

Andean Flora of Ecuador

Naturetrek Tour Report

21 September - 6 October 2017

Report compiled by Gustavo Cañas-Valle



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Day 1

Thursday 21st September

The clients were in flight from London to Quito and transferred to the Puenbo Birding Garden hotel.

Day 2

Friday 22nd September

From Puenbo to Patate

On the easternmost section of a mountain plateau within the Ecuadorian Andean mountains, Puenbo Birding Garden and the nearby Quito Airport are located. This plateau is formed by three valleys: Quito, Los Chillos and Tumbaco. The last two drain dry warm air and warm water from cooler superficial streams which start further south on the mountains of the Cotopaxi, Sincholagua and Pasochoa volcanoes. As they flow north, those streams carve deep gorges in a mix of lahar (mudflow and debris) remnants from the Cotopaxi successive volcanic eruptions and volcanic ashes from other nearby active volcanoes. The Machangara River, the natural drainage of the southern section of the Quito Valley, joins San Pedro and Chiche Rivers to form the Guayllabamba, the major river which gives the name to the watershed that we explored today.

Before taking off, at Puenbo Birding Garden, we described some of the frequent plants of the area including *Tillandsia recurvata*, and *Tillandsia secunda* (Bromeliaceae) as epiphytes on *Inga insignis* (Leguminosae, formerly Mimosaceae) on the citrus trees of one of the orchards on the property and also rooting on the power lines of the neighborhood. Part of the rural landscapes of this neighborhood newly added to the urban dynamic of Quito are the cultivated trees of *Persea americana* (Lauraceae), *Annona cherimolla* (Annonaceae) and *Parajubaea cocoides* (Areaceae, known locally as Coco cumbi). The two former species are today's constant elements of the farmland both in the Valleys next to Quito and in the Patate River watershed. The latter is a palm native to South America, present mainly as part of the landscaping of the streets, gardens and haciendas within the urban frame. The only known native population comes from Northern Peru.

We started our day in the field at the Chiche River view point, close to Puenbo, exploring the dry inter-Andean desert and semi-desert vegetation. Since one of our clients Barbara was very interested in both birds and plants at the same time, I decided to stop at this view point which offers a combination of geology, birding and flora attractions. Frequent species available here included *Opuntia ficus-indica* (Cactaceae) and *Leonotis sp.* (Lamiaceae). The representative native species for this formation were *Acacia macracantha* (Leguminosae, formerly Mimosaceae), *Cestrum sp.* (Solanaceae), and gardened dry-forest species like a tree *Ceiba* (formerly *Chorisia sp.*, Malvaceae) and a large bush with orange and red flowers: *Abutilon striatum* (Malvaceae). This oasis of vegetation created by human habitation, where the residences interact with the dry valley vegetation, attracts several species of birds including Giant Hummingbird, Vermilion Flycatcher, Golden Grosbeak and the locally common but always colourful Sparkling Violetear. While we were photographing plants, Jorge, our driver was keeping an eye on the flowers, so he could warn us about the presence of the Giant 'hummer'. This hummingbird chirped as it came to drink from the "Red-stripped Chinese Lantern" *A. striatum* flowers.

Shortly after we spotted the Giant Hummingbird, we departed for Machachi, in order to arrive in our lunch spot around the time for our meal. We entered the Cotopaxi National Park from the north.

As we were crossing Los Chillos Valley we spotted several Locally called “Guaba trees”: a combination of *Inga insignis* and *Inga edulis* (Leguminosae, formerly Mimosaceae), where the former was the dominant species. Both are the most common members of Inga in the surroundings of Quito. These trees are noticeable because of their white inflorescences, which exhibit a puffy appearance given by the numerous stamens in the complete flower. The structure of the tree resembles the one from *Acacia macracantha*: flat and wide. These plants, when in flower act as natural hummingbird-feeders.

The inter-Andean valley vegetation along the Machachi – Cotopaxi drive included *Buddleja incana* (Scrophulariaceae, formerly Buddleiaceae), *Coriaria ruscifolia* (Coriariaceae), *Syphocampylus giganteus* (Campanulaceae), *Brugmansia sanguinea* (Solanaceae), *Bocconia integrifolia* (Papaveraceae), *Muehlenbeckia* sp. (Polygonaceae), *Passiflora mixta* (Passifloraceae), *Ambrosia arborescens* (Asteraceae) and *Vallea stipularis* (Elaeagnaceae). On the hedges of the small farms we went by an introduced species naturalized in our country include *Sambucus nigra* (European Elder) and *Silybum marianum* (Milk Thistle). These species might have been actively introduced by European settlers due to their past importance for farmers.

Other species seen, which arguably could not be native to Ecuador, but which have been and still are widely considered part of our flora include *Agave americana* and *Furcraea cabuya* (Asparagaceae). The real native species within the family might be *Furcraea andina*. One definitely introduced species in the same Asparagaceae family is *Yucca guatemalensis*, a regular presence along hedges in dry mountainous habitats. In their native land, *Y. guatemalensis* is used as a source of food.

During our drive along the rural rock-paved road to Cotopaxi, we started with the frequent sightings of *Bomarea multiflora*, a species distributed all along the Ecuadorian highlands and highly varied within the Alstroemeriaceae. Other trees included *Vallea stipularis* (Elaeagnaceae), and *Oreopanax* sp. (Araliaceae). On them we also spotted wide clusters of *Cuscuta americana* (Convolvulaceae).

At the Cotopaxi National Park, we saw *Ephedra rupestris* (Ephedraceae) in front of our lunch spot. This plant is part of a community of prostrate alpine inhabiting the sparsely vegetated surface of the last lahar of Cotopaxi Volcano, which happened in 1877 as it is reported by the Geophysical Institute (Andrade, et al., 2005). Other worth noting species seen in the surroundings of our lunch stop to the park are *Hallenia weddelliana*, *Gentiana sedifolia*, *Gentianella cerastioides* (Gentianaceae), *Disterigma empetrifolium* (Ericaceae), *Werneria nubigena*, and *Hypochaeris sessiliflora* (Asteraceae).

During our walk at the trail surrounding the Limpiopungu lake, we spotted plants of *Cotopaxia asplundii* (Apiaceae) without flower close to *Lachemilla orbiculata* (Rosaceae). The reeds inhabiting the lake, *Carex* sp. (Cyperaceae), were the refuge of Grass Wren and Ecuadorian Rail. We saw the first and heard the second. Other bird species seen at and around the lake included Andean Gull, Andean Coot, Andean Duck, Andean Teal And Andean Lapwing.

The drive between the exit of the Cotopaxi park and Leito, our overnight spot, took us through farmland in the Patate Valley. Farmed species in the Patate Valley include *Annona chirimola* (Annonaceae), *Canna indica* (Cannaceae), *Schinus molle* (Anacardiaceae). This valley also represents a sample of the inter-Andean desert and semi-desert vegetation formation. On sight as we drove we had *Tecoma stans* (Bignoniaceae), *Senna multiglandulosa* (Leguminosae, formerly Caesalpiniaceae), *Acacia macracantha*, *Ipomoea* sp. (Convolvulaceae), *Passiflora vitifolia* and

Lantana camara (Verbenaceae). As we drove we also saw introduced species like *Argemone mexicana* (Mexican Prickly Poppy), *Kalanchoe* cf *pinnata* (Crassulaceae).

Most of our botanizing we did within a few metres from our vehicle at selected stops or whenever the presence of a plant in flower required us to stop on the side of the road. This is in fact the regular pace of our tour.

We arrived for three nights at the Hacienda Leito, Patate Baños.

Day 3

Saturday 23rd September

Patate to Río Verde

Ecologically speaking the Patate valley is an island of volcanic, fertile, well-drained terrain at the exit of the dry valley of the Cutuchi River. Water in this watershed drains from the north and the south into the drainage of the Patate River. Water available for farming, which has transformed the face of the surroundings of the towns of Lasso and Patate, drains from the Cutuchi River coming from Cotopaxi, from the Ambato river above Ambato, and from the Patate River. There is, however, moisture deprivation due to the rain-shadow effect that causes that all the plateau below 2800 metres to be inter-Andean desert and semi-desert. Most of the species that characterize this vegetation formation remain only on the slopes of the deeper and steeper drainages of the rivers.

As the day started, Tungurahua and the snow-capped volcanoes which can be visible from the hacienda and the road to Patate were all covered in clouds. The day started cloudy and ended drizzly, so we decided to explore the closer dry valley vegetation first on the way down to Rio Verde, then to explore up the slopes of Tungurahua volcano.

We drove outside the secluded Leito Valley and into the Patate River shores scanning the slopes of the valley. Species seen on the hedges of the farms included *Ricinus comunis* (Euphorbiaceae), *Echinopsis pachanoi* (Cactaceae) and *Euphorbia laurifolia* (Euphorbiaceae). The former is an introduced species from Eastern Africa which was likely introduced to be used originally as a laxative due to its medicinal properties, eventually surviving as an escapee (Patel, Dumancas, Kasi Viswanath, Maples, & Subong, 2016). Mescaline is extracted from *Echinopsis pachanoi* as part of traditional indigenous rituals. Finally, the stems of *Euphorbia laurifolia* are widely used as live fencing posts all along the Ecuadorian highlands.

As we left the Hacienda Leito, on the right side of the road there was *Erythrina edulis* (Leguminosae, also known as Fabaceae) a native plant to the Neotropical Andes. This species is present mainly in moist and well-drained terrain, adjacent to human inhabitation. As a useful plant, its fruit are harvested and the large beans inside are cooked as a source of both carbohydrates and protein.

Some of the species we identified in the dry valley included *Cleistocactus sepium* var. *ventimigliae* (Cactaceae), an endemic subspecies from the central and northern Ecuador dry valleys, plus *Stenomesson aurantiacum* (Amaryllidaceae), *Vriesea* cf *fragans*, *Puya glomerulata* and *Tillandsia secunda* (Bromeliaceae). More common and smaller flowers included *Cynoglossum amabile* (Boraginaceae) and *Mimosa quitensis*, *Lupinus pubescens*, *Dalea coerulea* (all Leguminosae), *Clinopodium fasciculatum*, *Clinopodium tomentosum* (both Lamiaceae), *Dodonaea viscosa* (Sapindaceae), *Datura stramonium* (Solanaceae), *Argemone subfusiformis* (Papaveraceae).

After we reached Baños we headed towards Rio Verde for lunch. Before and after the meal, we used our time to explore the gardens of our restaurant in order to photograph any of the Bromeliaceae or Orchidaceae sheltered there. *Phragmipedium pearcei*, *Prosthechea vespa* and *Tillandsia cyanea* were in flower.

Some farmed species are also present along the roadside: *Inga spectabilis* (Guaba Machete), which is used for food, and *Psidium guajaba* (Myrtaceae, locally called Guayaba or, in English, Guava).

In the afternoon, we drove up the eastern slopes of Tungurahua volcano, through the north-eastern access of the Sangay National Park. Today we also explored the ascent to the Sangay National Park on the northern slopes of the Tungurahua volcano. One of the species we spotted on the hillside of the road up was *Pitcairnia pungens* (Bromeliaceae). There were Fuchsias, such as *Fuchsia loxensis* (Onagraceae), and birds like Hooded Mountain Tanager offered good photo opportunities.

Day 4

Sunday 24th September

Patate to Puyo

The day started cloudy as we were departing from Hacienda Leito towards Puyo in the morning. We drove away from the valley and descended in front of the junction of the Chambo and Patate Rivers, which form the Agoyan. There we faced basalt columns caused by the volcanic activity of Tungurahua volcano. Beyond, we crossed the deep gorge of the Agoyan River and we stopped to enjoy it and photograph it. As we approached this point Grete said, "I am used to mountains and I am still overwhelmed by this landscape; it is spectacular". She also claimed it to be as interesting a landscape as one of the sections of the northern territories within the extended Guayllabamba River watershed.

At San Francisco, on the detour to La Floresta we recorded a Russet-backed Oropendola flying across the road.

Around 9am, we arrived at the first view point over the Pastaza River. A few metres below we stopped on the side of the road in order to photograph the river. On the roadsides coming down onto the Shell-Mera plateau there are frequent patches of the introduced and very fragrant *Hedychium coronarium* (Zingiberaceae), native to China. Crossing the Cloud forest down along the Pastaza River watershed, there are also several frequent genera of bushes, herbs, grasses and trees we spotted: *Cavendishia*, *Cecropia*, *Monochaetum*, *Tibouchina*, *Piper*, *Monnina*, *Tournefortia*, *Chusquea*, *Ginerium* and *Dioscorea*.

By 10.45, we started walking in CERFA (el Centro Rescate de la Flora Amazonica), Puyo's Orchid Garden. Our welcoming species were a Peruvian plant *Pachystachys lutea* (Acanthaceae) which welcomes the visitors to the garden as well a native *Pitcairnia*: *Pitcairnia nigra* (Bromeliaceae). There were so many plants to check that we moved extremely slowly.

The small pond next to the visitor centre offered views of a few orchids. *Maxillaria lebmanni* and *Maxillaria sanderiana* are two species of orchids we found here. *Phragmipedium* cf *caudatum* was also flowering, along with *Aechmea zebryna* at the entrance to the garden. As we started the path through the vegetation, only on the first hundred metres of the walk we spotted *Huntleya*, *Gongora*, *Scaphocephalum*, and *Xylobium*. In between the epiphytic orchid plants, there were clusters of white flowers of *Spermacoce* sp. (Rubiaceae)

Acanthaceae is represented on the garden's paths. It includes the genera *Justicia* and *Aphelandra*. Gesneriaceae has *Monopyle*, *Alloplectus*, and *Columnea*. There are several species of *Heliconias* in the garden: *H. irsuta*, *H. psittacorum*, *H. rostrata*, *H. wagneriana*, *H. vellutina*.

Part of the vegetation of the trails include palms within the following genera: *Asterogyne*, *Calyptrogyne*, *Chamaedorea* and *Geonoma*. Since the garden seeks to become a sample of useful plants from the Ecuadorian Amazon, a set of palm species which are source of fibre, food and medicinal substances are easily spotted along the walk. These include *Astrocaryum chambira* (known as Chambira), *Bactris gasipaes* (known as Chontaduro), *Iriarteia deltoidea* (known as Pambil or Chonta-Pambil) and *Mauritia flexuosa* (known as Morete, all in the Arecaceae). Grete and Barbara were also introduced to the Cylocanthaceae when interacting with *Carludovica palmata* the source of the fibre used to weave the wrongly called Panama hats: the Ecuadorian Jipijapa hats described in the locally famous Peruvian song "José Antonio". Other useful materials come from species available here, especially *Crescentia cujete* (Gourd Tree).

Continuing with our walk, we arrived at the gathering spot, the furthest away one where there are fruit trees. There, we found the usual two or three specimens of *Platystele* cf. *adelphae*. Two yellow-flowered orchids are sometimes also in flower: *Prosthechea aemula* and *Prosthechea fragrans*. Here there also flowering plants traditionally used as garden flowers outside their South American range: *Brunfelsia* cf. *grandiflora*, *Megaskepasma erythrochlamys*, *Psychotria poepigiana* and *Warszewiczia* cf. *coccinea*.

Other edible plants seen in CERFA include *Artocarpus altilis* (Moraceae), *Bixa orellana* (Bixaceae, known as Annatto), *Colocasia esculenta* (Araceae, known as Taro), *Manihot esculenta* (Euphorbiaceae, known as Yuca or Cassava), *Oenocarpus batava* (Arecaceae, known as Ungurahua) and *Prestoea acuminata* (Arecaceae, known as Palmito de Castilla). Additional useful palm species, in the Arecaceae family, are *Aphandra natalia* (known as Palma de Fibra because fibres from the leaves are collected to make brooms) and *Phytelephas equatorialis* (known as Tagua or Vegetable Ivory).

Species selected by humans as decorative foliage plants originating in the Neotropics are also represented in the garden and those include *Cordyline fruticosa*, *Monstera deliciosa* (Adam's ribcage or Swiss Cheese Plant), *Phylodendron verrucosum* (Araceae), *Calathea crotalifera* and *Calathea lutea* (Marantaceae), *Notopleura polyphlebia* (Rubiaceae), *Tradescantia zehbrina* (Commelinaceae) and *Plectranthus scutellarioides* (Lamiaceae). Cultivated flowers here included *Spathiphyllum* sp. and a species of *Diastema* (Gesneriaceae).

Some species of trees introduced from lower altitude Tropical rainforest include *Apeiba membranacea* (Monkey's Comb), and *Zanthoxylum* sp. Species introduced from other tropical regions include *Alpinia purpurata*, *A. zerumbet* and *Etilingera elatior* (all Zingiberaceae). Genera frequently seen on the western slopes of the Andes but present in CERFA include *Siparuna*.

Although not a regular species, we were looking for a special plant on the lime treelets of the citrus garden: *Restrepia* cf. *antennifera*. This time we did not spot either the plant or the flower.

We departed from CERFA to our lunch spot by 1.15, arriving for lunch by 2pm. Lunch was a local treat prepared with produce from the three regions of our country at a Gastronomic Patrimony restaurant: Astoria. The dish we had for lunch is called "Volquetero". It is prepared with *Lupinus mutabilis* (Leguminosae), roasted

corn, plantain chips, tomato, onions, tuna fish and lime. We stopped in Baños to buy a flash memory for Grete as she was running short on space for pictures.

We arrived back at the Hacienda Leito by 5.50pm. Today we did not have rain, but the sky was overcast even in Puyo, where we expected to have more sunshine. However, the temperature throughout the day was fabulous.

We went to bed early so we could have an early morning start to enjoy our long drive to Cuenca.

Day 5

Monday 25th September

Patate to Cuenca

We left the Hacienda Leito straight after breakfast, heading to Ambato. There we took the Flores road. Now a paved road, this track was once a trail for horses and carriages connecting Ambato and Guaranda, the old access point to the coastal region. Along the road we had a stop to enjoy again the flowers from the inter-Andean desert and semi-desert that we saw around Patate. Here we searched for *Phaedranassa tungurahuae* (Amaryllidaceae), although we did not find any specimens in flower. However, we did see *P. dubia*, plus *Onoseres hyssopifolia* (Asteraceae), *Racinaea fraseri*, *Tillandsia incarnata* and *T. usneoides* (all Bromeliaceae), and *Echeveria quitensis* (Crassulaceae). One frequent introduced species besides *Kalanchoe daigremontiana* (Crassulaceae) is *Leonotis nepetifolia* (Lamiaceae). The orange flowers of the latter attract hummingbirds.

Chimborazo and its Dry Paramo (high plateau) appeared when the road levelled out. From the beginning of the trip, in Quito, we saw volcanic summits both east and west of the Highlands' branch of the Pan-American Highway. Chimborazo volcano is the main geological feature of today's drive. It gives the name to the territory around it, declared by the nation as a Fauna Production Reserve. The most representative species within the Reserve is *Vicugna vicugna* (the Vicuña)

Once an endangered species, Vicuña has become a regular sighting along the higher altitude sections of the road that surrounds Chimborazo. In 1999, political and military tension supported the idea of the introduction of the species in this national protected area. A group of 377 individuals were presented as a gift of good will amidst the signing of a Peace Agreement between Ecuador and Peru. Nowadays, this population has multiplied, and grown up to a herd of about 7600 individuals.

Upon our arrival to the mesa that surrounds the north-western perimeter of the volcano, we started to see several small groups of Vicuña. Vicuñas are grazing on the sparse and already meagre vegetation of the Dry Paramo within the Reserve. Due to its uniqueness, we try to explore this vegetation on every trip in order to share with our clients the beauty of the prostrate rosettes, short and coriaceous herbs and small bushes that still survive. Archaeological data from the recently dismantled Central Bank of Ecuador Museum supports the theory that Vicuñas did not inhabit Ecuador as a native species. Herds arriving from the South American Puna, their natural habitat, were introduced around 1300 years BC in our territory, most likely by traders.

Along the same lines, the effects of the recent introduction of Vicuñas are analyzed by students from Escuela Politecnica del Chimborazo. The research is describing the composition of the diet of the Vicuñas within the protected area. This information will allow to identify the possible impact of this camelids on the flora of the Chimborazo Reserve. Some of the species at risk by the Vicuñas here include *Valeriana rigida* (Caprifoliaceae,

formerly Valerianaceae), *Nototriche hartwegii* (Malvaceae), *Eudema nubigena* (Brassicaceae), and important sources of nectar for Ecuadorian Hillstar: *Delelia biflora* (formerly *Culcitium nivale*) and *Chuquiraga jussieui* (both Asteraceae) and *Astragalus geminiflorus* (Leguminosae or Fabaceae).

As we descended along the southern slopes of Chimborazo, we started to record *Opuntia cylindrica* (Cactaceae). This species is mainly used as a living fence between properties. Individuals grow on top of rammed earth walls used as limits between properties.

On our way to our lunch spot, we drove by the first church set in Ecuador: María Natividad de Balbanera. It was established in 1534 as the Spanish progressed to the north searching for Quito. Next to it there is Colta lake, a landmark sacred to the Panzaleo indigenous people.

After lunch, our goal was to at least see during daylight the Ingapirca Archaeological site, one of the better preserved, and with adequate facilities for the interpretation of Inca remnants in Ecuador. We made it to photograph it right around sunset.

We arrived at 7.30pm to the village of Baños de Cuenca for dinner and overnight.

Day 6

Tuesday 26th September

Cuenca to Loja

Today we took advantage of the facilities and had an early start for some of us to use the thermal pool. The thermal water and the swimming help to relax the muscles, improve circulation and stretch the whole body, before we embarked on a new set of kneeling and photographing on the way to Loja.

After breakfast we did a short driving tour of Downtown Cuenca. We started with the traditional houses of the outskirts of Cuenca. Then we explored Downtown from La Condamine street, along Calle Larga and back to the south-western exit of the City using Calle Bolivar. We saw a sample of the architecture of Cuenca from the Republican times.

On our way out of Cuenca we also stopped for some fuel, birding, and a cultural experience with a whole pig cooked on an open fire: Chanco a la Barbosa. One bird we wanted to see well we saw at this spot- Chiguanco Thrush. Since it is very similar to the common Great Thrush in the northern highlands, I wanted to make a proper comparison of leg and beak colours for Barbara.

Having had our mid-morning snack, we left to the Nabon Paramo to look for alpiners, including two Puyas: the endemic *Puya nutans* and the shared endemic *Puya hamata* (Bromeliaceae). Along the way we found also the likely *Puya pigmaea*. The paramo pass south from Cuenca offered first photographable records of stands of *Oreocallys grandiflora* (Proteaceae), though we had seen it scattered along the drive between Alausí and Cuenca. Other interesting species included *Escallonia* cf. *myrtilloides*, *Clinopodium* cf. *vimineum*, *Eryngium humile* and *Gnaphalium* cf. *roseum*,

Grassland paramo presents several flowering species growing within the stands of *Calamagrostis*, *Agrostis* and *Festuca* grasses. Amongst the most remarkable we can name *Bomarea glaucescens* (Alstroemeriaceae), *Eryngium humile*

(Apiaceae), *Gamochaeta americana* and *Lasiocephalus ovatus* (Asteraceae), *Puya clava-herculis* (Bromeliaceae), *Valeriana rigida* (Caprifoliaceae), *Lupinus microphyllus* and *Lupinus tauris* (Leguminosae), and *Gentianella hysopifolia* and *Halenia taruga-gasso* (both Gentianaceae).

Bushy paramo in the area includes *Brachyotum jamesonii* (Melastomataceae), *Diplostephium oblanceolatum*, *Loricaria ferruginea*, *Monticalia arbutifolia* and *Monticalia vaccinioides* (Asteraceae), *Valeriana microphylla* (Caprifoliaceae), and *Hypericum decandrum* (Hypericaceae).

Cushion paramo presents domes made with *Azorella pedunculata* (Apiaceae), *Werneria nubigena* and *Xenophyllum humile* (Asteraceae), *Lysipomia vitreola* (Campanulaceae), *Pernettya prostrata* (Ericaceae), *Bartsia laticrenata* (Orobanchaceae) and *Arcytophyllum filiforme* (Rubiaceae). Flowers that would be regularly seen at this altitude in the Southern highlands from now on include species of *Sisyrinchium* (Iridaceae) with blue and yellow flowers.

As we were heading to Río León we had a quick stop to look for one ecologically interesting member of the Loranthaceae, a tree-like mistletoe: *Gaiadendron* cf. *punctatum*. On the same spot, we also saw Red-crested Cotinga, Plain-colored Seedeater, and Masked and Glossy Flowerpiercers.

At Río León we stopped to observe the endemic cactus *Espostoa frutescens* plus other species of cactus on a xerophytic cliff. Close to the bridge over the river we confirmed the persistence of *Tillandsia tectorum* (Bromeliaceae) a regionally endemic species with a high level of endemism at the variety level. Even further on, as we were approaching Oña, we spotted a patch of this species on a cliff.

We arrived in Saraguro for us to experience lunch at an indigenous home: Inti Huasi. We were served home-style food which included fresh vegetables from the garden. Our party members looked for souvenirs and picked, among other items, a hand-made traditional belt for women. We left our lunch spot using a back road. This gave us the opportunity to find *Puya* cf. *loxensis* (Bromeliaceae) as part of a live fence. The sunset happened over the mountains of the Catamayo Valley, as we were approaching Loja. Our next experience, after arrival in Loja, was our dinner: we had pure local chocolate drink with empanadas and plantain balls filled with chicken and cheese.

Day 7

Wednesday 27th September

Cajanuma and Road to Tapichalaca

Today we explored Cajanuma, the highlands access to Podocarpus National Park closest to Loja. On the access road we found a variety of *Puyas* as well as *Schefflera* and members of the Ericaceae: *Befaria* and *Vaccinium*, as well as *Bomarea* (Alstroemeriaceae).

The weather was excellent: neither so hot nor so cloudy and windy. Our most remarkable find were the orchids and a White-banded Tyrannulet nesting. During our short walk we photographed several flowers of *Pleurothallis* (Orchidaceae). We also had the opportunity to watch the tyrannulet flying on and off its nest. This species' nesting has not yet been described; however, neither then nor after the tour, was I able to find somebody available to monitor it.

After we had our picnic lunch in Cajanuma, we descended to Vilcabamba on our way to "La Virgen" along the road to Tapichalaca. This is the limit between Loja and Zamora. Our travels along this road have always been

successful. During our drive today, we had to restrict our stops, so we would arrive at our hotel in Vilcabamba before 6pm. We found orchids, bromeliads, cecropias and fuchsias.

Along the drive to Tapichalaca, which resembles the ways up to Cerro Toledo and to Cajanuma, the important genera are available for photography include *Clusia* (Clusiaceae), *Schefflera*, *Oreopanax* (Araliaceae), *Saurauia* (Actinidiaceae), *Weinmannia* (Cunoniaceae, formerly Weinmanniaceae), *Disterigma*, *Gaultheria*, *Pernettya*, *Vaccinium* (Ericaceae), *Macrocarpaea* (Gentianaceae), *Miconia* (Melastomataceae), and *Arctophyllum* (Rubiaceae). *Podocarpus oleifolius* (Podocarpaceae), in the family which gives the name to the park, is also available for pictures on the side of the road.

As we explored the road to Tapichalaca, we regularly found stands of *Pleurothallis* cf *maxima* (Orchidaceae). This species is not frequently in flower. Species from the genus *Palicourea* and to-be-confirmed *Faramea* are representatives of the Rubiaceae, which we saw today. Recent landslides on the mountain sides can be identified because they are covered with *Gunnera* cf *insignis* (Gunneraceae).

A sunset over the mountains of Cariamanga was our closing for today.

Day 8

Thursday 28th September

Cerro Toledo

Today, Barbara and I had again a birding session before breakfast. Our target here was Pacific Pygmy Owl. Along the tour we had been birding as a secondary goal of the tour. Today our birding session in Vilcabamba produced Pacific Pygmy Owl, Pacific Hornero and Grey-chinned Hermit (SW population).

Grete decided to have a day off from exploring the mountains. She planned to explore people and their doings; so, she decided to stay in town on her own, since she speaks Spanish. I gave her basic information about Vilcabamba, suggested a map and the contact phone of the hotel, and discussed basic security guidelines before we split.

As we were driving to Yangana we saw and heard Spot-fronted Swifts (a musical chattering or rattle). On our way up, Barbara, Jorge and I had a brief stop in Yangana since it is the last formal comfort stop before the climb to the Antennas Hill. We saw Grey-breasted Martin in Yangana which was a bonus. Due to rain observed atop the mountain from Yangana, we decided to explore the road up the mountain from bottom to the top. Along the drive we normally photograph the plants starting from the top of Cerro Toledo since the weather there is always unpredictable. Before leaving Yangana, we also did a little exploration of town, including buying some local bread.

As we drove up to Cerro Toledo, our priority was to take advantage of the hours of light and the areas with dry weather more than reaching the top. However, on our way there we saw pretty interesting flowers, including *Fuchsias*, *Bomareas*, *Weinmannias*, Cecropiaceae, *Puya*, Podocarpaceae, and Orchids. We also had a very odd situation when we were checking for a plant and two birds just happened to show up: Rufous-headed Pygmy Tyrant and Rufous Antpitta. Both showed themselves well in the open, but it was difficult to point to them without the help of a laser. So, after attempting to show them both to Barbara, I tried taking pictures. Only the Antpitta cooperated.

Galium cf hypocarpium (Rubiaceae) is among the most frequent plants at this altitude along with *Nertera granadensis* (also Rubiaceae). *Pilea microphylla* (Urticaceae) is a frequent plant on the wet areas around roadsides and trails on the areas around the tree-line. *Castilleja* (Orobanchaceae) is one of the commonly seen genera at this altitude. *Diastema* and *Koellikeria* are genera of Gesneriaceae also seen on the wet areas along the drive up to the Paramo highlands.

Up atop the mountain, the clouds and the rain made any attempt to photograph flowers a wrong idea. Anyway, I tried, and got wet documenting some of the Melastomataceae, Orchidaceae, Bromeliaceae and Ranunculaceae. After we arrived at the traverse road in the Paramo, we were lucky to find a few flowers of Orchids, Ericaceae and Melastomataceae. We were also able to enjoy the mysterious view of the vegetation dominated by stalks of dry Bromeliads appearing between the dense cloud, above the level of the grass. One target species persisted, showing itself with dry or spent inflorescences: *Puya cuevae* (Bromeliaceae), endemic to Ecuador. However, we were not able to find the other one, *Ranunculus guzmanii* (Ranunculaceae). Eventually, scanning on our way to the antennas, we found two specimens of *R. guzmanii* with three flowers. This marked our return from chilly and wet Cerro Toledo.

Cerro Toledo was as usual a memorable experience even though the rain did not allow long periods outside the vehicle. Even though it is very cold and windy, the flora available makes this mountain road one of the most remarkable areas in the country in terms of flower architecture and taxonomic uniqueness.

Back in Vilcabamba we met a very relaxed and happy Grete. She had had a great day interacting with the people in town.

Day 9

Friday 29th September

Vilcabamba – Catamayo Valley – Playas and El Empalme

Today we had a long drive across the Vilcabamba, Malacatos, Catamayo and El Naranjo Valleys. It offers several changes of habitat along with very dramatic mountainous landscapes.

We started our exploration along the road from Vilcabamba to Catamayo. When entering the Catamayo valley, with a bright sunny day, we stopped at the shores of the Chinguil River. There we explored the surrounding meagre vegetation. There we saw some local bird and plant species describing the inter-Andean desert and semi desert vegetation formation. Highlights were *Capparis scabrida* (Capparaceae), *Tecoma cf weberbaueriana* (Bignoniaceae), *Momordica charantia* (Cucurbitaceae), *Cercidium praecox* (Leguminosae), and a *Cleome* relative, plus Band-tailed Sierra Finch. Pacific Pygmy Owl again showed up to allow some shots. At the spot where we were birding we also collected several herbal species from this vegetation formation.

One of our highlights today was a food stop where we bought the locally famous peanut-based Loja “Bocadillo” as a souvenir for friends. Some introduced plants, part of the gardens of the people around our souvenir stop inhabiting the valleys draining to the Catamayo River, and spreading into Peru, were *Terminalia catappa* (Tropical Almond tree), *Casacabela thevetia* (Yellow Oleander), *Delonix regia* (Flame Tree), *Mangifera indica* (Mango tree), *Spathodea campanulata* (African Tulip Tree), *Caesalpinia pulcherrima* (Malinche) and *Pyrostegia venusta* (Flame Vine).

Our visit to the Equatorial dry forest habitats gave us the opportunity to enjoy the views of Kapok trees *Ceiba trichistandra*, *Eriotheca* cf *ruizii* and *Cavanillesia platanifolia* (all Malvaceae). Epiphytes observed covering them and other trees along our drive included *Tillandsia multiflora*, *Tillandsia usneoides*, and *Vriesia* cf *espinosa* (all Bromeliaceae). On the most barren terrain we saw cacti from the genera *Armatocereus* (cf *cartwrightianus*), *Cereus* (cf *diffusus*) and *Opuntia* (cf *quitensis*). We stopped for Epiphytic cacti, *Hylocereus* sp. Within the family the other remarkable cactus was *Espositoa lanata*, a shared endemic between Ecuador and Perú. Naturalized plants present in the dry forest include *Erythrina velutina* and *Plumeria rubra*.

These were the highlights today, plus several equatorial dry forest species seen during the drive in El Naranjo Valley, including *Cordia lutea* (Boraginaceae), *Parkinsonia aculeata* (Leguminosae), *Bursera graveolens* (Burseraceae), and *Carica parviflora* (Caricaceae).

Other Tropical plants worth stopping to learn about them included *Ochroma pyramidale* (Malvaceae), *Acacia insulae-iacobi* and *Prosopis juliflora* (both Leguminosae), *Trema micrantha* (Cannabaceae), *Bougainvillea pachyphylla* (Nyctaginaceae).

On our way back to the Catamayo Valley, right after leaving Catacocha, we experienced the rain-shadow effect, as the road was covered in cloud. The moisture arrives from the west as clouds which flow over the mountain ridges, cover the road, and reduce visibility. This experience lasts until the clouds roll down into the Catamayo Valley where they dissolve. This was a constant phenomenon during our visit to the Catacocha – El Empalme road. It always occurs as the day ends, starting about 4 pm.

We arrived at our destination, Gran Hotel Marjohns in Catamayo, before 6pm.

Day 10

Saturday 30th September

Catamayo to San Isidro

Our flight did not allow any landscape photography or volcano-watching since the sky was cloudy over Cuenca and Loja, and became cloudier from above Alausí and all the way north to Quito. As we arrived, the best use of our time was to go to the Quito Botanical Garden. There was rain from Quito to San Isidro. It was visible that the rain was particularly heavy around the Papallacta Pass. I confirmed with both our lunch destination, Guando Lodge, and San Isidro Lodge that the weather conditions were difficult for field photography.

When we were headed to Northern Downtown Quito, we were fulfilling also the expectation that Grete had about visiting the Botanical Garden and some other colonial areas of Quito. We entered the city from Guapulo, visited briefly the Church and the small plaza there, and headed to La Carolina Park where the Botanical Garden is.

At the Garden we experienced again some of the plants we had enjoyed during our drive south to Loja. Yet, we also had the opportunity to see an ample sample of Carnivorous plants from the genus *Nepenthes* (Tropical Pitcher Plants). *Nepenthes* is originally mainly from Malaysia. Our main target at the garden was to have a long visit to the Orchid collection. There we found many new orchids for our guests, but also bromeliads that we had seen already.

Around noon we headed to Papallacta. However, we stopped upon request from both our guests at one of the Supermarkets where we looked for Coca tea (Popular at this point of the tour because it helped us to prevent the effects of altitude in our bodies.) We did not find it, but Grete and Barbara found herbals teas they wanted to take home to share with their friends and family.

After a quick stop for Lunch in Guango we headed to San Isidro Lodge for hummingbirds and hot drinks, amidst the rain. Around Guango we saw *Arthrostema* in flower. A bonus during the rain was a quick look at Torrent Duck.

Day 11

Sunday 1st October

San Isidro to Guacamayos and Narupa road to Hollín

Having experienced how the rain during the previous afternoon had kept us from walking the trails in San Isidro, we decided to start this morning with an exploration of the Guacamayos ridge and the road to Hollín River. This gave us an opportunity to use the dry hours of the morning and first hours of the afternoon before the rain settled.

As we visited the Guacamayos ridge, we explored the roadsides. There we were able to spot a species of the genus *Pityphyllum* (Orchidaceae), plus two of our target species *Meriania bernandoi* (Melastomataceae) and *Utricularia* cf. *uniflora* (Lentibulaceae). We spotted several Ericaceae genera along the drive, including *Satyria* and *Cavendishia*. One frequent species seen was *Cavendishia bracteata*. Other species worth noting included *Epidendrum fimbriatum* (Orchidaceae). Worthy genera seen at the Guacamayos include *Calceolaria*, *Fuchsia* and *Bomarea*. In this last one, we found *Bomarea cornuta* (Alstroemeriaceae), also present in areas above 2000 metres. *Pitcairnia* cf. *hitchcockiana* (Bromeliaceae), a usual sighting during our flora trips, occurs in areas where we may also look for birding opportunities as well. In this case the bird twitch was Cliff Flycatcher. We observed two pairs next to *Pitcairnia* plants.

On our way back to San Isidro we also observed butterflies on the shore of a river, as we looked for *Pitcairnia barrigae* (Bromeliaceae). However, the vegetation had no trace of the orange flowers that give the plant away, so we moved on. We stopped again to have a closer look and better pictures of the Torrent Duck we saw yesterday, succeeding in the Cosanga River.

Back at the lodge we used the afternoon rain for us to catch up with the hummingbirds of the place and for both our passengers to have a time for relaxing at one of the beautiful settings of Ecuador.

Day 12

Monday 2nd October

San Isidro to Papallacta

We started birding the premises before breakfast and we collected some interesting birds including Blueish Flowerpiercer and Geoffroy's Wedgebill (Eastern Wedge-billed Hummingbird). The night had been very cold, so the morning was clear. Yet we did not want to risk having rain in the afternoon that could restrict our exploring. We dedicated the morning, right after breakfast, to exploring the Cock-of-the-rock trail for about 600 metres. There we found *Dichea*, *Ceratostema*, *Marcgravia*, *Fuchsia orientalis*, fungi and butterflies. On the forest walks, in San

Isidro, we have spotted *Pleurothallis alveolata* and *Pleurothallis anceps* (Orchidaceae) as epiphytic plants, either on fallen branches or old fallen trunks. *Oncidium serratum* (Orchidaceae) we spotted on the trees next to the dining hall.

Along the access alley we were able to see the edible *Solanum quitoense* (Solanaceae) and a regular garden plant here is *Zantedeschia aethiopica* (Aracaceae, Calla Lily). Disturbed areas seen during our drive away from San Isidro presented *Crotalaria* cf *vitellina* and *Ludwigia* cf *peruviana* (Onagraceae). On wet terrain there were always Apiaceae, including the genus *Hydrocotyle*.

Right before noon we changed locations and explored the trail to the monolith. There we spotted two species of *Clusia* and the endemic *Pitcairnia* cf *baezana*.

On our way to our next overnight spot: Termas de Papallacta Lodge, we stopped at Guango Lodge bridge in order to look for flowers and birds. One of the highlights there in the flowers was *Lepanthes mucronata* (Orchidaceae). Among the few birds we saw, the most interesting one was Slaty Brushfinch.

Our second stop before Termas was the Papallacta River where we spotted *Barnadesia*, *Fuchsia*, *Talictum* and again *Vallea stipularis* (Elaeagnaceae). This last one was flowering outside its usual season. At the river we also saw one of the birds associated with water that we were missing: White-capped Dipper.

At the lodge we arrived before 6pm, as we had decided, so our clients could have some use of the facilities.

Day 13

Tuesday 3rd October

Papallacta Pass full day

In the morning we explored the Papallacta Pass. The area offers great opportunities for exploring moist mountainous habitats. As Sklenár and P. M. Jørgensen (1999) reported, vegetation increases chances for endemism. Hence, we were looking for the shared endemic *Xenophyllum crissum* (Asteraceae).

Among the birds we saw, we spotted Grass Wren, Variable Hawk, Blue-mantled Thornbill, Many-striped Canastero, and Stout-billed Cinclodes.

At the Guamaní Hill we found *Huperzia* cf *crassa* (Lycopodiaceae), *Arcytophyllum filiforme* (Rubiaceae), *Miconia salicifolia* (Melastomataceae), *Valeriana microphylla*, *Valeriana plantaginea* and *Valeriana rigida* (Caprifoliaceae), *Puya hamata* (Bromeliaceae), and *Oritrophium* aff *crocifolium* (Asteraceae). Even though we did explore all the surroundings of the top of the hill, we did not find Rufous-bellied Seedsnipe.

In the afternoon, when visiting the Upper Cloud Forest as it turns into Bushy Paramo, above the tree line, we spotted genera like *Diplostegium*, and *Hallenia*. Frequent sightings here included *Brachyotum ledifolium*, *Brachyotum jamesonii* (Melastomataceae), *Diplostegium* cf *ericoides*, *Dorobaea pimpinelifolia* (Asteraceae), *Ceratostema alatum* (Ericaceae), *Clinopodium nubigenum* (Lamiaceae), *Pedicularis incurva* (Orobanchaceae), *Siphocampylus lucidus* (Campanulaceae) and *Greigia vulcanica* (Bromeliaceae).

We arrived back at Termas in time for the clients to enjoy the thermal pools.

Day 14

Wednesday 4th October

Guango Lodge and transfer day to Quito

At the lava-flow disturbed areas, we spotted *Phytolacca* cf *rugosa*, or *Phytolacca bogotensis* (Phytolaccaceae) and *Cleome anomala* (Capparaceae). On the cliffs, as we drove pass Papallacta we spotted *Tillandsia complanata* (Bromeliaceae).

During our excursion to the lava flow, as we arrived at the end of the road made on the rocks, we spotted *Fernandezia* (formerly *Pachyphyllum*) cf *crystallinum* (Orchidaceae). This is a plant that dwells in the mossy spaces between the rocks. Other regular plants in the lava flows are *Pleurothallis coriacardia*, *Pleurothallis laevis*, and *Pleurothallis* cf *linguifera* (all Orchidaceae). Some other orchids we spotted there included *Elleanthus* cf *maculatus* and *Pleurothallis* cf *lilijae*. Along the disturbed areas of man-made trails or on road-sides, we found *Pterichis* sp.

One of our highlight birds today was Rainbow-bearded Thornbill, at the lava flow. At the same spot, within a mix of lichens and mosses, Grete found a specimen of *Bomarea hieronymi* (Alstroemeriaceae).

Berberis pichinchensis (Berberidaceae) and *Calceolaria crenata* (Calceolariaceae) were two of the last species available for watching as we were transferring Barbara and Grete to Puenbo Birding Garden, where our trip together came to an end.

Day 15

Thursday 5th October

Today the clients left for Quito Airport for the flight home.

Day 16

Friday 6th October

Arrival in London.

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Species Lists

Birds (✓=recorded but not counted; H = heard only; ad = adult; j = juvenile; M = male; F = female; G = guide only)

	Common Name	Scientific Name	September / October													
			22	23	24	25	26	27	28	29	30	1	2	3	4	
1	Silvery Grebe	<i>Podiceps occipitalis</i>				6										
2	Ecuadorian Rail	<i>Rallus aequatorialis</i>	✓													
3	Andean Coot	<i>Fulica ardesiaca</i>	✓													
4	Lesser Yellowlegs	<i>Tringa flavipes</i>	2													
5	Greater Yellowlegs	<i>Tringa melanoleuca</i>	2													
6	Baird's Sandpiper	<i>Calidris bairdii</i>	2													
7	Andean Lapwing	<i>Vanellus resplendens</i>	4													
8	Southern Lapwing	<i>Vanellus chilensis</i>										4 (2 ad, 2j)				
9	Andean Gull	<i>Chroicocephalus serranus</i>	✓													
10	Carunculated Caracara	<i>Phalcoeboenus carunculatus</i>	1												1	
11	Andean Teal	<i>Anas andium</i>	4													
12	Yellow-billed Pintail	<i>Anas georgica</i>				2										
13	Torrent Duck	<i>Merganetta armata</i>									1M, 1F	1M, 1F				
14	Andean (Ruddy) Duck	<i>Oxyura ferruginea</i>	✓													
15	Western Cattle Egret	<i>Bubulcus ibis</i>				12										
16	Black Vulture	<i>Coragyps atratus</i>		4	8					4	2	6				
17	Turkey Vulture	<i>Cathartes aura</i>		1						1		1				
18	Variable Hawk	<i>Geranoaetus polyosoma</i>									2				2	
19	Black-chested Buzzard-Eagle	<i>Geranoaetus melanoleucus</i>													1	
20	American Kestrel	<i>Falco sparverius</i>							1	3					1	
21	Rufous-banded Owl	<i>Strix albitarsis</i>										1 (G)				
22	San Isidro Owl	<i>Strix sp.</i>									1(G)	1				
23	Pacific Pygmy Owl	<i>Glaucidium peruanum</i>							2	2						
24	Rufous-bellied Seedsnipe	<i>Attagis gayi</i>													2	
25	Amazilia Hummingbird	<i>Amazilia amazilia</i>								1						
26	Loja hummingbird	<i>Amazilia amazilia alticola</i>							4							
27	Giant Hummingbird	<i>Patagona gigas</i>	2			1									1	
28	Sparkling Violetear	<i>Colibri coruscans</i>	2	3	3	1									2	
29	Lesser Violetear	<i>Colibri cyanotus</i>										2				

	Common Name	Scientific Name	September / October															
			22	23	24	25	26	27	28	29	30	1	2	3	4			
30	Ecuadorian Hillstar	<i>Oreotrochilus chimborazo</i>	1F															
31	Black-tailed Trainbearer	<i>Lesbia victoriae</i>	1	1					1								2	
32	Green-tailed Trainbearer	<i>Lesbia nuna</i>							1									
33	Tawny-bellied Hermit	<i>Phaethornis symratorphorus</i>										1						
34	Long-tailed Sylph	<i>Agelaiocercus kingii</i>										2M	2M, 1F					
35	Great Sapphirewing	<i>Pterophanes cyanopterus</i>					1											
36	Chestnut-breasted Coronet	<i>Boissonneaua matthewsii</i>							1			7	12	5				
37	Tourmaline Sunangel	<i>Heliangelus exortis</i>										1M, 1F						
38	White-bellied Woodstar	<i>Chaetocercus mulsant</i>										1M, 1F	1F					
39	Gorgeted Woodstar	<i>Chaetocercus heliodor</i>										1F	1F					
40	Buff-winged Starfrontlet	<i>Coeligena lutetiae</i>										1F						
41	Collared Inca	<i>Coeligena torquata</i>										1M, 1F	1M					
42	Bronzy Inca	<i>Coeligena coeligena</i>											2					
43	Gray-chinned Hermit	<i>Phaethornis griseogularis</i>								1								
44	Buff-tailed Coronet	<i>Boissonneaua flavescens</i>											1					
45	Fawn-breasted Brilliant	<i>Heliodoxa rubinoides</i>										2M, 1JM						
46	Geoffroy's Wedgebill	<i>Schistes geoffroyi</i>												1F				
47	Speckled Hummingbird	<i>Adelomyia melanogenys</i>										2	1					
48	Blue-mantled Thornbill	<i>Chalcostigma stanleyi</i>															1M	
49	Rainbow-bearded Thornbill	<i>Chalcostigma herrani</i>																1M
50	White-collared Swift	<i>Streptoprocne zonaris</i>															4	
51	Spot-fronted Swift	<i>Cypseloides chertrei</i>								15								
52	Smooth-billed Ani	<i>Crotophaga ani</i>							6	5	20	2						
53	Dark-billed Cuckoo	<i>Coccyzus melacoryphus</i>			2													
54	Pacific Parrotlet	<i>Forpus coelestis</i>										6						
55	Red-masked Parakeet	<i>Psittacara erythrogaena</i>										20						
56	Red-crested Cotinga	<i>Ampelion rubrocristatus</i>					2											
57	Golden-olive Woodpecker	<i>Colaptes rubiginosus</i>								1								
58	Streak-necked Flycatcher	<i>Mionectes striaticollis</i>										1						
59	Vermilion Flycatcher	<i>Pyrocephalus rubinus</i>	1M				1M	1M	1M	1M								
60	Boat-billed Flycatcher	<i>Megarynchus pitangua</i>								2								
61	Black-billed Shrike-Tyrant	<i>Agriornis montanus</i>					1 (G)											

	Common Name	Scientific Name	September / October														
			22	23	24	25	26	27	28	29	30	1	2	3	4		
62	Tawny-crowned Pygmy Tyrant	<i>Euscarthmus meloryphus</i>									1						
63	Rufous-headed Pygmy Tyrant	<i>Pseudotriccus ruficeps</i>								1 (G)							
64	White-banded Tyrannulet	<i>Mecocerculus stictopterus</i>							2			2					
65	White-throated Tyrannulet	<i>Mecocerculus leucophrys</i>															2
66	Cliff Flycatcher	<i>Hirundinea ferruginea</i>											3				
67	Baird's Flycatcher	<i>Myiodynastes bairdii</i>									1						
68	Black Phoebe	<i>Sayornis nigricans</i>										1	1				
69	Torrent Tyrannulet	<i>Serpophaga cinerea</i>												1			
70	Paramo Ground Tyrant	<i>Muscisaxicola alpinus</i>														4	
71	Red-rumped Bush Tyrant	<i>Cnemarchus erythropygius</i>															2
72	Montane Woodcreeper	<i>Lepidocolaptes lacrymiger</i>												1			
73	Pacific Hornero	<i>Furnarius cinnamomeus</i>										10					
74	Stout-billed Cinclodes	<i>Cinclodes excelsior</i>	3														2
75	Chestnut-winged Cinclodes	<i>Cinclodes albidiventris</i>	1														4
76	Many-striped Canastero	<i>Asthenes flammulata</i>							H								1
77	Azara's Spinetail	<i>Synallaxis azarae</i>				2							H	H	H		
78	Blue-and-white Swallow	<i>Notiochelidon cyanoleuca</i>							2				6				
79	Brown-bellied Swallow	<i>Notiochelidon murina</i>							10				4	6	10	6	
80	Southern Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>									2						
81	Grey-breasted Martin	<i>Progne chalybea</i>								1							
82	Spectacled Whitestart	<i>Myioborus melanocephalus</i>	3											2	2	4	
83	Black-crested Warbler	<i>Myiothlypis nigrocristata</i>	1													4	
84	Russet-crowned Warbler	<i>Myiothlypis coronata</i>								1			1				
85	Blue-grey Tanager	<i>Thraupis episcopus</i>	3	2						4	2	2					
86	Golden-crowned Tanager	<i>Iridosornis rufivertex</i>								2							
87	Saffron-crowned Tanager	<i>Tangara xanthocephala</i>											1				
88	Beryl-spangled Tanager	<i>Tangara nigroviridis</i>												3			
89	Hooded Mountain Tanager	<i>Buthraupis montana</i>		6					1								
90	Scarlet-bellied Mountain Tanager	<i>Anisognathus igniventris</i>														1	1
91	Bluish Flowerpiercer	<i>Diglossa caerulescens</i>												3			
92	Masked Flowerpiercer	<i>Diglossa cyanea</i>						✓						1		1	
93	Glossy Flowerpiercer	<i>Diglossa lafresnayii</i>						✓									

	Common Name	Scientific Name	September / October														
			22	23	24	25	26	27	28	29	30	1	2	3	4		
94	Black Flowerpiercer	<i>Diglossa humeralis</i>														1	3
95	White-sided Flowerpiercer	<i>Diglossa albilatera</i>													1M,1F (G)		
96	Black-eared Hemispingus	<i>Hemispingus melanotis</i>													2		
97	Golden(-bellied) Grosbeak	<i>Pheucticus chrysogaster</i>	1F														
98	Slaty Brushfinch	<i>Atlapetes schistaceus</i>													1J		
99	Yellow-breasted Brushfinch (split)	<i>Atlapetes latinuchus</i>														2	
100	Pale-naped Brushfinch	<i>Atlapetes pallidinucha</i>															2
101	Chestnut-capped Brushfinch	<i>Arremon brunneinucha</i>										1 (G)					
102	Yellow-browed Sparrow	<i>Ammodramus aurifrons</i>											1 (G)				
103	Band-tailed Sierra Finch	<i>Phrygilus alaudinus</i>									2F						
104	Plain-colored Seedeater	<i>Catamenia inornata</i>					✓										
105	Long-tailed Mockingbird	<i>Mimus longicaudatus</i>										1					
106	Tropical Gnatcatcher	<i>Polioptila plumbea</i>										4					
107	Fasciated Wren	<i>Campylorhynchus fasciatus</i>								5	6						
108	Mountain Wren	<i>Troglodytes solstitialis</i>										2	1				
109	Grass Wren	<i>Cistothorus platensis</i>															1
110	Black-backed Grosbeak	<i>Pheucticus aureoventris</i>		1F, 2M													
111	Rufous-collared Sparrow	<i>Zonotrichia capensis</i>	✓	✓	✓	✓	✓	✓	✓			6	10	10	8	10	
112	Inca Jay	<i>Cyanocorax yncas</i>										2	6				
113	Turquoise Jay	<i>Cyanolyca turcosa</i>		3										4			
114	Black-billed Peppershrike	<i>Cyclarhis nigrirostris</i>												H			
115	Great Thrush	<i>Turdus fuscater</i>	✓	✓						✓	2			3	10	10	
116	Plumbeous-backed Thrush	<i>Turdus reevei</i>								1							
117	Glossy-black Thrush	<i>Turdus serranus</i>												1M			
118	Black-billed Thrush	<i>Turdus ignobilis</i>												1			
119	Chiguanco Thrush	<i>Turdus chiguanco</i>					1				1						
120	White-capped Dipper	<i>Cinclus leucocephalus</i>												2		2	
121	White-bellied Antpitta	<i>Grallaria hypoleuca</i>											1				
122	Blackish Tapaculo	<i>Scytalopus latrans</i>											H			H	
123	Northern Mountain Cacique	<i>Cacicus leucoramphus</i>		4										6			
124	Shiny Cowbird	<i>Molothrus bonariensis</i>						4	6	6							
125	Band-tailed Pigeon	<i>Patagioenas fasciata</i>		10						15							

	Common Name	Scientific Name	September / October												
			22	23	24	25	26	27	28	29	30	1	2	3	4
126	Croaking Ground Dove	<i>Columbina cruziana</i>									4				
127	White-tipped Dove	<i>Leptotila verreauxi</i>									3				
128	Eared Dove	<i>Zenaida auriculata</i>	✓	✓	✓	✓	✓				20				6

Mammals

1	Red-tailed Squirrel	<i>Sciurus granatensis</i>												2	
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