

## The montane forest at Santo Domingo

The second expedition to the montane forests took place in the buffer zone of the Madidi National park, near the Leco Community of Santo Domingo. We managed to install 10 temporary plots of 0,1 ha and 2 permanent parcels of 1 ha. Between both plots types we inventoried a total of 5750 stems and made 1156 collections of specimens and 54 samples of silica gel. Among the novelties we collected a new species of *Prestonia* sp. (Apocynaceae) in flowers and the first record from Bolivia of the genus *Croizatia* sp. (Euphorbiaceae). We also found additional specimens representing several new species, which we already had obtained during previous trips to the montane forests, in the genera, *Pleurothyrium* sp. (Lauraceae), *Dendropanax* sp.



Flowers of *Thibaudia* sp. nov. (Ericaceae) collected at Wayrapata (A. Fuentes).

(Araliaceae), *Clidemia* sp. (Melastomataceae) and *Talauma* sp. (Magnoliaceae).

### **Personnel**

The expedition participants were Peter M. Jørgensen director of the Project, Alfredo Fuentes and Leslie Cayola, investigators and responsible for the expedition. Edwin Ticona, Isabel Loza,

Maritza Cornejo and Neftali Chapi, students of the project. In addition Gualberto Chive as volunteer. The principal guides were Sandalio Cuqui (leader of the Santo Domingo community) y Saul Sompero, in addition participated Clemente Cuqui, Pepe Miranda, Freddy Miranda as guides and Doña Margarita Cuqui as cook.

Maritza Cornejo will use the data from the non-permanent plots for her degree in biology and Neftali Chapi will use of the data from the two permanent plots for his degree as an agronomy engineer. In addition the general collecting in the area will allow us to elaborate several scientific articles on new species and discoveries.

### **Notes from the expedition**

We left on October 6, 2006 from our headquarters at the National Herbaria of Bolivia (LPB), La Paz. Arrived safely at Charazani after midnight and for safety reason we decided to spend the night there. In the early morning some of the participants went for a walk on the slopes near town, we found some interesting plants among them *Dunalia brachyacantha* (Solanaceae) a common species in the vicinity of Charazani, but a species that had not been collected in the Madidi region previously, so we secured both photos and pressed material. After breakfast we



Map of location of the inventories made at the Tintaya stream, Santo Domingo Community. The circles represent the temporary plots and the squares the permanent plots. The symbols in yellow indicate inventories in valley bottom.





The torrential rain had washed out several bridges, in this place the nearby community had already improved the passage. We took full advantage and passed without any problems here (A. Fuentes).

left for Apolo, but made several stop on the way to collect plants.

We stopped in an area known as Wayrapata, to collect a potential new species of *Thibaudia* sp. (Ericaceae) and we managed to find it with flowers. This species had been collected sterile a couple of years ago during a thesis study, that evaluated the epiphytes diversity in this area. At that time James Luteyn, Ericaceae specialist, told us that it could very well be a new species, we took full advantage of passing through the area again and made some nice collections of this potentially new species, this time in flowers. We arrived in the late afternoon at Apolo and sought lodging at the Monastery of the Cistercians order. The nuns run a pleasant guesthouse with a relaxed atmosphere. We barely settled in before a torrential thunderstorm commenced, like precursor for our stay in the humid montane forest for the next three weeks.

Next morning, after a pleasant and healthy breakfast, we started off towards the Santo Domingo community, but the intense rainfall the day before had turned the road from bad into worse. The trip that normally takes three hours took us practically the entire day; pushing the trucks through the clay and mud and passing the small unstable wooden bridges. In the late afternoon



Torrential rain in Santo Domingo, after our arrival to the community (A. Fuentes).

we finally arrived at Santo Domingo, a community of the Leco ethnic group who has lost her native language due to the evangelization during the Spanish colonial period, today they speak Quechua and Spanish. This small community is located at the limit between the well preserved montane forests and the secondary and savannah vegetation of the area of Apolo. Their inhabitants extract some non woody products from the forests, among them the incense (*Clusia* sp. nov.), copal (*Protium montanum*) and leaves of a palms species that is used to construct thatched roofs.

Once in the community, we arranged a meeting with the leaders and inhabitants, we asked for their consent and collaboration for the work that we intended to make in the montane forest in the vicinity of their community and on their land. After a brief explanation of the objectives and



Greeting the flag at the school of Santo Domingo (A. Fuentes).



methodology of our work, they gave their approval and we began to organize the equipment that had to be transferred by porters, since the community had very few pack animals, and the trail we were to follow was not cleared for the animals to pass.

The following day before taking off, we were invited to witness a civic act at the school; the children sang and recited poems. Later we left towards the Tintaya stream, where we would locate the base camp. The trail passed in an almost flat and expansive valley, covered by bamboo (*Guadua* sp., Poaceae) forests, which had largely been converted to farm land, the bamboo forests probably grew on old fallows.

As always we divided the work, a group went to scout the area around the campsite to find



Members of the Santo Domingo community transferring our equipment and food to the Tintaya stream (A. Fuentes).

Bark and leaves of copal (*Protium montanum*) (A. Fuentes).

good places for establishing plots while the other group established the camp with “chapapas” (shelves and rustic tables), tents and tarps. This way we would be ready the next day to dedicate ourselves exclusively to the field work.

After the recognisance, a group began to install the first permanent plot on a broad badly drained terrace across the stream from the campsite, it is quite unusual to an area so flat at 1400 m and in mountainous terrain. The group that worked with the non-permanent plots decided to initiate thier work on a slope approximately 2 km from the camp site.

The vegetation of the area is was a pluvial montane forest, between 1400 and 1600 m of altitude, characterized by the palm *Dictyocaryum lamarckianum*, with frequent occurrence of *Socratea exorrhiza*, *Alchornea glandulosa* and *Protium montanum*, other families like Lauraceae, Melastomataceae and Rubiaceae are abundant and diverse. The forest extends on terraces

furrowed by small streams and steep slopes, with high levels of accumulation of organic matter. On the badly drained terraces *Croizatia* sp. (Euphorbiaceae) was characteristic and abundant, it is a small tree of the under story and a new generic record for Bolivia. The small palm locally called “Jatata” (*Geonoma* sp.), was characteristic and abundant on the slopes; it is furthermore an important resource for the community because the leaves are the best material for thatched roofs.

In the entire area a horsefly species were also abundant, which along with the mosquitoes, bees and “japutamus” (small acaroids), were in charge of making our stay unpleasant. We had two dogs in the camp, they were the property of Saúl Sompero, and they accompanied



Fruits of *Croizatia* sp. (Euphorbiaceae), first record of the genus in Bolivia (A. Fuentes). Flower of *Prestonia* sp. nov. (Apocynaceae), abundant in the sector of the Tintaya stream (A. Fuentes). Fruits of *Dendropanax* sp. nov. (Araliaceae), from the pluvial montane forest (A. Fuentes).

us everywhere and brightened our hard working days with their playful nature. Our work was, however, constantly interrupted by several torrential rain storms that practically interrupted our work on a daily basis. The storms delayed our work it is almost impossible to work while it rains and the wet conditions made both our campsite and trails more difficult to traverse. The slippery ground, the foliage loaded with water and the wet clothes, left a few of us with a cold.

During our stay we had to return to Santo Domingo and reunite with the community members, since our first meeting with the community a series of misunderstandings had arisen between the community leader and some of the community members that did not attend the first meeting, some were against the type of activities we were carrying out. The reasons were several, but unfounded. They had the susceptibility that their forest resources would be “stolen”, that the plots we were installing on their land would no longer belong to them and that these areas would be passed on to the Madidi National Park, and that they would no longer form part of their territory.



Their fears were founded in prior bad experiences and speeches of a political nature. They were of the opinion that our activities did not benefit them in any way, and that the information extracted, would never be used to improve their conditions. After several hours of discussions and repeated explanations of the work we performed and that we were not laying any claim to the area, they finally renewed their support of us and our work. We promised to send them copies of all the documents that would be published there from the compiled information. In addition we will support them with the data that we collected on density of the Jatata palm; information that will be most useful in the elaboration of a management plan that is underway.

We returned to La Paz after 27 days, the exit was easier with the experience we had gained from the entry to Tintaya and Santo Domingo.



Members of the Madidi Project, next to some of the Santo Domingo community members (A. Fuentes).