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HUMBOLDT'S MEXICAN TEXTS AND LANDSCAPES*

ANDREW SLUYTER

ABSTRACT. While in New Spain from 1803 to 1804, Alexander von Humboldt interacted with some of its landscapes and the texts that represented them. Analysis of those interactions regarding the Basin of Mexico and the Gulf lowlands demonstrates what purely text-based studies of the production of places cannot: The contrasting landscape elements and patterns that had emerged over millennia during precolonial times in those two places, their relative degrees of depopulation during the colonial era, and the relative degrees of rigor Humboldt applied to interacting with the resulting landscapes and the texts that represented them greatly affected his representations of those places in his 1811 *Essai politique sur le royaume de la Nouvelle-Espagne*. His representations of the precolonial Basin of Mexico as productively developed and of the precolonial Gulf lowlands as pristine have influenced the transformations of those places in the two centuries after New Spain became the Mexican republic through its wars of independence (1810–1821). *Keywords:* economic development, Alexander von Humboldt, landscape, Mexico, pristine myth.

Notwithstanding the extreme care which I bestowed in verifying the results, I have no doubt of having committed many [plusieurs] very serious errors, which will be pointed out in proportion as my work shall excite the inhabitants of New Spain to study the state of their country.

—Alexander von Humboldt, 1811

The bicentennial of Alexander von Humboldt's year-long sojourn in Mexico, from March 1803 to March 1804, provides the stimulus to analyze his role in the relationship between long-term landscape transformation and the cultural bias that continues to be such a central orthodoxy in modern economic development (Sluyter 1999). That orthodoxy, the "Pristine Myth" in William Denevan's (1992) terms, maintains that the precolonial landscapes of the Americas were undeveloped and, therefore, that non-Westerners are unproductive and economic development must equate to cultural westernization (Sluyter 2001). James Blaut (1993) coined a slightly different term to label that same orthodoxy: the "myth of emptiness," which dictates that development must diffuse from the West to the non-Wests. Despite this article's historical focus on Humboldt's visit to late colonial Mexico, the following analysis directly concerns present-day economic development (Sluyter 2002).

Mary Louise Pratt (1992) has already cast Humboldt in a central role in that phenomenon. She concluded that Humboldt reinvigorated the colonial pristine myth on the eve of the independence of many of the Latin American republics. His characterization of the Americas as "primordial nature" turned a colonial belief into a

* Although the views expressed in this essay do not necessarily reflect those of the people acknowledged, I thank Ulrike Leitner for sharing insights on Humboldt's unpublished field notebooks, the staffs of the Latin American Rare Books Room of Tulane University and of the Special Collections Room of the Louisiana State University, and the anonymous reviewers.

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modern scientific fact: “Even the label ‘New Continent’ is revived, as if three centuries of European colonization had never happened or made a difference. What held for Columbus held again for Humboldt: the state of primal nature is brought into being as a state in relation to the prospect of transformative intervention from Europe” (Pratt 1992, 126–127). That conclusion derives from textual analysis of Humboldt’s writings in the context of his influence on the modern sciences as well as on the political elite and foreign investors in the Latin American republics that became independent from Spain over the three decades following his 1799–1804 expedition (Miranda 1962, 106–107, 205–210; Livingstone 1992, 133–138; Pratt 1992, 111–113, 175–182; Florescano 1994, 203–204; Mendoza Vargas and Bernal 2003).

Although the work of Pratt and others such as Edward Said (1979) spawned a boom in textual analysis of scientific travel literature that generally confirmed and elaborated her conclusions, she has also had critics. The most meaningless offer the cliché that because Humboldt was, like everybody, a product of his time he cannot be held to the moral standards of ours. They thereby misrepresent Pratt’s goal, which is to understand, not to judge, Humboldt’s role in a process that has so greatly transformed the world precisely because he was not only a product of his time but also a major “producer” of his time—and ours. The more meaningful critiques reanalyze his texts using alternative assumptions and thereby come to somewhat different conclusions about his role in that process (Sachs 2003).

Yet, irrespective of the conclusions of such textual analyses, they alone will never resolve Humboldt’s role in the (post)colonial reinvigoration of the pristine myth because they verge on idealism (Sluyter 1997). Nobody, not even someone of Humboldt’s stature, can impose an idea about a place on a place simply by writing about that place. Even accepting Pratt’s conclusion that Humboldt’s writings were centrally involved in the modern reinvigoration of the colonial idea that the precolonial landscapes of Latin America were pristine, he based those texts in part on preexisting texts and on his observations of landscapes. All of those texts—the ones on which Humboldt drew, as well as those he wrote—partially derived from the colonial transformation of those landscapes and subsequently became involved in their further transformation.

To understand Humboldt’s role in that process requires analysis not only of the texts he wrote and drew on but also of his interactions with landscapes that had undergone dramatic transformations during colonial times. This study focuses on the interactions between Humboldt’s 1811 *Essai politique sur le royaume de la Nouvelle-Espagne* (hereafter “the *Political Essay*”) and two landscapes that he directly observed and described in that text: the Basin of Mexico and the lowlands along the Gulf of Mexico.¹ The textual pole of the analysis, the *Political Essay*, is one of Humboldt’s major publications and the only one to derive from the Mexican segment of the expedition. The following sections sketch that text’s genesis and content and address in turn each of the two landscapes by establishing that neither was pristine in precolonial times and by assessing how Humboldt represented them: one as pristine; the other as not. The subsequent sections contrast Humboldt’s in-

FIG. 1—Humboldt's route in New Spain with locations of the Basin of Mexico (see Figures 2 and 3) and the Gulf lowlands (see Figures 4 and 5). *Source:* Modified from Brand, 1959, fig. 1. (Cartography by the author and Clifford Duplechin, Department of Geography and Anthropology, Louisiana State University)

teractions with the Basin of Mexico and the Gulf lowlands, in terms of both their landscapes and the texts that represent them, to reveal some of the factors that resulted in his representing them so differently.

THE POLITICAL ESSAY

Humboldt arrived in Acapulco on 22 March 1803 and departed nearly a year later, on 7 March 1804, from Veracruz (Figure 1). With the support of Viceroy José de Iturrigaray, he traveled throughout central New Spain, made firsthand observations, and collected unpublished statistics and maps (Sluyter 2006). Before sailing for Philadelphia by way of Cuba, he presented the viceroy with a synthesis of the results, *Tablas geográficas políticas del Reino de Nueva España, que manifiestan su superficie, población, agricultura, fábricas, comercio, minas, rentas y fuerzas militares* (AGN, Historia, vol. 72, part 2, ff. 271–294; Humboldt [1799–1859] 1980, 125–126; [1803–1804] 1970).

On returning to Europe, Humboldt took up residence in Paris and began to prepare his notes for publication in multiple volumes under the uniform title *Voyage aux régions équinoxiales du Nouveau Continent, fait en 1799, 1800, 1801, 1802, 1803 et 1804 par Alexandre de Humboldt et Aimé Bonpland* (1810–1838; Leitner 2000). Sev-

eral volumes treat Mexico to some degree, but only the *Political Essay* does so directly and systematically. Its three volumes, two of text and one an atlas, appeared in fascicles beginning in 1808 and in complete form under the uniform title *Essai politique sur le royaume de la Nouvelle-Espagne avec un atlas physique et géographique* in 1811, the year after Mexico's wars of independence began and a decade before final victory over Spanish sovereign power (Humboldt 1811, 1812; Sluyter 2006). The work became immensely popular, so Longman of London published a four-volume English translation that same year (Humboldt [1811] 1966; Leitner 2000). The *Political Essay* incorporated the *Tablas geográficas políticas* but greatly expanded the nontabular sections with material from his field notebooks, or *Tagebücher* (singular *Tagebuch*), most of which have been published (Humboldt [1801–1804] 1986–1990, 1: 389–392). Humboldt so thoroughly mined those *Tagebücher* for publishable text that they generally do not contain landscape descriptions beyond those in the *Political Essay* (Leitner 2004).

The 1,833 pages of the *Political Essay*, excluding the lengthy index, divide into a “Geographical Introduction” and fourteen chapters, themselves divided among six books (Sluyter 2006, 99). The “Geographical Introduction” details Humboldt's sources for maps and other figures. “Book I” treats the land of New Spain; “Book II,” the people; “Book III,” each of New Spain's fifteen political territories; “Book IV,” the prospects for agricultural and mining development; “Book V,” the prospects for manufacturing and commerce; and “Book VI,” state revenues and military defense. But, beside being a unique compilation of detailed data on late colonial New Spain, the *Political Essay* constitutes an early economic development report (Sluyter 2006, 100). Humboldt's explicit purpose, echoed in his correspondence with Viceroy Iturrigaray, presages similar statements in current country-level economic development reports, such as the World Bank's 2001 prospectus for Mexico (Humboldt [1799–1859] 1980, 125–126; [1803–1804] 1970, 142; [1811] 1966, 1: xvii, 1; Giugale 2001, 1). The form of the *Political Essay* foreshadows the conceptual framework underlying modern economic development, causing Donald Brand (1959, 123) to characterize it as “the first modern regional economic geography. . . , concerned primarily with the sources of wealth and their distribution and utilization.”

THE BASIN OF MEXICO

By the time Humboldt saw the landscapes of the Basin of Mexico in 1803, nearly three centuries of colonization had caused much desettlement and dedevelopment (Figure 2). The late precolonial population of the Aztec capital of Tenochtitlán had been some 300,000, a metropolis atop a settlement hierarchy with a total population of around 1.5 million in a basin with an area of some 7,000 square kilometers (Ezcurra 1990). In relative terms, population had fallen by about 90 percent between 1520 and 1620, the first century of colonization, and recovered to only about a third of the late precolonial population by the time of Humboldt's visit (Ezcurra 1990). The dense precolonial population had altered basin hydrology with such engineering works as the Albarradón of Nezahuacóyotl, a dike more than 10 kilo-

meters long that prevented Lake Texcoco's saline waters from penetrating the *chinampa* zone that partially ringed Tenochtitlán. The chinampas were agricultural fields built on the lake bed and separated by a network of canals, the resulting system incorporating such functions as frost mitigation, nutrient recycling, and, possibly, subirrigation to produce sustainably high yields (Sluyter 1994; Crossley 2004). The freshwater in the southern half of the interconnected lacustrine system derived from springs that flowed from the basalt slopes rimming the two southern lakes, Xochimilco and Chalco, which in turn fed into Lake Texcoco in the vicinity of Tenochtitlán. During the late precolonial period, some 10,000–20,000 hectares of chinampas existed, about half ringing Tenochtitlán and the other half stretching southeastward through Lakes Xochimilco and Chalco. By Humboldt's visit only the latter chinampa zone survived (Armillas 1971).

Yet, even though those settlement and agricultural systems had suffered nearly three centuries of colonial degradation by 1803, Humboldt did not, as content analysis of the *Political Essay* demonstrates, characterize the precolonial basin as pristine (Figure 3). He described the vestiges of precolonial hydraulic engineering works—the focus of this analysis because they formed such a significant aspect of the basin's infrastructural development—in some detail and singled out the chinampas as highly productive (Humboldt [1811] 1966, 2: 29, 96–97, 101, 117–119). And he did acknowledge that the precolonial population of the basin was much greater than it was in 1803. His estimate that some 400,000 people lived in Tenochtitlán, in fact, exceeds the current estimate by a third (Humboldt [1811] 1966, 2: 80–81; Ezcurra 1990). Based on his constant assumption that population density correlates with development success and potential, Humboldt therefore concluded that people had more effectively developed the basin in precolonial than in colonial times (Humboldt [1811] 1966, 1: 91, 94–95, 99).

Humboldt seems to have recognized that European colonization had negatively impacted the basin's hydrology and thereby its agricultural development. He does not seem to have understood the functional relationship between the systems of chinampas and dikes, the sole intention of which he believed to be to prevent flooding of Tenochtitlán. He entirely ignored the relationship between the dikes and the creation of a freshwater embayment and chinampa zone in Lake Texcoco. But he did implicate colonial drainage of the lakes in the destruction of the basin's agriculture ([1811] 1966, 1: xxvi–xxvii; 2: 10, 14, 31–34, 120–123, 147–148). Drainage, Humboldt lamented, had “destroyed the germ of fertility in a great part of the plain of Tenochtitlan [*sic*]. Efflorescences of carbonate of soda (*tequesquite*) have increased in proportion as the masses of running water [*l'humidité de l'atmosphère et la masse de eaux courantes*] have diminished. Fine savannas have gradually assumed the appearance of arid steppes. For great spaces the soil of the valley appears merely a crust of hardened clay (*tepetate*), destitute of vegetation, and cracked by contact with the air” (pp. 2: 170–171).

Humboldt acknowledged that the precolonial basin was densely settled and prosperously developed—not pristine by any stretch. He evaluated native and Western

FIG. 2—The late precolonial Basin of Mexico, showing the locations of Tenochtitlán, principal hydraulic engineering works, and zones of chinampa agriculture. *Sources:* Modified from West and Augelli 1966, fig. 8.13; Doolittle 1990, fig. 5.8. (Cartography by the author and Clifford Duplechin, Department of Geography and Anthropology, Louisiana State University)

FIG. 3—Excerpt from Humboldt's map of the Basin of Mexico. *Source:* Humboldt 1812, pl. 5. (Reproduced courtesy of Louisiana State University Libraries' Special Collections, Baton Rouge, Louisiana)

technologies according to the same standards. Those standards were inherently those of the West, and his position does sometimes become somewhat equivocal, as when he appears to favor drainage of the two freshwater lakes, Chalco and Xochimilco, that harbored the surviving chinampas ([1811] 1966, 2: 177). But he did not ignore or minimize the precolonial development of the Basin of Mexico.

THE GULF LOWLANDS

By 1804, nearly three centuries of colonization had also greatly desettled and dedeveloped the Gulf lowlands that Humboldt crossed in late February, during the depths of the dry season, on his way from Jalapa to the port of Veracruz (Figure 4). In contrast, when Hernán Cortés arrived at Veracruz in 1519, he and the other conquistadores encountered a densely settled and productively developed landscape (Siemens 1990). Zempoala, a city of approximately 100,000, occupied the top of a settlement hierarchy in a region of about 5,000 square kilometers with a total population of some 500,000 (Sluyter 2002, 35–60).

The inhabitants had developed several systems of intensive agriculture attuned to the highly seasonal precipitation regime of the subhumid climate, including sloping-field terracing and intensive wetland agriculture (Sluyter 2002, 48–60). The terraces occupied the piedmont slopes, occurring in complexes of hundreds of hectares. The precise chronology and extent of those fields remain elusive, but farmers seem to have constructed them by clearing fieldstones into lines parallel to slope contour in order to manage soil moisture for cropping maize, cotton, and agave. The intensive wetland agriculture covered several thousand hectares of the belt of backswamps just inland from the cordon of dunes that parallels the coast. Although the precise extent and chronology of the wetland fields remain uncertain, farmers seem to have constructed them by ditching into and mounding above surfaces that seasonally intersected the water table. The most general function of the water-land system involved regulation of soil moisture in the rooting zone. But unlike the chinampas, where dikes controlled water levels and the surfaces of the large rectilinear planting platforms did not intentionally become submerged, the labyrinthine complexes of small platforms and narrow canals of the lowlands occurred in seasonal wetlands. The platforms and canals enabled farmers to manage drainage to allow cropping as early in the dry season as possible yet retain enough water for splash and subirrigation well into the dry season. With rapid and near total depopulation during the early colonial period, on the scale of 99 percent by the end of the sixteenth century, the piedmont and wetlands became poles in a system of regional transhumance. Tens of thousands of cattle grazed the wetlands during the dry season, retreating to the higher and drier piedmont with the onset of the rains. People began to reoccupy the Gulf lowlands in number only after the revolution of the early twentieth century resulted in the breakup and redistribution of some of the haciendas (Sluyter 2002, 189–201).

Yet, in contrast to the Basin of Mexico, Humboldt did not acknowledge the dense settlement and productive development of the precolonial Gulf lowlands. He did

acknowledge that precolonial population was higher and land use more intensive than in 1804 ([1811] 1966, 2: 254). But, relative to the highlands, he characterized the precolonial lowland population as minimal (pp. 1: 89–90; 2: 254). Even though he followed the royal highway that passed through several vestigial complexes of precolonial fields, he acknowledged nothing of that antecedent landscape of intensive agriculture. And he did not visit even the ruins of Zempoala, only a 15-kilometer excursion off the royal highway.

Humboldt was, in fact, generally pessimistic about the agricultural potential of the Gulf lowlands. The leafless and withered state of much of the vegetation during the dry season and the threat of yellow fever seem to have negatively influenced his judgment (Humboldt [1811] 1966, 4: 154–156). He singled out cattle ranching as particularly inimical to development (pp. 2: 255–256; 3: 101). The only hope he offered for development involved agricultural intensification by immigrants who did not, as he believed, suffer from the lassitude caused by the tropical climate (pp. 2: 253–255).

Humboldt characterized the precolonial Gulf lowlands as populated, albeit sparsely relative to the highlands, and undeveloped relative to their potential. He characterized the colonial Gulf lowlands as even more sparsely populated than in the precolonial era and undeveloped relative to their potential. He implied that since native peoples and Spanish colonizers had failed to develop the lowlands beyond extensive cattle ranching, in his view a waste of their potential, other Europeans would have to do so.

HUMBOLDT'S TEXTS

Comparative analysis of Humboldt's interactions with the texts and landscapes of the Basin of Mexico and the Gulf lowlands reveals some of the factors involved in his differing representations of those two places despite both having been densely settled and productively developed during precolonial times. Given that some of the texts Humboldt drew on to write the *Political Essay* clearly state that the precolonial Gulf lowlands were densely settled and productively developed, his failure to represent them as such at first seems inexplicable. After all, he spent much of his year in New Spain "in the intellectual and scientific communities of Mexico City, where he studied existing corpuses on natural history, linguistics, and archaeology" (Pratt 1992, 136). The reasons for his characterization of lowland landscapes as pristine become clearer through analysis of his interaction with the texts of those "corpuses," which fall into three major categories: precolonial codices; eyewitness accounts of late precolonial landscapes written by conquistadores; and compilations of precolonial and early colonial histories that members of the clergy had collected and codified during the sixteenth century, when a greater proportion of the precolonial codices and oral histories were still extant.

By late colonial times, colonization had destroyed the vast majority of precolonial screen-fold pictorial texts, typically referred to as "codices." The conquistador Bernal Díaz del Castillo ([1632] 1986, 75), for example, saw "many books of their paper, folded, like the cloth of Castile" when he first reconnoitered Zempoala in 1519, but

FIG. 4—The Gulf lowlands with locations of places, roads, Humboldt's route, and field system remains. Sources: after Siemens 1990, fig. 1; Sluyter 2002, fig. 2.6. (Cartography by the author and Clifford Duplechin, Department of Geography and Anthropology, Louisiana State University)

they disappeared during the ensuing conquest. Most of the extant codices probably reached Spain early in the conquest and were subsequently distributed among European archives (Glass 1975, 11–13). By the time the *Political Essay* was published, Humboldt ([1811] 1966, 1: 160) had seen originals of some of those texts and copies of others, and he possessed some “fragments of them,” publishing several examples in *Vues des cordillères* (1810b). But, although he clearly worked directly with at least some of those texts, not one of them pertains to either the Gulf lowlands or the Basin of Mexico.

Among the accounts of late precolonial landscapes written by conquistadores, the most pertinent are the *Historia verdadera de la conquista de la Nueva España* by Díaz del Castillo (1632; [1632] 1986), the *Cartas de relación* by Cortés (1519–1526] 1988), and *La conquista de México* by Cortés's biographer, Francisco López de Gómara ([1552] 1987]). The *Historia verdadera*, a well-known, detailed, eyewitness account of the conquest that a conquistador wrote in his retirement during the 1550s and 1560s, contains some descriptions of late precolonial landscapes of the Gulf lowlands and Basin of Mexico (Díaz del Castillo [1632] 1800, [1632] 1927, [1632] 1982). Humboldt cited the work several times throughout the *Political Essay* ([1811] 1966, 1: 91, 157; 2: 19, 58–59, 73–74, 246; 3: 427, 473). Yet he did not remark on Díaz del Castillo's reaction to riding into Zempoala for the first time: “[Entering] among the houses,

FIG. 5—Humboldt's map of the Gulf lowlands, as excerpted from his map of central New Spain. Source: Humboldt 1812, pl. 9. (Reproduced courtesy of Louisiana State University Libraries' Special Collections, Baton Rouge, Louisiana)

on seeing such a large city, and having seen no other larger, we greatly admired it, and how it was so luxuriant and like a garden, and so populous with men and women, the streets full of those who had come out to see us" (Díaz del Castillo [1632] 1986, 76).² Given that the Spaniards arrived in April, toward the end of the dry season, the description implies irrigation, yet the conquistador's admiration of the architecture, the dense population, and the lush vegetation did not seem important to Humboldt. Or, perhaps, as his translation of another quotation from Díaz del Castillo suggests, he did not really read the *Historia verdadera*. Humboldt, presumably in an attempt to give the *Political Essay* credibility by drawing on an eyewitness account, claimed ([1811] 1966, 2: 58) that Díaz del Castillo wrote, " 'The death of the young king,' says Bernal Díaz [*sic*] del Castillo (an old soldier full of honour and of naivety of expression), 'was a very unjust thing. And it was accordingly blamed by us all [*Aussi fut-elle blâmée a de nous tous*], so long as we were in the suite of the captain, in his march to Comajahua.' " Yet that quotation little resembles Díaz del Castillo's words as rendered in either the 1632 Spanish edition of the *Historia verdadera* or its 1800 English translation (1632; [1632] 1800; [1632] 1927, 450; 1982 [1962], 523). Humboldt thus seems either to have been extremely careless in his translation or to have copied the quotation from an unreliable secondary source. Francisco Clavigero's

Storia antica del Messico, published in Italy, seems the most likely such text because it attributes (1780–1781, 3: 233), just as erroneously, a similar statement to Díaz del Castillo: “‘This execution,’ said Bernal Díaz, ‘was very unjust, and censured by all of us who went on that journey.’” Seemingly, Humboldt did not really peruse at least one of the eyewitness accounts that he represented to readers he had read. Instead, he relied on a secondary source that misrepresented Díaz.

Humboldt cited Gómara’s *La conquista* but, apparently, never read the entire text. Gómara did not witness late precolonial landscapes firsthand, but he did write *La conquista*, first published in 1552, on the basis of the letters and confidences of Cortés (Warren 1973). Despite quoting Gómara at length to support other conclusions with the credibility of Cortés’s personal biographer, Humboldt ([1811] 1966, 1: li; 2: 322, 500; 3: 4, 80, 427, 473, 477) electively ignored other evidence, such as the claim that Cortés characterized Zempoala as “completely covered with gardens and freshness, and with fine irrigated gardens” (Gómara [1552] 1987, 97).

Cortés’s *Cartas de relación* seem, on the basis of a count of citations, to have been a major textual source for Humboldt ([1811] 1966, 1: xxxi, cxxiv, 11–13, 91, 157, 173, 239–240; 2: 10–15, 19, 27–29, 32, 46, 48, 54–60, 77–78, 201–202, 320–321, 448, 456, 509; 3: 25–26, 111–112, 117, 425–426, 473–476; 4: 17–19, 22–28). The *Cartas* detail the conquest in a series of five dispatches Cortés wrote to Emperor Charles V between 1519 and 1526. Humboldt’s source for those dispatches was Francisco Lorenzana’s 1770 *Historia de Nueva España*, which includes only the second, third, and fourth of the five dispatches (Lorenzana [1770] 1980; Humboldt [1811] 1966, 1: xxxi).

As one example of Humboldt’s selective use of the *Cartas*, he quoted at length from the dispatch of 30 October 1520 to demonstrate that late precolonial Tenochtitlán was comparable to Spanish cities of the time, yet he ignored the description of the Gulf lowlands in that same dispatch. In it, Cortés attributes to the district of Zempoala some 50 towns and fortresses that could muster 50,000 warriors and implies that the city itself was comparable to Seville: “I left the city of Zempoala, which I named Seville” (Lorenzana [1770] 1980, 39–40). Humboldt’s extremely poor translation of Cortés’s description of Tenochtitlán suggests the same sort of carelessness with the *Cartas* as with the *Historia verdadera*. Either in copying or translating the passage from Lorenzana, Humboldt introduced significant errors of omission and commission, such as characterizing Tenochtitlán’s main market square as “twice as large as that of Seville” instead of Cortés’s original “two times as large as the city of Salamanca” (Lorenzana [1770] 1980, 102–103; Humboldt [1811] 1966, 2: 10–13). Such errors suggest a lack of rigor more than willful manipulation of data but are nonetheless revealing considering that Humboldt’s ([1811] 1966, 2: 10–13) authority as a scientist rested in part on his claim to represent places such as “Tenochtitlan [*sic*] in 1520, according to the description of Cortez [*sic*] himself.”

Also available to Humboldt were compilations of precolonial and early colonial histories, both oral and textual, collected and codified during the sixteenth century. Precolonial texts and oral histories suffered destruction and truncation throughout New Spain during the catastrophic violence and depopulation that characterized

the early colonial period, but the Gulf lowlands suffered more rapid and greater depopulation than did the Basin of Mexico. Zempoala and other major settlements underwent population declines of about 99 percent between 1519 and 1580 (Sluyter 2002, 153–159). In contrast, the Basin of Mexico underwent “only” 90 percent depopulation over the first century of colonization, so some texts and oral histories survived. The paucity of information in such compilations that relate to the Gulf lowlands relative to the Basin of Mexico suggests a partial reason for Humboldt's differing representations of those places. Yet such compilations do contain sufficient information about the precolonial Gulf lowlands to conclude that they were densely settled and productively developed, information that Humboldt ignored.

Humboldt was familiar, for example, with the Codex Mendoza, a copy of a register of tribute levied on the provinces of the Aztec empire, including those in the Basin of Mexico and the Gulf lowlands (Glass 1975). The first viceroy, Antonio de Mendoza, ordered the copy and the Spanish glosses that explain the Nahuatl pictographs. From New Spain, the Codex Mendoza went to Europe and ended up in London by the early seventeenth century. There, Samuel Purchas ([1625] 1905–1907, 15: 417–504) published a version in his 1625 *Purchas His Pilgrimes*. Even though the *Political Essay* referred to the Codex Mendoza as the “Raccolta di Mendoza,” seemingly following Clavigero's Italian usage in the *Storia antica*, Purchas *His Pilgrimes* seems to have been the source of at least some of the pictographs reproduced in *Vues des cordillères* (1810b, 284–291, pl. 58–59; [1811] 1966, 2: 18). Humboldt may also have seen the Matrícula de Tributos, another copy of the Aztec tribute list, very similar to the Codex Mendoza, that viceregal officials retained in New Spain (Glass 1975). If not, he certainly saw the version of the Matrícula de Tributos that Lorenzana ([1770] 1980) published in his *Historia de Nueva España* together with Cortés's *Cartas*.

Although neither the Purchas nor the Lorenzana versions of the Aztec tribute list is remarkable for accuracy or completeness, both demonstrate the dense population and agricultural productivity of the Gulf lowlands. The province of Cuertlaxtlan, which encompassed the port of Veracruz and environs, provided an annual tribute of 6,720 loads of cotton mantles, 200 loads of cacao, and various luxury items. Purchas ([1625] 1905–1907, 15: 470–472) included the page describing the Cuertlaxtlan tribute. Lorenzana ([1770] 1980) included the same page. And Humboldt ([1811] 1966, 2: 250) was aware of the equivalence of precolonial Cuertlaxtlan and colonial Cotastla, a town 45 kilometers southwest of Veracruz that he labeled on his map of the lowlands (Figure 5). Although convoluted attempts to quantify population on the basis of such tribute lists remain far from convincing, 6,720 loads of cotton mantles per year certainly should have suggested to Humboldt that the precolonial Gulf lowlands were intensively cultivated and densely settled (Sluyter 2002, 41–43).

Humboldt also drew on the more comprehensive compilations of native oral and textual histories that members of the Spanish clergy had collected during the second half of the sixteenth century before they destroyed the original texts (Gibson and Glass 1975). He seems to have known about many of the texts falling into this category even though they remained in manuscript form until well after publica-

tion of the *Political Essay*; an example being the notable *Historia general de las cosas de Nueva España* by Bernardino de Sahagún, researched and written over the second half of the sixteenth century (ca. 1550–1580] 1950–1982; Humboldt [1811] 1966, 2: 74; D’Olwer and Cline 1973). But Humboldt seems mainly to have drawn on Juan de Torquemada’s *Monarquía indiana*, written between 1592 and 1613, incorporating many earlier compilations, and first published in 1615 (Torquemada [1615] 1969; Alcina Franch 1973). Humboldt cited *Monarquía indiana* only twice, but the secondary source he drew on more than any other, Clavigero’s *Storia antica*, reiterates much of Torquemada (Clavigero 1780–1781; Humboldt [1811] 1966, 1: cxxiv, 11, 91, 95, 139; 2: 14, 16, 18, 24, 26, 45, 58, 73–74, 81, 87, 211, 262–263, 348, 441, 513; 3: 26, 39, 45, 110, 426, 473; 4: 135; Ronan 1973).

Although *Monarquía indiana* and *Storia antica* provide more information on the Basin of Mexico than on the Gulf lowlands, both provide some on the latter. *Monarquía indiana*, for example, relates the origins of Zempoala and describes the Gulf lowlands as densely populated, albeit quite vaguely: “settling in the plains of Zempoala, near the port of Vera Cruz, populating that whole territory with a great many people” (Torquemada [1615] 1969, 1: 278). Torquemada (pp. 1: 251, 396) also claimed that Zempoala was a grand city with a population on the order of “twenty-five to thirty thousand *vecinos* [heads of household],” large buildings, broad avenues, and many houses with lush gardens—“altogether appearing a delightful paradise.” Because “*vecinos*” refers to heads of households, the total population would have been 4.5 times as great, some 112,500–135,000 (Sluyter 2002, 44). Regarding the Gulf lowlands more broadly, when the Basin of Mexico suffered famine due to drought or frost, the lowlands supplied Tenochtitlán with maize by trade and tribute (Torquemada [1615] 1969, 1: 158; Sluyter 1993). *Monarquía indiana* also repeats Cortés’s estimate that the district of Zempoala contained some 50 towns and fortresses that could muster 50,000 warriors but inflates the district’s population to “more than a hundred and twenty thousand *vecinos*,” suggesting a total lowland population of 540,000 (Torquemada [1615] 1969, 1: 522). Yet Humboldt ([1811] 1966, 2: 74) ignored that passage on the Gulf lowlands while citing another regarding the Basin of Mexico that appears on the facing page in the facsimile edition of *Monarquía indiana* (Torquemada [1615] 1969, 1: 522–523). Clavigero (1780–1781) repeated, sometimes verbatim, Torquemada’s claims about the population and urban character of Zempoala and the Gulf lowlands.

Other texts that Humboldt used similarly confirm the precolonial development of the Gulf lowlands. Humboldt drew on Gonzalo Fernández de Oviedo’s *Historia general y natural de las Indias*, for example, but apparently did not read carefully enough to note that Oviedo parroted Cortés’s claim that the district of Zempoala contained 50 towns and forts capable of providing 50,000 soldiers (Fernández de Oviedo [1535] 1959, 5: 11; Humboldt [1811] 1966, 2: 415, 431–434, 436, 439, 446, 501, 515; 3: 3, 55). Humboldt also drew on Antonio de Herrera ([1601–1615] 1944–1947, 3: 374), who similarly repeated Cortés’s claim but, like Torquemada, converted soldiers into *vecinos* and inflated the number to 120,000.

Clearly, all of these texts are biased in various ways. Cortés may have estimated the population rather liberally in order to exaggerate his accomplishments and the potential for colonization, with Torquemada inflating even Cortés's estimates and Díaz del Castillo explicitly attempting to counter such exaggeration in his *Historia verdadera*. Reconstruction of population on the basis of such sources therefore requires careful consideration of and correction for such biases (Sluyter 2002, 41–47). Among Humboldt's secondary sources, some, such as Herrera, clearly bastardized primary texts, whereas others were explicitly engaged in polemics. Torquemada, for example, expressed an early Creole patriotism, praising pre-Columbian antiquity and Mexican nature. Such patriotism became the reasoned, Enlightenment nationalism of the eighteenth century (Florescano 1994, 187). As the primary example of that succession, Clavigero drew on Torquemada to counter the eighteenth-century thesis that the Americas were naturally inferior to Europe. That so-called *querelle d'Amérique* stemmed from Buffon's claims about the poverty of American nature and society relative to Europe but became popularized through such publications as Corneille de Pauw's 1770 *Recherches philosophiques sur les américains* and William Robertson's 1778 *History of America* (Glacken 1967, 680–685; Pratt 1992, 120; Florescano 1994, 189–191). Clavigero, like other Enlightenment nationalists, Thomas Jefferson included, explicitly engaged that polemic. Not only did Humboldt ([1811] 1966, 1: 91) recognize Clavigero's efforts, he supported them: "See the judicious observations of the Abbe Clavigero on the ancient population of Mexico, directed against Robertson and Pauw."

Although understanding Humboldt's interactions with the biases of his textual sources may help explain the popularity and influence of the *Political Essay* in republican Mexico, the immediate issue is his biased use of those texts, not their biases per se. Whether or not any of Humboldt's textual sources were reliable, he drew on them to support his representation of the Basin of Mexico but ignored them when they contradicted his representation of the Gulf lowlands.

Humboldt thus reified rather than revised the pristine myth for the Gulf lowlands because, in part, his use of textual sources lacked rigor; but the reasons for that lack of rigor remain unclear. Certainly those texts' overwhelming emphasis on the Basin of Mexico and the Aztecs obscures the scattered and limited information on the Gulf lowlands. Ferreting out the relevant passages requires long hours of careful reading. Perhaps Humboldt simply lacked sufficient time, both in the libraries of Mexico City and later in Paris. Possibly he reached his conclusions on the basis of what local scholars told him and merely selectively skimmed the primary texts for corroborating rather than contradictory evidence. Conceivably he had Carlos Montúfar, a traveling companion fluent in Spanish, do that skimming for him. Perhaps most essential, as textual analysts such as Pratt suggest, because Humboldt spent much of his sojourn in New Spain interacting with local scholars in Mexico City, the *Political Essay* incorporates their representations of New Spain and introduced them, legitimated by Humboldt's reputation for scientific objectivity, into existing European representations (Florescano 1994, 204–205). As Pratt (1992,

136–137; italics in the original) put it, “Following independence, Euroamerican elites would re-import that knowledge *as European knowledge* whose authority would legitimate Euroamerican rule” and continue to disempower native peoples.

HUMBOLDT’S LANDSCAPES

Textual analysis can only reveal so much of the process, because Humboldt’s landscape observations should have mitigated any tendency to incorporate so naively the representations of local scholars and their texts (Sluyter 2002, 38–59). He certainly noted vestiges of chinampas, dikes, and monumental architecture in the Basin of Mexico (Humboldt [1811] 1966, 2: 47–48, 61, 80, 119). If he had likewise noted the vestiges of precolonial settlement and agriculture along the royal highway that crosses the Gulf lowlands, he would have revised rather than reinvigorated the colonial pristine myth for that region. Why a supposedly keen observer such as Humboldt should have failed to observe those vestiges becomes somewhat clearer through analysis of the differing landscape histories of the Gulf lowlands and the Basin of Mexico and of Humboldt’s differing interactions with those landscapes.

The precolonial population density of the Gulf lowlands may simply have been too low to leave behind as many landscape vestiges as in the Basin of Mexico, thus reducing the probability that Humboldt would encounter them along his route. In the Basin of Mexico, some 1.5 million people lived in an area of some 7,000 square kilometers, a density of about 214; but in the Gulf lowlands, some 500,000 people lived in an area of some 5,000 square kilometers, a density of about 100. But even people half as densely settled on the land as in the Basin of Mexico created landscape vestiges visible five centuries later, although admittedly most readily apparent from the air (Sluyter 2002, 51–59).

So perhaps the types of vestiges common to the Gulf lowlands were not as visible at ground level as were those in the Basin of Mexico. The intensive wetland fields of the lowlands were certainly smaller than chinampas, and their vestiges are now only marginally detectible at ground level as subtle lineations in topography, soil moisture, and vegetation (Siemens 1990, 118–120; Sluyter 1994). Therefore, even though the royal highway from Jalapa to Veracruz runs beside complexes of vestigial wetland fields, they disappeared from the textual record between the sixteenth and twentieth centuries. In 1560 Lucas Hernández noted “a small lake which appears in the rainy season . . . and marshes ditched straight southward” (AGN, Mercedes, vol. 15, f. 191v). In the 1970s Alfred Siemens (1990, xiv) noted their characteristic vegetational patterning while flying into the Veracruz airport. Between Hernández and Siemens, though, no one noted anything relevant. Moreover, Humboldt (1966, 4: 154) seems to have left the royal highway where it crosses the Río de la Antigua, followed its bank to the town of La Antigua, and proceeded to Veracruz by way of the coast. He might therefore have never been within sight of vestigial wetland fields.

The remains of sloping-field terraces are also more evident from the air than on the ground, yet some other German visitors to the Gulf lowlands noted those ves-

tiges of precolonial development just a few years after Humboldt failed to do so. Carl Sartorius arrived in Mexico in 1824 and published *Mexico: Landscapes and Popular Sketches* in 1858, providing a clear description of vestigial terraces by noting ([1858] 1961, 10) that “When the tall grass is burnt down, we can see that the whole country was formed into terraces with the assistance of masonry, everywhere provision had been made against the ravages of the tropical rains; they were carried out on every slope.” Brantz Mayer and Hugo Finck also noted those moribund terraces (Mayer 1847, 11; Finck 1871, 373; Sluyter 2002, 54–55). Humboldt, however, did not—even though his route passed through extensive complexes of ruined terraces and the dry season was far enough advanced for the scrubby vegetation to have lost its leaves and for ranchers to be burning the extensive grasslands, exposing the characteristic rows of stones running along slope contours. Possibly Humboldt mistook the vestigial terraces for terracets, the so-called cowntours formed when herds of cattle graze hill slopes (Trimble and Mendel 1995, 235–236; Johnson 2004). Yet Sartorius, Finck, and Mayer presumably had cultural backgrounds similar to Humboldt’s, and they had no trouble recognizing the rows of stones as remnant terrace walls.

In addition to the traces of past agricultural use, Sartorius ([1858] 1961, 10) recognized extensive precolonial settlement: “On the dry flat ridges the remains of large cities are found, forming for miles regular roads.” But Humboldt observed nothing—apparently. Even the ruins of Zempoala do not seem to have interested him. They provided an opportunity to see a well-preserved, major precolonial city that, unlike Tenochtitlán, had fallen into ruin due to depopulation rather than to having been demolished by the conquistadores and rebuilt as a Spanish city. One of Humboldt’s principal textual sources even roughly identifies Zempoala’s location, “twelve leagues [67.2 kilometers] from La Antigua” and stated that it “now remains no more than a rancho of that name, and a tower, or lookout to survey the coast” (Lorenzana [1770] 1980, i, 39n). The distance reference may be wrong, the ruins being less than 20 kilometers from La Antigua, but they are 10 kilometers directly inland from where the watchtower at Point Zempoala guarded the coast during the eighteenth century (AGN, General de Parte, vol. 27, f. 75). Despite that relatively good locational information and short excursion off the royal highway, Humboldt does not seem to have been interested enough to ask locals in La Antigua for more precise directions to the ruins, even though he does locate Point Zempoala on his map. The location of Zempoala would fade from the literature until its rediscovery by Estefania Salas in about 1880 (Strebel 1883).

Humboldt thus reinvigorated rather than revised the pristine myth for the Gulf lowlands because, in part, his field observations lacked rigor, the principal reason probably being the haste with which he traveled from Jalapa to Veracruz. According to his letters, he left Jalapa on 17 February 1804 in order to sail from Veracruz on 23 February ([1811] 1966, 4: 166; [1799–1859] 1980, 130–132). His *Tagebuch* for that segment of the journey, not published but recently relocated, apparently reveals that he arrived in Veracruz on 18 February, making the journey of some 125 kilometers in two days (Leitner 2002, 8; 2004). The *Tagebuch* does not contain any details of his

interactions with the landscape, however, and the precise itinerary therefore remains obscure. Humboldt's (1810a, 2: 334) *Recueil d'observations astronomiques* provides some additional insight because it records instrumental observations at places along his route, the same toponyms that punctuate the modern highway. But the *Recueil d'observations astronomiques* does not record the dates of Humboldt's observations and does not reveal whether he stopped for the night at an inn or what time of day he passed through the terrace zone. Because the sailing was delayed until 7 March, he could have made some excursions from the port while waiting, but the relevant Tagebuch indicates a preoccupation with gathering information from port officials and merchants, as confirmed by the extensive data on imports and exports through Veracruz in the *Political Essay* ([1811] 1966, 4: 27–52; [1801–1804] 1986–1990, 1: 389–392).

In contrast, Humboldt spent about half a year in the Basin of Mexico, using it as a central base from which to make excursions to Pachuca, Guanajuato, and other places (Miranda 1962, 100). Those six months—approximately from mid-April to mid-May 1803, June and July 1803, and October 1803 through late January 1804—allowed sufficient time to observe the basin's varied landscapes at length and in different seasons. The two days spent traveling between Jalapa and Veracruz and the two weeks stuck in port were simply insufficient to make careful observations of Gulf lowland landscapes.

CONTINUING CONSEQUENCES

Most basically, Humboldt reinvigorated rather than revised the pristine myth for the Gulf lowlands because those places had undergone different landscape histories, and his interactions with their landscapes and the texts that represented them lacked the rigor required to counter his tendency to incorporate the representations of local scholarship. As New Spain became the Republic of Mexico, its political and scholarly elites reimported the myth of pristine Gulf lowlands that Humboldt's growing credibility increasingly legitimated as scientific fact. The *Political Essay* became seminal to Mexico's development. And the Gulf lowlands developed, as Humboldt had recommended, on the basis of commodity agriculture involving exotic crops and technologies, mainly systems of concrete irrigation canals for the production of irrigated sugarcane. The indigenous terraces and intensive wetland agriculture, which had sustained so many in precolonial times with food production as well as cotton, continue moribund and largely ignored as an alternative that might complement unilateral Westernization (Sluyter 2002, 204–209). In the Basin of Mexico, in contrast, at least some chinampas continue to produce crops (Sluyter 2006).

Pratt's conclusion therefore holds true for the Gulf lowlands, but not the Basin of Mexico, because her emphasis on the production of places through the imposition of textual representations ignores such places' landscape histories and Humboldt's interactions with those landscapes. As the comparative analysis demonstrates, the types of landscape elements and patterns that developed over millen-

nia during precolonial times, the degree of depopulation over centuries during colonial times, and the rigor Humboldt applied to interacting with the resulting texts and landscapes greatly affected his representations of places. Similar geographical research on long-term landscape transformation elsewhere would further complement the textual analyses of literary scholars and help us to better understand the emergence, persistence, and continuing consequences for economic development of cultural biases such as the pristine myth.

NOTES

1. Throughout this article quotations from Humboldt's *Political Essay* come from the widely available 1966 AMS Press facsimile edition of the 1811 Longman edition. Humboldt wrote in French and published his original text in Paris in 1811 as the *Essai politique sur le royaume de la Nouvelle-Espagne*. His translator, John Black, generally provides a reliable rendition of the French, but I have nonetheless checked all quotations from the *Political Essay* against the 1811 *Essai politique* and indicate all significant differences in brackets.

2. This translation, and all others in this article, are mine.

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