

# The *Ceroxylon* Trip in Northern Peru

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1. The forest of *Ceroxylon quindiuense* at Ocol.

When IPS board members and other guests dispersed following the 2013 interim board meeting at the Inkaterra Ecolodge near Puerto Maldonado in southeastern Peru, most boarded planes for Lima. But for a small subgroup including myself, Lima was just a stop on the way to the trailhead for another palm adventure, this one to see the famous wax palms of northern Peru.

Our journey was to see the Ocol Forest, a forest of *Ceroxylon* palms (Fig. 1) on the upper slopes of the Andes Mountains. The leader of the tour was IPS Board member Fernando (“Pacho”) Roca Alcazar, who has worked in the region for

many years, but now resides in Lima, where he is an administrator at the Catholic University in that city. The plane landed at the airport in Tarapoto, a city of over 100,000 persons in the Department of San Martin, at an elevation of



2. Our transportation across Huallaga River.

about 350 m (1200 ft.) in the western foothills of the Andes. Located 6.5° of latitude below the Equator, Tarapoto is also known as the “City of Palms” after a native palm species (*taraputus*) found in abundance in the nearby lagoon (now replaced by city streets) by the early Spanish settlers in the 1780s. Pacho thought the *taraputus* was either *Mauritia flexuosa* or *Dictyocaryum lamarckianum*.

From the airport, we were transported to Puerto Palmeras, a resort and staging ground for ecotourism in the area, although the many buildings of the resort seemed to be centered about the huge swimming pool with an outside bar, hardly suggesting the rigors of ecotourism. In contrast to the lowland heat of Inkaterra (12.5° of latitude below the Equator), the prevailing temperature of the Andean

3. Participants in the *Ceroxylon* adventure, left to right: Soejatmi Dransfield, Kathleen Grant and Tom Jackson, John Dransfield, David Tanswell, Jeffrey and Christine Brusseau, Alexander, Lauri and Toby Spanner and Pacho.



foothills was relatively comfortable. However, our evening arrival did not permit palm exploration, and early in the morning we left for our next destination, Lago Lindo, a resort near the town of Sauce.

We traveled south of Tarapoto on a well-paved highway, then traveled east on a minor road to the bank of the Huallaga River. Here a ferry – actually a raft propelled by several big outboard motors – carried cars and passengers across the broad and fast-flowing river (Fig. 2). After waiting an hour or so, it was our turn. As we were propelled across the river, we gathered for a group picture (Fig. 3) in the front of the ferry (the missing member of the group, yours truly, is behind the camera). The apparently primitive character of the transportation was deceptive, however. Government agencies have offered to fund construction of a bridge, but the local population has blocked it, fearing that development would spoil the character of their region and bring in too many visitors.

Once across the Huallaga, we resumed our bus journey, climbing in elevation. We began to see many specimens of a robust *Syagrus* species (Fig. 4). Toby Spanner later identified the species as *S. sancona* on the basis of the number of rachillae. We disembarked from the bus at

the top of a hill overlooking the Lago Lindo resort, which, at an elevation of 700 meters (2300 feet), also serves as headquarters for an ecological reserve. The walk down the hillside to the resort is well known and is featured in much of the online advertising for local resort facilities. Figure 5 from along the trail shows a palm typical of the area, *Oenocarpus mapora*. At one point, we came across some artisans sculpting statues of men of importance in Peruvian history from the underlying soft sandstone, including José de San Martín, the nation's founder. We just beat the rain to the main building. Soon, we were served lunch at the lakeside boathouse. Across the lake were large groups of *Attalea* palms, which I assumed were *A. butyracea*, though some local botanists referred to them as *A. phalerata*.

Each member or family of our group was assigned a cabin with a front deck, table and chairs and a hammock in a picturesque tropical hillside setting overlooking the lake. Outside my cabin, on very high ground, was a very nice-looking young specimen of *Mauritia flexuosa*. After settling in, we gathered in the main building to begin a guided tour of the lakeside gardens. We saw more *Attalea* sp., a tall spineless form of *Bactris gasipaes*, and several smaller *Bactris* spp. by the side of the

4 (left). *Syagrus* cf. *sancona*. 5 (right). *Oenocarpus mapora*.





6. *Mauritiella armata*.

path. One of the latter was most probably *B. brongniartii*. One spectacular flowering non-palm was a *tangarana* (*Triplaris sangarana*). Upon our return, we could participate in feeding the tropical birds, such as macaws. A pet toucan proved to be very aggressive in its pursuit of food. As it turned dark, we gathered in the lobby for what became the tour drink of choice, the pisco sour (like a whiskey sour, but made with the local pisco alcohol derived from fermented grapes). Our cabins had electricity from 6 to 10 p.m. only and no hot water, so we turned in early after dinner for an early morning cold shower and departure from this beautiful place, where I would have liked to stay for a while longer.

We were on our way to Pomacochas, the location of the Puerto Pumas resort, normally closed except for special groups. They opened for our visit with a staff of two employees. This would be our staging area for treks during the remainder of the tour. We stopped for lunch, still in the lowlands, at an open air restaurant next to a wetland with a forest of *Mauritia flexuosa*. The dead fronds hanging down had an intriguing appearance. Later, alongside the road, we saw several large palms typical of the

region: *Mauritiella armata* (Fig. 6), *Oenocarpus mapora* and *Oenocarpus bataua* (Fig. 7). We were never close to the last species, nor to the *Dictyocaryum lamarckianum* that we could see in the distance on hillside ridges as we climbed steadily into the mountains. Finally, we saw our first *Ceroxylon*, tall palms with very straight, ringed trunks, often with a white waxy surface between the rings. The tree shown in Fig. 8 was either *C. echinulatum* or *C. quindiuense*. Both species have pendulous leaflets. *Ceroxylon quindiuense* is supposed to be a taller, more massive tree (in fact, it is the world's tallest palm, reaching 60 m [200 ft.] in height). Toby Spanner, who, with Pacho, was the most knowledgeable in our group about the genus *Ceroxylon*, noted that it was difficult to distinguish between the two species when viewing an isolated tree in the field.

*Ceroxylon* palms are dioecious. There are 12 species currently recognized, of which we saw four, or probably five, during our tour. Henderson et al. (1995) listed *C. vogelianum* as the only *Ceroxylon* species present in northern Peru, but they were probably working with incomplete information from a region that was then lawless and dangerous to enter. Vast



7 (left). The distinctive crown of *Oenocarpus bataua*. 8 (right). A species of *Ceroxylon*.

*Ceroxylon* forests once spread across the Andean foothills, but most have been lost to clearing for agriculture. Henderson et al. (1991) stated that 90 percent of the Andean forests had been eradicated.

*Ceroxylon* palms are subject to other threats as well. Collection of fronds from several varieties, including *C. quindiuense*, for Palm Sunday observances have substantially imperiled populations, and the governments

9. *Ceroxylon parvifrons*, a high-elevation species.





10. *Ceroxylon peruvianum*.

of several countries are now trying to suppress this practice. Frequently, some *Ceroxylon quindiuense* are left intact during clearing of land for pastures. However, removal of the plant cover around the palms and movement of cattle around them, compacts the soil about the roots, and the palms decline, the trunk becoming very thin at the top before death occurs. We observed this unfortunate result in the pastures on the edges of the Ocol forest.

Although the various *Ceroxylon* species are adapted to specific ranges of altitude in their natural environment, altitude is not an obstacle to the growing of *Ceroxylon*, as Pacho has been successful in growing four species (*C. alpinum*, *C. amazonicum*, *C. ventricosum* and *C. vogelianum*) in his garden at sea level in Lima for several years. But *Ceroxylons* do not grow quickly, and many years might be required to produce a trunked palm. *Ceroxylon* palms like humidity, but do not do well in extreme heat or cold. The mild, foggy climate of Lima would suit them well, as might the windward climate of various Hawaiian Islands.

The fruits are red-orange and 1.5–2.5 cm (0.6–1.0 in.) in diameter. Two species have a

smooth skin, but most show a warty pattern that is highly characteristic of individual species and “is a useful taxonomic character to recognize species,” according to a recently published monograph on the genus (Sanin & Galeano 2011). The seeds are round, brown or black, smooth, and 1.0–2.0 cm (0.4–0.8 in.) in diameter. Germination is adjacent-ligular and the eophyll is entire. After our visit to the Ocol forest, Toby initiated discussions with local conservationists about supplying *Ceroxylon* seeds for his palm seed business and remained for several additional days of reconnaissance in the area, so palm hobbyists may find these seeds available in the near future.

Since it was late, we retired to Puerto Pumas for pisco sours, dinner and a night’s rest. At over 2200 m (7200 ft.), the town was cold, and we pulled out our jackets to wear in the unheated hotel. In the chilly morning, breakfast was scrambled eggs, papaya, melons and delicious tamales. After several hours of travel, we stopped in Chachapoyas, the administrative seat of the Amazonas District, where we were asked to meet local political leaders. Then, it was on to see more *Ceroxylon*.



11. A ruined, pre-Incan fortress.

The next species was *C. parvifrons* (Fig. 9), reputed to grow at the highest elevations (up to 3500 m, or about 11,500 ft.) of any palm species. This species is quite distinctive in its appearance, having erect, arched leaves with stiff, regularly-arranged leaflets. Finally, we reached the main objective of our trip, the Ocol Forest, a massive stand of *C. quindiuense* (Fig. 1) within walking distance of the village of Molinopampa. This rare and unique view helped us visualize what the vast ancient stands of these forests on the Andean mountain slopes must have looked like. Our hike into the forest took us close to a specimen showing the typical shuttlecock form of juveniles of all *Ceroxylon* species. We saw trees with as much as 8 m (about 25 ft.) of trunk that still retained the juvenile shuttlecock form. The higher forest also contained many examples of *Prestoea acuminata* var. *acuminata*, a clumping form of this widely distributed species. Offshoots of the latter species often had rose-colored leaf bases.

The following morning, we became tourists and headed for the ruins of Kuelap, a pre-Incan mountain fortress similar to Machu Picchu and near the town of Tingo. Our road journey took us near a population of *Ceroxylon*

*peruvianum*. In this species, only recently (2008) described, the wide, closely-spaced leaflets are in slightly different planes giving the leaves a somewhat plumose appearance (Fig. 10). From Tingo, we ascended a mountainside road that could be a candidate for the TV program "The World's Most Dangerous Roads."

Near the fortress was a new and well-appointed visitor center, but there was still a climb of a kilometer to reach the fortress ruins (Fig. 11) at 3100 m (about 10,000 ft.). Wandering around the ruins, we found many trees with large numbers of deep red bromeliads (probably a *Tillandsia* species) covering the branches. The rain was off and on again, and we could see storms approaching across the mountain valleys. From the ramparts of the fortress, we could see hillside farm plots, cultivated perhaps since before the time of the Incas.

The next morning, we made our final departure from Puerto Pumas. But we made several palm stops on the journey back, one to view *Ceroxylon vogelianum* (Fig. 12). This species is one of the smaller *Ceroxylon* species and has thin leaflets in many planes, giving it a plumose appearance. Then it was time for our



12. *Ceroxylon vogelianum*.

return to Puerto Palmas in Tarapoto to rest for a few hours before the evening flight back to Lima and points beyond. For me, it had been one of the more memorable trips of my experience.

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