

Just Beyond the Eye: Floating Gardens in Aztec Mexico

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The *chinampas* of the Basin of Mexico have long intrigued travelers, scholars, and casual readers alike. Since the arrival of conquistadors to the region, reports of this remarkable form of island agriculture have circulated widely, and to this day chinampas continue to be highlighted in virtually every geography, anthropology, and history survey course on Mesoamerica. Following a well-established tradition, these wetland fields are often described as “floating gardens,” although it is usually quickly noted that the modern form are no longer buoyant.

Alexander von Humboldt’s brief discussion of the nature and probable antecedents of these fields appeared to confirm that chinampas originated as floating gardens, a concept already widely accepted after its initial promulgation by both Jose de Acosta and Francisco Javier Clavijero.¹ Centuries of repetition of, and elaboration on, these earliest descriptions have led to a remarkable persistence of belief in floating gardens in spite of scant documentary evidence of their past existence, many observers’ acknowledgement of failure to see these gardens, and numerous attempts to refute the concept entirely.

While the prevalence of this belief may seem merely quaint, I argue here that it is the result of a complex conjuncture of Romantic perspectives on the non-modern world, specific characteristics of travel literature, the prevalence of a “textual attitude” in the study of Mexico, and of specific ways that Mexico and the Aztec have been equated and appropriated as examples in scholarly debate. The implications of these Orientalist tendencies have not been simply a less-than-satisfactory understanding of chinampa agriculture or the Basin of Mexico. Rather, they have contributed to, and reinforced the marginalization of the indigenous and poor in central Mexico throughout the past 200 years. Further, preoccupation with a mythical, ancient past has distracted observers from major environmental changes occurring in the region, particularly in the area once devoted to chinampa agriculture. Consideration and acknowledgement

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of such tendencies in and effects of, scholarly work are important if we are to fulfill our responsibilities as scholars, and continue to strive for a better understanding of other times, places, and people.

Chinampa Agriculture

Chinampas are long, narrow, rectangular fields in the wetlands of the southern Basin of Mexico. Separated by ditches or canals and normally elevated 50-150 centimeters above water level, they are similar to raised and drained fields in other regions.² Several different types of chinampas are described in historical documents about Mexico; the one generally portrayed in paintings, books, and other discussions of Aztec Mexico—an artificial platform lined with willow trees (*Salix bonplandiana*) whose roots shore up the vertical field edges—may actually be a relatively recent form.³

Although this agricultural landform has pre-Aztec antecedents in the Basin of Mexico, the maximum area converted to chinampas—some 9,000 to 10,000 hectares—was reached during the late Aztec period, when they were presumably under primarily maize cultivation.⁴ During much of the Colonial period and until recently, the *chinampertía* was an important source of vegetables for Mexico City, in addition to maize and other foods grown for household consumption.⁵ During the late-Aztec period, chinampas surrounded the center of Tenochtitlán/Mexico City and covered much of the basin floor to the southeast, but by 1950, chinampas were farmed in only ten communities (Figure 1). Since the 1950s, dramatic hydrological alterations, rapid urbanization, as well as social and economic changes, have contributed to considerable reduction in the area farmed and widespread conversion of chinampas to dryland maize fields, pasture, and floriculture plots.⁶ Today, chinampas are cultivated in a variety of ways by several hundred farmers only in Xochimilco, San Gregorio, San Luis, Tlahuac, and Míxquic.

Field-informed Historical Revisionism

I first visited the *chinampertía*—the area in which chinampas are still farmed—in the spring of 1991. Regular visits to San Luis Tlaxialtemalco and other chinampa-farming communities followed as I prepared a dissertation proposal and then carried out field work during several stints in 1997 and 1998. While my field work focused on very different topics, conversations with chinampa farmers almost always included some references to the pre-Hispanic antecedents of their fields, implements, and techniques as well as the contemporary political economy and the constraints and opportunities being presented.⁷

Two processes set in motion by experiences and conversations in the chinampa-farming region have particular relevance to this paper. The first

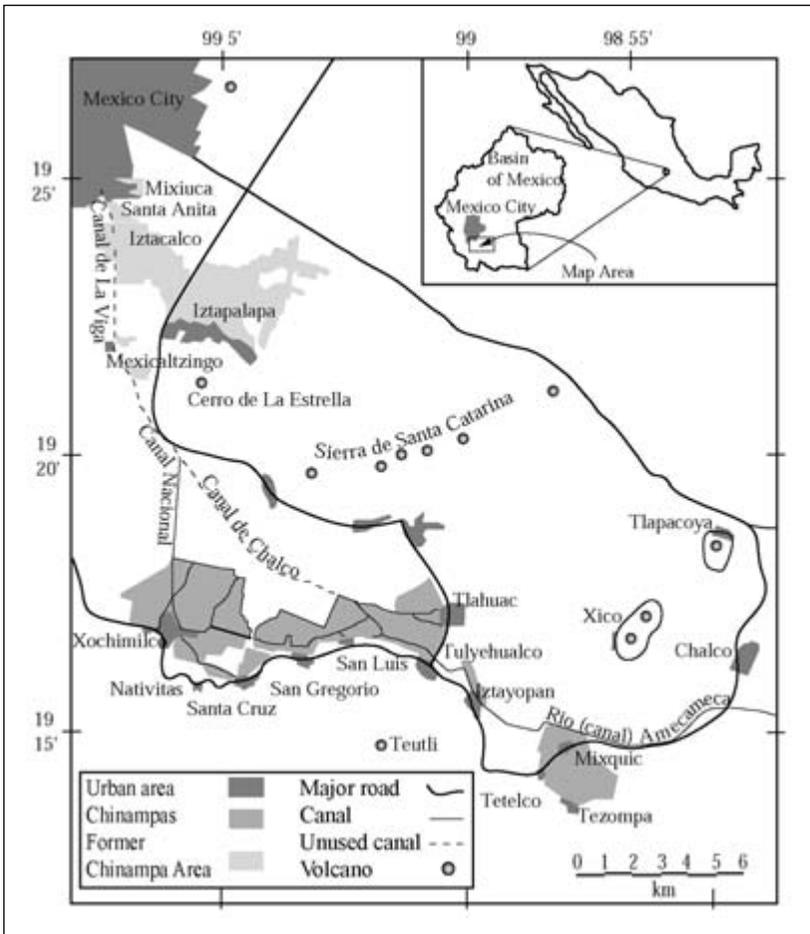


Figure 1. Remaining areas of cultivated and formerly cultivated chinampas, circa 1940. Adapted from Figure 3 in Robert C. West, "Chinampa Agriculture in Mexico," in West, ed., *Latin American Geography: Historical-Geographical Essays, 1941-1998*, Geoscience and Man 35. (Baton Rouge: Geoscience Publications, Louisiana State University, 1998): 39-57. Used with permission.

was my initial observation that it seemed impossible to mistake the very solid chinampas on which farmers grew a variety of crops with "floating gardens."

Others, of course, have had similar realizations and expressed doubt about the equivalence in various ways.⁸ I also began to wonder if perhaps the colonial period observations had been of chinampas that were particularly "low," that is, raised only slightly above the water level and therefore extremely waterlogged and decidedly "squishy" underfoot (Figure 2 illustrates just such a chinampa, situated near the northern edge of the *chinampería* of San Gregorio Atlapulco). Several of Robert West's photographs from 1947 also suggested the possibility that observations during



Figure 2. Waterlogged chinampa in San Gregoria Atlapulco, Xochimilco, D.F., Mexico (June 1995, photo by author).

or after the summer wet season—when many fields were partially flooded—might have led to confusion.⁹ Later, recollections by several chinampa farmers that they had sometimes harvested maize from canoes because water levels were so high reinforced in my mind the possibility that early descriptions of chinampas as floating gardens were somehow mistaken. Further, field examination of sixteen chinampa profiles revealed no evidence of anything like a “mesh of branches” at the base of the fields, but rather, continuous layers of lake sediment from below the water table to relatively near the surface where a thoroughly mixed “construction horizon” was obvious.¹⁰ It seemed clear that either these were a different type of field than those reported by early colonial observers, or those observers were mistaken about what they had seen. Indeed, I decided that the latter must have been the case, and began my re-reading of the chinampa literature with this possibility firmly in mind, notwithstanding the mounting evidence of the existence of both natural floating islands and human-made buoyant fields in numerous wetlands and rivers around the world.¹¹

The second reason for re-reading the historical sources differently was prompted by a casual remark by Jose Perez Espinosa, during a conversation about previous researchers in the area.¹² Many Mexican and non-Mexican scholars have conducted research, visited out of curiosity, and brought students to the region. In these visits, references to the ancient floating gardens—sometimes in awe, sometimes in derision—are com-

mon. On one occasion, I remarked to Jose that I found it interesting that many early descriptions emphasized being able to move the fields around at will. He noted that he could not see any reason that fields that floated around from one place to another would be advantageous. In fact, to him the idea seemed inherently problematic.

Indeed, as I later observed on several occasions, chinampa farmers are very cognizant of the boundaries of their own properties—even when the landscape features that originally marked them (usually certain canals and trees) are no longer present.¹³ Disputes over property lines, and attempts to resolve them with reference to fading documents, opinions of elder passers by, and childhood memories are common, particularly as many farmers have begun to fill in canals, build bridges, broaden pathways, and make other changes in field morphologies as they change their farming strategies.

The importance of this remark, and my subsequent attention to issues of property ownership and boundaries, was to draw attention to the questions, “why did the sources emphasize the alleged ability to move floating gardens whenever a farmer wanted?” and, “why might an eighteenth-century European cleric or a nineteenth-century traveler find that idea more inherently attractive than a twentieth-century Mexican farmer?”¹⁴

Historical Political Ecology

Trying to answer why authors over five centuries might have described chinampas as they did, instead of in other ways, requires engagement with a variety of political ecology and also post-structuralist perspectives, but in a manner quite different than most of the work in which these perspectives have been employed.

Ancient agricultural landscapes are one major theme within political as well as cultural ecology. For example, the significance of “empty landscapes” full of both people and agricultural landforms or their vestiges have been discussed in numerous contexts, as have examples of failures to identify indigenous agricultural practices as farming.¹⁵ Other political ecologists have emphasized mistaken beliefs regarding origins of particular forms of agriculture, poor understanding of non-European land uses based in part on colonialist attitudes toward indigenous peoples, and political and economic marginalization as roots of land-use change, rather than the agricultural landscapes in particular.¹⁶

Each of these perspectives has influenced this analysis. However, rather than discussing an agricultural landscape that has been ignored, or the implications of the failure to appreciate it, my focus is on a group of documents that marvel at a particular form of indigenous agriculture. Further, these sources focus on an agricultural form that, if it once existed, had long ceased to be important, and had been replaced by forms of farming that, even if not quite as marvelous, were still extremely interest-

ing and economically important, but were largely ignored in the documents in question.

Several political ecology analyses have employed the concept of a *regional discursive formation* explored by Richard Peet and Michael Watts, usually by asserting that a particular contemporary land-use conflict or problematized mode of production has developed within a political economy strongly influenced by narratives regarding modernity, Western knowledge and technology, or native peoples and their land use.¹⁷ Others have focused on conflicts surrounding conservation efforts, and ways these conflicts are tied to colonialist narratives without explicitly referring to the regional discursive formation concept.¹⁸

In this analysis, though, I do not focus on such conflicts. In fact, they are only briefly mentioned although a historical political ecology of chinampa agriculture could indeed focus on precisely the issues of land and water control, ecological change, and social, political, and economic relations in the region. What emerges from my analysis instead, are details of the evolution of a particular regional discursive formation—Aztec Mexico—and the ways in which floating gardens were employed in the construction, transformation, reappearance, and reemployment of this discursive formation. The observation that technologies of production are at the nexus of a web of relations that include academic, cultural, and political processes in addition to ecological and social factors will be shown to be of particular importance.¹⁹

While the focus of Edward Said's *Orientalism* was the role in which particular modes of scholarship contributed to, and sometimes explicitly rationalized, colonialism of the Arab and Islamic realms, several of his observations also have relevance for scholarship of Mexico.²⁰ Spanish colonialism had of course been launched well before the writing of any of the earliest works discussed here, and the period of colonial rule had ended long before the last had been completed. Nevertheless, Said's attention to what he termed a "textual attitude" toward "other" places and the people that inhabit them are equally relevant to the portrayal of Mexico, and Aztec Mexico in particular.²¹ The deference to previous texts and "common knowledge," rather than emphasis on insights from personal observations, or revisions to the common knowledge based on new information, I will argue, were key aspects of the regional discursive formation, as were certain other trends within travel literature of the eighteenth and nineteenth centuries.

Acosta and Clavijero's Floating Gardens

While numerous sources mention floating gardens, three descriptions have been particularly influential. The cleric Jose de Acosta in 1590 was the first chronicler to relate floating fields to contemporary Mexico and not simply during review of the founding of *Tenochtitlán*. Acosta described

these fields only generally, as soil piled on top of sedges and reeds (*juncia y espadaña*) in such a way that the field did not sink.²² He also noted that they could be moved from one place to another, but gives no indication as to their size or any other aspect of how they were farmed. It is not clear from the *Historia Natural* where or if he had seen any floating gardens or other chinampas.

Almost 200 years later, Francisco Clavijero offered a slightly expanded description, noting first as had Acosta, that what he is about to describe will be hard to believe.²³ Clavijero asserted that planting surfaces were formed from lake-bottom mud spread on top of a mesh of interwoven stems and roots from aquatic plants. Thus, land had been created for the expansion and provision of Tenochtitlán and, he claimed, these chinampas were still extant at the time of writing (1780). Not only did these rectangular platforms float, he noted, they could be towed to a new location whenever the farmer quarreled with a neighbor or missed his family.²⁴

Clavijero did apparently make a trip along the Canal de La Viga (see Figure 1) where he saw some form of chinampa, as he appears to be recalling his own observations in estimating that typical chinampa dimensions were fifteen by six meters, and that fields were less than a foot above water level.²⁵ However, his historical narrative interspersed with contemporary information of unspecified provenance leaves the reader unsure exactly what Clavijero saw, read, or was told by others.

Indeed, it is doubtful that either Clavijero or Acosta saw any such floating fields. Neither actually claims to have seen floating gardens under construction, nor being moved about, though both clearly believe in their existence. Neither Acosta nor Clavijero mention any actual farming practices in spite of their fascination with the gardens. Further, Clavijero's comment that construction of a floating island of soil was simple (*bastante sencillo*), and the complete absence of detail in his account regarding how such a structure became a suitable planting platform suggests that he never saw the process.²⁶

Moreover, both authors place their brief references to chinampas within a discussion of the arrival of the *Mexica* to the area, the settlement of *Tenochtitlán*, and the rise of the Aztec to power in the region.²⁷ For information on these processes, both were dependent on ethnohistoric sources known to scholars for some time.²⁸ Two of these, now known as the *Ramírez Codex* and the *Anales de Tlaltelolco*, relate the story of a floating garden that was demanded as tribute by the leaders of the neighboring and powerful *Culhua* on the southern shore of Lake Texcoco.²⁹

The point of this origin myth, however, is not that such fields existed before or that they subsequently became important, but that the *Mexica* succeeded in complying with an impossible demand—with divine assistance—leaving their neighbors awestruck and deferential rather than aggressive, and the *Mexica* soon became the dominant polity in the region.³⁰ While most scholars have concluded that there must have been some form

of floating field or germination bed in the region at some time in the past, it does not follow that they were ever important, nor that they occurred throughout the region.³¹

Nevertheless, since 1780 it has been nearly impossible to keep chinampas still, even though another report described in considerable detail the construction of a very different type of lake-margin drained field only 11 years later.³² Among those influenced by Acosta and Clavijero's accounts was Alexander von Humboldt.

Von Humboldt in Mexico

Von Humboldt and Aimé Bonpland traveled to Mexico after their South American sojourn that began in 1799. They arrived in Acapulco in late February 1803 and reached Mexico City on April 11.³³ Later they traveled to Pachuca and Actopan, Hidalgo (May 15-27), and the states of Guanajuato and Michoacán (August 1-October 10). By early January 1804, von Humboldt submitted a draft of the statistical summaries he had prepared on the geography and economy of New Spain; and on January 20 the von Humboldt party left the capital for Veracruz.

Thus, the majority of von Humboldt's time in the Basin of Mexico was during June and July, and again in November and December 1803. The chinampa zone was never mentioned as a major destination or planned field project, as were his climb of the *Nevado de Toluca* (November 29, 1803), and his examination of the *Huehuetoca* drainage canal (January 9-12, 1804). Further, the nature of von Humboldt's discussion of chinampas is considerably different from the majority of his *Ensayo Político*, and is another indication that he did not consider the chinampas a major part of his work in Mexico. While he was within several hours (by horse) of the chinampa farming region throughout his time in the Mexico City area, it is most likely that his visit was of the nature of a weekend excursion along the Canal de La Viga (Figure 1). A carriage or boat (*trajinera*) trip along the canal was already a popular outing at the time, and was no doubt a common way to entertain foreign visitors then as it is today.³⁴

Chinampas According to von Humboldt

Von Humboldt introduces his comments on chinampas by noting the beautiful and remarkable scene of a major market in Mexico City, and the tremendous variety of fruits and vegetables available. Much of this produce was grown, he notes, in the chinampas and brought to market along the Canal de La Viga. He then asserts that there are two types of chinampas, the rapidly disappearing buoyant platforms that "Europeans call floating gardens," and others that are fixed at the lake margin.³⁵

After these brief statements, von Humboldt follows the example of Acosta and Clavijero and reminds the reader of the historical role of artificial plat-

forms. The majority of his comments then focus on a natural model for such platforms; in the shallow lake and marsh environment, he suggests, small chunks of soil bound by the roots of dense aquatic vegetation could be dislodged from the lake margins by wave action or run-off. These pieces would then float and could gradually accumulate into larger bodies or small islands. This suggestion was at least partly based on similar features he had seen in both the Guayaquil River (Ecuador), and Lake Tívoli, Italy.³⁶

Did von Humboldt see floating gardens? His statement, “there are still some in Lake Chalco” (*de los cuales hoy existen todavía algunos*) could be his own observation or merely repetition of a statement by others, as could the note that they are rapidly disappearing (*su número se disminuye de día en día*). He does not claim that he saw any, as he does earlier with regard to the floating islands in the Guayaquil River (“*yo las he visto*”) or Lake Tívoli (“*he encontrado*”) or even that he went to Lake Chalco.³⁷ Similarly, he does not say that he saw examples of floating vegetation in Lake Chalco or Xochimilco, although others later noted their existence and described them in detail.³⁸

Indeed, the lack of detail is what is most striking about von Humboldt’s comments on floating gardens and is perhaps the strongest indication that he did not see any. In discussing the Ecuadorian and Italian floating islands, for example, he gives not only their dimensions but also the vegetation species of which they were composed.³⁹ For floating-garden construction, though, he uses only general terms for the vegetation used to build the platforms. Similarly, for the lake margin chinampas he did see along the Viga Canal, he discusses field dimensions and symmetry, crops, the surrounding landscape, and some other characteristics; floating gardens, though, occur only in historical context.

In contrast, in the following paragraphs, von Humboldt discusses in considerable detail the water content and quality of thermal springs at Peñón del Baños; the inefficiency and slim profit margin of the nearby salt works; and the history, appearance, and recent vandalism of the Chapultepec castle. He also reviews chronologically the series of floods that led to the beginning of the Huehuetoca drainage canal in 1608, and includes a precise, admiring summary of its engineering.

Such detail-laden descriptions are typical of von Humboldt’s own research and observation throughout the *Ensayo Político*; the passive claim that some floating gardens still exist, and the sparse, ambiguous summary of their construction, are not. Indeed, it seems probable that had he seen such a phenomenon as floating, cultivated, moveable fields, they would have warranted more prominent and thorough discussion. Instead, he provides only bare outlines of their appearance and construction, and a tentative suggestion as to why they no longer floated.

Rather than confirmation that floating gardens still existed at the time of his visit, then, this passage should be viewed as a paraphrase of the earlier account by Clavijero, or repetition of the commonly accepted views in Mexico at the time.

Floating Gardens in Subsequent Scholarship

Shortly after the *Ensayo Político* was published, other travelers and scholars began using it as a main source of information, and regarded von Humboldt's assertion as evidence that floating gardens had survived at least until 1803. Some even repeated his description in spite of recognizing that they saw something quite different, or after expressing doubt that such a thing ever existed.⁴⁰

As summarized in Table 1, nineteenth- and twentieth-century travel writers and scholars utilized von Humboldt's brief mention of chinampas, and the earlier accounts of Acosta and Clavijero in several different ways. Those who cite von Humboldt directly as evidence that floating gardens once existed are relatively few; more regarded the early statements about floating gardens as facts that had to be mentioned. Several of this latter group note that the fields they saw were quite different, but then describe floating gardens anyway, clearly using one of the earlier descriptions. Some further indicate their deference to von Humboldt's version by citing additional suggestions unique to his account.

Toward the end of the nineteenth century, an important change occurred—most observers stopped making a distinction between “true,” floating gardens and the chinampas they actually saw, and began instead to offer explanations as to how chinampas that began as floating gardens had affixed themselves, or been deliberately anchored to the lake bottom. Three main explanations are proffered—as the water level fell, floating gardens became grounded;⁴¹ the mass of the gardens increased over the years as new layers of mud were added, and they sank to the lake bottom;⁴² and, the most common, willow stakes inserted into the field edge during construction took root in the lake-bottom mud, anchoring the field.⁴³ A fourth suggestion, that the mobility of floating gardens had impeded surveying and tenure regularization so they were deliberately anchored, was rare.⁴⁴

It must be noted, however, that these explanations are without basis. As apparently reasonable as they initially sound, no supporting evidence for any of these explanations has ever been provided. The widely reported practice of placing willow branches into the soil to shore up the edges has often been equated with the “roots anchoring the field to the lake bottom” explanation, but this is not what actually occurs. Willow trees root in the capillary fringe above the water table, not below.⁴⁵

Rather than factual statements about the nature of chinampas and their relationship to floating gardens, then, these four weak explanations should be seen as an indication of how strong the belief in floating gardens had become during the nineteenth century. Even the most observant authors felt obliged to incorporate the belief in floating gardens into their discussions of chinampa agriculture.

Since 1950, scholars have recognized the superiority of the studies by Miguel Santamaría, Robert West, and Pedro Armillas, and few look back any

Table 1. Major references to floating gardens in nineteenth- and twentieth-century Mexicanist scholarship.

Direct citation of von Humboldt as evidence that floating gardens formerly existed	Used Acosta, Clavijero, or von Humboldt's descriptions of floating gardens and natural mats of vegetation	Mentioned aspects of nineteenth-century chinampas noted only by von Humboldt	Explained how formerly floating gardens became "fixed" to lake bottom (several different explanations offered)	Consulted same sources as well as considering biophysical evidence to argue that belief in floating gardens is mistaken
Poinsett 1822	Prescott 1843	Tylor 1861	Orozco y Berra 1864	Nuttal 1925
Tylor 1861	Ober 1877	Orozco y Berra 1864	Ober 1877	Leicht 1937
Orozco y Berra 1864	Schilling 1938	Von Hesse-Warteg 1890	Rivera Cambas 1882	Wiley and Garcia Prada 1939
West and Armillas 1950			Peñafiel 1884	Wilken 1985
			Von Hesse-Warteg 1890	
			Santamaría 1912	
			Schilling 1938	
			West and Armillas 1950	
			Coe 1964	
			Outerbridge 1987	
			López Ríos 1988	

The "Notes" section of this paper includes full publication details of all the sources indicated here by their date of publication.

longer to the three sources previously considered authoritative. Attempts to debunk the idea of floating gardens from a number of perspectives have also been periodically circulated, while others have made valiant attempts to draw attention to other sources that clearly describe chinampas of an entirely different sort.⁴⁶ Nevertheless, in spite of these efforts, the lack of evidence for even ancient floating gardens in Mexico, and studies that reveal numerous other important and intriguing aspects of this agricultural system, the belief in floating gardens is firm to this day.⁴⁷

Discussion: Floating Gardens and Mexicanist Discourse

This long and stubborn persistence of belief in floating chinampas prompts several questions: Why was this idea so captivating? Why was the floating garden image repeatedly chosen over other, more detailed, early chinampa descriptions that also bore a greater resemblance to the fields actually viewed? Why did late nineteenth- and early twentieth-cen-

tury writers repeatedly describe ancient, perhaps mythological, floating fields instead of the chinampas and farmers they saw in front of them?

The simple explanation—Acosta, Clavijero, and von Humboldt commanded such respect that the veracity of their reports was never questioned—is not sufficient. While high regard for these scholars certainly contributed to confidence in their accounts, and to reluctance of even skeptics to dismiss the idea of floating gardens, it must also be noted that these famous accounts were quite selectively cited. All three, for example, emphasized the productivity of the contemporary chinampas and the tremendous variety of foods they produced. These observations are generally ignored by subsequent writers who focused on the field-construction and buoyancy descriptions.

Similarly, the most significant of von Humboldt's observations about chinampa agriculture were those regarding the problematic potential for soil salinization, and the falling regional water table, but none of the sources listed in Table 1 mention either. Also striking is the fact that von Humboldt's suggestion as to how formerly floating gardens became "fixed"—they sank as the water level dropped—was ignored by all but one author in favor of other explanations.⁴⁸ It was not respect for Acosta, Clavijero, and von Humboldt's keen observations, nor their status as expert authorities, then, that drew acclaim. Rather, it was the image of floating gardens themselves that drew repeated attention.

The Heroic and Picturesque

All of the early sources cited here, and many of the nineteenth- and twentieth-century sources as well, link their discussion of chinampas with their summary of the Aztec settlement and expansion of Tenochtitlán.⁴⁹ The important elements—in literature, art, and music that depict the Aztec, as well as the scholarship discussed here—are not the details of how a floating platform might actually be built, but the idea that land for living and planting could be almost miraculously created on and "from" water.⁴⁹ The creation of fields and housing platforms out of marsh vegetation and mud fit well with a Romantic captivation with heroic achievement.⁵⁰

Similarly, for both Clavijero in 1780 and Ernst von Hesse-Wartegg a century later, the image of a disgruntled or unsettled farmer moving his field and family to a better location was powerful, and this potential of a floating garden was emphasized over more quotidian considerations. The Romantic desire for freedom from mundane duties and control by the state was translated into admiration for the supposed liberties available to and practiced by ancient chinampa farmers.⁵¹

It also led to disappointment when a visit to Mexico forced the realization that floating gardens no longer existed and a tendency to go on and describe the floating gardens even though they had not been seen after all.⁵² Indeed, Benjamin Keen suggests it was characteristic of Euro-

pean writing during this period to be “carried away by the wonders of ancient Mexico ... [and leave] the realm of sober history to roam through an Indian world of illusion and fantasy.”⁵³

A broader explanation for such features in the early commentary concerning chinampas can also be seen in the general tendency of nineteenth-century travel writing to look for, emphasize, and describe a quintessential, picturesque scene.⁵⁴ Descriptions of isolated, floating gardens of presumed ancient origins, and particularly in combination with ideas about moving them about the lake at will, was no doubt more picturesque than a description of rows of solid platforms separated by vegetation-choked canals and farmed by poor, sweaty, and perhaps hungry farmers.⁵⁵

The predilection noted above for describing floating gardens, even when no such fields were seen, then, was partly due to the perspective of writers with Romantic visions of a simpler, more pleasant existence, and their preferences for heroic achievements and picturesque scenes. The tendency is better understood by examining several additional characteristics of travel literature also shared by academic writing of the period.

In particular, I find the tendency for early travel writers to rely on a reader’s presumed notions about places, or *topoi*, to convey a particular impression of the author’s experience, and for both writers and readers to regard other places and peoples with what has been termed a “textual attitude,” to be insightful regarding the persistence of the floating-garden image.⁵⁶

Topoi and Textual Attitudes

Noakes suggests that nineteenth-century travel literature commonly “purports explicitly to give an account of the details and patterns of life in . . . [another country], but implicitly takes its focus from the effort to persuade the reader to adopt a particular attitude toward the place ‘described.’”⁵⁷ Rather than describing what they actually experienced, writers often favored particular types of musing about scenes or landscapes that portrayed their foreign experiences, and observational skills, in a certain way. Travel writers often do so, Noakes argues, by use of *topoi*, or “commonly held notion[s] about someone or something which [are] accepted as true virtually without question and [carry] rhetorical weight because of this special status accorded [them] by a particular audience.”⁵⁸ For example, French visitors to Naples expected to encounter an intellectual, politically active populous, while travelers to Italy, Spain, and Portugal—and their readers—expected to see peasants either gallantly making the best of their situation, or living in squalor with and like animals, and numerous travel writers focused on precisely those aspects of a day’s experiences.⁵⁹

Floating gardens functioned as a similar rhetorical device. The traveler/writer, and the reader, knew about floating gardens from the widely available publications of Clavijero and von Humboldt, knew how they were made, and had some *a priori* notion of what their benefits must have

been.⁶⁰ Without reports of floating gardens, nineteenth-century accounts of Mexico would have been perceived as incomplete. Even William Bullock, whose main interest in canoeing through the chinampa zone was to hunt waterfowl, addressed the floating gardens.⁶¹ In this sense, floating gardens may be seen as simply a rather quaint example of rhetorical license.

However, the tendency for travelers to seek out particular places, scenes, or events highlighted by previous authors, and even to regard only those places and events as important, are also aspects of what has been termed a “textual attitude” on the part of scholars and writers.⁶² Once a renowned writer, particularly one of the first to describe a newly “discovered” place, has determined that certain places or events are significant, and has codified them in a particular text, later travelers and scholars are inclined, and later obliged, not only to visit the same, but also to write of their experiences at those places, and to compare their own observations to those of the earlier, authoritative version.⁶³

This tendency was not limited to travelers to the New World, nor to the Orient, by any means. James Buzard illustrates dramatically the degree to which nineteenth- and early twentieth-century British and American travelers to France and Italy not only expected to see what had been described by previous writers, but moreover, explicitly sought a “sublime synthesis,” a matching of previously acquired images with their own experience at the same place. Further, he suggests, in this travel literature, “the original becomes itself when the viewer perceives that it suits its representations.”⁶⁴

Several of the travelers to Mexico mentioned here did use von Humboldt as a travel guide, seeking out places he had gone as if to establish that they too had “done” a proper visit to Mexico.⁶⁵ Bullock also went to some trouble to track down certain monumental sculptures first reported by von Humboldt, and to make casts of them for delivery to the British Museum.⁶⁶ To some extent, then, floating gardens persisted in the literature because they had been identified earlier as “important” sights to see in Mexico.

Other authors simply combined their own account with additional information gleaned (copied actually, but in the style of the time, not cited) from the earlier sources—another characteristic of a textual attitude.⁶⁷ While several writers followed their acknowledgement that none had been sighted with descriptions of floating gardens taken right out of Acosta, Clavijero, and von Humboldt, one in particular provides a striking illustration of deference to earlier sources.⁶⁸ The floating gardens, Frederick A. Ober notes, “are always just beyond the eye, floating a little farther on; if one is at the Viga bridge, they are down the canal at Santa Anita; at the latter place, they are at Xochimilco; and there one will hear of them as at Lake Chalco.”⁶⁹

In spite of this skepticism, and his recognition that the chinampas readily visible along the canals he traveled were, in fact, just as authentic, he then promptly goes on to describe the “veritable” floating chinampas, the ones that “we shall in very truth encounter” in Lake Chalco, without

a further word about the fields he did observe! This same author begins a later discussion with a note that while he has found Mexicans to be quite pleasant and honest, he will nevertheless report the same things that others had previously reported about the “Mexicans.”⁷⁰

We see in these accounts, then, an apparent obligation to address and conform to authoritative texts rather than simply describe what was seen.⁷¹ Similarly, deference to the early texts is exposed in the weak explanations of how the solid, modern chinampas must have been transformed from “authentic” floating gardens. Rather than regard their own observations as either evidence that contradicted earlier sources or indications of the existence of different forms of chinampas, the authors invent transformations.⁷² Even in their absence, floating gardens continued to be discussed, reconstructed, and invented.

The tendency to regard Mexico’s floating gardens with a textual attitude, though, was not in explicit defense, nor advocacy, of colonialism. The fundamental changes initiated by the Conquest were, of course, already well underway. Further, the authors under discussion were from several different countries—Spain, Austria, the United States, Germany, Britain, and Mexico—their work was contributed over four centuries, and not all of them were particularly enamored with colonial processes. Neither were many of these authors interested in Indians or Mexicans in terms of their potential role as consumers.⁷³ These considerations significantly lessen the degree to which they collectively represent imperialist rationalizations. Nevertheless, the textual attitude toward the floating gardens contributed to other complex, academic relations that ultimately did contribute to the marginalization of the region.⁷⁴

Academia and Archaeologized Indians

As noted earlier, most of the pre-twentieth-century discussions of chinampas and floating gardens were brief.⁷⁵ Additionally, floating gardens almost always appear in conjunction with discussion of the ancient Aztec, and the emphasis is on their role in the semi-miraculous settlement and expansion of Tenochtitlán. In fact, floating gardens are not really the main subject. Rather, they are a device for introducing discussions about Aztec Mexico. As satisfying and obligatory as floating gardens were to a desire for picturesque, heroic, expected features of Mexico, the Aztec were even more so.⁷⁶

Much of the literature discussed here, in fact, not only focuses on, but equates Mexico with the Aztec. This tendency to “archaeologize” Mexico, to see and portray the landscape and people in terms of their relationship to the Aztec period and events, can be clearly seen in the following excerpt from Ober’s *Travels in Mexico*.⁷⁷ Describing his “gondola” trip along the Canal de La Viga, Ober notes that the local guide pointed out “that hill celebrated in Aztec history, La Estrella,” and later

mentions that in Lake Chalco there is a “small, though interesting island . . . Tlahuac, visited by Cortez and his soldiers on their way to Mexico in 1519.”⁷⁸ The island/village of Tlahuac was undoubtedly very interesting—even picturesque—and might have provided considerable original material for his travel tales (not to mention information about chinampa agriculture), yet for Ober it is only interesting because Cortez passed through. Throughout his book, as well as those of others who purported to write about their travels and experiences in Mexico, the reader consistently learns (has confirmed) far more about the Aztec and early colonial history of Mexico than about anything the author saw or thought during his travels.⁷⁹

Few of these attempts to “describe Mexico,” then, actually focused on describing or understanding the place they encountered. Rather, they wrote about Mexico primarily because of its usefulness for illustrating certain ideas pertinent to European and American Romantic discourses. Interest in newly discovered worlds as places of escape, liberty, innocence, nobility, and new picturesque scenes drew writers and other artists with means to Mexico (while others wrote and painted without visiting).⁸⁰ Well educated, and undoubtedly limited in their ability to see all that they wanted, these authors naturally drew on previous scholarly works for their information and repeated relevant historical anecdotes. Thus they contributed to both the authority with which those works were regarded, and to the textual attitude within Mexicanist scholarship, reinforcing the tendency to represent Mexico as certain images from its history. The Aztec, then, continually reappear, rather than gradually being replaced by the people and places encountered in later centuries, both because of the attractiveness of certain stories and images to the Romantic imagination, and because they were the subject of the earliest sources.

Moreover, there were at least three other major political and academic discourses into which the Aztec, and thus the early colonial sources, were inserted as examples, and in which the Aztec, as a regional discursive formation, further evolved. The first was an ongoing discussion of the true nature of the conquest; second, the appropriation of certain Aztec images and leaders during the Mexican Independence movement; and third, locating the Aztec in several different evolutionary schema of the emerging discipline of anthropology in Europe, the U.S., and Mexico.⁸¹

Over the centuries, numerous clerics and others have debated the methods, motives, and merits of the conquest. As Keen demonstrates, a primary concern was whether Aztec society, as understood from the available sources, was so advanced, egalitarian, prosperous, and the like, that it should have been recognized as a civilization deserving of better treatment than it received, or whether the sources revealed that they were, in fact, a barbarous society in decline that was somehow rescued from itself by the arrival of the Spanish.⁸²

Two main observations regarding this process are important here. The first is that this debate (which, of course, continues today) led to con-

tinual rereading of the early texts, with certain observations being emphasized at different times depending on the argument being made.⁸³ Second, Clavijero's *Historia Antigua* was not simply a best effort at reconstructing Mexican history. It was also an attempt of a Jesuit exiled from Mexico (for his pro-Indian views) to establish for the record that the Aztec had been an advanced civilization with great knowledge and achievement, that the conquest had been in some respects a grave injustice, and that Mexico's people were not "better off" than they had been.⁸⁴

Clavijero's marveling portrayal of Aztec ingenuity in the form of floating gardens, then, should not be seen simply as a less-than-fully investigated claim about Aztec history, but rather, as an element of that history deliberately chosen for its value in illustrating the virtues of Aztec Mexico.

Shortly after Clavijero's *Historia* and von Humboldt's visit, Mexican Independence leaders also began to invoke the Aztec past in nationalist discourse. Several prominent leaders, primarily of Creole descent, began to refer to both independence activists and the conquered Aztecs as "you," and "we," appropriated the mythical homeland *Anahuac* to refer to the desired nation-state "Mexico," and even equated the Virgin of Guadalupe with the Aztec deity *Tonantzín*.⁸⁵ From the symbolic adoption of *Mexica* as the national identity, to the names given to streets, and to figures chosen for public architecture, the Mexican as Aztec was not only appropriated and exploited by Independence leaders, but has also resonated with successive generations of Mexican politicians, intellectuals, and citizens.

Aztec Mexico also became an important source of data for, and was featured in, several different debates in anthropology both within Mexico and elsewhere. Edward B. Tylor and others contributed to early models of societal evolution from pre-agricultural to urban in which the Aztec were presented as an example of a society somewhere along the trajectory. Bandelier and Morgan in the U.S. later developed another model in which they portrayed the Aztec as a "Middle Status Barbarian Culture," primarily on the basis of a rereading of the Spanish chroniclers, ethnohistoric sources, and accounts of the Conquest. Others, particularly in Mexico, worked with the same, now widely distributed, documents and the increasing archaeological evidence, to counter that the Aztec had been a state-level, stratified, accomplished culture. Students of these scholars then focused on correcting past models and misrepresentations, often with considerable emphasis on the picturesque and dramatic in addition to those details that appeared to confirm ideas about such topics as barbarism, civility, and artistic achievement.⁸⁶

By the first half of the twentieth century, much of the anthropological literature within Mexico focused on two very different themes—understanding the Aztec past (also the Toltec and Teotihuacán) in order to demonstrate how dramatically the situation had changed for Mexico's Indians (who therefore needed the attention of the Revolutionary government); and demonstrating that "true" Mexican identity derived not from

the Aztec, but from the history since the Conquest. Both schools of thought continued to reread the colonial documents about the Aztec in order to prove their points. Others looked back to the Aztec for land-tenure insights that might help boost Mexico's agricultural productivity, a common refrain in Porfirian Mexico.⁸⁷

It must be noted that only a few of the authors on which I have focused attention in this article were major participants in these anthropological debates. Nevertheless, their observations about floating gardens were based on the same sources, and their publications were contributing to and being influenced by the academic and political environments in which these debates were topical. While it is difficult to assess how significant an influence a certain argument had on a particular analysis or publication, it is equally difficult to imagine that the authors cited here were oblivious to these discussions. Two major implications of these academic and political relations warrant final comment.

As subsequent scholars repeatedly looked back to Acosta, Clavijero, von Humboldt, and others for insight and confirmation in these spiraling academic appropriations of the Aztec, the earlier scholars' observations were effectively canonized. Thus, any of their observations could be cited later without critical comment, and indeed, had to be cited in any respectable account of Mexico and things Mexican. Second, the particular trajectory of the intellectual debates both within and outside of Mexico resulted in extending by another century or so the degree to which scholars focused on ancient, rather than contemporary, Mexico.

Academic Relations, Archaeologized Mexico, and Marginalization

Mary Louise Pratt suggested that "to revive indigenous history and culture as archaeology is to revive them *as dead*."⁸⁸ Certainly many archaeologists and others who strive honorably to learn about the past would disagree with this condemnation, but the truth in the remark is that one of the results of the long-term tendency to discuss the Indians of central Mexico in the past and without connection to their living descendants, was to ignore, or delay research on, the lives of actual Indians.

Further, I submit, the process of continually looking to the Aztec, and of emphasizing their great achievements for intellectual purposes, led also to a mystification of Indians according to which the Aztec had been capable of marvelous feats that contemporary Indians were not. The frequent dredging up of the old descriptions of floating gardens as examples of Aztec ingenuity within the broader discursive relations onto which the Aztec were inscribed, contributed to this mystification. As one author implied, the noble Aztecs created monumental palaces and exotic, floating gardens, while in contrast, contemporary farmers—dirty, simply dressed, sad, and living in primitive huts alongside dirt streets—can only

manage to come up with canals alongside their properties and “the marvels of the Mexican race are sinking into oblivion.”⁸⁹

A main effect of these processes was to reinforce notions of superiority over the indigenous population. Archaeologized chinampa farmers and other Indians were not only denied connection to their past, they were also denied connection to the marginalizing processes of the intervening centuries.⁹⁰ Modern, academic observers too were freed from acknowledging the causes of present conditions in the region and the role they—however unintentionally—might be playing in them.

Throughout the period discussed in this analysis, major economic, political, social, and environmental changes, as well as marginalization of the descendants of the Aztec, were occurring. The irony of the continual emphasis on floating gardens is that major environmental and economic changes were forever altering the nature of farming in the region right in front of the travelers and scholars, but the nature of these changes are poorly understood in part because of the lack of attention paid to them. Floating fields, and much more, had long disappeared, and the lives and fields of chinampa farmers dramatically changed as lakes were drained, rivers diverted and channelized, canals converted into streets, springs into pump houses, ditches into sewers, and fields into house sites and dumps.⁹¹ To discuss the contemporary would have been to confront such degradation and change, their apparent irreversibility, and perhaps to consider one’s own culpability in the processes. Describing the past, however passionately and legitimately, allowed authors to overlook the often less pleasant reality.

Conclusion

Acosta, when he mentioned the existence of floating gardens, introduced his comments by insisting that he was not making it up. Three centuries later, authors fumbled for explanations as to why the chinampas were no longer buoyant. Today, it is virtually impossible to discuss chinampa agriculture without first addressing the widespread belief that chinampas float, thus expending considerable energy on questions largely irrelevant to the actual importance of this form of wetland agriculture, let alone more pressing issues of the contemporary situation.

Repetition of the image of floating gardens—widely known, picturesque, heroic, and symbolic of freedom and ingenuity—meshed well for centuries with an archaeologized, textual understanding of Mexico and its peoples, and became an important element in the regional discursive formation of Aztec Mexico. The perpetuation of the floating gardens image, whatever its real origin, should be seen not only as an example of these trends in Mexicanist scholarship, but also as an indication of the degree to which academic relations can contribute unwittingly, as well as deliberately, to marginalizing processes often considered outside the realm of academia.

I do not believe that all scholarship must be activist, or focused on the present. Rather, I wish to suggest that the persistence of floating gardens in the literature clearly indicates the caution necessary, expressed in the form of considerable research into the intellectual context into which our sources were first inserted, that is warranted when we look back at historical documents for evidence. Second, when we do look back into the literature for whatever slivers of information might be available, and particularly when we are searching for hitherto-ignored references to phenomena of interest to us, but of perhaps only minor importance to the original author, we can not regard those slivers as necessarily, nor entirely, factual observations.

Without taking such an attitude, we may repeat the errors that led to floating gardens, buoyed by their picturesque image, and in spite of limited evidence of having ever existed, persisting into the modern understanding of Mexico, even as the very real chinampa farmers, their families, and the fields they farm changed dramatically over the centuries in ways that remain poorly understood.

Notes

1. Jose de Acosta, *Historia Natural y Moral de las Indias* (1590; reprint, Mexico, D.F.: Fondo de Cultura Economica, 1940); Francisco Javier Clavijero, *Historia Antigua de México* (1780; reprint, Mexico City: Editorial Porrúa, 1917).
2. Janice P. Darch, ed., *Drained Fields of the Americas* (Oxford: British Archaeological Reports, International Series Vol. 189, 1983); William M. Denevan, and Billie Lee Turner II, "Forms, Functions and Associations of Raised Fields in the Old World Tropics," *Journal of Tropical Geography* 39 (1974): 24-33; William Denevan, Kent Mathewson, and Gregory Knapp, eds., *Pre-Hispanic Agricultural Fields in the Andean Region* (Oxford: British Archaeological Reports, International Series, Vol. 352, i and ii, 1987); Ian S. Farrington, ed., *Prehistoric Intensive Agriculture in the Tropics* (Oxford: British Archaeological Reports, International Series, Vol. 232, i and ii, 1985); Ri Jian Lin and Shi Ming Luo, "The Structure and Function of the High Bed-Low Ditch System in the Pearl River of Southern China," in M.G. Paoletti, W. Foissner and D. Coleman, eds., *Soil Biota, Nutrient Cycling, and Farming Systems* (Boca Raton, FL: Lewis Publishers, 1993): 157-68.
3. The most complete summary of the sources, the fields they describe, and insights from her own observations and interactions with chinampa farmers is the analysis of Teresa Rojas Rabiela, "La tecnología indígena de construcción de chinampas en la Cuenca de México," in Teresa Rojas Rabiela, ed., *La Agricultura Chinampera: Compilación Histórica* (Mexico, D.F.: Universidad Autónoma Chapingo, 1993): 301-27. Use of the term *proto-chinampas* to refer to these earlier forms of wetland agriculture in the Basin of Mexico was initially suggested by Alfred Siemens, *A Favored Place* (Austin: University of Texas Press, 1998). The conclusion by a number of scholars that ancient proto-chinampas were likely quite different than modern chinampas is based largely on ge archaeological evidence provided and analyzed in a number of sources: Raul Avila López, "Chinampas de Iztapalapa," in Carlos Javier González, ed., *Chinampas prehispánicas* (Mexico City: Instituto Nacional de Antropología e Historia, 1992): 81-154; Charles D. Frederick, "Chinampa Cultivation in the Basin of Mexico: Observations on the Evolution of Form and Function," paper presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago, March 24-28, 1999; Deborah L. Nichols and Charles D. Frederick, "Irrigation Canals and Chinampas: Recent Research in the Northern Basin of Mexico," in Vernon L. Scarborough and Barry L. Isaac, eds., *Economic Aspects of Water Management in the Prehispanic New World*, Research in Economic Anthropology, Supplement 7 (Greenwich, CT: JAI Press, 1993): 123-50; Jeffrey R., Parsons, Elizabeth Brumfiel, Mary H. Parsons, and David J. Wilson, *Prehispanic Settlement Patterns in the Southern Valley of Mexico. The Chalco-Xochimilco*

- Region*, Vol. 14 of *Memoirs of the Museum of Anthropology* (Ann Arbor: Museum of Anthropology, University of Michigan, 1982).
4. Pedro Armillas, "Gardens on Swamps," *Science* 174 (1971): 653-66; Angel Palerm, "La base agrícola de la civilización urbana en Mesoamérica," in Angel Palerm and Eric Wolf, eds., *Agricultura y civilización en Mesoamérica* (Mexico City: SepSetentas, 1972): 65-94.; Jeffrey R. Parsons, "The role of chinampa agriculture in the food supply of Aztec Tenochtitlán," in C. Cleland ed., *Cultural Change and Continuity: Essays in Honor of James Bennet Griffin* (New York: Academic Press, 1976): 233-57; Parsons et al., *Prehispanic Settlement Patterns in the Southern Valley of Mexico*; William T. Sanders, "The Agricultural History of the Basin of Mexico," in Eric R. Wolf, ed., *The Valley of Mexico* (Albuquerque: University of New Mexico Press, 1976): 101-59; William T. Sanders, Jeffrey R. Parsons, and Robert S. Santley, *The Basin of Mexico: Ecological Processes in the Evolution of a Civilization* (New York: Academic Press, 1979).
 5. For lists of crops grown in chinampas see Acosta, *Historia Natural y Moral de las Indias*, 534; Miguel Santamaría, "Las Chinampas del Distrito Federal," in Teresa Rojas Rabiela ed., *La Agricultura Chinampera: Compilación Histórica* (Mexico, D.F.: Universidad Autónoma Chapingo, 1993): 43-76. Reprint of *Las Chinampas del Distrito Federal. Informe rendido al Señor Director General de Agricultura por el agrónomo Miguel Santamaría* (Mexico, D.F.: Secretaría de Fomento, 1912); Teresa Rojas Rabiela, "Evolución histórica del repertorio de plantas cultivadas en las chinampas de la cuenca de México," *La Agricultura Chinampera*, 203-51.
 6. See Luis Bojórquez Castro and Francisca Villa Rodríguez, "El ecosistema lacustre. Xochimilco y el deterioro de las chinampas," in Teresa Rojas Rabiela, ed., *Presente, pasado y futuro de las chinampas* (Mexico, D.F.: CIESAS, 1995): 85-137; Beatriz Canabal Cristiani, *Xochimilco: Una Identidad Recreada* (Mexico, D.F.: Universidad Autónoma de México-Xochimilco, 1997).
 7. Philip L. Crossley, "Sub-irrigation and Temperature Amelioration in Chinampa Agriculture," (Ph.D. diss., University of Texas at Austin, 1999).
 8. Michael Coe, "The Chinampas of Mexico," *Scientific American* 211:1 (1964): 90; Hugo Leicht, "Chinampas y Almacigos Flotantes," *Anales del Instituto de Biología* 8:3 (1937): 375-86; Robert C. West and Pedro Armillas, "Las chinampas de México. Poesía y realidad," *Cuadernos Americanos* 50:2 (1950): 166; Gene Wilken, "A Note on Buoyancy and Other Dubious Characteristics of the 'Floating' Chinampas of Mexico," in I.S. Farrington, ed., *Prehistoric Intensive Agriculture in the Tropics* (Oxford: British Archaeological Reports) 232 (i): 31-48.
 9. Robert West donated some 3,000 black-and-white photographs taken over his career to the Cartographic Information Center at Louisiana State University, and to the Nettie Lee Benson Latin American Collection at the University of Texas at Austin. A searchable index of these photographs will soon be available at the websites of these libraries.
 10. A more lengthy discussion of these sediments and the complete field descriptions of these profiles can be consulted in Crossley, "Sub-irrigation and Temperature Amelioration," Chapter 3, Appendix B.
 11. Numerous sources have discussed natural and manmade floating islands in many locations. See Brij Gopal, D.P. Zutshi, and Chet Van Duzer, "Floating Islands in India: Control or Conserve?" *International Journal of Ecology and Environmental Sciences* 29 (2003): 157-69; David Grove, "Floating Garden Agriculture," *The Masterkey* 39:1 (1965): 23-9; Mark W. Clark, "Biophysical Characterization of Floating Wetlands (Flotant) and Vegetative Succession of a Warm-Temperature Aquatic Ecosystem," (Ph.D. diss., University of Florida, 2000); Robert C. West and Pedro Armillas, "Las chinampas de México. Poesía y realidad," *Cuadernos Americanos* 50:2 (1950): 165-82.
 12. José Perez Espinosa, to whom I am grateful for much assistance over the years, has not only guided hundreds of visiting scholars and students around the chinampas of San Luis Tlaxiátemalco, but has also gone to considerable effort to collect and read as many of the documents later written by these visitors as possible. My own research was facilitated greatly not only by conversations with him, but also by the many documents he loaned or gave to me.
 13. Archival research clearly indicates that at least some chinampas have been regarded as private property since at least the mid-sixteenth century. See S.L. Cline, *Colonial Culhuacan, 1580-1600* (Albuquerque: University of New Mexico Press, 1986): 125-59.
 14. The significance of these questions was further raised by reviewers of an earlier draft of this article who challenged me to try to explain why certain misinformation about chinampas had been perpetuated, rather than simply show that it was false. In addition to the helpful comments of two anonymous reviewers, I would like to acknowledge the contributions to this paper made by Karl Offen, Kent Mathewson, Juanita Sundberg, and Chet Van Duzer.

15. James M. Blaut, *The Colonizer's Model of the World: Geographical Diffusionism and Eurocentric History* (New York: Guilford, 1993): 25; Douglas Deur, "Plant Cultivation on the Northwest Coast: A Reconsideration," *Journal of Cultural Geography* 19:2 (2002): 9-35; Andrew Sluyter, "The Making of the Myth in Postcolonial Development: Material-Conceptual Landscape Transformation in Sixteenth-Century Veracruz," *Annals of the Association of American Geographers* 89:3 (1999): 557-84. Others, of course, have made similar observations in more traditionally cultural ecological analyses, for example, William M. Denevan, "The Pristine Myth: The Landscape of the Americas in 1492," *Annals of the Association of American Geographers* 82:3 (1992): 369-85; William E. Doolittle, "Agriculture in North America on the Eve of Contact: A Reassessment," *Annals of the Association of American Geographers* 82:3 (1992): 386-401.
16. Thomas J. Bassett, "The Political Ecology of Peasant-Herder Conflicts in the Northern Ivory Coast," *Annals of the Association of American Geographers* 78:3 (1988): 433-52; Thomas J. Bassett and Koli Bi Zuéli, "Environmental Discourses and the Ivorian Savanna," *Annals of the Association of American Geographers* 90:1 (2000): 67-95; Piers Blaikie and Harold Brookfield, *Land Degradation and Society* (London: Methuen, 1987); Judith A. Carney, *Black Rice: The African Origins of Rice Cultivation in the Americas* (Cambridge, MA: Harvard University Press, 2001); Melissa Leach and Robin Mearns, eds., *The Lie of the Land: Challenging Received Wisdom on the African Environment* (Oxford: James Currey and Portsmouth, 1996); Roderick P. Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley: University of California Press, 1998); Nancy Lee Peluso, *Rich Forests, Poor People. Resource Control and Resistance in Java* (Berkeley: University of California Press, 1992); Bruce Willems-Braun, "Buried Epistemologies: The Politics of Nature in (Post)Colonial British Columbia," *Annals of the Association of American Geographers* 87:1 (1997): 3-31.
17. Richard Peet and Michael Watts, "Liberation Ecology: Development, Sustainability, and Environment in an Age of Market Triumphalism," in Peet and Watts, eds., *Liberation Ecologies. Environment, Development, Social Movements* (London and New York: Routledge, 1996): 16; Bassett and Zuéli, "Environmental Discourses and the Ivorian Savanna;" Leach and Mearns, *The Lie of the Land*; see Walker in this volume.
18. Neumann, *Imposing Wilderness*; Peluso, *Rich Forests, Poor People*.
19. Lakshman Yapa, "Improved Seeds and Constructed Scarcity," in Peet and Watts, eds., *Liberation Ecologies*, 69-85.
20. Edward Said, *Orientalism* (New York: Vintage Books, 1979; reprint, with afterword by Edward Said, New York: Vintage Books, 1994).
21. Said, *Orientalism*, 92-96.
22. Acosta, *Historia Natural y Moral de las Indias*, 533-34. See also Coe, "The Chinampas of Mexico," 90; Rojas Rabiela, "La tecnología indígena de construcción de chinampas," 315-16.
23. Clavijero, *Historia Antigua de México*, 379.
24. Clavijero, *Historia Antigua de México*, 379.
25. These dimensions are conversions from the original estimates in *varas*.
26. Clavijero, *Historia Antigua de México*, 379. Scholars who have visited chinampas and talked with the farmers tended to report farming practices in detail and mention that according to chinampa farmers it took years for a field to become stable enough to farm; see Santamaría, "Las Chinampas del Distrito Federal," 49-51.
27. Mexica is the commonly accepted term for the group who settled the island that later became Tenochtitlán -1215 AD. Today, the group is more commonly referred to as the Aztec.
28. See Zelia Nuttall, "Los jardines del antiguo México" in Carlos Javier González, ed., *Chinampas Prehispánicas* (Mexico, D.F.: Instituto Nacional de Antropología e Historia, 1992): 41-61. Originally published in *Memorias y Revista de la Sociedad Científica "Antonio Alzate"* 37 (1920): 193-213; West and Armillas, "Las chinampas de México," 166; Rojas Rabiela, "La tecnología indígena de construcción de chinampas," 316.
29. Alvarado Tezozómoc, *Codice Ramirez, Relación del Origen de los Indios que Habitan Esta Nueva España, según sus Historias*, (c. 1600; reprint of 1878 edition, Mexico, D.F.: Editorial Leyenda, S.A., 1944); Anonymous, "Anales de Tlaltelolco," in Carlos Javier González, ed., *Chinampas Prehispánicas* (date unknown; reprint, Mexico City: Instituto Nacional de Antropología e Historia, 1992): 33; Acosta, *Historia Natural y Moral de las Indias*, 534.
30. Nuttall, "Los jardines del antiguo México," 61; Rojas Rabiela, "La tecnología indígena de construcción de chinampas," 316.
31. West and Armillas, "Las Chinampas de Mexico," 166, concluded that early observers must have seen some floating construction materials, or early stages of chinampa construction. Armillas, "Gardens on Swamps," 653, later concluded that the most satisfactory explanation of the float-

- ing gardens belief was a mistaken identification of much smaller, floating seed beds. A report by Karl Sapper of floating fields in 1923 was also a significant influence on West's acceptance that such fields may have existed; see West and Armillas, "Las Chinampas de Mexico," 166, note 7).
32. Joseph Antonio Alzate y Ramirez, "Memoria sobre agricultura (1791)," in Rojas Rabiela, ed., *La agricultura chinampera*, 14-29. Reprint of extract published in Luis Chavez Orozco, ed., *Alzate y la agronomía de la Nueva España*, (Mexico, D.F.: Banco Nacional de Crédito Agrícola y Ganadero, S.A., Tomo III, 1954).
 33. For these and other details concerning the activities of von Humboldt and his party while in Mexico see Juan A. Ortega y Medina, "Estudio Preliminar," in Alexander von Humboldt, *Ensayo Político sobre El Reino de La Nueva España*, I-LIII (1822; reprint, Mexico City: Editorial Porrúa, 1966): I-XLIX.
 34. See William Bullock, *Six Months Residence and Travels in Mexico* (1824; reprint, Port Washington, N.Y.: Kennikat Press, 1971): 175-6.
 35. Von Humboldt, *Ensayo Político*, 134.
 36. Von Humboldt, *Ensayo Político*, 134. Others, however, do verify their existence and discuss them in considerably more detail.
 37. For the original observation that von Humboldt did not claim to have seen floating fields, based on their reading of the French version of his *Ensayo*, see Norman L Willey and Carlos García Prada, "El Embrujo de las Chinampas," *Hispanic American Historical Review* 19 (1939): 85.
 38. Manuel Orozco y Berra, *Memoria para La Carta Hidrográfica del Valle de Mexico* (Mexico City: Imprenta de A. Boix, 1864): 162-3; Antonio Peñafiel, *Memoria sobre las aguas potables de la capital de México* (Mexico, D.F.: Secretaría de Fomento, 1884): 83.
 39. Von Humboldt, *Ensayo Político sobre El Reino de La Nueva España*, 134.
 40. Frederick A. Ober, *Travels in Mexico* (Boston: Estes and Lauriat, 1877): 332.
 41. Ernst von Hesse-Wartegg, *Mexico: Land und Leute, Reisen auf neuen Wegen durch das Aztekenland* (Wien und Olmütz: Verlag von Ed. Hölzel, 1890). This explanation was originally suggested by von Humboldt, *Ensayo Político sobre El Reino de La Nueva España*, 134.
 42. Manuel Rivera Cambas, untitled excerpt, in Javier González, ed., *Chinampas Prehispánicas* (Mexico, D.F.: Instituto Nacional de Antropología e Historia, 1992): 37-9. Reprint of excerpt from *México pintoresco, artístico y monumental* (Mexico, D.F.: Imprenta de la Reforma, 1882): Vol. 2: 459-62, 476; Orozco y Berra, *Memoria para La Carta Hidrográfica*, 163.
 43. Coe, "The Chinampas of Mexico," 94; Georgina López Rios, *Chinampas, perspectiva agroecológica* (Mexico, D.F.: Universidad Autónoma Chapingo, 1988): 22; Thomas Outerbridge, "The disappearing chinampas of Xochimilco," *The Ecologist* 17:2 (1987): 79; Peñafiel, *Memoria sobre las aguas potables*, 70; Elizabeth Schilling, "Los 'jardines flotantes' de Xochimilco. Una selección," in Rojas Rabiela, ed., *La Agricultura Chinampera: Compilación Histórica* (Mexico, D.F.: Universidad Autónoma Chapingo, 1993): 79. Spanish translation by Helga Stein of an excerpt from the original, Die "schwimmenden Gärten" von Xochimilco," *Schriften des Geographischen Institutes der Universität Kiel*, IX(3) (1938); West and Armillas, "Las chinampas de México," 166.
 44. Santamaría, "Las Chinampas del Distrito Federal," 49.
 45. For further discussion of the rooting characteristics of willow trees, see Philip L. Crossley, "Sub-irrigation in Wetland Agriculture: Evidence from the Chinampas of Mexico," *Agriculture and Human Values* 21:2 (2004): 87-101.
 46. For arguments against the existence of any floating gardens as they have been described, see Leicht, "Chinampas y Almacigos Flotantes;" Nuttal, "Los jardines del antiguo México;" Wilken, "A Note on Buoyancy;" Willey and García Prada, "El Embrujo de las Chinampas."
 47. Many authors make nuanced distinctions between the alleged floating fields of the past and the chinampas in use today, apparently reflecting their careful reading of the available sources or recognition of the different types of fields that may have been given the name chinampa over the centuries. It remains common, though (about half of the web "chinampa" search results consulted on 5/14/2004), to see unequivocal references to chinampas as floating gardens in texts and "reference" sources such as these—Brummett, Palmira, et al., *Civilization Past and Present, Volume I - to 1650*, 9th ed., (New York: Longman, 2000): 340; <http://www.sciencedaily.com/encyclopedia/chinampa>, accessed on 5/14/2004; <http://www.worldhistory.com/wiki/c/chinampa.htm>, accessed on 5/14/2004—and in contemporary newspaper accounts and tourism information in Mexico, materials prepared for students doing research on the Internet, and in the alternative horticultural press. See <http://www.elsiglodetorreon.com.mx/archivo/nID/16767/y/2004/m/04/>, accessed on 5/14/2004; <http://www.jeronimus.net/mexmus/mxxmilco/index.htm>, accessed on 5/14/2004;

- <http://archaeology.asu.edu/tm/pages2/mtm60.htm>, accessed on 5/14/2004; <http://www.artehistoria.com/frames.htm?http://www.artehistoria.com/historia/contextos/1427.htm>, accessed on 5/14/2004; http://www.mrburnett.net/3rdGradeBurnett/I216web/aztec_chinampa.htm, accessed on 5/14/2004; <http://www.rosneath.com/au/resources/chinampa-essay.html>, accessed on 5/14/2004; <http://www.agnr.umd.edu/howard/mg/schfloa.htm>, accessed on 5/14/2004. The point is not that some writers or the public are somehow “wrong,” but that the idea of floating gardens and their use by the Aztec remains popular.
48. Von Hesse-Wartegg, *Mexico: Land und Leute*.
 49. Use of *Aztec* here is deliberate although Mexica and other terms are more historically, ethnically, and linguistically accurate. *Aztec* is the term used by almost all of the writers discussed here, and their general, imprecise, and symbolic use of this term over all the others is precisely the point I wish to elucidate.
 50. In the eighteenth and nineteenth centuries, several poems, novels, plays, and at least one opera chose “Aztec Mexico” as the setting for their otherwise typically European stories of love, betrayal, and heroic triumph over nature and fate, see Benjamin Keen, *The Aztec Image in Western Thought* (New Brunswick, N.J., Rutgers University Press, 1971): 311-462.
 51. For lengthy discussion of these aspects of Romanticism, see Keen, *The Aztec Image in Western Thought*, 311-462; Anthony Pagden, *European Encounters with the New World, from Renaissance to Romanticism* (New Haven: Yale University Press, 1993).
 52. For example, Ober, *Travels in Mexico*, 332; von Humboldt, *Ensayo Político*, 166.
 53. Keen, *The Aztec Image in Western Thought*, 564.
 54. James Buzard, *The Beaten Track: European Tourism, Literature, and the Ways to “Culture,” 1800-1918* (Oxford: Clarendon Press, 1993).
 55. While vegetation-choked canals may be far more characteristic of today’s chinampería than that of the nineteenth century, and though I continue to find parts of the chinampería quite picturesque, my point here is to emphasize the kinds of details one does observe in the region versus the type of description one finds in the literature.
 56. Susan Noakes, “The Rhetoric of Travel: The French Romantic Myth of Naples,” *Ethnohistory* 33:2 (1986): 141; Said, *Orientalism*, 92-6.
 57. Noakes, *Ethnohistory*, 139.
 58. Noakes, *Ethnohistory*, 141.
 59. Caroline B. Brettell, “Introduction: Travel Literature, Ethnography, and Ethnohistory,” *Ethnohistory* 33:2 (1986): 129; Buzard, *The Beaten Track*, 172-204.
 60. For discussion of the distribution and availability of these and other important documents concerning Mexico, see Keen, *The Aztec Image in Western Thought*; Eloise Quinones Keber, “Humboldt and Aztec Art,” *Colonial Latin American Review* 5:2 (December 1996): 277-98; Anthony Pagden, *European Encounters with the New World*; Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (New York: Routledge, 1992).
 61. Bullock, *Six Months Residence and Travels in Mexico*, 175-6.
 62. Buzard, *The Beaten Track*, 196; Said, *Orientalism*, 92-4.
 63. Buzard, *The Beaten Track*, 196.
 64. Buzard, *The Beaten Track*, 196.
 65. Bullock, *Six Months Residence and Travels in Mexico*; von Hesse-Wartegg, *Mexico: Land und Leute*; Ober, *Travels in Mexico*; Joel R. Poinsett, *Notas Sobre México* (translation by Pablo Martínez del Campo of 1825 original, Mexico City: Editorial Jus, 1950).
 66. Quinones Keber, “Humboldt and Aztec Art,” 278.
 67. Said, *Orientalism*, 94.
 68. Poinsett, *Notas Sobre México*; William H. Prescott, *Conquest of Mexico* (1843; reprint, Garden City, NY: Blue Ribbon Books, 1943); von Hesse-Wartegg, *Mexico: Land und Leute*.
 69. Ober, *Travels in Mexico*, 332.
 70. Ober, *Travels in Mexico*, 332.
 71. See, for example, Orozco y Berra, *Memoria para La Carta Hidrografica del Valle de Mexico*, 163; Santamaría, *Las Chinampas del Distrito Federal*, 49; Coe, *The Chinampas of Mexico*, 94.
 72. An important exception to this tendency, and the only one between Alzate y Ramírez in 1791 and Angel Palerm in 1972 to recognize the possibility that there was more than one form of wetland field in the region during pre-Hispanic times, is found in Edward B. Tylor, “Fragmento sobre las Chinampas (1861)” in Rojas Rabiela, ed., *La Agricultura Chinampera: Compilación Histórica*, 2nd ed. (reprint of excerpt of translation by Angel Palerm of Edward Tylor, *Anahuac, or Mexico and the Mexicans, Ancient and Modern* (1861) in Angel Palerm, *Historia de la Etnología*.

- Tylor y los profesionales británicos*, Ediciones de la Casa Chata 5, México, D.F.: CISINAH, 24-25, Mexico: Universidad Autónoma de Chapingo, 1993): 42. See also Angel Palerm, "La base agrícola de la civilización urbana en Mesoamérica," 65-94.
73. In contrast, see the arguments and examples given by Kristine L. Jones, "Nineteenth Century British Travel Accounts of Argentina," *Ethnohistory* 33:2 (1986): 195-211; Santamaría, "Las Chinampas del Distrito Federal," is the only source in which an economic perspective on the activities of chinampa farmers is presented.
 74. Here I refer to the concept of academic relations as discussed by Yapa, "Improved Seeds and Constructed Scarcity," 71-3.
 75. The contrast between the brief, rhetorical references to floating gardens in the major early sources discussed here, and the attention paid to those references by scholars intent on salvaging all possible evidence from past observations is striking. See Armillas, "Gardens on Swamps," 653; Crossley, "Sub-irrigation and Temperature Amerlioration," 43-102; West and Armillas, "Las Chinampas de Mexico," 165-6. As noted, my own work reflects this irony as much, or more, than any other.
 76. See Keen, *The Aztec Image in Western Thought*, 311-462, for numerous other examples of both fascination with the Aztec, and the equating of Aztec and Mexico.
 77. The suggestion that von Humboldt and others archaeologized America is from Pratt, *Imperial Eyes*, 132-5. Other countries and people have, clearly, also been archaeologized. For references to a similar attitude toward ancient Rome versus contemporary Italians, for example, see Buzard, *The Beaten Track*, 211.
 78. Ober, *Travels in Mexico*, 337.
 79. Bullock, *Six Months Residence and Travels in Mexico*; von Hesse-Wartegg, *Mexico: Land und Leute*.
 80. All of the authors discussed here, except Prescott, did travel to Mexico. Many of the others reviewed in Keen, *The Aztec Image in Western Thought*, did not.
 81. Each of these discourses is discussed in detail in Keen, *The Aztec Image in Western Thought*, 293-319, 461-80.
 82. Keen, *The Aztec Image in Western Thought*, 311-6.
 83. Keen, *The Aztec Image in Western Thought*, 311-6.
 84. Keen, *The Aztec Image in Western Thought*, 311-6.
 85. Keen, *The Aztec Image in Western Thought*, 316-9.
 86. See Keen, *The Aztec Image in Western Thought*, 461-80, for a thorough review of these debates, leading figures, and important publications.
 87. Keen, *The Aztec Image in Western Thought*, 461-76.
 88. Pratt, *Imperial Eyes*, 134, emphasis in the original.
 89. These observations about the nature and conditions of contemporary Xochimilco residents (p. 418) and the statement, "*Las grandezas de la raza mexicana van hundiéndose en el olvido*" (p. 428, my translation), are from Jose G. Montes de Oca, "Xochimilco y sus chinampas," *Memorias de la Sociedad Alzate* 45 (1926): 413-28.
 90. I refer here to all of the types of marginalization discussed by Piers Blaikie and Harold Brookfield, *Land Degradation and Society* (London: Methuen, 1987): 21-3.
 91. See Bojórquez Castro, *El Ecosistema Lacustre*; Canabal Cristiani, *Xochimilco: Una Identidad Recreada*; Outerbridge, "The disappearing chinampas of Xochimilco"; Elizabeth Mansilla Menéndez, "La relación entre la Ciudad de México y Xochimilco," in Rojas Rabiela, ed., *Presente, pasado y futuro de las chinampas* (Mexico City: Centro de Investigaciones y Estudios Superiores en Antropología Social, 1995): 201-4; Manuel Marroquín y Rivera, *Obras de provisión de aguas potables para la Ciudad de México* (Mexico City: Juan Aguilar Vera, 1910); José Fernando Ramírez, *Memoria acerca de las obras e inundaciones en la ciudad de México* (México, D.F.: Instituto Nacional de Antropología e Historia, 1976).