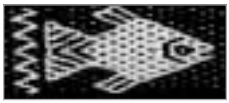
Excerpted from

BEN ORLOVE

LINES IN THE WATER

Nature and Culture at Lake Titicaca

2 Mountains



Soon after I moved into my apartment in Puno in 1979, I put maps of the altiplano on the wall of the larger of the two rooms. They gave it the appearance of an office or a study, thus reassuring me, when I doubted that my research was advancing very well, that I really was a serious anthropologist. Even in less anxious moments I drew some comfort from them, since they linked me to prior generations of field researchers who also had used maps as decorations. I ended up installing a large, disparate collection, justifying each addition by the fact that no single map showed in detail the entire altiplano, as the plateau that contains the Lake Titicaca basin is known. (Most maps of the altiplano are made by national governments, and each—motivated by a mix of nationalist pride and military caution—depicts the other's territory as blank space.) My favorite was a Peruvian map that showed the department of Puno. Though its dull browns and

grays lacked aesthetic appeal, it showed in great detail the configuration of the lakeshore and the lands near it. Coming in a close second were the tasteful aquatic maps that showed land in white and gray and reserved color for the lake itself, depicting waters at greater depths in successively darker shades of blue. I included as well a national map of Bolivia that indicated the country's departments not with the red, yellow, and green of the nation's flag, but with the garish substitutes of magenta, mustard, and lime.

One day, when I was taking a break from typing up notes, I got up from the piece of furniture that served as my desk and dining table and strolled over to the map-covered wall. I became interested in the largest peninsula in the lake, about seven hundred square kilometers in area. It is shaped something like an hourglass, with an unusually bulbous lower half. The bottom of the hourglass is attached to the shores of the lake; the neck is an isthmus, less than three kilometers wide; and the top projects far into the lake. The bottom half of the peninsula, I noticed, consists essentially of one tall mountain, Ccapia, whose summit, at 4,809 meters, is almost exactly a thousand meters above the level of the lake, 3,808 meters. After checking over all the maps, I realized that no place could provide a better view: other mountains are lower, or farther from shore, or behind other peaks that would block the lake. I resolved to climb to its summit. From its top I would be able to see the two main sections of the lake, the Lago Grande and the smaller Lago Pequeño, separated by the narrow Straits of Tiquina.

I would have preferred a mountain that was easier to get to. Ccapia is almost midway between Puno and the Bolivian capital of La Paz, about 120 kilometers from each. This distance was not great by the standards of industrial countries, but it meant a long trip on the dirt roads of the altiplano. I noticed that Ccapia lay near some roads, the ones that connected the larger villages on the peninsula. Wondering whether I might be able to climb this mountain, I went to the tall basket in which I kept other maps rolled up. I soon found a more detailed map of the lower portion of the peninsula. With any pretense of completing my field notes cast aside, I cleared off my table and examined the map. Drawn on a scale of 1:100,000, it indicated footpaths as thin, unbroken black lines. These lines

Lake Titicaca basin.

crossed the mountain and went right to the top. From my experience in other parts of Peru, I had learned that these maps were usually accurate. If they contained any mistakes, it was to omit paths, rather than to put in nonexistent ones.

I was glad to consult this map, not only to obtain the information that it contained, but also to recollect the effort that I had made to obtain it. I had seen the entire series to which it belonged in the main university library at Berkeley, and I knew that I wanted copies of the altiplano por-

tion to use in Peru. They contained valuable information on lakeshore villages, and, perhaps even more important, I knew their familiarity would comfort me in this alien land. They bore a strong resemblance to the topographic maps on similar scales that had guided me while I was backpacking in California. Such maps of the United States could easily be purchased in camping supply stores, but it took some doing to obtain similar ones in Peru. There was only one place in the entire country where they were sold: the Peruvian Military Geographical Institute, in a former mansion in an out-of-the-way neighborhood of Lima not well served by bus lines. The room where maps were sold was just to the right of the main entry hall, in what must have been one of the formal *salas,* or living rooms, of the mansion. Individuals who wanted to buy maps—mostly government officials who had vehicles and drivers to take them to this institute—were required to present some sort of identification. Their names, addresses, and identity-document numbers were entered in a registry of map-buyers. Because every copy of every map had a number stamped on it, the government could presumably track down all the maps in case a war broke out. (The blank obverse side of the maps bore a list of the *Obligaciones del Comprador,* the duties of the purchaser, which included turning the map in to national authorities at the first signs of an outbreak of civil disturbance.) In the case of certain regions frequented by tourists, such as the Inca trail to Machu Picchu or the more popular peaks of the Cordillera Blanca, the institute staff might soften the regulations and accept a hotel in Lima as an address, rather than insisting on a more permanent residence or office.

Had the changes of bus and the long walk to the institute not delayed my arrival until late in the afternoon, when many of the staff had already left, I probably never would have been able to obtain the five sheets of this series, which included the portions of the border near Lake Titicaca. I presented my passport and copies of my official *convenio,* or agreement with the Peruvian government agency IMARPE. These documents did not fully satisfy the clerk; he was unable to decide whether he should sell me the maps I had requested. Would his superiors be angry with him if they found that he had made so weighty a decision in their absence? Was I a well-connected figure who could make trouble for him if he refused me?

After a few minutes of trying to postpone this difficult decision, he brightened. *"¿No necesita recibo, verdad?"* (You don't need a receipt, do you?), he asked. I assured him that I did not. He checked to see that the armed guard at the door was not looking in on us, then went back into the storeroom. He looked nervous as he laid out the sensitive border sheets on the counter. In too much of a rush to check my documents for the correct spelling of my sponsors, he scribbled a misspelled "IMARFE" in the space for "identification of purchaser" printed on the maps, and a second acronym, one that I have been unable to decode, "DINTE," for the "signature of permission-granting authority." He took my money, rolled the set of maps into a cylinder, thrust it into my hands, and hurried me out the door. I was delighted to have the maps in my possession and set off on the long walk to the avenue where I would catch a bus back to my hotel.

The encounter became clearer to me after I'd thought it over. Few of these maps had been sold. The clerk must have known that the registry of purchasers was checked only infrequently, so that even if the gap in these border sheets were noticed, he would be only one of several individuals on whom blame might be placed. Moreover, the acronyms he had put on my map consisted of capital letters written in block script rather than cursive. It would therefore be difficult to trace him if anyone apprehended me with the maps and doubted the legitimacy of the channels through which I had obtained them. No definitive evidence against him could be presented. In the meantime, he must have pocketed the cash that I had given him. Had he given any of it to the apparently inattentive guard, I wondered? I somehow thought that he had not, but I could not be sure.

And here in Puno, seeking to climb a mountain, my efforts at obtaining these maps paid off. This sheet, which I had previously used only to locate fishing villages and reedbeds, showed the routes to the summit of Ccapia. I asked Hugo and René, the younger biologists at IMARPE whom I saw regularly, if they'd like to join me. I had accompanied them and Eufracio, the director, on two or three trips to the peninsula, first to the remote village of Vilurcuni to select fishermen for our catch survey, and later to complete other surveys. And the IMARPE staff was always ready for an excuse to visit the border town of Yunguyo, on the peninsula's isth-

mus. With a smaller government presence than Desaguadero, it was a good place to pick up contraband, especially small electronic items that had been smuggled all the way across Bolivia from Brazil, and the much prized *café de los yungas,* the dark, strong-flavored coffee from the lowland Bolivian valleys between the Andes and the Amazon. But mountain climbing seemed a bit strenuous to them. Urban dwellers at heart, they liked to take their vacations in cities. Their idea of a pleasant outing in the altiplano was a visit to a hot spring or an excursion to a town with some local food specialty such as roast lamb. I kept talking up the possible climb, and it became a bit of a joke. The other biologists would tease Hugo, the shortest and fattest among them, suggesting that a run up the mountain would be a good way for him to burn off his excess kilos. He would retort that he was *gordito pero agilito,* plump but quick on his feet—a truth they had to recognize, since he was one of the best players on the IMARPE soccer team. He achieved a double balance with this response, since he knew that I never accepted the invitations of the IMARPE biologists and technicians to join in one of their games. Aside from Amanda, the one woman biologist, they were all at least competent at the sport, having played it since their boyhoods, and some of them were quite good. By contrast, I was a very poor player and did not want them to see how awkward I was on the field. This unwillingness of mine to play soccer balanced with their reluctance to climb a mountain; we were even. They were as glad as I was to have the pair of unmet invitations as a reliable and safe source of banter.

If not with my IMARPE friends, then with whom could I climb Ccapia? Though Cirilo was a sturdy walker, he was in his sixties and had limited vision. The climb might be too strenuous for him. Tito was a possibility. I had gone on outings to pre-Inca ruins and colonial churches with him. He shared my curiosity about the altiplano and my fondness for hikes, in part, I think, because he was a bit of an outsider in town himself. He was the son of the owner of one of the largest hardware stores in Puno, the grandson of Italian immigrants—and hence, by local standards, someone who was clearly a newcomer. His old Volkswagen could take us to the foot of Ccapia as reliably as the IMARPE Toyota Land Cruiser could. We discussed the trip, but it never materialized. Ccapia

Lake Titicaca in a flood year, with water covering the fields on either side of the railroad line between Puno and Juliaca. Photograph by Tom Love.

was much higher than the hills we had scrambled up to see ancient burial towers, and even Atojja, the one sizable mountain that we had climbed, was not as high. It was a good bit farther from Puno as well, and it would have entailed an earlier departure than Tito was accustomed to.

I needed some other plan. I knew that the base of the mountain was easy to get to, and that I would pass by it on one of my trips between Puno and La Paz. Occasionally, I traveled between these two cities by the routes that did not pass the mountain. I sometimes spent two or three days on the narrow winding roads on the northeast shore of the lake, with long delays in the squares of small towns while I waited for a truck to take me on the next leg of my trip. On two occasions, I went directly across the lake by steamer. This form of travel was the most enjoyable: it was comfortable, it had the best views—the sunrise over the snow-covered peaks of the Cordillera Real took on an added beauty when reflected in the waters of the lake—and the steamer itself was a wonderful

old ship, the glamour it must have had in the 1930s still evident in its old brass fittings and worn velvet curtains. But these alternatives were slow, so I usually took the main road on the southwest side of the lake, and this is the road that passed by Ccapia. It was the widest of the roads around the lake, although, like all the others, it was not paved. With two full lanes, cars and trucks did not need to slow down very much to pass each other. Running through flatter terrain, it was less likely to get washed out and was more quickly repaired when it did. On this road, buses could cover the 240 kilometers between Puno and La Paz in ten hours, sometimes in eight.

This road went south from Puno through a series of small towns: Chucuito, Acora, Ilave, Juli, Pomata. These had been former *cabaceras,* or chiefly villages, of the Lupaqa nation, both when it was an independent kingdom and after it was conquered by the Incas and became a province of their empire. The towns had been parishes under Spanish rule, and they became districts soon after independence. When the road reached Pomata, at the base of Ccapia, it divided in two. The principal branch continued to the southwest along the base of the hourglass peninsula. It passed below Ccapia and reached first Zepita (the sixth of the Lupaqa settlements) and then Desaguadero, a town named for the river on whose banks it had been built. This river marks the border between Peru and Bolivia, and Desaguadero is the easiest place to cross between these two countries: the Peruvian border station is only a few blocks from the river, and the Bolivian station is right next to the modern cement bridge. The Bolivian portion of the trip to La Paz passed quickly on the flat road that climbed slowly up the altiplano away from the lake until it reached the lip of the canyon in which the city stands.

The other fork of the road from Pomata offered a slower, more scenic route to La Paz. Following the edge of the lower half of the hourglass, it hugged the shore, circling around Ccapia to Yunguyo, the seventh and last of the Lupaqa towns, and to the border, two kilometers farther on. Passengers were not permitted to ride between the several hundred meters that separated the border stations, but instead had to walk, a process that often created a certain amount of confusion and delay. Seven kilometers past the border lay the first Bolivian town, Copacabana, the site of

major shrines since pre-Inca times and now the seat of a cathedral and the home of the Virgin of Copacabana, Bolivia's patron saint. The name of this town has traveled far, carried first in the early sixteenth century by the Portuguese explorers to the beach near the city of Rio de Janeiro and second in the mid-twentieth century by North American businessmen to their nightclub on East 60th Street in Manhattan. From Copacabana the road wound up the ridge that formed the central part of the upper half of the hourglass. The flat top of this ridge, less than half as high as Ccapia, afforded spectacular views, but I recalled it principally for the sense of foreboding that it evoked. At several bends in the road, hungry dogs would run up to the bus, yapping loudly. The local people, rather than ignoring them as they usually would, opened windows and tossed pieces of bread down to them. These dogs were *almas perdidas,* they explained to me, lost souls: souls that had escaped from purgatory and taken animal form, souls capable of retribution against those who denied them their wishes. From this haunted ridge the road curved down to Tiquina, where the lake narrows to a strait less than a kilometer wide. The buses queued up here for their turn to take one of the ferries, flat wooden boats barely larger than the buses themselves. The road on the other shore had another ridge to climb and descend before it finally reached the flat portion of the altiplano that led to La Paz.

I could not easily select between the alternatives of approaching the mountain from the Copacabana road or the Desaguadero road. The former would let me begin the climb from a town where I could ask for directions, since the route from Yunguyo to the peak was short. The latter would require me to ask the bus driver to drop me off somewhere in the potato fields and pastures roughly midway between Pomata and Zepita. Despite that difficulty, however, the second route had some advantages: it had more traffic, and it would take me through an area of great historical interest. I was curious to see this area between Desaguadero and Pomata, a key route across the altiplano for centuries, and as such, a battleground. It was the site where the Incas quelled the largest rebellion that they had ever faced. The altiplano, with its autonomous Aymara-speaking kingdoms, was one of the most difficult regions for them to conquer. The Pacajes, the former kingdom to the south of the Lupaqa, rose up around

the 1470s. It was not subjugated until the Incas staged a decisive victory around 1488. In 1538, still not fully under Spanish rule despite the military successes of the conquistadores against the Incas elsewhere in the Andes, this place saw a set of battles between the Spaniards and Lupaqa, who had retained a distinctive identity even after their incorporation into the Inca empire. In this fighting, the Spaniards received some support from the Colla, the Aymara kingdom to the north of the Lupaqa, which they controlled more tightly. In 1823 this area witnessed one of the key events in the Wars of Independence on this part of the continent. As schoolchildren in both countries know well, the republicans under General Santa Cruz defeated the royalists in the Battle of Zepita. If I were to hike through this area, I thought, I might find some evidence of the fortifications in the region. At the very least, I would be able to imagine more concretely the troops that had fought here in earlier centuries.

Neither the convenience of the Yunguyo route on the Copacabana road nor the interest of the battlefields on the Desaguadero road were attractions strong enough to make me select one over the other. The routes were similar in their difficulty. They both had an elevation gain of a thousand meters, and the round-trip distances were also very close: twenty-five kilometers for the former, twenty-three for the latter. Moreover, they both shared a key logistical difficulty: I would not be able to take the detailed map with me, since these maps were sensitive documents, and I had to consider the possibility that I might be searched if I were to hike so close to the border. I took this risk seriously, since I had had a difficult encounter with a policeman at the border earlier that year. After he saw me taking photographs of the Río Desaguadero, he wanted to confiscate my camera. It required all my rhetorical abilities to convince him to let me keep it. I was not a spy, I told him, but an anthropologist. This river fascinated me for its ecological and historical significance—look how small it is, considering that it is the only outflow of the lake; that's because much more water leaves the lake by evaporation than by flowing down the river. Did he know that the Incas had maintained a pontoon bridge there, constructed of reed rafts, and that such bridges were maintained throughout the colonial period and well into the nineteenth century? Either impressed by my reference to his nation's pre-Columbian heritage

or eager to escape my babbling, he let me keep the camera, but I did not want to meet him, or any colleague of his, while I was illegally transporting a document. I thought of the alternatives: if I rolled it up and brought it with me in the cardboard tube that I ordinarily used for carrying maps, it would be conspicuous enough to attract attention. If I folded it and concealed it in my bag, it would certainly wear along the creases. Moreover, if it were found there, I would have a more difficult time pleading innocence. Better to leave it in Puno, where it would remain safely for me to consult in the future.

The thought of a mapless ascent troubled me. I recalled one such hike that I had taken on my own. It took me longer than I had anticipated to climb the ridge that separated two small towns, Luribay and Sapahaqui, in valleys halfway down to the lowlands east of La Paz. Leaving Luribay just after sunrise, I had to retrace my steps several times to find the correct route out of the valley. I arrived in Sapahaqui not late in the afternoon, as I had hoped, or even at nightfall, but in the middle of the following morning, exhausted from a night spent in an uncomfortable bivouac near the crest of the ridge, and very thirsty as well. Unwilling to drink from the springs that I knew might be contaminated by sheep and llamas, I had nothing to supplement the two quarts of water that I had brought, other than the moisture I could extract by chewing the cobs of the fresh-boiled corn that, along with a roll, some cheese, and some figs, had been the food I was given by the family with whom I'd stayed in Luribay.

As with so many undertakings in the altiplano, then, the climb up Ccapia would depend on personal contacts, on finding someone who could lead me to the summit. I added the bottom half of the peninsula to my mental list—already quite lengthy—of places in which I wanted to meet local residents. The IMARPE biologists introduced me to an employee of the Ministry of Fisheries from Yunguyo, Diogenes Choquehuanca. He described with enthusiasm the many times he had made the climb as a boy, and the wonderful view from the top. I could visit his parents, he told me; he was sure that one of his brothers could accompany me to the peak. I willingly agreed to the favor that Diogenes requested in return, to bring an *encargo*—a package of some sort—to his parents.

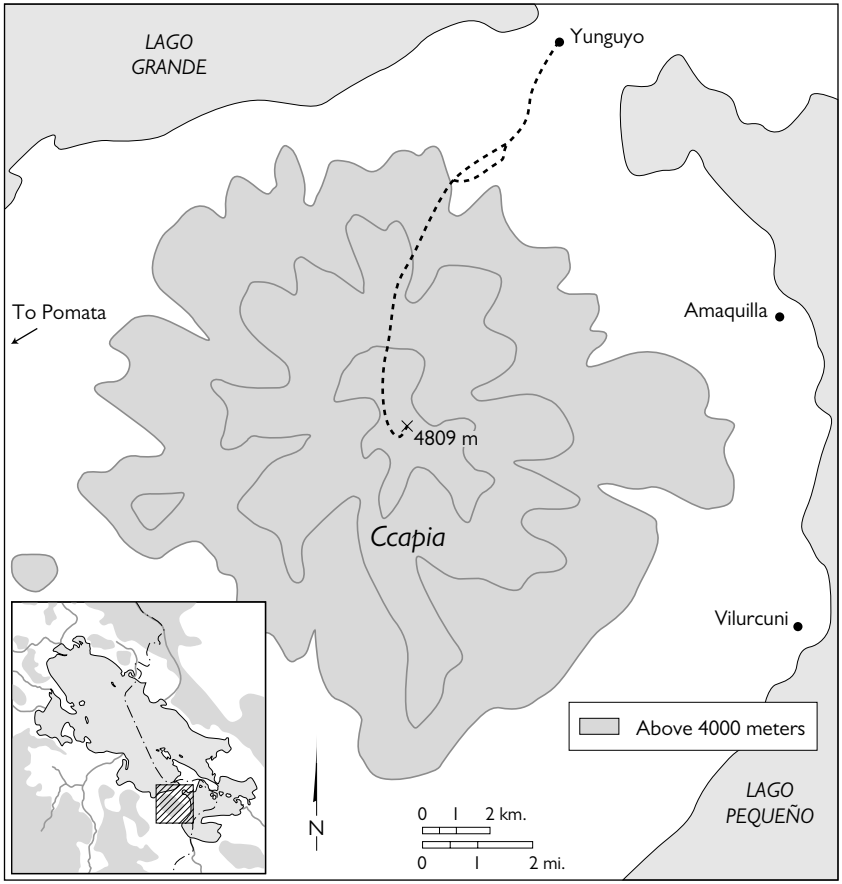
Several weeks later, when I was preparing to travel from Puno to La Paz, I looked up Diogenes at the Ministry of Fisheries office. I returned the next day to receive the item he wanted me to deliver. I was pleased to find that it was only an envelope. On the following morning I picked up a bus in Puno. It traveled through the lakeshore towns that had become familiar to me. I was always struck by the well-preserved square in the first town, Chucuito, and its most striking feature, the churches. With their massive bulk and the long arcaded walls that surrounded their courtyards, they retained something of the authority that they must have had at the time of their construction in the decades after the Spanish conquest. The plaza contained a *rollo* as well. This fluted column, erected in the mid-1500s, served as a pillory under the Spaniards: Indians who violated the law could be punished by being tied to the *rollo* and whipped. Though such *rollos* had been placed in many towns, few survive to the present.

After Chucuito the road continued through the flat lakeshore zone, the land a patchwork of cultivated and fallow fields, with clusters of low adobe houses scattered among them. Other towns came every half hour or so. Like Chucuito, they had features that had become familiar to me: the bridge in Ilave over the river of the same name, the largest of the streams that flowed down into the lake from the Cordillera Occidental; the four fine churches in Juli; the small cluster of food vendors near Pomata, where the bus would always stop at lunchtime and where I would buy a bowl of soup with several large potatoes and a hunk of meat. The roofs of Yunguyo were visible at some distance as the bus worked its way across the flatlands near the lake. Once I arrived in the town, I quickly found the house of Diogenes' parents. I was not sure which of several possible factors accounted for the warmth with which they received me. Had the envelope contained some check or document that they had been awaiting? Had he written very positively about me? Did they hope that I would somehow promote his career? Or were they simply hospitable people, glad for the presence of a visitor to add some variety to their lives? In our conversations later that afternoon, I learned that they included other foreigners in the circle of their acquaintances; they showed me the collection of Christmas cards, some of them several years old,

pinned to one wall of their living room, including ones that they had received from a Peace Corps volunteer who had lived in a nearby village.

I have a clearer sense of the motives of Diogenes's older brother in agreeing to lead me up the mountain the next day. Dante—like his brother and their other six siblings, named for a literary figure rather than a saint, as is more common in the altiplano—had studied at a university but had not finished his degree. He had lived for a while in Arequipa, the largest city in southern Peru, where he had worked as the assistant manager in a store, only to find that this job did not turn out the way that he had hoped. He had plans to return to Arequipa in a few months on a business deal that involved a few partners. In the meantime, he was back in Yunguyo, living with his wife and children in two rooms in the back of his parents' house, helping out occasionally in his parents' store, and altogether a bit bored. He welcomed an educated outsider with whom he could talk, and he had nothing to do the next day that could not be postponed. His father seemed pleased, as much to give his older son the chance to spend some time out of the town from which he wanted to move permanently as to return to me the favor of having brought the envelope from his younger son.

We arose early the next morning and had a large breakfast—habits that I associate with Aymara-speaking households, whether rural peasants, as most of them are, or prosperous urban merchants like the Choquehuancas. Dante's older child, a boy of about eight with the undistinguished name of Juan, was eager to join his father and this exotic stranger and came along as well. Out the door, down the street: two blocks later and we left the town behind. The cement street turned into a dirt road with some ruts left by the few trucks that occasionally traveled on it. Because the land sloped upward so gradually from the lake, I would have had no sense of climbing at all for the first half hour, if it had not been for the massive presence of Ccapia, looming larger as we approached it. We continued onward among the fields, brown at this time of year. Some of them contained parallel lines of ridges and furrows, dotted with clumps of barley stubble. Others were covered with large clods of earth, which were left after potatoes had been dug from the ground. There were occasional bare patches of whitish ground, too prone to flooding to per-



The Ccapia route.

mit cultivation. Every few hundred meters we would pass a family compound—a few adobe houses clustered near one another, linked by a low adobe wall with a doorway leading into the courtyard.

After an hour or so, we reached the first hills, dotted with eucalyptus groves, that flanked the mountain. The road continued between two ridges that descended from the mountain to bound a small field-filled valley, an extension of the flatlands around the lake. We did not go very far into this valley, but rather swung up onto the ridge on our right. Af-

ter a short, steep climb on a path that went between stone terraces, we decided to take a break and sat down on some boulders. Though Dante was not, I thought, a regular consumer of coca leaf, the mild stimulant used throughout the Andes, this rest stop struck him, as it did me, as a good spot at which to chew some leaves. Juan watched with surprise to see a gringo retrieve from his pack a plastic bag containing dry green leaves a few centimeters long, but he seemed familiar with the process of chewing itself—the adults passing the bag back and forth, thoughtfully selecting leaves and placing them in our mouths, then biting off a little corner of the cake of *llipt'a.* This gray lump, made from the ashes of stalks of certain plants, contains the alkaline substance that invariably accompanies coca-chewing. Though Dante did not blow on the leaves or offer blessings to the mountains, as more traditional people might, he did pick them carefully from the bag and hold them between thumb and forefinger in a little fanlike arrangement before adding them to the quid in his cheek. We all sat quietly for a few moments, before Dante proposed that we resume our climb.

We continued up the ridge, leaving behind the last of the potato fields about the time that we reached its crest. In this part of the altiplano, agriculture is confined to the shores of the lake and the areas immediately adjacent to them, where the climate is milder than in the surrounding highlands. This crest ascended more gently than the sides of the ridge, leading us to broader, more open country that rose steadily but not steeply toward the peak. The climb was not difficult, I realized, despite the elevation of the summit. Ccapia is hundreds of meters higher than the tallest peaks in the lower forty-eight states; as I later discovered, it reaches a few meters higher than Mont Blanc, the highest mountain in the Alps. Nonetheless, it was proving to be what my climbing friends in California call a walk-up.

This uncultivated land looked quite different from the flat areas below us. The slopes of the mountain were covered with *ichu,* the perennial grasses that grow in clumps half a meter or so across, each composed of hundreds of blades of grass, cylindrical rather than flat, rising up a quarter to half a meter. The clumps of *ichu* stretched for kilometers on either side of the narrow path we followed, with occasional low, tiny-leafed

shrubs scattered among them. This landscape, the *puna,* as the grasslands are known, had little in common with the Amazonian forests that lay only eighty kilometers to the northeast of us, and four kilometers lower. It was much more like the distant steppes of Siberia, or like northern Canada, another region of vast open landscapes, of tough perennial plants adapted to a cold, harsh climate. The steppes and the *puna* are the homelands of herds of large ruminants, animals whose bodies are large enough to prevent rapid heat loss, and whose multiple stomachs can digest the rough vegetation. Reindeer and caribou in the steppes support pastoralists of the more domesticated varieties, hunters of the wilder ones. Animals and people live in close association in the *puna* as well. Here on Ccapia, we saw flocks of sheep off in the distance. Llamas and alpacas, I knew, were more numerous in the higher portions of the cordilleras, and vicuñas, though much reduced by hunting, were still found in remote zones.

This empty country invited the pace that we adopted: steady and fairly fast, but not hurried. Up on the slopes of the mountain, the trail was narrower than the paths between the fields down near the lake. We fell into the most comfortable order: Dante in front, his son Juan close behind, and I in the rear. Even if the trail had been wider, I do not think that we would have spoken much in this open grassland. The empty expanses of the *puna* corresponded to the silence in which we walked.

After a couple of hours, we reached a spot where the rock outcroppings, which so far had been quite low, grew large. We rounded a bend and came to a tiny pond, a few hectares in area. This seemed a good place for lunch, with a distinctive feature of landscape, some large boulders to sit next to, and a clear view of the town of Juli and a broad stretch of lakeshore below us. Though he had been hiking uncomplainingly, Juan seemed particularly glad to stop. We shared the bread, chocolate, and oranges that I had brought and the cheese that Dante carried, and we chatted for a while. They had some questions about the United States, and they wanted to hear once again about my project with the biologists at IMARPE and my link to Diogenes. Then Dante spoke of the pond and its legends. The pond is surprisingly deep, he told me. Some people say that it contains treasure; the old people believe that ducks made of gold ap-

pear on its surface for a few moments each year. I reflected on these stories, wondering how seriously he took them. I was not sure whether he was more eager for me or for his son to hear them. Perhaps he wanted his son to hear him tell these stories to a foreigner like me, so that he would take some pride in the old tales. But my mind did not linger on these possibilities. I was content to look down at Juli and pick out the churches, and then to gaze off across the lake. We sat for some time and then realized that we still had a good bit of distance to cover.

We set off and resumed our firm pace. As we rounded a corner, a breeze picked up. I noticed that the sun had begun to swing down. It was already early in the afternoon, later than we had expected, when we reached the summit, a little rise atop the mountain's broad crest. For the last portion of the climb, we had been hiking with our backs to the lake, not stopping to look behind us. When we turned around, the whole altiplano appeared before our eyes: the enormous sheet of the lake below us, beyond it a spread of dry grasslands rising to long chains of snow-covered peaks. For all my anticipation of this view, I still was unprepared for its immense scale. The lake itself was far bigger than I had expected. The opposite shore, sixty kilometers to the northeast, seemed very remote, and the most distant portions of the lake, near the delta formed by the Río Huancané, lay beyond the horizon, even though we stood a full thousand meters above the lake's surface. From our vantage point atop the highest point on the peninsula, the lake seemed to stretch around us. Filling 240 degrees of the view, it could not be taken in all at once. If we looked immediately below us at the southwestern shore near Juli, we had to turn our heads to see the Río Desaguadero.

Only one small portion of the eighty-one hundred square kilometers of the lake's surface was obstructed from view. The upper half of the hourglass peninsula contains a broad ridge that blocks the view of the Straits of Tiquina. This narrow, canyonlike channel, less than a kilometer wide and four kilometers long, separates the Lago Grande from the Lago Pequeño. Had I not known that these two were connected by the straits, I might have taken them for two bodies of water, separate and distinct. The Lago Pequeño was not only smaller, but filled with many more islands; the uninterrupted expanse of the Lago Grande seemed almost oceanic in

scale. I recalled the Bolivians whom I once had heard discussing whether Lake Titicaca was so large that it should not be termed a *lago,* a lake, but rather a *mar continental,* an inland sea. From this vantage, I had no doubt that it merited such a name.

I began to pick out some of the specific features in the lake. The town of Copacabana, quite close to us, was easy to find, and immediately offshore from it was the largest island in the lake, with its distinctive steep cliffs. This island appears as Isla Titicaca on old maps but is now known as the Isla del Sol, the Island of the Sun, for the temples that the Incas built on it to commemorate its importance. Viracocha, the creator, had made the world and peopled it with a race of giants, but had left it in darkness. Dissatisfied with the giants, Viracocha caused a great flood, whose waters still remain in Titicaca. After the flood, he decided to remake the universe in a different way. He created the sun and the moon on the Isla del Sol, giving light to the world, and then went to Tiwanaku, where he formed animals and humans.

Other islands were in view as well. That more distant one must be Soto, the island near the deepest portion of the lake, where many fishermen caught trout and carried them illegally across the border from Peru into Bolivia. How brave they seemed, crossing the broad open waters in five-meter boats. And those hills were the pasturelands of Chuquiñapi, a village that I had traveled to several times. Its position on the corner of a large peninsula could not be confused with any other place, even though its shores were blocked from view by a ridge. But which was that distant town on the Bolivian shore beyond the Isla del Sol, the few roofs distinct among the fields? Was it Escoma or Puerto Acosta, or could it even be Moho, on the Peruvian side of the border, across the lake? And was that distant small fleck of land the island of Socca, Cirilo's home, the village that I had visited so many times?

I tired of these efforts at identification and let my eyes rest on the vast lake itself. I could see many shades of blue on its surface, and as I looked more closely, I could note the play of rougher and smoother patches of water as the winds shifted. I stared for a long time at the distant horizon, where the sky met the lake. And then my gaze was drawn back nearer me, and upward, not merely to the cluster of mountains that I had ex-

pected, to Illimani and the other high peaks near La Paz, but to a long, gleaming sweep of white, the full extent of the Cordillera Real. Here I could see the sections that, to people standing on the shores of the lake, were hidden behind lower ranges, and here, too, I realized to my astonishment, I could see other mountains glinting far to the northeast in the distant Cordillera de Carabaya. These two cordilleras form the local portion of the eastern cordillera, the Cordillera Oriental, the great eastern flank of the Andes that stretches from Venezuela and Colombia down into Patagonia, the wall that separates the highlands from the Amazonian forests immediately beyond. Puffy clouds had begun to build over a few of the summits, suggesting the humidity of the forests that lay behind the mountains. We had climbed a kilometer up from the level of the lake, but the highest peaks reached two full kilometers above us. *Majestic* is surely an overused adjective, and yet these ranges did possess the quality of solemn grandeur that that word evokes. It was as if I had come not before a king or queen, but before an entire assembled court whose imposing stateliness derived equally from the presence of a few exalted figures and from the dignified array of many other, lesser, yet still noble personages—the other peaks, which, though lower than the tallest ones, still stood higher than I did.

Dante and Juan relished the attention that I gave to the Cordillera Real. Dante's travels had left him with an awareness of how little Yunguyo mattered to people from large cities and foreign countries, so he was pleased to find a gringo who was so evidently impressed by these local attractions. Still, both he and his son were surprised not that I could identify Illimani, but that I knew so few of the other mountains' names. Juan took these mountains' importance for granted and seemed not to believe my statements of ignorance when I asked his father which peak was Illampu, which one was Huayna Potosí. It was like standing with New Yorkers in view of the Manhattan skyline and asking them to point out the World Trade Center and the Empire State Building. These mountains were familiar to them not merely as reference points on the horizon, but as more immediate presences as well. The mountains send the winds that blow across the altiplano. Each wind bears the name not of the cardinal direction from which it comes, but of the mountain that is its source.

View across the Straits of Tiquina to the Cordillera Real in Bolivia. Photograph by Mike Reed.

Dante and Juan identified a few of the other major peaks that I asked about and then turned to the part of the view that most held their attention. Had there been a city in sight, I think that they would have pointed it out to me, but there was no town with more than ten thousand inhabitants in the eighty thousand square kilometers before us. La Paz lay deep in a canyon, and both Puno and Juliaca, the two sizable cities on the Peruvian altiplano, were far to the north, beyond the curve of the horizon. They showed me instead the nearby towns of Pomata, Zepita, and Desaguadero; that space far below us, surrounded by buildings, was the plaza of Yunguyo, and those tiny specks were the town's market, its two churches, its secondary school. Amid the darker shade of the cultivated lands right near the lake were the villages, all of whose names Dante and Juan knew.

As the day progressed into mid-afternoon, I sensed their impatience (they must have recognized that they would have to be the ones to propose starting our descent), but I had one last thing to do. I wanted to look

at the Cordillera Occidental, the western cordillera, the other main chain of the Andes. We turned our backs to the lake and the Cordillera Real. Surely the western cordillera must be more impressive than this, I thought. And there must be something worth looking at in the huge expanse of dry *puna* that stretched away from us to the western range. Dante agreed with me that the white spot on the horizon, so small as to be barely recognizable, must be Sajjama, at sixty-five hundred meters the highest peak in that part of the altiplano. Like a novice stargazer trying to locate the Pleiades or the Andromeda galaxy, I stared and speculated. Could that peak be Parinacota, a volcano on the border between Peru and Chile? I liked that mountain because I understood its simple Aymara name, Flamingo Lake: in that dry zone were many shallow saline lakes containing the crustaceans that supported enormous flocks of the brightly colored birds. Could I expect to see the mountains immediately beyond Arequipa, Chachani, Pichu-pichu, and Misti? I had climbed more than halfway up Misti nine years earlier, only to be turned back by unexpected clouds, which thickened during my descent and which dispersed the next morning to reveal the peak covered with the season's first snow, unusual both for its early date and its great extent.

Though Dante and Juan stood quietly, I sensed that I was testing their patience with these questions. (Weeks later, back in my apartment in Puno, I resolved them myself with more map study: I probably had seen Parinacota, but not Misti.) Even if we had had far more time, though, their attention would not have been held for long by these western mountains, which are less important in local folktales and are less striking visually than their eastern counterparts. It was not that they are lower than the Cordillera Real and the Cordillera de Carabaya. In fact, some of its peaks are higher. Rather, it was that certain climatological facts, with which I was familiar, leave them less interesting to look at. Cloud-laden air masses travel westward from the Amazon, dropping heavy rains and snows on the eastern cordillera, the first mountains they encounter. Though the second barrier of the western cordillera succeeds in intercepting virtually all of the clouds that reach it—to the west of it lies the Atacama Desert, the driest place on the surface of the earth—it still receives a smaller share of the moisture than the eastern cordillera. Because of the

more frequent and heavier storms to which it is subject, then, the Cordillera Oriental has a much lower snowline than the Occidental. As we stood atop Ccapia, to our northeast lay the broad white swath of the eastern cordillera; to the southwest were the peaks of the western cordillera, many of them higher than their snow-covered counterparts (some of them reach above fifty-eight hundred meters), but all of them appearing as dry heaps of rock or, at most, small zones of snow. Indeed, the western cordillera contains the highest snow-free mountains in the world—a feature that attracts some ice-averse mountain climbers, but that does not give it great visual appeal.

Finally, it was time to go. I was as ready to start down as Dante and Juan. Even if we had somehow been able to camp at the summit and return to Yunguyo the next day, I would not have sat still and gazed steadily at these mountains for the hours that our climb down the mountain required. I would have grown too cold and restless. The steady pace of our descent—like our ascent, the trip down was made in silence—provided just enough warmth and motion for me to enter a pensive state in which I became mesmerized by Illimani and the other mountains whose names I had just learned: Illampu and Huayna Potosí, their snowy crowns turning opalescent as the afternoon drew on. I felt a satisfaction that came not only from physical effort, not only from the successful completion of a long-anticipated endeavor, but also from a feeling of wholeness linked to the wholeness of the mass of the mountain we had climbed, to the wholeness of the altiplano we had seen. As we came lower down, we saw the shepherds and their flocks returning home, and then a truck driving down a road with a long plume of dust trailing behind it. Far off, barely within earshot, a donkey brayed.

If we had begun our descent earlier, or if Ccapia were not so large, we could have chosen a different way back to Yunguyo, perhaps seeing some other villages, but the lateness of our return required us to follow the same path we had taken up. Dante led us on a route that differed from our ascent in only one detail: to reach the little valley that formed an extension of the flatlands near the lake, we dropped down from the last ridge not at the spot where we had stopped to chew coca, but at a higher point, taking a little-used trail with numerous switchbacks. This trail took us

through a sizable stand of eucalyptus, perhaps a few hundred trees. I had seen many such groves before, but never had I reacted to them this way: the gray-green leaves, with their hard, waxy coats, had often seemed harsh to me, but after the hours spent in open grasslands, the slight rustle of the leaves and their fresh, aromatic fragrance struck me as lush and appealing.

I noticed a change in Dante and Juan once our trail left the ridge and joined the main path down the valley. Although it was nearly dusk, their pace slackened a bit, and they began to speak more. In his tone, if not in his words, Juan seemed relieved to get off the mountain while it was still light, as if he had been troubled by the thought of remaining in that wild place after dark. Dante, I thought, had been able to sense his son's fear because he had felt it himself. He, too, had been eager to return to the lower zone of fields, of wider paths, of greater human presence. We could now walk side by side, and we began to speak of the hike as if it were over, even though Yunguyo was still five kilometers away. Despite the growing darkness, we could easily follow the path. It was wide (or at least it seemed so, after the narrow trails on the mountain), fairly straight, and lighter than the fields on either side. We sensed the houses along the path as much from the barking of a dog or the sudden scent of burning dung as from the sight of their black forms against the night sky, which was rapidly filling with stars. Tired but content, we trudged easily along, knowing that we would be back to Dante and Juan's house in less than an hour. I felt a great sense of comfort from the completion of the long day, the security of our return, the anticipation of the meal that awaited us, and above all, from the poignancy of the many small reminders of human habitation down here. The climb had been a vivid reminder of something I had known intellectually for a long time, that the strip of land right on the shores of the lake, for all its droughts, frosts, and floods, is the only hospitable section in the immense, barren steppe of grass and rock that stretches from one cordillera to the other. This narrow ribbon of farmland is home to the villagers. Within its confines they build their houses, cultivate their fields, and set out in their tiny boats onto the waters of the lake, whose vastness I now could comprehend.

When we arrived in Yunguyo, the pavement and the faint illumination

of the streetlights made it seem like a city. We passed a few stores that were open, each spilling a wedge of brighter light into the street. Dante greeted someone who passed us but did not stop to talk. We were welcomed in his house with a flurry of concern for our late arrival. Dante's parents gladly received our apologies and my willing acceptance of responsibility for our delay. Though Dante's younger siblings had already eaten, his parents and wife had waited for us to have a late dinner of soup and a dish of meat and noodles. After we ate, the two women went back to the kitchen, where Juan soon joined them. Dante turned his chair slightly toward his father and talked with him. I was relieved to have a few moments to be alone with my thoughts. I drifted into a reverie, but it did not last long. Dante, apparently as tired as I was, soon proposed that we go to sleep.

We all awoke early the next day. After breakfast and the exchange of a long series of farewells and promises to write, I set off for La Paz. A truck carried me through the two border stations without delay and dropped me off in the plaza in Copacabana, where I found a bus that would be leaving soon for La Paz. It wound its way up the ridge, pausing for the passengers to toss bread to the dogs, and then worked its way down to the ferry stop at the Straits of Tiquina. I was glad when the bus completed the series of switchbacks up the next ridge. Ccapia came back into view, accompanying me for all of the long last leg of the trip.

I looked out at Ccapia and noted again its broad rounded shape, so different from the sharper peaks of the eastern cordillera that loomed a few dozen kilometers off the road. Enormous geological forces have been at work to create these mountains. The most important element of the geology of this region is the convergence of the continent of South America with the bottom of the Pacific Ocean. This portion of the Andes has been shaped by the operation of plate tectonics—the movement of the plates, or large sections of the earth's crust, and the uppermost mantle in relation to one another. The South American plate, which includes nearly all of South America and the western half of the bottom of the South Atlantic Ocean, has been pulling away from Africa, to which it had formerly been attached, and moving generally westward for the last 150 million years. Along most of its western margin, it meets the Nazca plate, the

plate that carries portions of the bottom of the South Pacific Ocean eastward. The mountainous Andes are the result of this impact, in which two enormously massive objects move toward each other at an enormously slow rate. The Nazca plate is thrust under the South American plate, slipping beneath it at an angle of about 30 degrees. As the South American plate rides up over this huge obstacle, the entire altiplano region is lifted up, and certain portions—particularly the eastern cordillera—have formed folds perpendicular to the direction of motion, much as the hood of a car would fold under such an impact. Along lesser folds and faults, blocks slide past each other, one side moving up, the other down. It is this movement that accounts for Lake Titicaca's great depth in places—more than 280 meters in spots—as well as for the steep cliffs on many of its islands and peninsulas. Moreover, as the Nazca plate plunges into the mantle, pools of magma form and rise, creating some small volcanoes within the altiplano (Ccapia is one such extinct volcano) and the higher volcanoes of the western cordillera. In recent years, geologists have studied this uplift in detail, examining regional variation in these mountain-forming processes in the crust and the interactions between the crust and the mantle that underlie them.

The most recent chapter of this long history, two or three million years in length, is the time for which there is strong evidence of the presence of lakes in the altiplano. In geological terms, lakes are ephemeral. It is not much of an exaggeration to compare them to puddles that disappear soon after they form, since it takes a delicate balance of factors for lakes to endure over long periods. Minor shifts in climate have large consequences for lakes. For example, lakes shrink rapidly in dry, warm periods, faced with both a reduced input of water and an increased loss from higher rates of evaporation. Even in cool, moist periods, lakes may not be permanent. The rivers that bring water to them also carry sediments that deposit on the bottom. As these sediments accumulate, lakes become shallower and can eventually fill up altogether. The rivers that carry water out of lakes are also part of this steady process of material moving downslope; they erode their own banks and eat away at the basins of lakes. Because of these processes of sedimentation and erosion, lakes are scarce in some of the rainiest parts of the world. The age that is required

for a lake to be termed "ancient" is only a few hundred thousand years—an age at which a river would still be in its youth, and a mountain range in its infancy. Few areas of the world have the specific combination of topography and climate that is required for lakes to reach even this age. A large proportion of such lakes is located between parallel steep mountain ranges in regions of the world with fairly moist climates. Titicaca is found in such a setting, as is the world's oldest lake, Baikal, in Siberia, and the lakes of the Great Rift Valley of Africa: Malawi, Tanganyika, and the smaller Albert and Turkana.

Like these other ancient lakes, Titicaca has undergone great variations. During the Ice Ages of the Pleistocene, when the earth's climate was cooler and moister, there were lakes in the altiplano larger than present-day Titicaca. Their presence can be inferred from fossilized diatoms and mollusks, as well as from the remains of former shorelines, now standing on hillsides above the lake. Half a million years ago, one of these lakes, known as Lake Ballivián, was about fifty meters higher than Lake Titicaca. At this time, Ccapia was an island. In periods between the glaciations, the lakes shrank considerably. The Straits of Tiquina may have dried up, separating the Lago Pequeño from the main lake. The history of the lakes in the region over the last twenty thousand years or so can be assessed more precisely through an examination of the sediments at Titicaca's lake bottom. The pollen and minerals that slowly accumulated in the muck record changes in the depth, temperature, and salinity of the lake. These records suggest that the level of Titicaca shifted by tens of meters in this period, assuming its current level only a few thousand years ago.

This most recent geological evidence overlaps with the oldest archaeological record. The earliest archaeological sites in the altiplano are about eight thousand years old. They consist of small hunter-gatherer settlements in the *puna* above the lake, probably inhabited by people who traveled up from the Pacific Coast. For many decades, archaeologists believed that humans reached the Americas about eleven or twelve thousand years ago, crossing from Siberia into Alaska when ocean levels were lower and the Bering Strait was dry. The earliest sites are difficult to locate, since human populations were small and the few remains they left have not always survived the intervening millennia. However, in recent years,

archaeological sites that are as much as fifteen thousand years old have been discovered in southern Chile, leaving open the possibility of earlier settlement in the altiplano as well. The question of the age of settlement in the Americas thus has been reopened. Even so, it is certain that the history of humans in the altiplano is only a fraction of the history of Lake Titicaca, much as the age of the lake is only a fraction of the age of the Andes—and the Andes, in turn, are geologically quite young compared to the age of our planet, calculated to be between four and five billion years.