—reveals similar traces of species that inhabited a world that no longer exists.

The stunning detail characterizing a number of the fossils—a bird's feather, the pointed leaves of an early flower, the finely textured scales of a fish available for purchase, alas, on eBay—gives them an ongoing vividness that belies their age.²² Although the turtles and crocodiles preserved in stone have been dead for millennia, their physical perfection creates a wondrous aura of contemporaneity.

A similarly strong sense of connection over time runs through many narratives regarding Padre Cícero. The priest's ability to connect the past to the present and the future is particularly clear in prophecies attributed to him by followers. ("My Padrinho always said that there would come a day . . ." they may assert.) This particular connection over time may also have a physical aspect particularly clear in numerous stories regarding stones in the Horto and Holy Sepulcher (Santo Sepulcro). These stones are often said to bear inscriptions that the priest traced with his own index finger. The most famous of these is a large rock bearing Padre Cícero's name.

Although the past that these stones evoke is relatively recent, their ability to summon up a bygone era links them to the fossils in some storytellers' minds. It also suggests ties to indigenous *pedras de letreiro*, painted or incised "writing stones" onto which prehistoric peoples traced pictographs of animals and children's feet.²³ Even though these stones are by no means as ancient as the fossils, they are viewed as verifying the presence of an older world that has left a message for the present.

Older persons in some corners of the Cariri often recall a time in which the fossils served as children's playthings. Some can remember cracking open smooth,

22. An advertisement for the fish, identified as a *Vinctifer comptoni* from the Santana Formation (price tag, \$129.99) appeared on eBay on May 28, 2009 (<http://cgi.ebay.com/RARE-FOSSIL-SANTANA-BRAZIL-VINCTIFER-COMPTONI-/350454568569>). The description noted that fossils from Brazil "have become extremely scarce, inasmuch as they can no longer be exported."

23. These stones exist in various parts of the Northeast. Although apparently similar specimens have been well researched in the Sete Cidades region of Piauí, there is only one master's thesis on their counterparts in Ceará (Limaverde 2006).

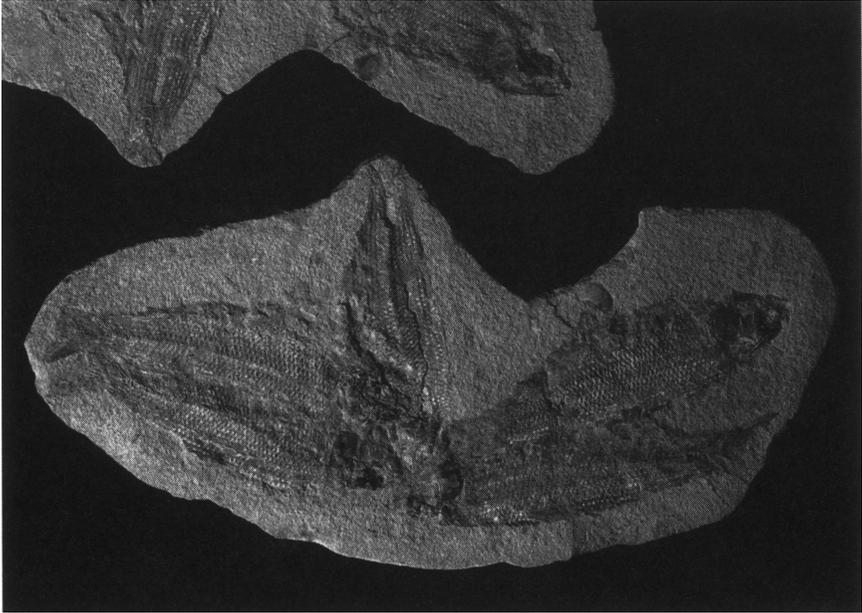


Figure 2 Fossil imprint of shoal of *Tharrhias araripis*, Santana Formation. Courtesy of Daniel Roman.

round rocks in search of the fish tucked within (figure 2). A number of these persons continue to believe that the *pedra-peixes*, or “stone fish,” date back to the time of Noah’s ark. Although presently inert, these creatures are thought not to have died but instead to await rebirth. (“Se eles tivessem morrido, teriam apodrecido,” one resident of fossil-rich Jardim observes with great conviction.)²⁴ Decidedly concrete and yet suffused with mystery, they give special meaning to long-standing prophecies about a day in which the backlands will become a sea (“quando o sertão virar mar”).²⁵

Although stories about Padre Cícero rarely mention fossils (the granite of the Horto far predates these), the two narrative elements occasionally come together. This sort of mingling is most common in tales and prophecies regarding a giant stone said to seal the mouth of the Batateira River in Crato, another geosite in the Araripe geopark described as “transition sediments” (Herzog et al. 2008, 36). Followers of the priest frequently insist that one day this stone will become

24. Man, born Jardim, Ceará, 1972, ice cream vendor, five years’ formal education (interviewed July 20, 2006). “If they had died, they would have rotted.”

25. These messianic visions recall another deeply important messianic community, that of Canudos, led by the *beato* Antonio Conselheiro, which military forces of the new Brazilian Republic attacked four times and finally razed in 1897. For a revealing comparison of Juazeiro to Canudos, see Della Cava (1968).

dislodged, thereby unleashing the waters of the river in a new, apocalyptic deluge reminiscent of the biblical Flood. On this day, the original ark, long hidden in the Horto, will carry Padre Cícero's followers to safety as the fish awaken from their stony slumber and swim off into the rising tide.

The idea of scientific evolution, in which older life-forms gradually morph into outwardly unrelated descendants, finds a partial correlate in pilgrim storytellers' insistence on Juazeiro as a kind of living palimpsest in which the past shines through the present without negating the reality of either. Storytellers often claim that persons who look upon the Horto with the eyes of faith will see the once thickly forested hillside superimposed on the now largely treeless space dominated by the giant statue that doubles as a perch for multiple television antennae. "A história do meu Padrinho Cícero nos ensina que tudo muda e que tudo fica," declares one young pilgrim. "Pois uma coisa sempre dá em outra, nada some por completo. Que a pessoa que não acredita nele acha que o mundo é só isso que a gente está vendo. Mas quem éromeiro sabe que tem coisas que não dá para a gente enxergar. Assim que o meu Padrinho fica segurando Juazeiro com uma cadeia de ouro em volta até aquele dia em que tudo o que vinha do começo aparece junto com o que depois chegou a ser."²⁶

POINTS OF CONTACT: NATURE AS A SERIES OF INTERRELATED FORMS

If the fossils associated with the Araripe geopark suggest a world in ongoing transformation, they also document the degree to which this world constitutes an intertwining whole. Rather than a collection of self-contained forms, these remnants of another era suggest how the pieces of a moving puzzle came together in a particular time and place.

One of the most important pieces of this puzzle is the already-mentioned dependent relationship between emergent flowering plant and pollinator animal forms that marks the Early Cretaceous period. "What would our present world be like without grasslands, deciduous trees, flowering plants, and fruits without bees and butterflies?" the authors of *The UNESCO Araripe Geopark* demand (Herzog et al. 2008, 54). Although the fossil of a tiny bee is unprepossessing in its own right, its testimony to this larger process is immensely significant.

This process extends beyond evolutionary patterns involving plants and animals within the Araripe Basin to include a series of geological entities whose dynamism finds particularly memorable expression in "a perpetually changing mosaic of plates on the Earth's outer layer" (Herzog et al. 2008, 26). "Instead of seeing isolated continents majestically moving around, we now understand the surface of our Earth to be a connectedness of life that responds to geological transitional

26. Woman, born Seridó, Rio Grande do Norte, 1992, primary school teacher, twelve years' formal schooling (interviewed December 11, 2008): "The story of my Padrinho Cícero teaches us that everything changes and everything stays the same. So one thing always becomes another, nothing disappears completely. The person who doesn't believe in him thinks that the world is only what we see before us. But a pilgrim knows that there are things that we can't perceive. So then, my Padrinho continues to protect Juazeiro by wrapping a golden chain around it until the day that everything from the world's beginning appears together with all that later came to be."

stages," the authors declare (Herzog et al. 2008, 27). Once again, their emphasis is not just on ongoing motion but on the transformative relations among seemingly disparate elements.

This insistence on dynamic systems finds particularly clear expression in the photos accompanying the geopark descriptions. Although close-ups of individual fossils abound, the most striking shots depict those more complex assemblages in which plants, rocks, and water mingle in a wide variety of ways. Each geosite is meant to represent a different geological moment, but the significance of each depends on its place within a multifaceted system.

Environmental interdependency serves as a bridge for the introduction of the sorts of present-day development issues of interest to the UNESCO project. Although the original application to the geoparks program concentrates on descriptions of sediments and fossils, it also includes a section on contemporary economic issues. Here, humans make a direct entrance into the larger world that the dossier so carefully describes.

This human presence has been signaled earlier by the presence of indigenous remains (e.g., pottery, stone tools) and a few pictorial references to history (a recently restored train station with palatial touches, the thick bricks of a nineteenth-century sugar plantation, and a brightly painted mansion). The concluding sections, in contrast, stress contemporary threats to all that has gone before. These threats include not only long-standing international traffic in fossils but also a range of environmental problems, to which I will return.

The interrelated quality of nature takes a somewhat different form in oral stories in which human beings are often present from the start. In contrast to the scientific narratives, which stress the coemergence of ultimately separate species, these tales tend to portray the extremely porous boundaries among natural entities. The narratives are full of ongoing transformations between what scientists would classify as living and nonliving entities.

A ball of fire in the oral accounts, for instance, may turn out to reveal a lion and serpent at its center. One or both of these creatures may then assume human form. In some of the stories likely to appear particularly odd and intriguing to outsiders, droplets of human blood immediately congeal into stones.²⁷ Blood may also open rocks that proceed to release an abundance of water. Often, Padre Cícero cracks open a stone that a pilgrim has brought from a distant property wracked by drought. In the moment that water comes gushing out of the stone in Juazeiro, a perennial spring suddenly appears on the formerly parched land.

Some of these transformation stories have less to do with Padre Cícero than with guardians or *mães*, "mothers" of the waters whose straight black hair and copper skin suggest an indigenous identity. Other tales initially look like retellings of well-known events from the Bible. In the following example, an older traditional healer who was born in Alagoas but who moved to the Cariri as a young woman describes how the blood of the newly crucified Christ opens the

27. All of these things happen in the *cordel* classic *História da Princesa da Pedra Fina*, by João Martins de Ataíde (1973). Similar references can be found throughout much of the *literatura de cordel*, a pamphlet literature whose verses are tightly linked to the oral tradition (see Slater 1989).



Figure 3 The Batateira River in Crato, which figures in numerous pilgrims' stories. Courtesy of Daniel Roman.

stone tomb in which the soldiers have encased the body. Her evocation of a world that spurns clear divisions between the human and nonhuman is likely to startle persons accustomed to the standard New Testament version of the story. From her perspective, stones that a geologist would see as inert are actually another life-form. Waterfalls are similarly alive and mobile (figure 3); just before the rainy season, one sings out right beneath her door.

Olhe então, foi assim. Os soldados mataram Nosso Senhor, aí botaram Ele na pedra e botaram outra pedra em riba. Então, o rei Herodes disse, "Ha, agora eu quero ver o Senhor sair daí!" Aí, um soldado teve vontade de beber água. Pediu água e aquela pedra foi se abriu e a água começou a brotar de dentro. Aí, o soldado bebeu aquela água e quando espiou pro céu Nosso Senhor ia subindo numa nuvem. Então a santa Madalena disse, "Olha, lá vai Ele!" aí o rei Herodes disse, "É, não, não pode ser ele," mas ela disse, "É, sim." Porque o sangue dele tinha aberto a pedra e Ele escapuliu. Até hoje tem aquela nascença lá no Santo Sepulcro, você estando em riba dá para espisar pra nascença em baixo, viu?²⁸

28. Woman, born Alagoas 1930, arrived Cariri 1947, healer and midwife, no formal education (interviewed January 13, 2007): "So look, it happened like this. The soldiers killed Our Lord, then they stuck Him in the rock and threw another rock on top. Then, King Herod said, 'Ha, now I want to see you get out of there!' Then, a soldier had an urge to drink some water. He asked for water and the rock broke open and water began to flow from deep within it. So, the soldier drank that water and when he looked up at the sky, Our Lord was rising in a cloud. Then Saint Mary Magdalene said, 'Look, there He goes!' so then King Herod said, 'No, that can't be him,' but she said, 'Oh yes it is!' Because His blood had opened

POINTS OF CONTACT: NATURE AS FULL OF MYSTERY

The natural world that emerges in descriptions of the Araripe geopark is thoroughly astonishing, thanks in part to all that it reveals. However, this world is equally remarkable for all that it continues to conceal. Although scientific awareness of the Araripe Basin fossils dates back almost two centuries, various fundamental issues, such as the precise manner in which today's continents broke apart from one another, remain unsolved. Other puzzles center on a host of more specific details. For instance, do the Arajara clay deposits and yellow fluvial sandstones represent simply one more sediment group, or must they be classed as a full-fledged geological formation? Which parts of the lake system once covering the Araripe Basin were sweet water and which saline? How can scientists be sure if a particular type of fossil is of plant or animal origin?

The aura of mystery surrounding many of these questions owes much to a scientific language that presents contemporary landscapes as wondrously immense artifacts far predating humankind. "The Exu Formation is composed of hard, cohesive sandstones, which form the most prominent lithologic unit of the Araripe Sedimentary Basin. This is a resistant layer, made of reddish, ferruginous sediments. These sandstones usually present crossed stratifications, which demonstrate that sands were deposited by a system of winding rivers, more than a hundred million years ago," reads one of any number of descriptions in which the seemingly matter-of-fact reference to an infinitely distant past only heightens a sense of something beyond human understanding (Sales Costa Filho 2008b, 78).

This sense of mysterious immensity finds reinforcement in the accompanying photos. Full-page illustrations of thick limestone stalactites bathed in a peach-colored light and of odd-shaped rocks that look as if they might have fallen to Earth from another planet inspire not just curiosity but also awe. Even readers long familiar with the region are likely to ask, "What lies beneath the surface? How did these things come to be?"

This mystery does not have much to do with human beings. Although photos of indigenous artifacts are similarly enigmatic, the human presence is more prone to serve as a foil to a thoroughly wondrous nature. The texts cast human beings above all as heirs to this ancient legacy, first noted in the scientific literature by the early nineteenth-century German naturalists Johann Baptist von Spix and Karl Friedrich Philipp von Martius (1824).²⁹

Oral narratives more readily include humans in their accounts of those enduring mysteries prominent in tales of enchanted beings and enchanted places. Although by no means restricted to accounts of the Horto, references to enchantment are particularly prevalent in such narratives.

"Enchantment" in accounts of Padre Cícero and Juazeiro holds a different meaning than it does in many present-day advertisements that promise an evening of enchantment at a luxury hotel or on a Caribbean cruise. Rather than read-

the rock and He'd escaped. Even today there is that spring there in the Holy Sepulcher, from the hilltop you can make out the spring below, see?"

29. Spix and Martius published a report of a Santana fossil fish in 1824. The Scottish naturalist George Gardner (1970) would publish the notes on his travels through the Cariri in 1841.

ily visible forms of allure, the process of enchantment involves the concealment and obfuscation of a thing or person's original nature. Disenchantment, in contrast, does not refer to the process of alienation famously described by the sociologist Max Weber, but instead to a welcome return to this temporarily hidden original state.³⁰ The sudden reanimation of fish long "frozen" into stone envisioned by some storytellers is an excellent example of this sort of transformation.

As in the case of the *pedra-peixes* concealed within rocks that must be broken open to reveal their presence, the disenchantment of the natural world makes visible a series of objects that had been lost from sight. In the often-repeated story of the enchanted grove, for example, a group of workers who are constructing the Horto church become hungry and ask Padre Cícero for food. The priest responds by sending them into a section of the hilltop thick with brambles amid which an orchard crammed with marvelous fruit trees suddenly appears. Although the men are able to eat their fill of gigantic oranges and glistening guavas, their later attempts to return to the spot without Padre Cícero's permission fail. The grove has become reenchanting, which means not that it has ceased to exist but that it has completely disappeared from human view.

Contemporary followers of the priest often insist that this much older orchard remains intact on the now largely denuded hillside. A handful claim to have seen it gleaming in the twilight, and at least one storyteller describes a tree hung heavy with dazzling blue fruit. However, the grove remains invisible to most. Because its reappearance will herald the second coming of Christ and/or Padre Cícero (the two may be conflated), this moment of disenchantment—which will bring both social justice and the revelation of nature's long-hidden secrets—continues to be anxiously awaited.

Storytellers are inclined to associate this revelation of nature's secrets with Padre Cícero's return to Earth. Some, however, speak of the triumphant reappearance of indigenous kings and princesses. These entities are often said to have retreated into castlelike boulders and the depths of rivers and freshwater springs following the bloody defeat of the Cariri Indians by Portuguese forces in the late seventeenth and early eighteenth centuries.³¹ However, the renewed appearance of these native sovereigns after centuries or millennia in accounts of enchanted nature is often viewed as a promise of eventual victory for the storytellers.

This sense of impending victory has much to do with many of these individuals' partially indigenous ancestry. Although the mythic figures in their tales regularly refuse to share their riches with contemporary humans, they are sometimes willing to form partial alliances with the poorest members of society—persons particularly likely to be of non-European ancestry. Although these supernatural beings are frequently capricious (the rainbow bridges they unfurl are likely to melt away beneath the feet of trusting humans), they are sometimes willing to

30. Weber's (2002) famous judgment, expressed in *The Protestant Ethic and the Spirit of Capitalism*, has recently undergone numerous reassessments. See, for example, Landy and Saler (2009); Gane (2002).

31. For an examination of the *Confederação dos Cariris* or *Guerra dos Bárbaros* (1683–1713), the last major Cariri effort to resist the Portuguese, see Puntoni (2002). In the region surrounding present-day Juazeiro, those natives not killed off or forcibly expelled often fled into the forest.

share the forest's secrets with native healers. This willingness to divulge at least a portion of their secrets to a group of people who can be considered their descendants holds out the hope that they may one day place all of their wealth and knowledge at the service of their human kin.

And yet, if some oral storytellers still insist on the eventual revelation of long-existing mysteries, nature's secrets are by no means easy to decipher. Although Padre Cícero routinely uses his *mistério* to help his followers, he continues to embody an enigma that transcends human understanding. Stories in which the priest directs his followers to capture two fierce jaguars in the Chapada do Araripe mountains, and then proceeds to transform the pair into a man and woman whom he installs in the Horto, have no clear moral beyond that of Padre Cícero's superhuman (and, in this case, suggestively shamanic) powers.³² This ambiguity is a large part of the tales' appeal. "Ninguém entende esta história, só sabe que é muito grande," asserts one older woman who heard it from her grandfather when she was a child.³³ Although these stories' portrayal of a world that refuses to be deciphered sets them apart from scientific accounts in which patient investigation eventually triumphs, a shared sense of mystery nonetheless unites the two.

POINTS OF CONTACT: ENVIRONMENTAL DESTRUCTION AS A PROFOUND THREAT

Written with multiple readerships in mind, the initial geopark narratives have several principal objectives. The most pressing is to assure UNESCO's continued backing of the project.³⁴ Although the geopark commission approved the Araripe project in 2006, initial charters are provisional and the state of Ceará must therefore provide evidence that it is acting on its plans. Moreover, because UNESCO provides no more than a prestigious seal of approval, the geopark's proponents must seek both financial and political support.³⁵ These practical realities help explain the narratives' unflagging insistence on the richness of the region and its great potential. The need to attract financial and political support for the project also leads the authors to downplay potential problems.³⁶

The most fundamental goal of the UNESCO geopark program is to protect

32. Writers frequently allude to Padre Cícero's partially indigenous ancestry. Because of its identity as an oasis, and one of the few places where the prized *pequi* nut could be found in abundance, the Cariri was almost certainly a crossroads on early migratory routes.

33. Woman, born Missão Nova, Ceará, 1944, subsistence farmer, no formal education (interviewed August 4, 2007): "No one understands this story, they just know it's very important."

34. The Araripe geopark is currently undergoing a requisite reevaluation for the renewal of its UNESCO status, with results scheduled to be announced in September 2011.

35. For a motion to make geoparks a more formal, at least partially funded component of UNESCO, see "UNESCO Activities and Geoparks" (<http://unesdoc.unesco.org/images/0019/001920/192093e.pdf>).

36. In February 2009, the state of Ceará secured a loan from the World Bank for \$46 million of a total of \$66 million dollars needed to establish the Araripe geopark. For a document detailing how the money will be spent, see the executive summary of environmental and social assessment (<http://www.cidades.ce.gov.br/pdfs/2-Sumario-Executivo-Versao-Ingles.pdf/view>).

geological and paleontological entities whose destruction would signal the disappearance of “a unique window into the Earth’s history” (Herzog et al. 2008, 17). However, too blunt an exposition of social and environmental threats to nature might make UNESCO wary. An overly candid assessment might also weaken potential support for the project among government officials who could see it as a criticism of their policies.

The early geopark narratives are not completely silent about new dangers to the natural world from massive urbanization, deforestation, pollution, and damage to a fragile water table caused by factories and quarries. They are particularly frank about widespread clandestine trafficking in fossils. “In spite of the fact that the commercial trade in Brazilian fossils is strictly illegal there exists since decades an illegal trade,” the UNESCO application notes (Governo do Estado do Ceará 2005, 74). However, these narratives are apt to refer to other, equally serious problems in distinctly cautious terms. Very general allusions to the “inefficient” urban infrastructure of Juazeiro and its neighbors, the “precarious” water system, and the “complexity” of the transportation network suggest much larger problems. Similar references to the “economic fragility” of local administrative structures, the “scarcity” of locally generated revenues, and the “inexpressive practice of inter-municipal cooperation” place the blame on localities even while they acknowledge the sorts of difficulties that the geopark is partially intended to address (Governo do Estado do Ceará 2005, 102).

The tone is less polite and the observations considerably more pointed in the previously mentioned geopark blog still maintained by one of the authors of the original UNESCO application, José Sales Costa Filho, an architect and urban developer who is no longer a direct participant in the project, which now involves a much larger cast of official entities.³⁷ After describing the situation of the national parks as “truly broke,” for instance, Sales goes on to offer various mordant observations about the “swell sense of solitude” in parks too poor to boast so much as a single telephone. (“Por exemplo, o escritório das estações ecológicas Caracará e Niquiá, além do parque nacional do Viruá, todos em Roraima, está há seis meses sem telefone. O mesmo ocorre com a reserva extrativista Tracuateua, no Pará. Deve ser ótima a sensação de isolamento proporcionada pela situação.”)³⁸

As this example suggests, the blog has been most attention-worthy for the larger national and regional context that it provides for the geopark. Commentaries and news items on the Araripe project alternate with other articles on subjects such as the financial problems facing Brazil’s national parks, the Workers’ Party

37. Although the blog is organized by José Sales Costa Filho, it includes occasional contributions by others. It continues to highlight geopark news along with a number of other topics relating to the interior of Ceará.

38. “Parques Nacionais na verdadeira pindaíba,” *GeoPark Araripe*, May 20, 2009 (<http://geoparkararripe.blogspot.com>): “For example, the offices of the Caracará and Niquiá ecological stations, as well as Viruá national park, all in Roraima, haven’t had a telephone in six months. The same is true of the Tracuateua extractive reserve in Pará. The sensation of remoteness [from civilization] offered by the situation must be really great.”

government's reluctance to address problems of climate change, and the "environmental racism" directed at indigenous peoples in the state of Ceará.³⁹

Besides providing a larger context for issues that the officially sponsored documents conjure up more obliquely, these often sharply worded journalistic pieces provide a counterpoint to photographs conspicuously devoid of litter, sewage, and graffiti. The blog's broader focus makes clear the extent to which the fate of geological sites and paleontological objects are caught up in larger processes involving economic interest, social change, and political maneuvering.⁴⁰

These larger processes of change are very clear to oral storytellers, whose narratives often touch directly on present-day environmental problems. In many of these stories, human attacks on the natural world cause supernatural beings formerly apt to make occasional appearances on Earth to withdraw into a space that mortals can in no way access. Instead of remaining invisible on the Horto summit, for example, the enchanted orchard may slip away beneath the earth or go flying off to some other realm of existence. Its withdrawal leaves Juazeiro and this earth impoverished, as there is no longer any chance that it will suddenly materialize before pilgrims' astonished eyes.

The environmental devastation common throughout much of the Cariri today has made stories of enchanted nature increasingly hard to find. Accounts of the Horto orchard persist largely because of their connection to Padre Cícero and past generations of pilgrims. They also continue to be told because there is little physical evidence to disprove them. In contrast, the ongoing degradation of rocks, springs, and forests has diminished the number of stories that people tell about these. The individuals who continue to recount these tales are often precisely those healers and diviners whose activities have allowed them to retain some proximity to natural entities that play an ever smaller role in urban migrants' lives. Even among these "specialists," however, the stories increasingly take the form of reminiscences of treasures that existed in the past.

Although the oral stories' insistence on unseen, often supernatural forces make them very different from more scientific narratives, the two reveal a similar sense of impending loss. Scientists worry that the disappearance of sediments and fossils will destroy evidence crucial to the solution of long-standing mysteries as well as questions yet to be articulated. This concern finds a correlate in oral storytellers' fears that nature's angry departure will adversely affect a communal destiny. "Já ajudei a dar a luz a mais de quinhentas crianças. Mas como vai ser a vida delas num mundo sem mais encantado?" demands the same elderly healer who tells the story of Christ's escape from the grave. "Que eu ainda tenho meus guias que ensinam remédios para os doentes, mas aqueles jovens vão ter que confiar em remédio de farmácia."⁴¹

39. The reference to "racismo ambiental" is from a posting by Leonardo Sampaio dated February 5, 2009.

40. This political maneuvering is inevitable, especially today, when the managing council of the geopark has come to include forty-seven institutional entities.

41. Woman, born Alagoas 1930, arrived Cariri 1947, healer and midwife, no formal education (interviewed January 13, 2007): "I've already helped birth more than five hundred babies. But how are their lives going to be in a world with no more Enchanted Beings? I still have my spiritual guides who teach

This woman's comment makes clear that the assaults on nature described in the stories threaten not just the world as it once was but also a future once synonymous with hope. The increasing impossibility of disenchantment also works against the restoration of what many storytellers see as a far richer past. In their concern for ancient origins and secrets yet to be discovered, these often seemingly fantastic stories resemble their scientific counterparts.

PRACTICAL IMPLICATIONS OF CONCEPTUAL TIES

Fascinating in their own right, the similarities as well as obvious differences in the visions of nature underlying scientific narratives concerning the geopark and oral stories about magical or sacred spaces have a number of practical implications for strategic planning. The shared belief in nature's antiquity, fluidity, interrelatedness, mystery, and endangered status holds out the possibility for broadly inclusive policies and actions that can accommodate multiple meanings rather than imposing a single, outsider-oriented vision on the Cariri and the Northeast. Above all, they suggest the possibility of an alliance between these two very different groups of storytellers.

The conceptual ties that partially unite the stories also offer hope for a geopark committed not only to much-needed improvements in material infrastructure but also to creating the conditions for an ongoing two-way translation. This translation would permit a rethinking of northeastern popular culture and would encourage new understandings of the Juazeiro pilgrimage as a religious experience that is also a vision of the human place in nature. Given the disdain with which both church and state have often regarded this pilgrimage and related cultural manifestations, an identification of shared features could not be more important.

As mentioned earlier in this article, the Crato bishopric is presently moving to display greater openness to the Padre Cícero devotion through a formal rehabilitation document submitted to Rome in 2005. Although the bishopric has local critics in this endeavor, it also has firm support throughout much of Brazil.⁴² The establishment of a geopark is therefore not necessarily antithetical to institutional interests; all depends on the way that the state defines the project. Because pilgrims themselves have long considered Padre Cícero "their" saint and do not necessarily accept the church's judgments, the church's official position will be only one of many elements to determine the project's success or failure.

The word *translation* is critical to plans regarding the geopark. Although the preceding pages have stressed links rather than divergences, the two sets of stories are clearly not the same. Antiquity, mystery, interrelatedness, and transformation over time will not have the same definitions for people with different values and experiences of the land, as well as different relationships to power. The act of translation therefore necessitates a willingness to rethink these definitions.

Translation in the case of pilgrims' narratives implies an ongoing effort to

the cures for the sick, but those young people [who I delivered] are going to have to rely on drugstore remedies."

42. These conflicts found their way into a *New York Times* article (Rohter 2005).

recognize the frequent bases in environmental fact for claims made in poetic language. It also implies an accompanying respect for sometimes illiterate storytellers' powers of environmental observation. The Horto's documentable antiquity does, in some sense, make it the actual bedrock of the region, and thereby the metaphoric center of the world. Although the idea of an ark hidden amid its thorny vegetation defies literal interpretations, the notion that this drought-prone world was once awash in water is no figment of the imagination.

Likewise, although storytellers' claims that the fossils come from the time of the biblical Flood would make them contemporaneous with earlier humans, the larger notion that the creatures whose outlines were traced into layers of sediment lived in an ancient past is absolutely true. A willingness to decipher the poetic language of these stories through their tellers' logic is certain to reveal a level of attention to the world of nature that can only bolster the geopark's chances for success. Precisely because a growing number of pilgrims live in cities, the journey to Juazeiro, with its enduring focus on a physical and affective landscape, provides crucial emphasis on concerns important to the geopark. This pilgrimage's heavy presence in national media such as the powerful Globo TV network makes it a powerful public arena in which to voice these concerns.

Translation in regard to scientific descriptions of the geopark, in contrast, requires that the project's proponents acknowledge the metaphoric force behind seemingly objective claims about the natural world. Although the generally dry tone of these accounts full of facts and figures is meant to signal scrupulous neutrality, their underlying vision of the Araripe Basin is profoundly mythic. By this, I do not mean that the claims in these accounts are false, but that the driving force behind them transcends the desire for objective observation. Because this desire largely defines Western science, the comprehension, let alone appreciation, of a "folk" perspective is in no way easy.

No hidden flaw, the scientific-sounding stories' more mythic dimensions hold out hope for the larger geopark project. Much of the geopark's potential appeal to a general public lies in the public's urge to see an enduring paradise in a landscape presently marked by dramatic—often potentially disastrous—change. And yet, at the same time that this Edenic urge transforms what might otherwise be somewhat tedious descriptions of sediments into a planetary drama that can garner enthusiasm, it threatens to exclude those who speak a very different sort of language in relation to the physical world.⁴³

The granite columns that presently serve as the official markers for the Horto geosite rise above a patch of garbage-strewn baked earth carefully tucked away from the main part of the summit. There are readily comprehensible legal and economic reasons for the choice of this location. The highest point of the hill belongs to the Salesian Order (Padre Cícero's principal heirs), and is thus private property, the use of which would require complex negotiations involving money, whereas the land on which the markers stand was donated to the UNESCO

43. This Edenic urge is visible as well in an article entitled "Out of Eden?" published in the journal *Geoscientist*, in which the authors express fears that the geopark will exclude "the scientific community" from "a paleontological paradise" (Martill and Heads 2007, 21).

project. Unfortunately for the geopark, this pragmatic choice reinforces long-standing oppositions between a seemingly universal science and a regional “folk” culture, powerful elites and the powerless northeastern masses. In so doing, it invites incomprehension and a widespread popular resentment all too obvious in repeated acts of vandalism that have stripped away the geomarkers’ polished facing.

These oppositions are already present in the geopark descriptions. Although the authors dutifully allude to Padre Cícero, the massive pilgrimage that is his legacy is largely reduced to oblique references to various problems—the pressure on municipal water sources during certain moments of the year, for instance. Photos of solitary-looking rocks that offer no evidence of pilgrims’ ongoing passage reinforce the idea of the Horto as a space in which nonhuman nature continues to reign supreme. But if nature does indeed remain fundamental to accounts of Padre Cícero, its appeal to his followers reflects its central place in their own past and present lives.

My point here is not that the Horto geosite ought to be summarily relocated to another portion of the hilltop or that official geopark descriptions should be radically revised. Rather, the full story of the Horto and of the Northeast—in which Padre Cícero is increasingly transformed from folk rebel into unflinching champion of the Catholic Church—cannot be told from a single point of view. If it would be a mistake to see pilgrims’ tales as divorced from the region that they have played such a large role in constructing, it would be similarly misleading to view the geopark accounts as purely scientific stories whose concern for a remote past wholly transcends those present-day political interests that they, like the oral tales, reflect and seek to shape.

Despite their many differences, both sets of narratives describe a nature ultimately inseparable from humans and from social as well as geological ruptures and transformations. Both are deeply mythic in their vision of a world full of concealed meanings. They challenge those persons charged with implementing the Araripe geopark to move forward with caution and respect. Although allowing multiple visions of the Horto to find their place in a coherent narrative will not be easy, ongoing efforts at translation are essential to the success of the UNESCO project as a whole. If this most familiar of the geosites remains a fixed and finite territory, it is also an unfolding story whose particular evolution will do much to determine larger perceptions of the Cariri and the Brazilian Northeast.

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