

Copyright Notice

This electronic reprint is provided by the author(s) to be consulted by fellow scientists. It is not to be used for any purpose other than private study, scholarship, or research.

Further reproduction or distribution of this reprint is restricted by copyright laws. If in doubt about fair use of reprints for research purposes, the user should review the copyright notice contained in the original journal from which this electronic reprint was made.

Hornaday, Humboldt, and the Grandeur of Nature

EXEQUIEL EZCURRA

TO THOSE WHO LOVE NATURE IN ALL ITS ASPECTS

—CARL LUMHOLTZ, dedication, *New Trails in Mexico*

One sunny December day in 1990, I was spending some leisurely time with my wife, Barbara, in downtown Mexico City, browsing old editions in the antique bookstores of Reforma Avenue. Glancing along the dusty shelves, I unexpectedly spotted the worn brown back of an old hardcover that made my heart thump with excitement. The spine read “*New Trails in Mexico—Lumholtz.*” The text itself was not new to me; in 1980 I had read Lumholtz’s account of his travels in the Gran Desierto in a 1971 edition of *New Trails* from Rio Grande Press; and the Southwest Center of the University of Arizona had printed a new edition in early 1990, just a few months before my book-search promenade down Reforma Avenue. But the volume I was observing looked much older; it was weathered by time and its colors were mellowed by age and usage. Could it be the original 1912 edition?

In tense anticipation, I took the book from the shelf and opened it. On its age-ambered pages I could read very clearly “*New Trails in Mexico: An Account of One Year’s Exploration in North-western Sonora, Mexico, and South-western Arizona, 1909–1910 by Carl Lumholtz, M.A.*” And right below, at the bottom of the page, was the final proof of authenticity: “Charles Scribner’s Sons, 1912.” Even more surprisingly, the first page was signed by its original buyer: “Guy S. Norvell, Capt. 8th U.S. Cavalry, Manila, Philippine Islands. May 15th, 1913.” How did the book find its way from New York to an American cavalry garrison in Manila in

EXEQUIEL EZCURRA is director of the Biodiversity Research Center of the Californias at the San Diego Museum of Natural History. Previously, he was president of the Instituto Nacional de Ecología (INE) in the cabinet of President Vicente Fox. As director general of natural resources in President Carlos Salinas’ administration, he proposed and guided establishment of the Pinacate and Alto Golfo biosphere reserves. He has also received awards for his support of binational protected areas along the U.S.–Mexico borderlands. He has produced more than one hundred publications in ecology and conservation, most dealing with New World drylands.

1913, then to Mexico City almost eighty years later? I won't speculate, but miracles happen, even for skeptics like me.

Pretending to be uninterested at first, I engaged in an intense haggling exercise with a very astute store owner who did not fall for my faked indifference. Finally, Barbara resolved the issue by paying the asked (and I thought exorbitant) amount and giving me the book as a holiday present. But the steep price did not hurt; I was returning home with a copy—my own personal copy!—of Lumholtz's original description of the Gran Desierto. I was walking on soft clouds. Life could not get any better.

But, then, it could. A year and a half later, Luis Donaldo Colosio—a Sonoran from Magdalena de Kino—became Mexico's Secretary of the Environment and invited me to work with him trying to improve the ailing and mismanaged system of protected natural areas in the country. One of the first ideas I proposed to him was to protect the Pinacate and the Gran Desierto by designating the area as a biosphere reserve. As part of the negotiations, I traveled to Las Cruces, New Mexico, to discuss the project with the Southwest Office of the National Park Service (NPS). The NPS people had invited some local researchers, and among them came Raúl Valdez from the Department of Fishery and Wildlife Sciences at New Mexico State University. Dr. Valdez—an American of long Mexican ancestry—is one of the topmost authorities in wildlife management in North America and has a profound knowledge of the history of the borderlands and the American Southwest. He is a true scholar, and also a well-mannered university professor and a very knowledgeable naturalist, as well as a decent and dedicated man.

Towards the end of our meeting, Dr. Valdez—who knew of my passion for the Gran Desierto—approached me and gave me a copy of *Camp-Fires on Desert and Lava* by William Temple Hornaday, printed by T. Werner Laurie in London in 1908, at the same time that Scribner's was printing the first American edition. I have never received a gift so wonderful. I took the book back home and put it in a shelf side by side with Lumholtz's *New Trails*. I have kept those two books with me since then; they are among my most precious possessions.

In 1992, when I was working to have the Pinacate Biosphere Reserve designated, I regarded the unexpected encounters with those two books as some sort of positive omen, a sign of good tidings for the Gran Desierto region, and a source of intellectual guidance. I kept the books near me, as if Lumholtz and Hornaday, through their lucid texts, could provide me inspiration in the difficult task of convincing the cold bureaucratic

structure of the Mexican federal government that the conservation of the Pinacate and the Gran Desierto was indeed a worthy enterprise.

And, indeed, they did inspire. *New Trails in Mexico* and *Camp-Fires on Desert and Lava* ranked high in the reference list of the proposal and in the accompanying documents supporting the decree of the Pinacate and Gran Desierto Biosphere Reserve in 1993. And, once the reserve had been finally created in Mexico, the precious information contained in the two books made it all the way to Paris, where Hornaday's and Lumholtz's accounts formed a crucial part of the long list of documentary evidence used to endorse the designation of area as an international biosphere reserve by UNESCO in 1995.

Apart from being wonderful explorers, Hornaday and Lumholtz were true scientists and rigorous thinkers. Intellectually, they were direct inheritors of the best scientists of the Age of Enlightenment, a time when so many traveling scientists set out to explore and understand the wider world and its diversity of life and cultures. In the tradition of Linnaeus, Humboldt, Darwin, or Wallace, the books by Hornaday and Lumholtz are based on three pillars of knowledge that are still the cornerstones of our scientific understanding of the global environment.

The first attribute is rationalism, the time-honored scientific principle established almost seven centuries ago by Roger Bacon and William of Occam, that natural phenomena have natural causes that can be explored systematically, experimented with, and understood through reason and causal explanation. Throughout their respective books, Hornaday and Lumholtz honored this tradition with rigorous scientific descriptions of everything they saw, making a real effort to systematize their exploration of the desert environment, to use the scientific method, and to understand the causes of and search for the deep scientific significance behind the phenomena they observed and recorded. They were true scientists in the strictest sense of the word, capable of very fine and detailed observations that established a baseline description of the region of immense value for researchers today.

The second attribute is a deep understanding of the concept of scale in nature. The two explorers had an acute capacity to make observations at a micro level and then extrapolate conclusions to the larger environment, and vice versa: "Naturally, one looks first at the desert as a whole, before analyzing its component parts and counting its stamens and pistils" (Hornaday 1908:35–36). Induction and deduction—the deriving of conclusions by reasoning across scales—were familiar concepts to the scientists in both expeditions. Local observations, both expeditionaries

knew, could be turned into scientific hypotheses and then tested at a larger scale to see if the ideas held true. Conversely, general trends could be synthesized as geographic rules and tested locally to see how robust their general predictions were. This approach allowed scientists to reach sound conclusions in an environment where direct experimentation was not possible but where scientific ideas had to be constantly put to a test. And the method was quite powerful; by simply observing in detail the water dynamics of the salt-flat springs of Adair Bay, the *pozos*, Lumholtz was able to infer quite correctly the functioning of the whole underground aquifer of the Gran Desierto: “I suppose these curious formations in the sandy soil of the shore are due to the action of water that at one time must have been stronger than now,” he wrote, anticipating our current knowledge of Pleistocene glaciations in the Sonoran Desert. “It seems as if the existence of so much freshwater here must presuppose its existence underneath the western area of the District of Altar and extending perhaps into southern Arizona,” he concluded, estimating quite accurately the size of the large but immensely fragile Gran Desierto aquifer (Lumholtz 1912:263–64).

The last attribute is cultural understanding, the capacity to accept and understand the opinions of other people. Indeed, both Hornaday and Lumholtz show in their texts a high respect for the people and cultures they encountered during their trips. In Lumholtz, an illustrious Norwegian who had received training as an anthropologist, this acute interest in the human species, devoid of any feeling of cultural superiority, is perhaps expected; but it has always been for me a matter of admiration how Hornaday—an American with a rigorous background in zoology but little training in anthropological sciences—always had kind words for the Mexican and native peoples he encountered along his trip, whom he regarded as friendly, good-natured, and innately happy persons: “Nervous prostration is as impossible in Sonoyta as happiness is to an American Countess” (Hornaday 1908:93). Lumholtz, well trained in anthropology, saw the potential for conflict among the different social groups in the region, but clearly cast his lot with the native Papagos (Tohono O’odham): “There is no trouble in civilizing the Indians by education, but a great step in the right direction would be to civilize the rough whites first” (Lumholtz 1912:365).

Rational thought, understanding of the larger scale of things, and cultural respect: what a simple yet powerful combination! A century after the two Gran Desierto expeditions, at a time when some groups in society try to restrict the teaching of scientific evolution in public

schools, or in which some leaders deny the existence of global climatic change and refute the urgent need to act upon the global environmental crisis, or when entire wars are driven by feelings of cultural or ethnic superiority, one cannot help but wish we had more people like Hornaday or Lumholtz around us today.

One wishes there were more scientists like them, not just because of their scientific ability, but also because of the sheer joy of writing and love of nature their texts project. Apart from the good science they contain, *New Trails* and *Camp-Fires* are also damn good books and make really great reading. And the capacity to inspire through good prose has always been a most powerful force to motivate the conservation and understanding of nature. Personally, I have always found it difficult to explain why I love deserts, those inhospitable, forbidding environments. Lumholtz, however, had no trouble describing masterfully the deep meaning of the desert in one of his most moving paragraphs:

To the lover of nature in all aspects, this land of “silence, solitude, and sunshine” cannot help but present a strong fascination. The wonderful colors of the late afternoon, the glorious sunsets, the peace and calm of night, the thrill that accompanies the early dawn of the morning are sources of constant delight for the traveler. Besides, an expedition of this kind directs one’s thoughts into other channels than those of the ordinary humdrum of life. The starlit sky, under which one sleeps with impunity, invites imagination to take flight into the infinite universe, and one has time to reflect on the beauty of existence and the grandeur of nature, a pleasure which is denied to most city dwellers. (Lumholtz 1912:xi)

As a person also fascinated by this region, I could not agree more. ❖

REFERENCES

- Hornaday, William T.
1908 *Camp-Fires on Desert and Lava*. New York: Charles Scribner’s Sons.
- Lumholtz, Carl
1912 *New Trails in Mexico*. New York: Charles Scribner’s Sons.