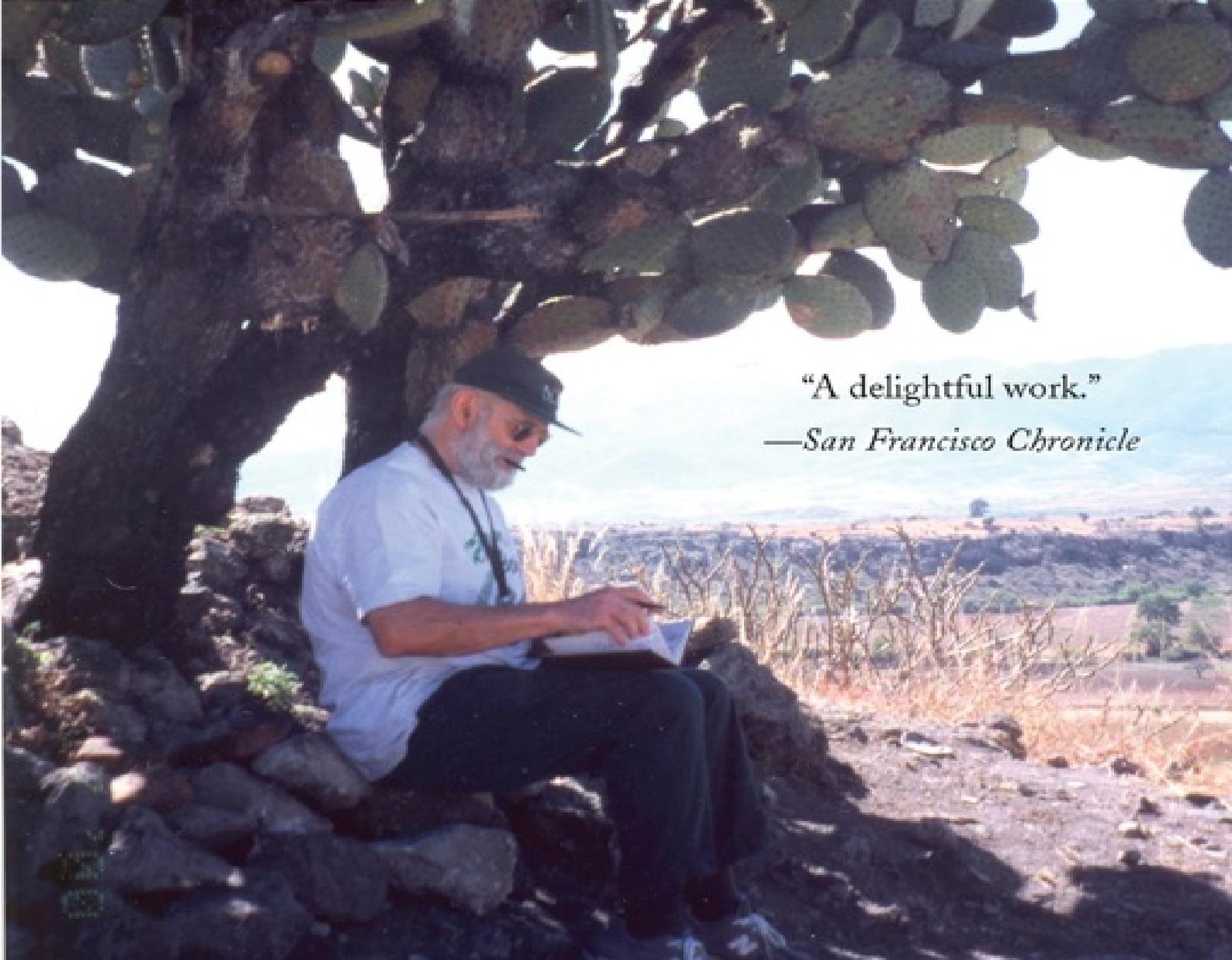
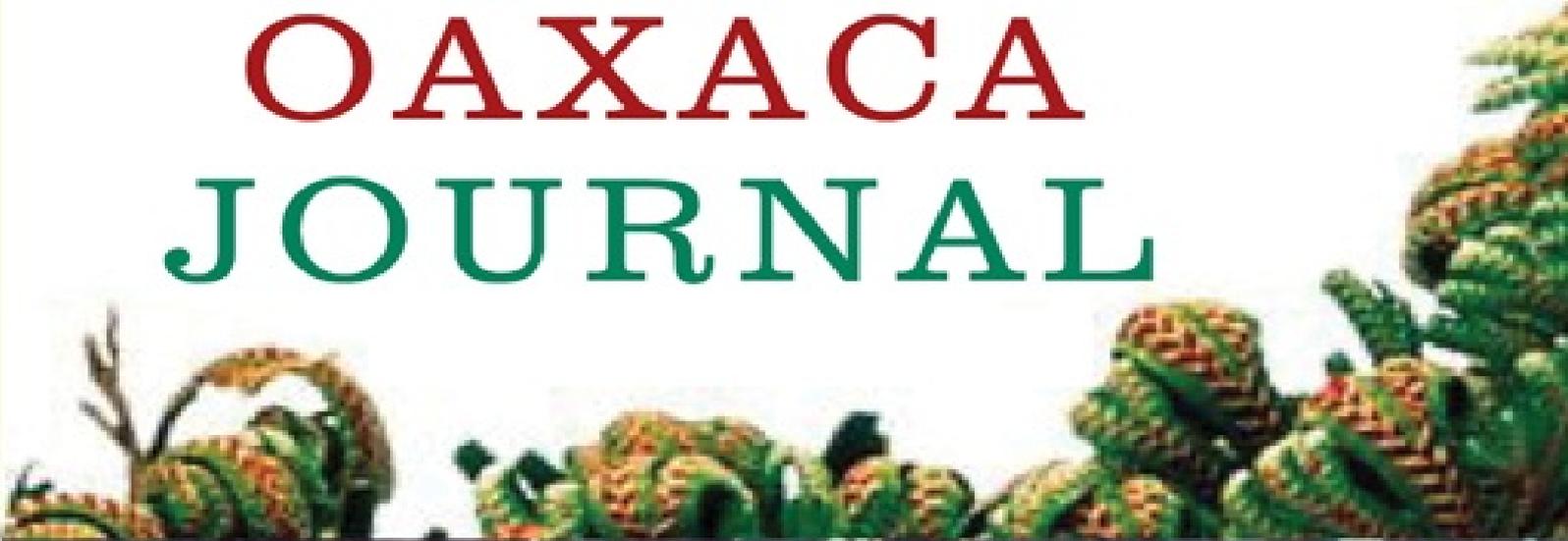


OLIVER SACKS

Bestselling author of *Musicophilia* and *The Mind's Eye*

OAXACA JOURNAL



"A delightful work."
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“Light and fast-moving.... Among the botanical and anthropological observations, one catches glimpses of Sacks’s inner life: his preoccupation with dualities, his nearly Victorian sense of modesty, his fascination with the world around him.”

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—*Chicago Tribune*

OAXACA JOURNAL

Oliver Sacks is a practicing physician and the author of more than ten books, including *Musicophilia*, *The Man Who Mistook His Wife for a Hat*, and *Awakenings* (which inspired the Oscar-nominated film). He lives in New York City, where he is professor of neurology and psychiatry at Columbia University Medical Center and the first Columbia University Artist.

www.oliversacks.com

The Mind's Eye

Musicophilia

Oaxaca Journal

Uncle Tungsten: Memories of a Chemical Boyhood

The Island of the Colorblind

An Anthropologist on Mars

Seeing Voices: A Journey into the World of the Deaf

The Man Who Mistook His Wife for a Hat

A Leg to Stand On

Awakenings

Migraine

OAXACA JOURNAL



OLIVER SACKS



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For the American Fern Society

and for plant hunters, birders, divers, stargazers,

rock hounds, fossickers, amateur naturalists

the world over.



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I used to delight in the natural history journals of the nineteenth century, all of them blends of the personal and the scientific—especially Wallace’s *The Malay Archipelago*, Bates’ *Naturalist on the River Amazon*, and Spruce’s *Notes of a Botanist*, and the work which inspired them all (and Darwin too), Humboldt’s *Personal Narrative*. It pleased me to think that Bates, Spruce, and Wallace were all crisscrossing in one another’s paths, leapfrogging, on the same stretch of the Amazon during the selfsame months of 1849, and to think that all of them were good friends. (They continued to correspond throughout their lives, and Wallace was to publish Spruce’s *Notes* after his death.)

They were all, in a sense, amateurs—self-educated, self-motivated, not part of an institution—and they lived, it sometimes seemed to me, in a halcyon world, a sort of Eden, not yet turbulent and troubled by the almost murderous rivalries which were soon to mark an increasingly professionalized world (the sort of rivalries so vividly portrayed in H. G. Wells’s story “The Moth”).

This sweet, unspoiled, preprofessional atmosphere, ruled by a sense of adventure and wonder rather than by egotism and a lust for priority and fame, still survives here and there, it seems to me, in certain natural history societies, and amateur societies of astronomers and archaeologists, whose quiet yet essential existences are virtually unknown to the public. It was the sense of such an atmosphere that drew me to the American Fern Society in the first place, and that incited me to go with them on their fern-tour to Oaxaca early in 2000.

And it was the wish to explore this atmosphere which, in part, incited me to keep a journal there. There was much else, of course: my introduction to a people, a country, a culture, a history, of which I knew almost nothing—this was wonderful, an adventure in itself—and the fact that all journeys incite me to keep journals. Indeed, I have been keeping them since the age of fourteen, and in the year and a half since my visit to Oaxaca, I have been in Greenland and Cuba, fossil hunting in Australia, and looking at a strange neurological condition in Guadeloupe—all of these travels have generated journals, too.

None of these journals has any pretension to comprehensiveness or authority; they are light, fragmentary, impressionistic, and, above all, personal.

Why do I keep journals? I do not know. Perhaps primarily to clarify my thoughts, to organize my impressions into a sort of narrative or story, and to do this in “real time,” and not in retrospect, or imaginatively transformed, as in an autobiography or novel. I write these journals with no thought of publication (journals which I kept in Canada and Alabama were only published, and that by chance, as articles in *Antaeus*, thirty years after they were written).

Should I have prettied up this journal, elaborated it, made it more systematic and coherent—as I was to do with my book-sized Micronesian and “leg” journals—or left it as written, along with my Canadian and Alabaman ones? I have, in fact, taken an intermediate course, adding a little (on chocolate, rubber, things Mesoamerican), making little excursions of various sorts

but essentially keeping the journal as written. I have not even attempted to give it a proper title. It was Oaxaca Journal in my notebook, and *Oaxaca Journal* it remains.

O. W. S.

December 2001

I am on my way to Oaxaca to meet up with some botanical friends for a fern foray, looking forward to a week away from New York's icy winter. The plane itself—an AeroMexico flight—has an atmosphere quite unlike anything I've ever seen. We are scarcely off the ground before everyone gets up—chatting in the aisles, opening bags of food, breast-feeding babies—an instant social scene, like a Mexican café or market. One is already in Mexico as soon as one boards. The seat-belt signs are still on, but nobody pays any attention to them. I have had a little of this feeling on Spanish and Italian planes, but it is far more marked here: the instant fiesta, this sunny laughing atmosphere all round me. How crucial it is to see other cultures, to see how special, how local they are, how un-universal one's own is. What a rigid, joyless atmosphere there is, in contrast, on most North American flights. I begin to think I will enjoy this visit. So little enjoyment, in a sense, is “permitted” these days—and yet surely, life should be enjoyed?

My neighbor, a jolly businessman from Chiapas, wishes me “*Bon appetit!*” then the Spanish version of this, “*iBuen provecho!*” when the meal comes. I cannot read anything on the menu, so I say yes to what I am first offered—a mistake, for it turns out to be an empanada where I wanted the chicken or fish. My shyness, my inability to speak other languages, alas, is the problem. I dislike the empanada, but eat some as part of my acculturation.

My neighbor asks why I am visiting Mexico, and I tell him I am part of a botanical tour headed for Oaxaca, in the south. There are several of us on this plane from New York, and we will meet up with the others in Mexico City. Learning that this is my first visit to Mexico, he speaks glowingly of the country, and lends me his guidebook. I must be sure to visit the enormous tree in Oaxaca—it is thousands of years old, a famous natural wonder. Indeed, I say, I have known of this tree and seen old photos of it since I was a boy, and this is one of the things that has drawn me to Oaxaca.

The same kind neighbor, noticing that I have torn out the end pages, and even the title page, of a book proof in order to write on them, and that I am now looking worried and out of paper, offers me two sheets from a yellow pad (I stupidly placed my own yellow pad and notebook in my main luggage).

Observing that I said yes when asked about the empanada, obviously having no idea what it was, and then as obviously disliking it when it came, my neighbor has again lent me his guidebook, suggesting that I look at the bilingual glossary of Mexican foods and the illustrations that go with this. I should be careful, for example, to distinguish between *atun* and *tuna*, for the Spanish word *tuna* does not denote tuna fish, but the fruit of a prickly pear. Otherwise I will keep getting fruit when I want fish.

Finding a section in the guidebook on plants, I ask him about *Mala mujer*, bad woman, a dangerous-looking tree with nettlelike stinging hairs. He tells me that youths in small-town dancing halls throw branches of it around to get the girls, everyone, scratching. This is something between a joke and a crime.

“Welcome to Mexico!” my companion says as we touch down, adding, “You will find much

that is unusual and of great interest.” As the plane draws to a halt he gives me his card. “Phone me,” he says, “if there is any way I can be of help while you are visiting our country.” I give him my address—I have to write it on a coaster, not having a card. I promise to send him one of my books, and when I see his middle name is Todd (“my grandfather came from Edinburgh”), I tell him about Todd’s palsy—a brief paralysis which sometimes follows an epileptic seizure—and promise to include a short bio of Dr. Todd, the physician who first described it.

I am very touched by the sweetness and courtesy of this man. Is this a characteristic Latin American courtesy? A personal one? Or just the sort of brief encounter which happens on trains and planes?

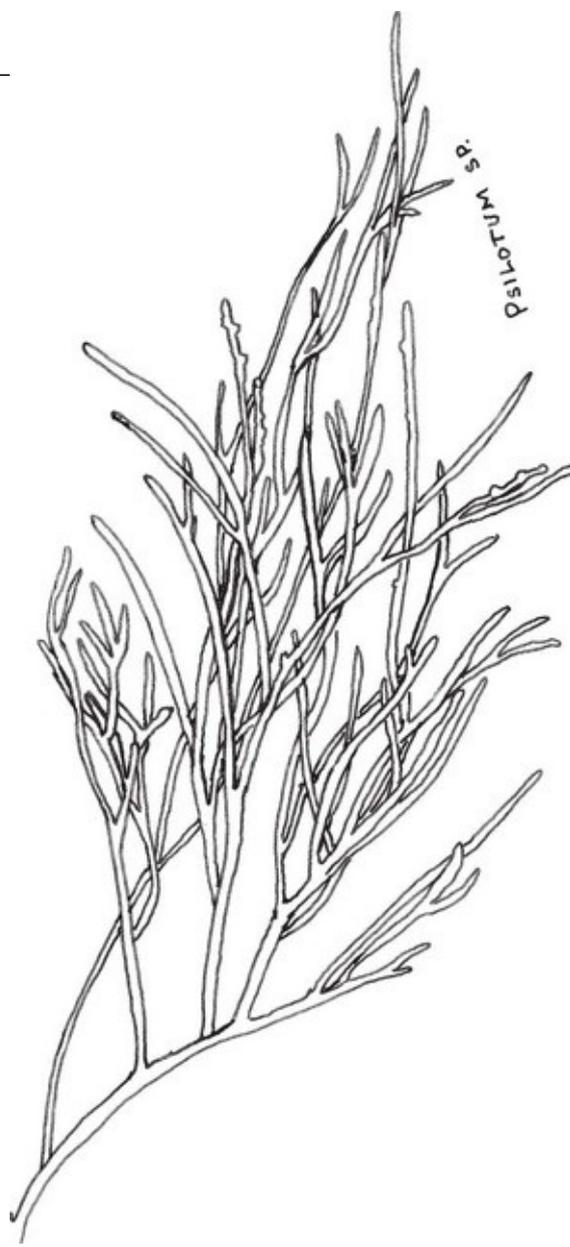
We have a leisurely three hours in Mexico City airport—lots of time before our connection to Oaxaca. As I go to have lunch with two of the group (scarcely known to me as yet—but we will know each other well after a few days), one of them casts an eye on the little notebook I am clutching. “Yes,” I answer, “I may keep a journal.”

“You’ll have plenty of material,” he rejoins. “We’re as odd a group of weirdos as you’re likely to find.”

No, a splendid group, I find myself thinking—enthusiastic, innocent, uncompetitive, united in our love for ferns. Amateurs—lovers, in the best sense of the word—even though a more than-professional knowledge, a huge erudition, is possessed by a good many of us. He asks me about my own special fern interests and knowledge. “Not me ... I’m just going along for the ride.”

In the airport we meet up with a huge man, wearing a plaid shirt, a straw hat and suspenders, just in from Atlanta. He introduces himself—David Emory—and his wife, Sally. He was at college with John Mickel (our mutual friend, who has organized this trip), he tells me, back in ’52, at Oberlin. John was an undergrad then, David a grad student. He was the one who turned John onto ferns. He is looking forward to meeting up with John when we go to Oaxaca, he says. They have only seen each other two or three times since they were schoolmates, nearly fifty years ago. They meet, each time, on botanical expeditions, and the old friendship, the old enthusiasm, is back straightaway. Time and space are annulled as they meet, converging as they do from different time zones and places, but at one in their love, their passion, for ferns.

I confess that, even more than ferns, my own preference is for the so-called fern allies—clubmosses (*Lycopodium*), horsetails (*Equisetum*), spike mosses (*Selaginella*), whisk fern (*Psilotum*). There would be plenty of those, too, David assures me: A new species of lycopodium was discovered on the last Oaxaca trip in 1990, and there are many species of selaginella; one, the “resurrection fern,” is to be seen in the market, a flattened, seemingly dead rosette of dull green which comes to startling life as soon as it rains. And there are three equisetums in Oaxaca, he adds, including one of the largest in the world. “But psilotum,” I say eagerly, “what about psilotum?” Psilotum, too, he says—two species, no less.



Even as a child, I loved the primitive horsetails and clubmosses, for they were the ancestors from which all higher plants had come.* Outside the Natural History Museum (in London, where I grew up) there was a fossil garden, with the fossilized trunks and roots of giant clubmosses and horsetails, and inside were dioramas reconstructing what the ancient forests of the Paleozoic might have looked like, with giant horsetail trees a hundred feet high. One of my aunts had shown me modern horsetails (only two feet high) in the forests of Cheshire, with their stiff, jointed stems, their knobby little cones on top. She had shown me tiny clubmosses and selaginellas, too, but she could not show me the most primitive of all, *Psilotum*. *Psilotum* does not grow in England. Plants resembling it—psilophytes—were the pioneers, the first land plants to develop a vascular system for transporting water through their stems, enabling them to stake a claim to the solid earth 400 million years ago, and paving the way for everything else. *Psilotum*, though sometimes called whisk fern, was not really a fern at all, for it had no proper roots or fronds, just an undifferentiated forking green stem, little thicker than a pencil lead. But despite its humble appearance, it was one of my favorites, and one day, I had promised myself, I would see it in the wild.

I grew up in the 1930s in a house whose garden was filled with ferns. My mother preferred

them to flowering plants, and though we had roses trellised up the walls, the greater part of the flower beds was given over to ferns. We also had a glassed-in conservatory, always warm and humid, where a great tassel fern hung, and delicate filmy ferns and tropical ferns could be grown. Sometimes on Sundays, my mother or one of her sisters, also botanically inclined, would take me to Kew Gardens, and here for the first time I saw towering tree ferns crowned with fronds twenty or thirty feet above the ground, and simulacra of the fern gorges of Hawaii and Australia. I thought these places the most beautiful I had ever seen.

My mother and my aunts had acquired their enthusiasm for ferns from their father, my grandfather, who came to London from Russia in the 1850s, when England was still in the throes of pteridomania—the great Victorian fern craze. Innumerable houses, including the one they grew up in, had their own terraria—Wardian cases—filled with varied and sometimes rare and exotic ferns. The fern craze was largely over by 1870 (not least because it had driven several species to extinction), but my grandfather had kept his Wardian cases till his death, in 1912.

Ferns delighted me with their curlicues, their croziers, their Victorian quality (not unlike the frilled antimacassars and lacy curtains in our house). But at a deeper level, they filled me with wonder because they were of such ancient origin. All of the coal that heated our home, my mother told me, was essentially composed of ferns or other primitive plants, greatly compressed, and one could sometimes find their fossils by splitting coal balls. Ferns have survived, with little change, for a third of a billion years. Other creatures, like dinosaurs, have come and gone, but ferns, seemingly so frail and vulnerable, had survived all the vicissitudes of all the extinctions the earth had known. My sense of a prehistoric world, of immense spans of time, was first stimulated by ferns and fossil ferns.

“What gate do we go from?” everyone is asking. “It’s Gate 10,” someone says. “They told me it was Gate 10.”

“No, it’s Gate 3,” someone else says, “It’s up there on the board, Gate 3.” Yet another person has been told we are leaving from Gate 5. I have an odd feeling that the gate number is still, at this point, indeterminate. One thought is that there are only *rumors* of gate number until, at a critical point, one number wins. Or that the gate is indeterminable in Heisenbergian sense, only becoming determinate at the final moment (which, if I have the right phrase, “collapses the wave function”). Or that the plane, or its probability, leaves from several gates simultaneously, pursuing all possible paths to Oaxaca.

Slight tension, hanging around, the gate finally resolved, awaiting the boarding call. Our plane was supposed to leave at 4:45 p.m., and now it is 4:50 and we have not even been boarded. (The plane, though, is here, waiting outside.) More meetings, encounters. There are nine of us now, or rather, eight of them—and me. For I have now retracted a little from the group, and am sitting a few yards from them, scribbling in my notebook.

There is almost always this doubleness, that of the participant-observer, as if I were a sort of anthropologist of life, of terrestrial life, of the species *Homo sapiens*. (This, I suppose, is why I took Temple Grandin’s words as the title of *An Anthropologist on Mars*, for I, no less than Temple, am a sort of anthropologist, an “outsider,” too.) But is this not so of every writer as well?

Finally, we board. My new traveling companion, not part of our group, is an elderly ba

man, heavy-lidded, with an Edward VII beard, who asks for a Diet Coke with rum (I am sipping a tomato juice, primly). I raise my eyebrows. “Keeps the calories down,” he jokes.

“Why not a diet rum, too?” I rejoin.

5:25 p.m.: We taxi endlessly about the monstrous tarmac, joltingly, too joltingly for me to write. This giant city, God help it, has a population of 18 million (or 23 million, according to another estimate), one of the largest, dirtiest cities in the world.

5:30 p.m.: We’re off! As we rise above the smear of Mexico City, which seems to stretch from one horizon to the other, my companion suddenly says, “See that ... that volcano? It’s called Ixtaccihuatl. Its summit is always covered in snow. There, next to it, is Popocatepetl with its head in the clouds.” Suddenly, he is a different man, proud of his land, wanting to show it off, to explain it, to a stranger.

It is an incredible view of Popocatepetl, its caldera nakedly visible and next to it a range of high peaks covered with snow. I am puzzled that these should be snow-covered, while the higher, volcanic cone is not—perhaps there is sufficient volcanic heat, even when it is not erupting, to melt the snow. With these amazing, magical peaks all around, one sees why the ancient Aztec capital of Tenochtitlán was established here, at 7,500 feet.

My companion (now on his second rum and coke, in which I join him) inquires why I have come to Mexico. Business? Tourism? “Neither, exactly,” I say. “Botany. A fern tour.” He is intrigued, speaks of his own fondness for ferns. “They say,” I add, “that Oaxaca has the richest fern population in Mexico.”

My companion is impressed. “But you will not confine yourself to ferns?” He speaks then with eloquence and passion, of pre-Columbian times: the astonishing sophistication of the Maya in mathematics, astronomy, architecture; how they discovered zero long before the Arabs; the richness of their art and symbolism; and how the city of Tenochtitlán had more than 200,000 people. “More than London, Paris, more than any other city on Earth at the time, except the capital of the Chinese empire.” He speaks of the health and strength of the natives, how athletes would run in relays four hundred kilometers without stopping, from Tenochtitlán to the sea, so that the royal family could have fresh fish every day. About the Aztec’s amazing communication network, surpassed only by that of the Inca in Peru. Some of their knowledge, some of their achievements, he concluded, seem superhuman, as if they were indeed Children of the Sun, or visitors from another planet.

And then—does every Mexican know, dwell in, his own history like this, this achievement, this consciousness of the past?—and then came Cortés and the conquistadors, bringing not only new weapons but new sicknesses to a people who had never known them: smallpox, tuberculosis, venereal diseases, even flu. There were fifteen million Aztec in Mexico before the Conquest, but within fifty years only three million—poor, degraded, enslaved—were left. Many had been killed outright, but even more had succumbed, defenseless, to the diseases imported by the Europeans. The native religion and culture were diluted and impoverished, too, replaced by the foreign traditions and churches of the conquistadors. But along with this came a rich and fertile mixing, a miscegenation which was cultural as well as physical. My neighbor goes on to speak of the “double nature, the double culture,” of Mexico, the complexities, positive and negative, of such a “double history.” And then, as we are landing, he speaks of Mexico’s political structures and institutions, their corruptness

and inefficiency, and the extreme inequity of income, how Mexico has more billionaires than any other country save the U.S., but also more people living in desperate poverty.

As we descend from the plane in Oaxaca city I can see John and Carol Mickel—my friends from the New York Botanical Garden—waiting in the airport. John is an expert on the ferns of the New World, of Mexico in particular. He has discovered more than sixty new species of fern in the province of Oaxaca alone and (with his younger colleague Joseph Beitel) described its seven hundred-odd species of fern in their book *Pteridophyte Flora of Oaxaca, Mexico*. He knows where each of these ferns is to be found—their sometimes secret, or shifting, locations—better than anyone. John has been to Oaxaca many times since his first trip in 1960, and he is he who has arranged this expedition for us.

While his special expertise lies in systematics, the business of identifying and classifying ferns, tracing their evolutionary relationships and affinities, he is, like all pteridologists, an all-round botanist and ecologist too, for one cannot study ferns in the wild without some understanding of why they grow where they do, and their relationship to other plants and animals, their habitats. Carol, his wife, is not a professional botanist, but her own enthusiasm, and her many years with John, have made her almost as knowledgeable as he is.

I first met John and Carol on a Saturday morning back in 1993. I lived in the Bronx quite near the New York Botanical Garden, and that particular Saturday, I was strolling around the gardens with my friend Andrew. We happened into the old museum building, and Andrew, who had heard me rhapsodize about ferns more than once, spotted a notice referring to a meeting that day of the American Fern Society. I was curious—I had never heard of it—so I wandered through the labyrinthine innards of the building and eventually found the meeting, a gathering of about three dozen people in an upstairs room. This gathering had a strange, old-fashioned, Victorian quality about it. It could have been a meeting of an amateur botanical society in the 1850s or 1870s. John Mickel, I later learned, was one of the very few professional botanists in the group.

Andrew whispered to me, “These are your sort of people,” and, as usual, he was right. They were indeed my sort of people—and they seemed to recognize me, welcome me, as one of themselves, as a fern person.

It was a curious, motley crowd. In general it was an older group, with many retired people, but there were several people in their twenties too, some of whom worked in the conservatory or the horticultural parts of the garden. Some were professionals—physicians or teachers; several were housewives; one was a bus driver. Some were city dwellers, with window boxes in their apartments; others had large gardens or even greenhouses in the country. Fern passion, it was clear, respected none of the usual categories, could take hold of anyone, at any age, and claim part of their lives. Some, I would find, had driven sixty or seventy-five miles to be there.

I often have to go to professional meetings, meetings of neurologists or neuroscientists. But the feeling of this meeting was utterly different: There was a freedom, an ease and lack of competitiveness I had never seen in a professional meeting. Perhaps because of this ease and friendliness, the botanical passion and enthusiasm that everyone shared, perhaps because I felt no professional obligation resting on me, I began going to these meetings regularly, every month. Prior to this I had not belonged, with any conviction, to any group or society; now

eagerly looked forward to the first Saturday of each month; I had to be out of the country, very sick, to miss the monthly AFS meeting.

The New York chapter was established by John Mickel in 1973, but the American Fern Society itself goes back to the 1890s, when it was founded by four amateur botanists, who stayed in touch by full and frequent letters. These letters were published by one of them in the *Linnaean Fern Bulletin*, and this soon attracted interest among fern lovers all over the country.

Amateurs, then, started the American Fern Society, just as they had founded the Torrey Botanical Society—a more general botanical society under the aegis of the famous botanist John Torrey—a few years earlier; and as they had started the British Pteridological Society in the 1890s. Most of the AFS's membership, a century later, is still made up of amateurs, with just a sprinkling of professionals. But such amateurs! There is old Tom Morgan, whom I saw at my first meeting in 1993, and whom I have seen at virtually every meeting since. Tom, who has a long white beard, and looks more than a little like Darwin, is enormously knowledgeable and indefatigable, despite having had Parkinson's disease for some years, and, recently, a broken hip. None of this daunts him: He climbs in the Adirondacks and the Rockies, treks through the rain forests of Hawaii and Costa Rica—always with his camera and notebook, recording new species and hybrids (an *Asplenium* hybrid he discovered, *Asplenium morganii*, was named after him), unusual locations of ferns, strange associations of ferns with other plants and particular habitats, and unusual cultural uses of ferns (the eating of fiddleheads in different cultures, for instance, or the drinking of *Ophioglossum* tea). He is the epitome, as Darwin himself was, of the amateur naturalist, and at the same time he is perfectly at home with the latest in evolutionary theory and genetics. And yet all this is just a hobby, a sideline for Tom, who was a physicist, a pioneer in materials science. Tom has been to Oaxaca, and urges me to go on this trip, even though he himself will not—he is going to Puerto Rico this year instead.

In fieldwork, field science, amateurs still provide major contributions, as they have done for centuries. In the eighteenth century, many of these amateurs were clergymen, like the Reverend William Gregor, who discovered the new element titanium in a black sand in a nearby parish, or Gilbert White, whose *Natural History of Selbourne* is still one of my favorite books. A special power of observing and remembering particulars, a special memory for places, allied to a love, a lyrical feeling for nature, is characteristic of this naturalist's sort of mind. In the 1830s it was remarked of William Smith, the "father of geology," that, even in his old age, his "memory for localities was so exact that he has often, after many years, gone direct to some hoard of nature to recover his fossils." It is similar with Tom Morgan—he remembers, I think, every fern of significance he has ever seen, and not only remembers it but exactly where it was located.

Comets and supernovae are frequently spotted first by amateur astronomers (one such, a minister in Australia, using only a small telescope but able to remember the exact location of every supernova, has made a unique survey of the incidence of supernovae in a thousand galaxies). Amateurs are vital in mineralogy—independent of grants or professional support—they get to places professionals may not reach and describe new species of mineral every year. It is similar with fossil hunting, and bird-watching. In all of these fields, what is mo

crucial is not necessarily professional training but the naturalist's eye, which comes from some combination of native disposition, biophilia, with experience and passion. Amateurs, in the best sense, have exactly this—a passion, a love, for their subject, and the accumulated experience, often, of a lifetime of acute observation in the field. The professionals in the Fern Society have always recognized this, and thus everyone—so long as they love ferns—welcome in the group, even if they are quite inexperienced. “The veriest greenhorn and the highest authority have always been on an equal footing as members,” as the Society president wrote on its fortieth anniversary—and I, as a start, am just such a greenhorn.

* Or so it was said when I was a boy. The current understanding, based on DNA sequencing, and not just on morphology, of the sequence of ancient plants in the fossil record, is against any such simple lineage, but indicates instead that lycophytes, ferns (including fern allies), and seed plants constitute the three main lineages of vascular plants, all presumably evolving from a common ancestor back in the Silurian.

Most of the thirty people on this tour to Oaxaca are members of the AFS, but drawn from different parts of the country—New York, Los Angeles, Montana, Atlanta. Today, on our first morning in Oaxaca, we are beginning to get acquainted over breakfast, and looking forward to getting our first glimpse at the town itself, an old colonial capital surrounded by a modern city of 400,000 people or so.

As we wind down the steep road from the hotel above the city, on our little tour bus, we stop and get out to enjoy a panoramic view of the city. Luis—our tour guide for the next week—points out the innumerable churches and the confines of the old colonial city. No one pays the least attention. John Mickel instantly scans the roadside for ferns, but John Mitchell, his near namesake and fellow botanist at the New York Botanical Garden, has an eye out for birds as well. The near identity of the two names, John Mickel and John Mitchell, is causing amusement and confusion among us, as indeed it does at the NYBG, where they both work, and where phone calls and mail for one are constantly misdirected to the other. Many of us begin to refer to John Mitchell as J.D., to distinguish him from John Mickel. No one that there is any similarity except in name. John Mickel is sixty-something, clean-shaven, lean and wiry, with tufted gray eyebrows and blue eyes; he goes bareheaded in all weather. J.D. is a younger and much larger man, and sports a huge beard. His massive head in a broad-brimmed hat, and binoculars invariably around his neck, he somewhat resembles Professor Challenger in *The Lost World*. Botanist he may be, but my first experience of J.D., today, is of a passionate, lyrical bird-watcher. He spots a bird and points it out excitedly.

“That’s a dusky, a dusky hummingbird, going out of the *Ipomoea*,” he whispers. “Isn’t that neat? ... Uh-oh! That’s a yellow-rumped warbler roughing around there, going after insects.”

Scott Mori (who, I learn later, is also from the NYBG, and president this year of the Torreón Botanical Society) scrambles down a precipice to get a wild tobacco plant. He examines it and murmurs, “*Nicotiana glauca*.” Though there is a *Nicotiana africana*, Scott says, the use of *Nicotiana* as tobacco came wholly from the New World, and goes back at least two thousand years.

As we pile back on the bus to continue into town, Scott reminds us of the early history of tobacco. Tobacco was nearly everywhere in the Americas, it is thought, by the time of Christopher Columbus. An eleventh-century pottery vessel shows a Mayan man smoking a roll of tobacco leaves tied with a string—the Mayan term for smoking was *sik’ar* (to think that I have enjoyed cigars for a thousand years, and never realized the word was of Mayan origin!).

This gives rise to a general discussion of the history of tobacco. Columbus was given a gift of fruit and “certain dried leaves which gave off a distinct fragrance” by the natives when he first set foot in the New World. He ate the fruit, but having no idea of the leaves’ use, he had them thrown overboard. A few years later, visiting Cuba and seeing the natives smoking, another explorer, Rodrigo de Jerez, brought the custom back to Spain—when his neighbors saw smoke billowing from his nose and mouth, they were so alarmed they called in the Inquisition, and Jerez was imprisoned for seven years. By the time he got out of prison,

smoking had become a Spanish craze.

Then, of course, there were the stories we all learned as schoolchildren in England—of Sir Walter Raleigh introducing smoking in England (his alarmed servant, thinking his master was on fire, doused him with a jug of water); of tobacco getting honorable mention in *The Faerie Queene*; of the Elizabethans, with their pithiness, calling it sot-weed; and of Queen Elizabeth herself being inducted into smoking, as an old lady, in 1600. And then, in rapid succession, smoking was denounced in *Worke of Chimney Sweepers* (1601), defended in *A Defense of Tobacco* (1603), and reattacked (*A Counterblaste* ...) by no less than King James himself. But despite royal disapproval and tariffs, by 1614 there were “7000 shops in and about London that doth vent Tobacco.” This gift from the New World was quickly adopted all over the Old

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By now we have arrived in the center of old Oaxaca, where the streets still run in the simple north-south grid laid out in the sixteenth century. Some of the streets, we notice, are named after political figures, like Porfirio Díaz Street, but others, to our pleasure, after various naturalists. I spot a Humboldt Street—Alexander von Humboldt, the great naturalist, visited Oaxaca in 1803 and described his experiences in his *Personal Narrative*. John Mickel points out a Conzatti Park. Conzatti, he says, was not a professional botanist—he was a school teacher and administrator who lived in Oaxaca during the 1920s and 1930s—but he was an amateur botanist, the first pteridologist in Mexico, who in 1939 documented more than six hundred Mexican fern species.

J.D., in the meantime, has spotted a tanager on a mango, and adds this to the list he is keeping.

We stop in the great colonial church of Santo Domingo. The church is enormous, dazzling and overwhelming in its baroque magnificence, not an inch free of gilt. A sense of power and wealth exudes from every inch of this church, a statement of the occupier's power and wealth. How much of the gold, I wonder, was mined by slaves, how much melted down from Aztec treasures by the conquistadors? How much misery, slavery, rage, death, went into the making of this magnificent church? And yet the statuary portrays smallish figures with dark complexions, as opposed to the idealized, enlarged statues of the Greeks. Clearly local models were used, and religious imagery adapted to local needs and forms. A giant golden tree emblazoned on the ceiling holds both court and ecclesiastical nobles in its branches—church and state mixed, as one.

A painting of the Virgin, gilded, ornate, blazes in the middle of the darkened, soaring nave (“Oh, my God,” whispers J.D., “look at that!”). Below it a black-robed woman, perhaps a nun, is kneeling; she raises her voice intermittently in a loud, guttural song or invocation. She is in a state of ecstasy, adoration. I have the feeling of something theatrical, histrionic. If she wants to pray, I feel, let her do so discreetly, not make such a racket. Others, however, find her beautiful, moving.

Just outside the church, the street is lined with vendors selling hammocks, necklaces, wooden knives, paintings. I buy a many-colored hammock and a slender wooden knife. Scott does, too (“just to spread money around,” he says). There are tiny shops across the street and among them I notice Gastenterolia Endoscopica. I wonder, absurdly, why one should seek a colonoscopy, a gastroscopy, a sigmoidoscopy, in these holy confines?

Luis, our guide, is still plying us with information: “Here is the ‘house of Cortés.’ Cortés

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