

Birds observed in and near the reserve of Tariquia, dpto. Tarija, Bolivia, in September/October 1992

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Summary

The main body of this trip report is a full species list with notes on localities, habitats, abundance and sound recordings. It is preceded by a description of the habitats covered and the itineraries.

Thirty-one species were observed which were not previously recorded for Tarija, according to the checklist (Ref 9). Species which were sound recorded are marked with (S): *Tigrisoma fasciatum*, *Geranoaetus melanoleucus*, *Buteo leucorrhous* (S), *Spizastur melanoleucus*, *Micrastur ruficollis* (S), *Columba fasciata* (S), *Metriopelia melanoptera*, *Bolborhynchus aurifrons*, *Otus hoyi* (S), *Glaucidium jardinii* (S), *Lurocalis (semitorquatus) rufiventris* (probably), *Caprimulgus longirostris* (S), *Geositta rufipennis*, *Upucerthia andaecola* (S), *Upucerthia ruficauda* (S), *Cinclodes fuscus*, *Asthenes (pudibunda) heterura* (S), *Asthenes (anthoides) punensis*, *Asthenes maculicauda* (S), *Phacellodomus striaticeps* (S), *Grallaria albicula* (S), *Anairetes parulus* (S), *Ochthoeca leucophrys* (S), *Muscisaxicola rufivertex*, *Legatus leucophaius*, *Progne subis*, *Anthus bogotensis*, *Phrygilus unicolor*, *Idiopsar brachyurus*, *Catamenia inornata*, *Saltator rufiventris*.

One species was doubtfully seen that would be new for Bolivia: *Progne dominicensis* Snowy-bellied Martin.

Southward range extensions were found for:

- *Lurocalis (semitorquatus) rufiventris*. However, this would be a range extension according to Fjeldså and Krabbe (Ref 3), but probably not according to the Argentina guide (Ref 8). Besides, my sighting was not absolutely certain.
- *Leptasthenura yanacensis*, was found slightly more to the southeast (an earlier record is from Tupiza).
- *Asthenes (pudibunda) heterura*.
- *Phyllomyias uropygialis*, was found slightly more to the south, judging from the distribution map in Fjeldså and Krabbe (Ref 3).

Note that these species were found within 30 km from the Argentinian border! Also, *Poospiza boliviana* is unknown from Argentina, according to Refs 3 and 8.

Several species were found which are listed by ICBP as Threatened or Near-threatened (Ref 2):

Threatened: *Cinclus schulzi* and *Saltator rufiventris*.

Near-threatened: *Tigrisoma fasciatum*, *Spizastur melanoleucus*, *Penelope dabbenei*, *Amazona tucumana*, *Cypseloides (fumigatus) rothschildi* and *Leptasthenura yanacensis*.

Two other interesting species found were *Asthenes maculicauda* and *Idiopsar brachyurus*. These two birds have a very similar distribution (Ref 3), both occurring to the north in Puno, La Paz and Cochabamba and to the south in NW Argentina.

Sound recordings of 108 species were made, altogether about 7 hours.

List of Updates

May 15, 1993:

- The wailing calls which at first I thought might have been made by *Lurocalis (semitorquatus) rufiventris* Rufous-bellied Nighthawk, I now ascribe with more certainty to *Otus hoyi* Montane Forest Screech-Owl.
- In the text under *Glaucidium brasiliense* Ferruginous Pygmy-Owl, I removed the comparisons with recordings made in other locations.
- A taped song from Pampa Grande, that I thought was made by *Geothlypis aequinoctialis* Masked Yellowthroat, I now ascribe to *Cyanocompsa brissonii* Ultramarine Grosbeak. I am no longer certain about the other taped songs of *Geothlypis aequinoctialis* Masked Yellowthroat, because the two are very similar.

August 10, 1993:

- The record of *Phyllomyias uropygialis* Tawny-rumped Tyrannulet is also a probable southwards range extension.

September 1993:

- I found a singing *Columba fasciata* Band-tailed Pigeon in the background of a sound recording from C5, until now unrecorded from Tarija.
- The already very uncertain sound recording of *Caprimulgus saltarius* Salta Nightjar was very probably the dawn/dusk song of *Myiodynastes maculatus* Streaked Flycatcher.

June 1994:

- The dawn/dusk song of *Myiodynastes maculatus* Streaked Flycatcher was confirmed by (Ref 14).
- Mystery songs at C2, C4 and C10 were identified as those of *Melanopareia maximiliani* Olive-crowned Crescentchest, with the help of (Ref 14) and my own recordings from near Inquisivi.
- Mystery calls taped on top of Cerro Alto de Minas turned out to be the "song" of the highland race of *Rhynchosciurus rufescens* Red-winged Tinamou.

March 1996:

- The former race *maculicollis* of Red-winged Tinamou *Rhynchosciurus rufescens* is now considered a distinct species: Huayco Tinamou *Rhynchosciurus maculicollis*.
- François Sagot drew my attention to the fact that the checklist does not mention *Muscisaxicola rufivertex* for Tarija.
- Songs recorded near C2 and C4 that I previously identified as coming from Olive-crowned Crescentchest *Melanopareia maximiliani* (see Updates in June 1994), turn out to be those of Darwin's Nothura *Nothura darwinii*.



Introduction

During birding trips in the south of the department Chuquisaca in September/October 1991 (with Jon Fjeldså) and in March 1992 (alone), we found several bird species which were not known to occur that far to the south (eg. *Asthenes (pudibunda) heterura*, *Scytalopus (femoralis) bolivianus*, *Polioxolmis rufipennis*, *Anisognathus flavinuchus* (Ref 4)). This aroused my interest in trying to find some of these birds in the department of Tarija as well. With this purpose I made three walks in and near the "Reserva Nacional de Flora y Fauna Tariquia" in September and October 1992. I found few southward range extensions (see the Summary), and my next birding trip will probably be to the more northern Serranía Huacayoj, between the Rio Pilaya and the road Tarija-Entrerios, to see if any of the other birds found in Chuquisaca do occur south of the Rio Pilaya.

Habitats

The long mountain ridge which encloses the Central Valley of Tarija on the east forms an effective rain barrier. Its western slopes are dry and eroded, whereas its eastern slopes are humid and have dense forest cover.

On the western slopes, only the highest parts receive enough moisture (mainly from clouds which "fall" over the ridge, at least when I was there) to enable growth of a vegetation of grasses, Bromeliads and *Polylepis*. Some ravine bottoms have stands of big *Polylepis* trees. Lower down the habitats seemed to me to be characteristic of the "Valles": many spiny trees, irrigated fields and people living everywhere.

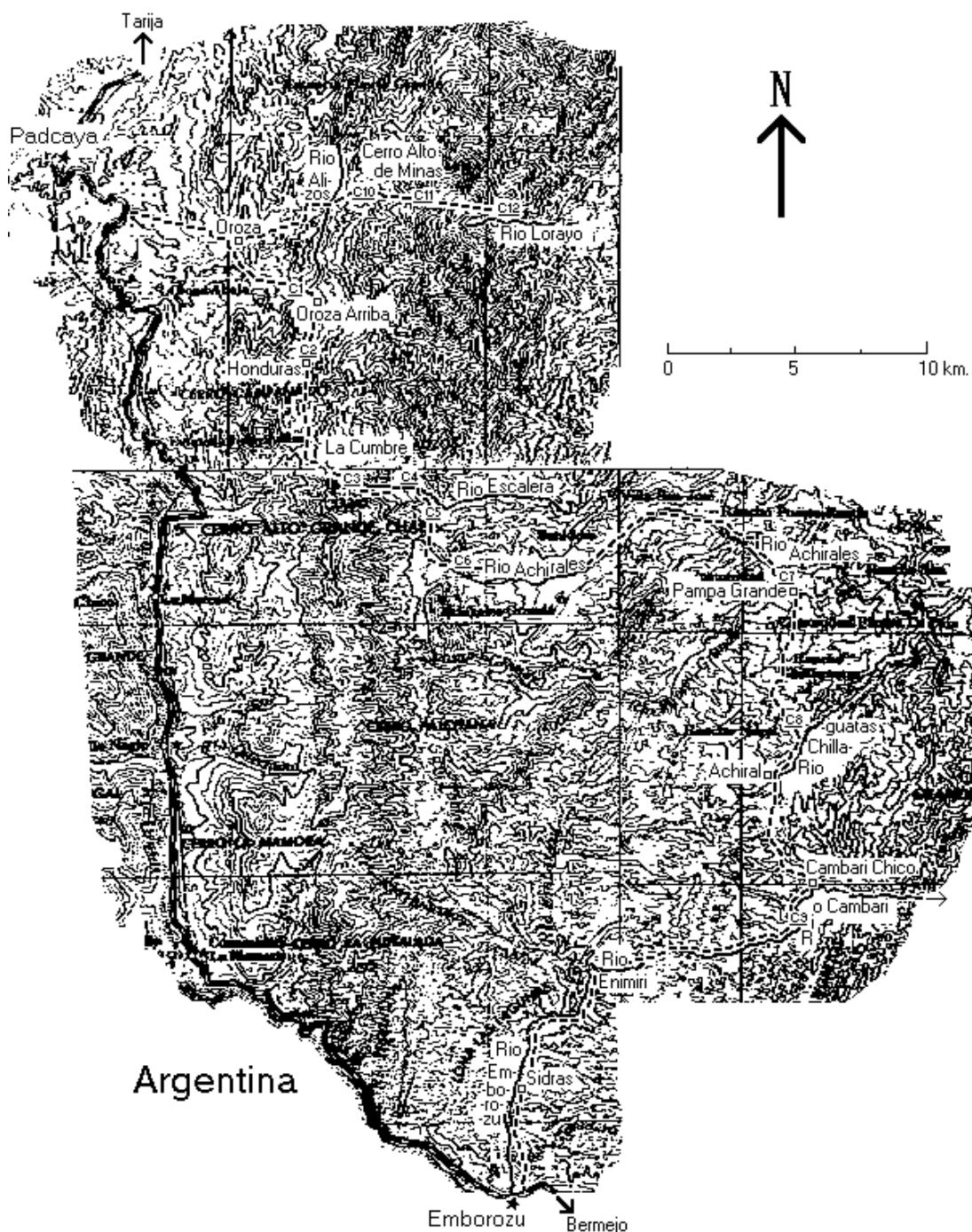
The habitats of the humid eastern slopes and of the foothills are more extensively dealt with in the report written by Brown and Grau (Ref 1). The highest slopes are grassy, lower down there are moss-covered *Polylepis* trees, then comes *Alnus*, and then forests with all kinds of trees, of which I was only able to identify the (often huge) *Podocarpus parlatorei* at (roughly) 1700m- 2100m. *Podocarpus* sometimes forms monospecific forests (eg at C5, see section Itineraries). No people are living here, but cows are everywhere (see Ref 1 for more information about this "Transhumance" cattle ranching).

The few people living in and around the reserve live in some fairly wide valleys lower down, in particular along the Rio Achirales/Rio Pampa Grande at about 900m-1100m (this area is called Tariquia by the local people), and along the lower Rio Emborozú at about 900m. On the level valley bottom along the Rio Achirales I saw mostly grassland, and few fields. The prevalent agricultural method in the surrounding hills is fallow shifting. Elsewhere I saw still plenty of rather undisturbed forest, except for the ubiquitous cattle. Along the Rio Emborozú there was more agriculture on the valley bottom, probably because the road following the river makes it possible to transport the produce to the town of Tarija.

I found the habitats in and around Tariquia to be generally more humid than comparable habitats we found in southern Chuquisaca (described in Ref 4). This explains, I think, the occurrence in Tarija of *Asthenes maculicauda* and *Idiopsar brachyurus* on the highest slopes. Especially remarkable was the difference in humidity between the foothill forests at 1000m-1500m. Whereas the foothill forests between San Josecito and El Palmar in Chuquisaca had few epiphytes, comparable forests in Tariquia are covered with mosses, bromeliads and creepers. The secondary forests and scrub around Pampa Grande were monopolized by a single abundant species of Bromeliad.

Also noteworthy was the relative abundance of *Polylepis* on the highest slopes compared to southern Chuquisaca, which explains the occurrence of *Leptasthenura yanacensis*.

Itineraries



I made three treks in the area. My fourth trek was aborted while I was standing in the rain near Padcaya, having just descended from the minibus. Fortunately the bus driver could read my mind, enabling me to return to the city of Tarija on the same bus! On most days I spent the entire morning birding, then walked slowly for only 3 or 4 hours. During each trek, only the final day was a fatiguing affair during which I kept walking all day, dreaming of hot showers, clean sheets, pizzas, beer and cigarettes.

My first walk covered the main trail from Padcaya to Pampa Grande down to an altitude of about 2000m, and lasted from September 23 to 28.

- I started from the main road Tarija-Bermejo, at about 4km southeast of Padcaya, at 2000m. From here a road leads through cultivated country to the village of Oroza. From here a trail descends to the valley floor, and follows the stream to the east. September 23.

- My first camp (C1) was on the level valley bottom, where the trail starts climbing up to Oroza Arriba. The following morning I birded mostly in the heavily eroded terrain on the slopes. Altitude: 2150m. Coordinates: 21°56'15"S, 64°37'04"W. September 23/24.

- C2 was in a place called Honduras, only a few kilometers to the south. I pitched the tent along the stream on the valley bottom. The surrounding slopes are covered with low scrub. Some farmers live here, and there are scattered fields. This place is slightly more humid, ie greener than C1. The next morning I walked up into a *Polylepis*-clad ravine to the east, at 2600m-2800m. Altitude: 2450m. Coordinates: 21°58'30"S, 64°37'30"W. September 24/25.

- After this I followed the trail to the pass called La Cumbre. Along the last 400 altitudinal meters I found small forests of *Alnus*, and higher up much *Polylepis* (mostly scattered trees, but also a contiguous stand). The highest, very steep slopes are humid, and densely covered with grass, Bromeliads and small *Polylepis* shrub. On the eastern side the trail descends over steep, stony and shrubby slopes. Altitude: 3030m. Coordinates: 22°00'00"S, 64°36'25"W. September 25.

- C3 was on the eastern slope, where the trail reaches the Rio Escalera. This is in a steep-walled ravine with *Polylepis* trees at the bottom. Altitude: about 2600m. September 25/26.

- From C3 the trail follows the Rio Escalera downwards. The area is quite disturbed, ie there are many glades. Initially all trees are *Polylepis*, then gradually *Alnus* takes over, and finally other trees predominate. September 26.

- At C4 the tent was placed on a grassy glade surrounded by forest. Springtime had just arrived here, many trees did not have leaves yet, and there were no herbs yet on the forest floor. Most birds were silent. Altitude: 2150m. Coordinates: 22°00'04"S, 64°34'55"W. September 26/27.

- From here the trail follows the Rio Escalera for some more distance, and then crosses the slopes to the south. After leaving the river, the trail leads down gently through glades and stands of big *Podocarpus* trees. I placed the tent close to the river (C5), on a glade surrounded by *Podocarpus*. Altitude: 2000m. Coordinates: 22°00'45"S, 64°34'10"W. September 27/28.

- That day the microphone cable broke, and I ran out of food, so on September 28 I walked back to Padcaya and returned to Tarija.

On my second walk I covered the same stretch as on the first walk, and then descended further down to Pampa Grande, whereafter I crossed several foothill ridges to finally reach Emborozú on the Tarija-Bermejo road. I walked from September 30 to October 9.

- I camped on C2 (Honduras) on the first night (September 30/October 1), and then spent two nights on C5 (October 1/2/3).

- From C5 the trail traverses the slopes southward to reach the Rio Achirales. Just after crossing this river for the second time, I placed the tent for two nights in tall forest on a very gentle slope (C6). There were few *Podocarpus* trees in this forest, the trees were quite moss-covered (but not as much as higher up), and there were thick creepers. The forest was quite disturbed: cattle wandered around, some trees had been cut down recently. This caused the forest to be rather open, with small glades. The forest floor was covered with grass and herbs. Altitude: 1730m. Coordinates: 22°02'05"S, 64°33'30"W. October 3/4/5.

- From C6, the trail descends down a long ridge on the northern bank of the river, until the trail reaches the river again at about 1400m. Here the valley starts to flatten out. People live here in scattered houses, the vegetation on the valley floor consists of grassland and low scrub, and the surrounding hills are covered with fields and secondary woodland. October 5.

- I walked to Pampa Grande, and pitched my tent about 500 meters NW of the village center (ie the church and the school) on a grassy plain overlooking the river (C7). Here I stayed for two nights. During October 6 a "surazo" arrived, bringing some rain and cold air, which made the birds much more silent during the following days. The area where I birded consists of level or sloping grassland, with isolated bushy areas, and hillsides covered with dense, shrubby vegetation. *Tillandsia usneoides* and a single species of epiphytic Bromeliad are abundant here. Altitude: 1050m. Coordinates: 22°02'20"S, 64°26'00"W. October 5/6/7.

- From C7, after crossing the Rio Pampa Grande and the grasslands of Pampa Grande, the trail ascends the hills up to an altitude of 1350m. Along this ascent the forest is ravaged by fallow shifting. Already from the Rio Escalera I had seen the huge clouds of smoke resulting from this agricultural practice. Along the trail I found mostly low scrubby habitat, and I heard the sound of axes in several places. On the Rio Chillaguatas side, however, I found beautiful, tall, moss- and creeper-covered forest, with only the occasional cow, of course. This forest had many "white" trees. This was where I pitched my tent (C8). Altitude: 1200m. Coordinates: 22°06'00"S, 64°26'00"W. October 7/8.

- From C8, the trail follows the Rio Chillaguatas upstream for some distance, to a tiny settlement called Achiral (altitude: 1130m. coordinates: 22°06'35"S, 64°26'25"W). From here, a wicked, muddy trail leads southward over a ridge (altitude 1280m) to the Rio Cambarí, where there are a few houses (Cambarí Chico) and some pastures and fields. October 8.

- From Cambarí Chico the trail leads up the Rio Cambarí. I pitched my tent about half an hour upstream, on grassland close to the river, surrounded by tall forest and low shrub (C9). Altitude: 1060m. Coordinates: 22°09'25"S, 64°25'55"W. October 8/9.

- The next day I followed the river upstream, in the end climbing to a pass at 1440m. Along the river there are some grassy areas, but mostly I saw lovely, tall forest. From the pass the trail descends along the Rio Enimiri, through a narrow canyon in some places, until it finally reaches the wide Rio Emborozú at an altitude of about 1000m. Here begins a primitive road to the main road Tarija-Bermejo, which is reached at an altitude of 850m, passing by the settlement of Sidras (900m). There are more people living here, and the valley floor consists mainly of fields, orchards, and some grassland. Along the river there was much riverine scrub. My impression was that the surrounding hills were not used for fallow shifting, although the good timber has probably already been

taken out. If I had not been in such a hurry to reach the main road before dark, I would probably have found several species on the valley floor (esp. in the riverine scrub) which now are not present in the species list. October 9.

On my **third walk** I crossed the mountain ridge about 10km more to the north, and then descended for one night to the Rio Lorayo. It lasted from October 14 to 18. The trail descends to an area which was taken into use not so long ago. There are no people living here, there is only "transhumance" cattle ranching and some small-scale cutting of *Cedrela angustifolia* ("Cedro") trees. Before getting there I ran out of food, however, and when I wanted to start out to this area on my fourth trek, bad weather broke out. Well, next time.

- On the first day I started out in the afternoon from Oroza, a spread-out village a few km east of Padcaya. I crossed the first low ridge to the northeast (2650m), descended to the Rio Alizos, and pitched my tent close to the trail about 1km east of the river (C10), on level and stony terrain covered with bunchgrass, small shrubs and small trees. On one side of the area was a scrubby hillside, and on the other side was a stream, accompanied by dense shrubby vegetation and scattered trees, among them *Polylepis*. The habitat was similar to that found at Honduras (C2). I stayed here for 2 nights. Altitude: 2600m. Coordinates: 21°53'50"S, 64°35'50"W. October 14/15/16.

- From here I moved a short distance up into the steep-walled ravine leading up to the pass (C11), where I camped. It is clad over its entire length with trees, predominantly *Polylepis*. Altitude: 3050m. Coordinates: 21°54'00"S, 64°34'40"W. October 16/17.

- The following day I climbed to the pass, which is close to the Cerro Alto de Minas (Cerro Altomina on the topographic map). Nearby I found several good birds. Altitude: 3350m, Coordinates: 21°54'00"S, 64°34'20"W. From the pass the trail led me on a long (1300m altitudinal difference) and steep descent. Initially the slopes are covered with bunchgrass, with some rocky outcrops and boulderfields. Lower down the trail leads through areas with moss-covered *Polylepis* trees, areas with *Chusquea* bamboo, and areas with low *Alnus* trees. However, I did not see much, as I walked all day through fog and a steady drizzle. Finally, at 2150m, the trail reaches the Rio Lorayo. Note: the 1:50.000 and 1:250.000 topographic maps give this name to the next river to the east. The present river is nameless on the map, but people who know the area assured me that everybody calls this river the Rio Lorayo. October 17.

- Now the trail follows the river downstream, initially through a vertical- (and sometimes overhanging-)walled canyon. After the canyon the valley becomes wider, and not much further down I pitched the tent on a meadow (C12). The trees in this area are covered with thick layers of moss. Because it rained during the whole previous day, and because it was still foggy, everything was dripping wet. Altitude: 2000m. Coordinates: 21°54'35"S, 64°32'10"W. October 17/18.

- The next day I walked back, all the way to the main road. On the ascent to the pass I walked initially through fog, but the sun was shining on the slopes above 2800m. It was as if I was on some rocky islands in a quiet, white sea.

Thanks

I want to thank the people of Proteccion del Medio Ambiente Tarija (PROMETA) for their help and information. Gabriel Baracatt, Alfonso Blanco, Eduardo Michel, Patty Barroso, Amilcar Taboada and especially Ivan Arnold, thanks.

Species List

The order of the checklist (Ref 9) is followed.

- ◆ This sign means that a sound recording was made.
- ♣ This sign means that the checklist does not mention the species for the department.

1. *Crypturellus tataupa* Tataupa Tinamou.

Very common in the foothills. Heard often at dusk and dawn on my second trip from C6 (1730m) onwards. I saw it twice.
◆ Many sound recordings.

2. *Rhynchotus maculicollis* Huayco Tinamou.

The song was taped high up on Cerro Alto de Minas, at 3200m, on October 17.
◆ "Song" taped.

3. *Nothoprocta pentlandii* Andean Tinamou.

- Several birds called around C2 before dusk on September 30, but they were silent the following morning.
- On October 14 and 15 one or two birds called near C10 before dusk. On the morning of October 15 they were silent, but they kept calling the entire morning of October 16! Also, I heard at least 5 birds calling during the first 2 kilometers climbing up from C10 on October 16, late in the morning.

These birds respond to each other: when one bird calls, all the others call at once, after which all are silent for 15 seconds or longer. When I chased a bird, it gave only a single whistle (contrary to what is stated in Ref 3).

◆ I made several sound recordings.

4. *Nothura darwinii* Darwin's Nothura.

Songs were taped near C2 on the western side of the mountains, and near C4 on the eastern side.
◆ I taped its song.

5. *Phalacrocorax brasiliensis* Olivaceous Cormorant.

- On October 5 I saw 2 in the Rio Achirales near Pampa Grande.
- On October 7 I saw 1 in the Rio Pampa Grande.
- On October 9 a flock of 6 headed upstream above the Rio Emborozú.

6. *Tigrisoma fasciatum* Fasciated Tiger-Heron.

- Two birds, of which one was an adult, along the Rio Achirales near Pampa Grande, just before dusk.
- An adult when descending along a stream to Cambarí Chico.
- ♣ The checklist does not mention this species for Tarija.

7. (*Tigrisoma lineatum*) Rufescent Tiger-Heron).

Possibly. I chased an adult Tiger-Heron when descending along a stream to Cambarí Chico, and had the impression that the neck was rufous. However, the previous species was also there, so it is a bit confusing.

8. *Syrigma sibilatrix* Whistling Heron.

One along the Rio Achirales between C6 and Pampa Grande, on October 5.

9. *Bubulcus ibis* Cattle Egret.

Two near Padcaya on September 23.

10. *Butorides striatus* Striated Heron.

One on a bank of the Rio Pampa Grande, behind the school, on October 7 (1050m).

11. (*Nycticorax nycticorax* Black-crowned Night-Heron?, *Mesembrinibis cayennensis* Green Ibis?).

Some heron-/ibislike birds flew around close to the Rio Achirales near Pampa Grande, producing a lot of noise, at dusk on October 5.

12. *Theristicus caudatus* Buff-necked Ibis.

Two flying over the grasslands near Pampa Grande, on October 6.

13. *Coragyps atratus* Black Vulture.

A bird of the foothills, especially common around Pampa Grande. The highest elevation where I saw the bird was 2500m, where a party of 3 was soaring high above C4 (2150m) on September 27. Generally over open areas.

14. *Cathartes aura* Turkey Vulture.

Common at all elevations and above all habitats.

15. *Vultur gryphus* Andean Condor.

Fairly common in the mountains, where I saw mostly single birds or pairs. The highest number seen was 5 or 6 above C4, soaring and gliding at about 2600m. On two occasions I saw it away from the mountains: 1 on the western side above Oroza, and an immature on the eastern side above Pampa Grande (1050m). I saw several immature birds.

16. *Sarcoramphus papa* King Vulture.

An adult near and an adult above Pampa Grande, soaring high, at midday on October 7.

17. *Merganetta armata* Torrent Duck.

- A male on the Rio Escalera at 2150m, just above C4, on September 26.
- A male on the Rio Escalera at 2100m, between C4 and C5, on October 1.

18. *Elanoides forficatus* Swallow-tailed Kite.

Regularly seen:

- 2 near C5, 2000m, September 27.
- 1 over C6, 1750m, October 5.
- 1 over Pampa Grande, 1050m, October 7.
- 2 near Achiral, 1150m, October 8.
- 2 near Sidras, 900m, October 9.

19. *Ictinia plumbea* Plumbeous Kite.

One near C6, 1700m, October 5.

20. *Accipiter striatus* Sharp-shinned Hawk.

Seen several times at high elevations, in dry habitats:

- 2 between C2 and La Cumbre, at 2500m and 2800m, September 28.
- 1 near C1, 2200m, September 30.
- 1 at C11, 3000m, October 16.

21. *Accipiter bicolor* Bicolored Hawk.

Seen several times at lower elevations, in forested habitats:

- 1 soaring above C6, 1750m, in the morning of October 5.
- Probable. I chased a bird twice when perched on horizontal branches above the trail in scrubby forest, 3km. south of Pampa Grande, October 7.
- 1 near Sidras, 900m, October 9.

22. *Geranoaetus melanoleucus* Black-chested Buzzard-Eagle.

- An adult between Padcaya and C1, 2000m, September 23.

- 1 near C1, 2200m, September 24.

- An adult near C2, 2500m, September 25.

- An adult near C6, 1750m, October 4. Nearby there were steep grassy slopes, which may explain its presence in this forest area.

♣ The checklist does not mention this species for Tarija, but note that I also saw it during my March trip (Ref 6).

23. *Buteo magnirostris* Roadside Hawk.

Common on the eastern side of the mountains. The highest elevation where I saw it was at C4, 2150m.

♦ Sound recorded.

24. *Buteo leucorrhous* White-rumped Hawk.

At C5 (Podocarpus forest at 2000m), a bird was seen circling over the forest on September 27 and on October 2.

♦ A good sound recording was made while it circled overhead, of the calls which are described in Fjeldså and Krabbe (Ref 3).

♣ The checklist does not mention this species for Tarija.

25. *Buteo polyosoma/poecilochrous* Red-backed/Puna Hawk.

I did not try to differentiate between these two species, although the fact that all adults seen were of the white phase indicates that they probably belonged to *B. polyosoma*. 3 of the 4 sightings were on the highest ridges and slopes.

- 1 or 2 near C4, along steep grassy slopes, 2200m, September 27.
- An immature and an adult on the western side of La Cumbre, 2800m-3000m, September 28.
- An adult near La Cumbre, 3000m, October 1.
- An adult and an unseen bird were calling loudly, while flying back and forth above C11, 3200m, October 16.

26. *Spizastur melanoleucus* Black-and-white Hawk-Eagle.

An adult bird soared low over C7 (Pampa Grande), at 1050m, in the morning of October 7.

♣ The checklist does not mention this species for Tarija, but note that I also saw it during my March trip (Ref 6).

27. *Phalcoboenus megalopterus* Mountain Caracara.

- An adult was seen near C2, at 2700m, on September 25.
- An adult was seen just east of La Cumbre, at 2950m, on October 1.

28. *Polyborus plancus* Crested Caracara.

Fairly common on the grasslands along the bigger rivers in the foothills:

- Several between C6 and C7 along the Rio Achirales on October 5.
- Two near C7 on October 6/7.
- Two along the Rio Cambarí on October 8.

29. *Micrastur ruficollis* Barred Forest-Falcon.

- 1, but probably 2, calling at C6, 1750m, October 3/4/5.
- 1 calling at C8, 1100m, October 7/8.

♦ Sound recorded.

♣ The checklist does not mention this species for Tarija, but note that I also saw and sound recorded it during my March trip (Ref 6).

30. *Micrastur semitorquatus* Collared Forest-Falcon.

At C8 (1200m) on October 7, a bird called almost continuously, with interruptions between the series of a minute or so, from 16.00pm (when I arrived) until dusk at 18.35pm, when it was the last bird to stop calling.

♦ I made sound recordings.

31. *Falco sparverius* American Kestrel.

Only seen between the main road and C1, on 3 days. On each day a single bird was seen.

32. *Penelope dabbenei* Red-faced Guan.

I saw this bird on only two occasions. And I did not see or hear a single bird in high-altitude forests on the eastern side of the mountains, whereas it was so common in these habitats on the previous Chuquisaca trips (Refs 4 and 6) and southeast of Vallegrande in southern Santa Cruz!

- A pair was seen in a *Polylepis*-clad ravine east of C2, 2700m, September 25.
- A single bird was seen close to the previous location: along the trail, where it crosses an *Alnus*- and *Polylepis*-filled gulley, between C2 and la Cumbre, just before the final climb up to la Cumbre, 2700m, September 25.

33. *Aramides cajanea* Gray-necked Wood-Rail.

A pair called near Pampa Grande, 1050m, October 6.

♦ Sound recorded.

34. *Vanellus chilensis* Southern Lapwing.

Several small parties of about 3 birds seen and heard in and around Pampa Grande, both on grassland and on river banks, 1050m.

35. *Columba fasciata* Band-tailed Pigeon.

I taped a singing bird at C5, 2000m, October 2.

♦ Sound recorded.

♣ The checklist does not mention this species for Tarija.

36. *Columba cayennensis* Pale-vented Pigeon.

Several were singing between C7 and Pampa Grande, 1050m, October 6/7. Twice I saw a pair perched on the highest, bare branches of tall trees.

♦ Sound recorded.

37. *Zenaida auriculata* Eared Dove.

- 1 between Oroza and C1, 2000m, September 23.
- 2 at C2, 2450m, September 25.
- 1 between C1 and C2, 2300m, September 30.
- Probably, 2 near C10, 2600m, October 15.

38. *Columbina talpacoti* Ruddy Ground-Dove.

A male was seen 1 or 2km west of C7, 1050m, October 5.

39. *Columbina picui* Picui Ground-Dove.

- About 5 between the main road and C1, 2000m, September 23.
- A party of 3 at C2, 2450m, September 25.
- A party of 2 at C2, 2450m, October 1.
- ◆ Sound recorded.

40. *Metriopelia ceciliae* Bare-faced Ground-Dove.

- A party of 2 near C1, 2150m, September 23.
- A party of 6 at C2, 2450m, September 25.
- A party of 3 near C2, 2550m, September 28.
- A party of 3 in Oroza 2100m, October 14.

41. *Metriopelia melanoptera* Black-winged Ground-Dove.

- A party of 8 between C1 and C2, 2300m, September 24.
- A party of 8 at C2, 2450m, September 25.
- A party of 6 at C2, 2450m, September 25.
- A party of 3 between C2 and La Cumbre, 2700m, September 25.
- A single bird between C2 and La Cumbre, 2700m, October 1.
- A party of 4 between C10 and C11, 2800m, October 16.
- A party of 3 near C10, 2600m, October 18.
- ♣ The checklist does not mention this species for Tarija.

42. *Leptotila verreauxi* White-tipped Dove.

Only found in very open and disturbed habitats in the foothills:

- Two were singing in and near Pampa Grande, 1050m, October 6/7.
- Two were singing along the Rio Emborozú, 900m, October 9.
- ◆ Sound recorded.

43. *Leptotila megalura* Large-tailed Dove.

A common bird in the foothills, in any forested habitat. I heard it often from around Pampa Grande up to the Rio Emborozú. I heard it at altitudes up to about 1400m, whereas we heard it in Chuquisaca at altitudes up to 2500m (Ref 6).

◆ Sound recorded.

44. *Ara auricollis* Golden-collared Macaw.

Quite common in the foothills, from Pampa Grande to the Rio Emborozú. Mainly in forests.

◆ I sound recorded the conversation of a perched pair, and flight calls. I also taped a party of 3 birds which called continuously while flying around just before dusk.

45. *Aratinga mitrata* Mitred Parakeet.

Several flocks of 10 to 50 birds were present in the valleys west of the main mountain ridge.

I also heard *Aratingas* calling east of the ridge:

- Near the Rio Escalera at 2100m, on October 1.
- Near the Rio Lorayo, where there are high vertical cliffs, at 2150m, in the fog on October 17 and 18.

46. *Pyrrhura molinae* Green-cheeked Parakeet.

Quite common from C6 (1750m) downwards, up to the Rio Emborozú. Several times seen and often heard.

◆ I taped flight calls.

47. *Bolborhynchus aymara* Gray-hooded Parakeet.

Common in shrubby habitats west of the main mountain ridge, always in small flocks of up to 12 birds.

◆ I taped flight calls.

48. *Bolborhynchus aurifrons* Mountain Parakeet.

A flock of about 25 birds was encountered in *Polylepis* woodland at 2750m, on the western side of La Cumbre, on September 25. This identification is based on the brownish bill and the obvious blue wing panel, and the fact that only *B. aurifrons* occurs in NW Argentina (as opposed to *B. orbygnesius*).

♣ The checklist does not mention this species for Tarija.

49. *Pionus maximiliani* Scaly-headed Parrot.

Generally a bird of clearings, not of unbroken forest.

- Common around Pampa Grande, 1050m.
- A flock of at least 10 in a clearing between Pampa Grande and C8, 1350m.
- 2 near the Rio Cambarí, 1050m.
- ♦ I taped flight calls.

50. *Amazona tucumana* Alder Parrot.

- A flock of 10, clearly separable into 5 pairs, came to sleep near C4, 2200m, in the evening of September 26.
- A common bird at C5, 2000m, and at C6, 1750m. They were particularly active during late afternoon and in the early morning. The largest number seen at any one moment was about 35 birds. There were no really large flocks, such as seen on a large roost in southern Chuquisaca in March (Ref 6). During the day birds would fly around in twos or threes, and were usually silent when perched.
- I heard birds at C12, near the Rio Lorayo, 2000m, in the fog on October 17 and 18.
- ♦ I taped flight calls, but also morning conversations of perched birds, including weird wailing screams.

51. *Piaya cayana* Squirrel Cuckoo.

One heard between Pampa Grande and C8, 1250m, October 7.

52. *Guira guira* Guira Cuckoo.

- A small flock of at least 3 between the main road and Oroza, 2100m, September 30.
- One singing near Oroza, 2100m, September 30.

53. *Otus hoyi* Montane Forest Screech-Owl.

Probably common, I heard and taped it at every suitable location:

- A bird was singing at C4, 2150m, September 26.
- At C5, 2000m, September 27, a bird was singing at about 1km from my tent, before dusk. Another one was singing extensively right over my tent, during the whole evening. Luck would have it that the microphone cable was broken! A few days later, on October 1, two birds were singing in the same location.

On both these days at 19.00pm, ie just after dusk, wailing calls were taped in this same location. These calls are very similar to calls of *Otus colombianus* Colombian Screech-Owl that are heard in the background of the ARA tape recording of its song, and also to calls of *Otus ingens* Rufescent Screech-Owl which I taped near Vallegrande, Dpto. Santa Cruz (Ref 7), so I assume they were made by *O. hoyi*.

- Two birds singing at C6, 1730m, October 4.
- ♦ Taped several times. This species is often duetting: one bird produces the "full" song, and the other a shorter one, as on the ARA tape (Ref 12).

I made a recording where a nearby bird sings the shortened song continuously, and where the full song is heard only occasionally, far away.

I also made a recording where bird A sings the full song, whereupon bird B answers with a hoarse, short song similar to the "response to playback" on the ARA tape (however, I didn't do any playbacking). Then, after some time B sings again this hoarse song, and is answered by B singing the shortened song!

♣ The checklist does not mention this species for Tarija, but note that the Museo Nacional de Historia Natural in La Paz has a specimen from Tarija (Ref 4).

54. *Glaucidium jardinii* Andean Pygmy-Owl.

This species apparently has two songs:

- Song A: The song on the ARA tape (Ref 12), which was taped in Venezuela. Every time I heard it, this song was sung only once. I heard it in the middle of the night, at dawn and dusk, and even during the day! This is the song I heard most often in Bolivia:

- in Quehuiña Pampa (Cochabamba), September 2-4, 1992. I heard it there from 2 different birds. One of them sang at 09.15am, in the glaring sun!
- in southern Chuquisaca, in March 1992.
- in Tariquia, during this trip.

- Song B: The other song consists of series of 10-25 regularly spaced whistles. It slightly swells in the beginning and slightly fades at the end, reminding of the song of *Otus watsonii*. The song of *G. brasiliianum* is similar, but does not swell and fade, is twice as fast, and the whistles are much shorter. This description corresponds with the one described from Peru (Ref 5), but conflicts rather with the description in Ref 3. I have recordings from several locations (and did not hear it elsewhere):

- I taped it southeast of Vallegrande, in dpto. Santa Cruz, on February 3-5, 1993.
- Jon Fjeldså taped it in southern Chuquisaca, on September 23 or 24, 1991.
- I taped it in Tariquia.

I heard it in 2 of the 3 locations where *Otus hoyi* was also present:

- A bird sang song A once at C4, 2150m, September 26.
- Two birds sang at C5, 2000m, at dusk on September 27. Both sang song A once, but then one of them started to produce song Bs. In the same location, one bird sang song Bs, at dusk on October 1.

- ◆ Not for the first time, I only managed to record the final 'poop's of song A. I also taped song B.
- ♣ The checklist does not mention this species for Tarija.

55. *Glaucidium brasiliianum* Ferruginous Pygmy-Owl.

- ◆ The song was taped at C9, 1060m, at 23.00pm on October 8.

56. (*Lurocalis (semitorquatus) rufiventris*) Rufous-bellied Nighthawk).

- A single nighthawk flew back and forth at C9, 1060m, above the Rio Cambarí, at the same height as the crowns of the trees on the river banks, at 18.30pm, ie at dusk on October 8. It would fly about 100-150 meters in one direction, before turning and heading the other way. I did not note a white bar on the wings, but it may have been there. I should have remembered to look at the shape of the tail, but I didn't. This stretch of river had solid forest on both sides, but there were clearings nearby. The river bed is not really wide, and the stream itself was at the time only 5 meters wide or so.
- ♣ The checklist does not mention this species for Tarija. According to Fjeldså and Krabbe (Ref 3), this would constitute a southward range extension. However, in the Argentina guide (Ref 8) *L. semitorquatus* is depicted as occurring on the Jujuy/Salta border, which would probably be *L. s. rufiventris*.

57. *Caprimulgus rufus* Rufous Nightjar.

Common in the foothills, mostly so around clearings, but also inside forest:

- 1 or 2 were singing, very briefly, at C6, 1730m, October 3/4.
- About 10 were singing intensively around C7, 1050m, on October 5/6/7.
- 1 was singing at C8, 1200m, October 7.
- At least 2 were singing at C9, 1050m, October 8/9.

- ◆ Sound recorded.

58. *Caprimulgus longirostris* Band-winged Nightjar.

- A male flew past me at a short distance, at C2, 2450m, just before dusk on September 30. I also taped its song.
- At C10, 2600m, I saw and heard it several times on October 15 and 16. A male used to perch close to my tent on the ground, on level stony soil with scattered scrubby vegetation. Several times I chased it whereupon it started flying around me in little circles, occasionally hovering while looking straight at me, and continuously producing short alarm calls (sound recorded). Once it sang before dusk, while it was still quite light, and it is very probable that it was perched on the ground while singing (as stated in Ref 3). Once I saw probably two birds flying around.
- ◆ I taped the song both at C2 and C10. It consists of monotonous series of rasping, high-pitched 'zee-eorr' calls, where the second syllable is lower-pitched. This song is one of those described in Fjeldså and Krabbe (Ref 3), and very different from the one on the ARA tape (Ref 11). I also taped the alarm calls of a bird which was flying around me.
- ♣ The checklist does not mention this species for Tarija.

59. *Uropsalis lyra* Lyre-tailed Nightjar.

A bird was singing at C6, 1750m, in the evening of October 4 and at dawn the next morning. The forest around the tent was nearly level, but there were steeper slopes nearby. The same night I also taped flight calls of some nightjar/nighthawk: the calls are very similar to those of *Chordeiles minor* Common Nighthawk on the ARA tape, but a little less abrupt and longer.

- ◆ I made good recordings. The song is identical to the one taped by Ted Parker in Serranía Bellavista, La Paz (Ref 11).

60. *Cypseloides (fumigatus) rothschildi* Dark Brown Swift.

- A flock of 8 birds flew around above C4, 2150m, just before dusk on September 26. They flew in wide circles across the valley, and were calling loudly and continuously.
- A little flock of at least 5 was seen once above C7, 1050m, on October 6, during the day.
- ◆ I taped only 2 final notes of a long series of calls, after which they disappeared. Bad luck.

61. *Chaetura andrei* Ashy-tailed Swift.

Common in the foothills, from Pampa Grande (C7) to the Rio Cambarí (C9). Mostly I saw them above clearings in the forest, calling continuously.

- 2 flocks were seen near and above Pampa Grande, one of at least 25 and one of at least 10 birds, 1050m, October 6 and 7.
- At least 2 flocks between C7 and C8, 1100m-1300m, October 7.
- Several flocks seen along the Rio Chillaguatas, the Rio Cambarí and in between, 1050m-1250m, October 8 and 9.
- ◆ I taped flight calls.

62. *Aeronautes andecolus* Andean Swift.

- A flock between the main road and C1, 2100m, September 23.
- Several near C1, 2150m, and some between C1 and C2, 2300m, September 24.
- A flock of at least 4 near Padcaya, 2000m, September 30.
- A little flock of 4 was often present, and was often calling, at C10, 2600m, October 15 and 16.

63. *Chlorostilbon aureoventris* Glittering-bellied Emerald.

- 2 males were seen near C1, 2150m, September 23 and 24.
- A female was seen in Pampa Grande, 1050m, October 7.

Note: Many hummers were heard in the valley of the Rio Emborozú, 900m, on October 9, some of which may have belonged to this species.

64. *Amazilia chionogaster* White-bellied Hummingbird.

- Common in the foothills, from C6, 1750m, to Emborozú, 850m, on October 3 to 9. Sang often.
- Several on the steep slope between the Rio Lorayo and the Cerro Alto de Minas, from 2300m to 2600m, on October 17 and 18.

Also, see the note for *Chlorostilbon aureoventris*.

- ◆ I taped its song and calls.

65. *Adelomyia melanogenys* Speckled Hummingbird.

A bird of the forest interior. In Tarija and Chuquisaca, I only heard it singing near streams inside forest. The song consists of interminable and monotonous series (about 4 per second) of high-pitched identical notes, with occasionally a short pause.

- 3 were singing along a stream, and several were seen, at C8, 1200m, October 7 and 8.
- 1 seen and 1 heard singing between C8 and C9, October 8.
- 4 were singing in the canyon of the Rio Enimiri, 1100m-1300m, October 9.
- ◆ I taped its song.

66. *Oreotrochilus* sp. Hillstar sp.

- 2 were seen together in eroded terrain, near C1, 2150m, on September 24.

67. *Patagona gigas* Giant Hummingbird.

- 2 were seen together in eroded terrain, near C1, 2150m, on September 24.

68. *Sappho sparganura* Red-tailed Comet.

Common everywhere, from 1050m (Pampa Grande) up to Cerro Alto de Minas (3200m). The only habitat where I did not see it was inside unbroken tall forest in the foothills.

- ◆ I taped songs and calls.

69. *Trogon curucui* Blue-crowned Trogan.

Three to four were heard calling, of which one was seen, along the Rio Cambarí, 1050m-1150m, on October 9.

- ◆ Sound recorded.

70. *Ceryle torquata* Ringed Kingfisher.

- 1 along the Rio Achirales, between C6 and C7, 1100m, October 5.
- 1-2 along the Rio Achirales near C7, 1050m, October 6 and 7.
- 1 along the Rio Cambarí at C9, 1060m, October 8.
- 2 along the Rio Emborozú, 900m, October 9.

71. *Chloroceryle amazona* Amazon Kingfisher.

- 1 along the Rio Chillaguatas, about 1100m, October 8.
- 1 along the Rio Cambarí, about 1000m, October 8.

72. *Ramphastos toco* Toco Toucan.

- 1 seen and heard calling at C7, 1050m, October 6.
- 2 heard calling between C7 and C8, at 1250m-1350m, October 7.
- 2 heard calling along the Rio Emborozú, 900m, October 9.
- ◆ Sound recorded.

73. *Picumnus cirratus dorbygnianus* Ocellated Piculet.

Three females and a male were seen well: they were scaled white/grayish brown below, and their flanks were barred dark and white. Another male was much more brown below, with white spots, but I did not see the flanks well.

- 3 at C6, 1730m, October 4.
- 1 at C7, 1050m, October 6.
- 1 along the Rio Chillaguatas, 1100m, October 8.
- ◆ Sound recorded.

74. *Veniliornis fumigatus* Smoky-brown Woodpecker.

Apparently rather common, as it was seen on every site in suitable habitat:

- 2 in a mixed flock at C4, 2150m, September 27.
- A pair at C5, 2000m, September 28.
- 1 between C5 and C6, 1800m, October 3.
- A female at C6, 1730m, October 4.

75. *Piculus rubiginosus* Golden-olive Woodpecker.

- 1 at C5, 2000m, October 2. It was working on a tree-hole, which was located in a thick, dead *Podocarpus* tree which had broken off not far above where the nest-hole was. The nest-hole was about 8 meters up, and was on the overhanging side (ie the tree served as a "roof"). Nearby I saw another nest-hole at the same height and in a similar position.
- A male between C7 and C8, 1350m, October 7.

76. *Colaptes melanochloros melanolaimus* Golden-breasted Flicker.

Always in pairs. Perches both in trees and on boulders.

- 2 near C1, 2150m, September 23.
- 2 at C10, 2600m, October 16.
- 1 or 2 pairs heard near C11, 3050m, October 16 and 17.
- ◆ Sound recorded.

77. *Colaptes rupicola* Andean Flicker.

Only seen near the crest of the main ridge:

- 2 just east of La Cumbre, 3030m, September 25.
- 1 on the eastern slope of Cerro Alto de Minas, about 3100m, October 18.

78. *Campetherus leucopogon* Cream-backed Woodpecker.

Rather common inside lower-elevation forests, often in parties of 3:

- Probably this species, 1 between C5 and C6, 1850m, October 3.
- A party of 3 was always present near my tent on C6, 1730m, October 4 and 5. It consisted of a pair and what was probably an immature female (it lacked red below the white line from the base of the bill to the ear coverts). I was probably in the heart of their territory, because they were very curious and would cling to a tree trunk just a few meters above my head (which made for wonderful sound recordings).
- 1 between C7 and C8, 1200m, October 7.
- A party of 3 close to Achiral, 1130m, October 8.
- At least 3 were seen and heard between Achiral and Cambarí, 1050m-1250m, October 8.
- A party of 3 and 1 or 2 heard along the Rio Enimiri, 1200m-1400m, October 9.
- ◆ I taped alarm calls, some other calls, hammering and its double rap drum.

79. *Sittasomus griseicapillus* Olivaceous Woodcreeper.

Very common in the foothills. The highest elevation where I found it was at 1850m, between C5 and C6. It was common at C6, C7, C8 and C9 and in between.

- ◆ I taped songs, and also long trills which rose and fell in pitch and volume.

80. *Xiphocolaptes major* Great Rufous Woodcreeper.

Calls usually once at dawn, and once at dusk, but I also heard a very vocal bird which called 2 or 3 times, both at dusk and dawn.

- 1 seen and heard at C6, 1730m, October 3. Its throat seemed to be brown, not white, contrary to what is stated in the Argentina guide (Ref 8).
- A pair seen and heard at C8, 1200m, October 7/8. At dusk, when it was quite dark already, they came close and were very visible.
- 1 seen along the Rio Chillaguatas, 1100m, October 8.
- 1 or 2 heard at C9, 1060m, October 8 and 9.
- ◆ I taped the second halves of songs, and the hammering of a nearby bird.

81. *Dendrocolaptes picumnus* Black-banded Woodcreeper.

- 1 was seen well at C6, 1730m, October 4. I did not hear it calling, though.

82. *Lepidocolaptes angustirostris* Narrow-billed Woodcreeper.

Found in both dry and humid habitats.

- Common between the main road and Oroza, in low spiny trees with small yellow flowers and black beans (*Acacia*, I guess).
- 1 seen and probably heard near C8, 1200m, October 7.
- 1 or 2 probably heard along the Rio Cambarí, upstream from C9, 1100m, October 9.

83. *Geositta rufipennis* Rufous-banded Miner.

One seen well between C2 and La Cumbre, 2700m, October 1. On a bare level field and a nearby bare stony slope.

- ♣ The checklist does not mention this species for Tarija.

84. *Upucerthia andaecola* Rock Earthcreeper.

A common bird west of the crest of the main ridge, and on the other side occurring down to 3000m (La Cumbre) and 2700m (Cerro Alto de Minas).

- ◆ I taped calls and songs.
- ♣ The checklist does not mention this species for Tarija.

85. *Upucerthia ruficauda* Straight-billed Earthcreeper.

At C1, C2 and C10, from 2150m to 2600m, there were birds which looked very much like *U. andaecola*, also in behaviour, but which had a very different call and song. I never saw them very well, although I did see that the tail appeared just as uniform rufous as in *U. andaecola* (this contradicts the Argentina guide (Ref 8), but not really Fjeldså and Krabbe (Ref 3)).

The song was the same as that which we heard in Chuquisaca (Ref 4), and that bird we identified then as *U. ruficauda*.

The call is a short, explosive hoarse note.

The song consists of monotonous series of chips, at a rate of 5 a second. Once, a bird was perched conspicuously on top of a boulder, singing continuously, unfortunately rather far away.

- 1 at C1, 2150m, September 24.
- At least 2 near C2, 2450m, September 24 and 25.
- 2 birds were singing at C10, 2600m, October 16.
- ◆ I taped calls and songs.
- ♣ The checklist does not mention this species for Tarija.

86. *Cinclodes fuscus* Bar-winged Cinclodes.

Very common along any stream, both west and east of the main ridge, but on the eastern side only down to about 2000m (both on the Rio Escalera and the Rio Lorayo). The highest altitude where I found it was at 3000m, near C11. Sometimes encountered away from streams.

- ♣ The checklist does not mention this species for Tarija.

87. *Cinclodes atacamensis* White-winged Cinclodes.

- A pair was present along the river which flows through the valley between Oroza and C1, 2100m, September 23, 28 and 30. This was where the valley narrows and some rocks are close to the stream.

88. *Furnarius rufus* Rufous Hornero.

Fairly common west of the main ridge. The highest altitudes where it was found was at C2, 2450m and C10, 2600m.

- ◆ I taped songs.

89. *Leptasthenura fuliginiceps* Brown-capped Tit-Spinetail.

Fairly common, both west and east of the main ridge, but on the eastern side only down to about 2100m (a little beyond C4, but not at C5). I did not find it west of C1 and the Rio Alizos. The highest altitude where I found it was at C11, 3050m.

90. *Leptasthenura yanacensis* Tawny Tit-Spinetail.

What struck me was how tame these birds were, they would happily clamber around in a *Polylepis* tree when I was standing only 2 meters away.

- A pair close to La Cumbre, on the western side, 3000m, October 1. The slopes are very steep here, and have a dense vegetation of grasses, Bromeliads, and little *Polylepis* trees. The birds I saw were mostly clambering about in the *Polylepis*, and once in a cluster of Bromeliads.
- Common in the *Polylepis*-clad ravine in which C11 is located, at 2850m-3100m. I saw and heard at least 10 on October 17.
- ◆ I taped various calls and songs.

91. *Synallaxis azarae* Azara's Spinetail.

Heard only, never seen. Although the higher-altitude records almost certainly were birds of this species, some of the lower-altitude records may have been birds of the next species.

- One heard at C4, 2150m, September 27.
- At least 2 heard at C6, 1730m, October 3 and 4.
- Two heard near C7, 1050m, and those regularly heard between C7 and C8, between C8 and C9, and between C9 and the Rio Emborozú, October 6-9, may also have been the next species. Most were heard inside or at the border of forest.
- At least 3 between the Cerro Alto de Minas and the Rio Lorayo, 2300m-2700m, October 17-18.
- ◆ I taped its calls/song.

92. *Synallaxis frontalis* Sooty-fronted Spinetail.

Only seen insufficiently, but heard. However, so far I have not been able to discern this species and the previous one by sound. The following records in scrubby habitats were probably this species. Also see the text under the previous species.

- Two calling loudly in open, scrubby habitat along the Rio Achirales, 1100m, October 5.
- One calling in scrub near Sidras, close to houses in rather open terrain, 900m, October 9.

93. *Poecilurus scutatus* Ochre-cheeked Spinetail.

- Several heard around C7, 1050m, October 6 and 7.
- Rather common between C7 and C8, at C8, on the way to C9, and on the way to the Rio Emborozú, 1000m-1300m, October 7-9.
- ◆ I taped its calls/song.

94. *Cranioleuca pyrrhophia* Stripe-crowned Spinetail.

Common on both the dry and the humid sides of the mountains. I found it in small spiny trees (*Acacia*?) bordering arid fields near Oroza at 2000m, in small trees along a stream in arid terrain at C10 at 2600m, in *Alnus* forest halfway C2 and La Cumbre at 2700m, in humid *Podocarpus* forest at C5 at 2000m, in humid deciduous forest at C6 at 1730m, in humid secondary forest at C7 at 1050m, in humid tall forest at C8 and C9, 1200m and 1050m.

- ◆ I taped its song/calls several times. Normally it produced the short song described in Fjeldså and Krabbe (Ref 3) with short intervals, and sometimes the long descending trill described in the same book.

95. *Asthenes dorbignyi* Creamy-breasted Canastero.

A very common bird on the western side of the mountains, in all kinds of arid habitat. On the eastern side I only noticed a few between La Cumbre and C3.

- ◆ I taped two songs:
 - The first one is described in Fjeldså and Krabbe (Ref 3). It consists of a short series of emphatic introductory notes, followed by a long descending trill. It is usually given singly, so I taped it usually in the background of recordings of other birds. It seems to be made year-round.
 - The second one is possibly linked to the breeding season. The song consists of a short trill, increasing in speed in the beginning and slowing down at the end. It is produced in long series, with short intervals. When singing, the bird was always perched high up in a bush or small tree, well hidden among the leaves. It was not easily disturbed, when really pressed it would move to another bush or tree, where it continued singing.

96. *Asthenes (pudibunda) heterura* Maquis Canastero.

One seen (and sound recorded) several times, clambering about in scrub, at C10 at 2600m, on October 14&15&16.

♦ I taped its calls. Previously I observed this species in Cochabamba and Chuquisaca, though only a few times. I never heard this species utter a distinctive song, but I did hear it produce series of its pretty trills.

♣ The checklist does not mention this species for Tarija. This record constitutes a southward extension of its known distribution, and leads me to the suspicion that it probably occurs in Argentina as well.

97. *Asthenes (anthoides) punensis* Puno Canastero.

One seen very well, high up on the eastern slope of Cerro Alto de Minas, at 3200m, in drizzling, foggy weather on October 17. It hopped on the ground between bunchgrass, and came very close.

♣ The checklist does not mention this species for Tarija.

98. *Asthenes maculicauda* Scribble-tailed Canastero.

A common bird on the highest slopes of Cerro Alto de Minas, where it clambered about on bunches of bunchgrass. Only observed above the treeline, ie above 3200m on the western slope and above 2800m on the eastern slope. Not very shy, and has a conspicuous call. Observed on October 17 and 18.

♦ I taped its call and its song.

♣ The checklist does not mention this species for Tarija.

99. *Phacellodomus striaticeps* Streak-fronted Thornbird.

Rather common on the western slopes of the mountains, mainly living in arid terrain with scattered scrub. Probably this species was also heard high up on the steep western slopes of Cerro Alto de Minas.

• Two birds between C2 and La Cumbre, at about 2500m, were probably this species, on September 25.

• One taped at C2, 2450m, on October 1.

• At least two were seen at C10, 2600m, on October 14 and 15.

• Several were seen well between C10 and C11, 2600m-2900m, October 16.

• At least 3 pairs of what was probably this species were heard on the steep slopes of the ravine in which C11 was located, at about 3000m

♦ I taped the song and alarm calls. The song is usually started with a series of double short "clicking" notes.

♣ The checklist does not mention this species for Tarija.

100. *Phacellodomus (striaticollis) maculipectus* Spotted-breasted Thornbird.

Quite common on the western side of the mountains, and several were seen or sound recorded on the eastern side down to 2150m. This is a species of dense bushy habitats along streams and similar places. It lives usually close to the ground, several times I even saw it digging around under dry leaves like a mammal, with only the tail sticking out, and making a lot of noise! It is not shy and was easy to see.

• Probably, 1 near C1, in eroded terrain with dense vegetation in the ravines, at 2150m on September 24.

• 1 at C2, September 24,25,28,30 and October 1.

• Common in a *Polylepis*-clad ravine above C2, 2600m-2800m, September 25.

• Two calling at C4, 2150m, September 27.

• A pair was seen at C3, 2600m, September 28.

• Several were seen along a stream at C10, 2600m, October 15.

• A pair was seen at C11, in a *Polylepis*-clad ravine, 3000m, October 16.

♦ The song was sound recorded, including a duetting pair at the nest.

101. *Syndactyla rufosuperciliata* Buff-browed Foliage-Gleaner.

A very common bird east of the mountains, wherever there were trees, but I did not observe it above 2150m.

♦ Often taped.

102. *Batara cinerea* Giant Antshrike.

• A singing bird was taped at C6, 1730m, and another one nearby at 1700m, on October 5.

• One bird singing near C7, 1050m, October 6, and a pair duetting nearby on the next day.

• One singing along the Rio Chillaguatas, 1100m, and another one between Achiral and Cambarí, about 1200m, on October 8.

♦ Sound recorded.

103. *Thamnophilus caerulescens* Variable Antshrike.

A common bird east of the mountains, not observed above 1500m.

♦ Sound recorded.

104. *Thamnophilus ruficapillus* Rufous-capped Antshrike.

On both sides of the mountains.

- 3 were singing in dense, low vegetation near the stream at C2 (2450m), on October 1.
- Probably this species was heard at Achiral (1130m) and twice near Cambarí Chico (1000m), October 8.
- About 5 were singing in low vegetation along the Rio Emborozú, 850m-950m, October 9.
- 4 or 5 were singing in dense vegetation along the stream at C10, 2600m, October 14-16.
- ◆ Sound recorded, songs and calls.

105. *Grallaria albicula* White-throated Antpitta.

- 1 sang at C6, 1730m, October 5.
- 2 sang at C7, 1050m, October 6 and 7.
- 1 sang at C8, 1200m, October 8.
- 2 sang along the Rio Lorayo, 2100m, October 17 and 18.
- ◆ Sound recorded.
- ♣ The checklist does not mention this species for Tarija.

106. *Melanopareia maximiliani* Olive-crowned Crescentchest.

Songs were taped near C10.

- ◆ I taped its song.

107. *Scytalopus (magellanicus) zimmeri//superciliaris?* White-browed Tapaculo.

More common, more vocal, and easier to see than during the Chuquisaca trips (Refs 4 and 6). The song and calls are the same as in Chuquisaca. Seems to prefer rocky habitats, and is most common in high-altitude ravines.

- Three seen in a *Polylepis*-clad ravine above C2 at 2600m-2800m, September 25.
- Common along the Rio Escalera, from C3 to C4 (2600m-2150m), on September 26/27.
- Common in the *Polylepis*-clad ravine of C11, 2900m-3200m, and also on the eastern side of the pass on Cerro Alto de Minas at 2900m-3200m, October 16/17/18.
- ◆ I taped its song and at least 2 different calls.

108. *Phyllomyias sclateri* Sclater's Tyrannulet.

A vocal bird, but rather shy and not easy to see. It was very common in forests on the eastern side of the mountains, at all locations. The highest elevation where I observed it was at C6, 1750m, October 4-5.

- ◆ I taped its characteristic song (or is it a call?) many times.

109. *Phyllomyias uropygialis* Tawny-rumped Tyrannulet.

At least 3 were seen in a mixed flock at C12, 2000m, October 18.

110. *Camptostoma obsoletum* Southern Beardless Tyrannulet.

In open habitats on both sides of the mountains.

- 1 or 2 at C1, 2150m, September 24.
- 1 between the main road and Oroza, 2100m, September 30.
- 2 near C7 and Pampa Grande, October 6-7.
- 4 along the Rio Emborozú, 850m-950m, October 9.
- ◆ I taped the song.

111. *Elaenia albiceps* White-crested Elaenia.

Common on the eastern side of the mountains, at higher elevations.

- 1 at C4, 2150m, September 27.
- Rather common at C5, 2000m, October 2.
- Common at C6, 1730m, and for some distance along the descending trail, down to about 1600m, October 3 to 5.
- Common at C12, 2000m, October 18.
- ◆ Songs and calls were taped.

112. *Elaenia parvirostris* Small-billed Elaenia.

A common bird in disturbed, scrubby habitats on the eastern side of the mountains.

- Common along the Rio Achirales between C6 and C7, 1300m-1050m, October 5.
- Very common at C7, all singing continuously just before dawn, 1050m, October 6-7.
- At least 2 were singing at C9, 1060m, October 9.
- Several were calling along the Rio Emborozú, 850m-1000m, October 9.
- ◆ I made excellent recordings of the song; I also taped some calls.

113. *Elaenia strepera* Slaty Elaenia.

- 2 were singing between Achiral and Cambarí Chico, about 1200m, on October 8.
- 1 was singing in low and dense shrubs at C9, 1050m, October 9.
- About 12 were singing between C9 and the pass leading to Emborozú, and about 10 were singing between the pass and the Rio Emborozú. All of the habitat was forest. Most of these birds were singing along the higher part of the trail, close to the pass. They sang all morning, maybe because the weather was sunny after several cool and cloudy days, as Slaty Thrushes *Turdus nigriceps* were singing all morning too. Most birds were found in small "leks": 3 or 4 were singing continuously within a short distance from each other. 1050m-1450m, October 9.
- One bird was singing in shrub along the Rio Emborozú, close to Sidras, at 900m, October 9.
- ◆ I taped its remarkable song, unfortunately I did not record its remarkable buzzing call.

114. *Elaenia obscura* Highland Elaenia.

- Several at C6, 1730m, and for some distance along the descending trail towards C7, October 3 to 5.
- Rather common at C7, 1050m, October 6-7.
- ◆ I taped several different calls.

115. *Mecocerculus leucophrys* White-throated Tyrannulet.

- Very common to abundant in higher-elevation forested habitats on the eastern side of the mountains, but also found on the western side and once at a lower elevation on the eastern side.
- 1 between C1 and C2, about 2400m, September 24.
 - Several in ravine above C2, at 2600m-2800m, September 25.
 - Rather common between C3 and C4, 2600m-2150m, and very common from C4 to where the forest stopped below C6, 2150m-1600m, September 26-October 5.
 - A pair inside tall forest at C8, 1200m, October 7.
 - Several at C11, 3000m, October 16-17.
 - Common east of Cerro Alto de Minas down to C12, 2800m-2000m, October 18.
 - ◆ I taped calls.

116. *Mecocerculus hellmayri* Buff-banded Tyrannulet.

- 1 in a mixed flock between C5 and C6, 1800m, October 3.
- Several at C6, 1730m, October 4-5.
- Twice 1 in mixed flocks at C12, 2000m, October 18.
- ◆ I taped calls.

117. *Serpophaga nigricans* Sooty Tyrannulet.

- 1 along the Rio Chillaguatas, 1100m, October 8.
- 1 along the Rio Cambarí, at C9, 1060m, October 8.
- Twice 1 along the Rio Emborozú, 850m-1000m, October 9.

118. *Serpophaga munda* White-bellied Tyrannulet.

- 2 between the main road and C1, 2000m-2150m, September 23.
- 1 along the Rio Cambarí, 1100m, October 9.

119. *Anairetes flavirostris* Yellow-billed Tit-Tyrant.

- Fairly common west of the mountains.
- Several between the main road and C1, 2000m-2150m, September 23.
 - Common at C1, C2, and in between, 2150m-2450m, September 24.
 - A pair at Oroza, several near the Rio Alizos, and common at C10 and on the way to C11, 2100m-2750m, October 15-18.
 - ◆ I taped calls and songs.

120. *Anairetes parulus* Tufted Tit-Tyrant.

Birds were observed in ravines with *Polyolepis* high up on the western slopes. Birds of probably this species were heard or sound recorded, but not seen, twice on the eastern slopes in humid forested habitats. These last records seem a bit doubtful to me now.

- At least 2 were seen in the *Polyolepis*-clad ravine above C2, at 2600m-2800m, September 24.
- What was probably this species was sound recorded at C4, 2150m, September 27.
- A pair was seen and sound recorded in the *Polyolepis*-clad ravine at C11, 3000m, October 17, and one was heard lower down in this ravine, at 2900m on October 18.
- A bird that probably belonged to this species was heard between Cerro Alto de Minas and the Rio Lorayo, at 2600m, October 18.
 - ◆ The pair at C11 was sound recorded.
 - ♣ The checklist does not mention this species for Tarija.

121. *Phylloscartes ventralis* Mottle-cheeked Tyrannulet.

A common to abundant bird east of the mountains, particularly so in the foothill forests. The highest elevation where I saw it was at C5, 2000m, October 3.

122. *Todirostrum plumbeiceps* Ochre-faced Tody-Flycatcher.

Heard only, never seen.

- Rather common at C7, at C8, and in between, October 6-8, 1050m-1350m.
- At least 5 were heard in shrubby habitats along the Rio Emborozú, 850m-1000m, October 9.
 - ◆ I taped its calls.

123. *Tolmomyias sulphurescens* Yellow-olive Flycatcher.

Twice heard calling at C9, 1060m, October 9.

- ◆ Sound recorded.

124. *Myiophobus fasciatus* Bran-colored Flycatcher.

- Common at C7, 1050m, October 6-7.
- Several times heard along the Rio Emborozú, 850m-1000m, October 9.

125. *Pyrrhomystis cinnamomea* Cinnamon Flycatcher.

- One in a mixed flock between C5 and C6, 1800m, October 3.
- Two at C6, 1730m, October 5. And at least 3 along the first 1 or 2 kilometers while descending from C6, 1700m-1600m, October 5.
- At least 5 in mixed flocks at C12, 2000m, October 18.
 - ◆ Calls were sound recorded.

126. *Contopus fumigatus* Greater Pewee.

- 2 at C5, 2000m, September 27.
- At least 3 were present near a mixed flock, between C5 and C6, 1800m, October 3.
 - ◆ Calls were sound recorded.

127. *Lathotriccus euleri* Euler's Flycatcher.

Locally a common bird in the foothills, and often singing. I often saw it perched on stones in streams or on branches overhanging a stream, usually little streams. I am now surprised that it was not seen at all on our trips in southern Chuquisaca (Refs 4 and 6), where only once I saw a bird of possibly this species near Cañon Verde.

- Common at C6, 1730m, October 3/4/5. Also a few during the first 1 or 2 kilometers on the way down to Pampa Grande.
- 1 at C7, 1050m, October 6.
- 3 at C8, 1200m, October 7.
- At least 20 on the way from C8 to C9 and at C9, heard and seen, October 8.
 - ◆ Taped many times. The song comes in variations: in the first place there is the characteristic 'peeer - peer-whit' (Ref 5, also found on Ref 13). Sometimes the initial 'peeer' is omitted, in which case the final short 'whit' is extended into a quick series: "peer-whitwhitwhit" or sometimes more 'whits'. I heard and taped the shortened song more often than the full one.

128. *Sayornis nigricans* Black Phoebe.

- Twice a bird along the Rio Achirales, 1050m-1300m, October 5.
- Common along the Rio Chillaguatas and the Rio Cambarí, 1000m-1100m, October 8-9.

129. *Pyrocephalus rubinus* Vermilion Flycatcher.

- Several between the main road and Oroza, 2000m-2150m, September 23.

130. (*Ochthoeca oenanthoides* D'Orbigny's Chat-Tyrant).

- 2 birds near Cerro Alto de Minas, on a slope with bunchgrass and scattered *Polylepis* shrub, possibly belonged to this species (but more probably to the next species), 3200m, October 18. I did not pay enough attention to them, as I was rather in a hurry.

131. *Ochthoeca leucophrys* White-browed Chat-Tyrant.

- 2 in the ravine above C2, 2600m-2800m, September 25.
- 2 between La Cumbre and C3, 2700m-2800m, October 1.
- 1 near the Rio Alizos, 2500m, October 14.
- 4 in the ravine at C11, 2900m-3200m, October 16-18.
- 2 high on the eastern slope between C11 and C12 belonged possibly to the previous species.
- ◆ I made recordings of calls and the dawn song.
- ♣ The checklist does not mention this species for Tarija.

132. *Myiotheretes straticollis* Streak-throated Bush-Tyrant.

- At least 5 in clearings between C5 and C6, 1800m-1950m, October 3.
- A pair at C10, 2600m, and a pair at C11, 3000m, October 16.

133. *Agriornis montana* Black-billed Shrike-Tyrant.

- 1 seen on the way to La Cumbre, 2600m, September 25.
- 2 seen near C3, 2550m, September 28.
- 2 or 3 seen close to La Cumbre, on both sides, 3000m, October 1.
- 1 between C10 and C11, 2900m, October 16.

134. *Muscisaxicola maculirostris* Spot-billed Ground-Tyrant.

- 1, probably this species, between the main road and C1, 2100m, September 23.
- Several on a bare, level field halfway C2 and La Cumbre, 2700m, October 1.
- 2, probably this species, east of La Cumbre, 3000m, October 1.
- 1, probably this species, east of the pass on Cerro Alto de Minas, and 1 west of the same pass, both at 3200m, October 17-18.

135. *Muscisaxicola rufivertex* Rufous-naped Ground-Tyrant.

Two birds together on an area with short grass in Achiral, in the middle of an extensive forested area, 1130m, October 8.

136. *Muscisaxicola juninensis/albilora* Puna/White-browed Ground-Tyrant.

- 1, on a bare, level field halfway C2 and La Cumbre, 2700m, October 1.
- ♣ The checklist does record neither of these species for Tarija.

137. *Knipolegus signatus* Plumbeous Tyrant.

Inside forests, east of the mountains. Of the birds for which I noted the sexe (the majority), all were males.

- 2 between C5 and C6, 1950m-1800m, October 3.
- About 4 at C6, 1730m, October 4-5.
- 1 or 2 at C8, 1200m, October 7.
- 1 at C9, 1060m, October 9.
- ◆ I taped the remarkable song.

138. *Knipolegus aterrimus* White-winged Black-Tyrant.

Common in all locations with arid habitats west of the mountains. A large majority of the birds observed were males.

- ◆ I taped the remarkable song.

139. *Hirundinea ferruginea* Cliff Flycatcher.

Most were seen west of the mountains, but 1 was seen on the eastern side.

- 1 at C1, 2150m, September 24.
- 1 near C5, 2000m, September 27.
- 1 between C1 and C2, 2350m, September 28.
- 1 or 2 near the Rio Alizos, about 2500m, October 14-18.
- Several at C10, 2600m, October 15.
- ◆ Calls were taped.

140. *Myiarchus tuberculifer* Dusky-capped Flycatcher.

Fairly common in forests east of the mountains.

- Common at C6, 1730m, October 3-5.
- 1 at C7, 1050m; 1 between C7 and C8, about 1250m; at least 1 at C8, 1200m; and about 5 heard between C8 and C9, 1100-1250m, October 6-8.
- 1 hear at C12, 2000m, October 18.
- ◆ I taped different calls and the song.

141. *Myiarchus tyrannulus* Brown-crested Flycatcher.

- 1 at C7, 1050m, October 7.
- 1 heard along the Rio Emborozú, 950m, October 9.
- ◆ I taped some loud harsh calls, very different from the usual rather melodious 'wip', which I also taped.

142. *Pitangus sulphuratus* Great Kiskadee.

- Several between the main road and C1, 2000m-2150m, September 23. I visited a nest.
- Several at C1, 2150m, and at C2, 2450m; September 24.

143. *Myiodynastes maculatus* Streaked Flycatcher.

Fairly common east of the mountains.

- Several near C6, 1730m, October 4-5.
- At least 10 were spotted in different locations from C7 to Emborozú, 1050m-1300m, October 6-9.
- ◆ The calls and dawn&dusk song were taped.

144. *Legatus leucophaius* Piratic Flycatcher.

Five birds were singing in the wide valley of the Rio Emborozú, at 850m-950m, October 9. Four were only heard, but one was seen while singing.

- ♣ The checklist does not mention this species for Tarija.

145. *Empidonax varius* Variegated Flycatcher.

One was seen close to C7, while flycatching from the highest branch of a tree along the Rio Achirales, at 1050m, October 5.

146. *Tyrannus melancholicus* Tropical Kingbird.

- Twice 1 along the Rio Achirales, 1050m-1300m; at least 3 near C7, 1050m; 2 along the Rio Emborozú, about 900m; October 5-9.

147. *Phytotoma rutila* White-tipped Plantcutter.

- A singing bird was heard near C1, 2150m, September 23 and 28.
- A single male or a single female was seen on different dates at C2, 2450m, September 25-October 1. Probably the other one was breeding.

148. *Progne subis* Purple Martin.

A little flock of 11 birds was perched on dead trees in the middle of the extensive grasslands of Pampa Grande, 1050m, October 7. They belonged to the present species, and not to Southern Martin *Progne modesta*, because of the conspicuous white patches of feathers on the flanks (Refs 3 and 10). 5 or 6 were adult males, but the others were very variable: 2 looked like males with a white belly and a white breast. All all-dark males showed the white patch behind the wing. Also see the text under the next species.

♣ The checklist does not mention this species for Tarija.

149. (*Progne dominicensis* Snowy-bellied Martin).

I am not really convinced that they were really this species, but note that two of the birds in the flock described under the previous species looked like adult males with a white belly and a white breast. At the time I thought that all the birds were Purple or Southern Martins at some plumage stage, because of the obvious adult males. Only later did I find out that the all-dark males were Purple Martins, and that this species does not have a plumage in which it looks like an adult male with a white breast and belly (Ref 10).

♣ The checklist does not mention this species for Tarija, and not even for Bolivia.

150. *Notiochelidon cyanoleuca* Blue-and-white Swallow.

More swallows were seen than the following records indicate, but often I was unable to identify them.

- Several were seen west of the mountains: between the main road and C1, at C2, at C10.
- At least 3 pairs were seen entering nesting holes in the vertical earthen walls on the pass of La Cumbre, at 3050m, October 1.
- None of the following records are certain, all are east of the mountains: a flock of at least 20 between C4 and C5; at least 2 above C5; at least 3 above C7; October 1-7.
 - ◆ I taped flight calls.

151. *Stelgidopteryx ruficollis* Southern Rough-winged Swallow.

See the remark under the previous species.

- At least 15 along the Rio Achirales, 1400m-1050m, October 5-6.
- 2 pairs seemed to be resident in vertical earthen cliffs along the Rio Cambarí, 1050m.
- Several small parties along the Rio Emborozú, 850m-1000m, October 9.

152. *Troglodytes aedon* House Wren.

A very common bird in all locations, in all kinds of habitats, from the highest mountain pass at 3400m to Emborozú at 850m, on all days.

- ◆ I taped songs and calls.

153. *Troglodytes solstitialis* Mountain Wren.

Probably the most abundant bird in high-elevation forests, but a bit less common in foothill forests.

- ◆ I taped songs and calls.

154. *Cinclus schulzi* Rufous-throated Dipper.

A common bird along the Rio Escalera from about 2500m until where the trail leaves the river at C5 at 2000m. I did not follow this river to see how far down Dippers occurred. Also heard on the Rio Achirales at about 1750m, and seen on the Rio Lorayo at 2000m-2100m. These three streams are all fairly wide.

I only heard one Dipper on the Rio Lorayo from where the trail reaches the stream until just before the place where I pitched my tent, a distance of about 1.5km. I think that the reason for that was that the stream was very wild on this stretch, with most boulders being in their position for a rather short time, so that algae and other greenery did not have sufficient time to build up in and along the water.

My impression was that the Dippers lived along the Rio Escalera at maximum density. Dippers were always found when I walked along the river for only a short distance. My rough estimate for the Rio Escalera, down to C5 at 2000m, is about 15 - 25 pairs. On the topographical maps I find about 15 - 20 other rivers of suitable size and in suitable locations between Entreríos and the Argentina border, so that would point to a number of 250-500 pairs in this area. But I would not be surprised if this is quite an underestimate.

I usually noticed them because of their calls. This calling was just as well because they are quite inconspicuous when they are silent, and sometimes hide instead of flying away. They are not shy, and I observed them several times from only a few meters distance until I would get bored. I usually saw them in pairs.

The call is a short, scratchy, 'chek'. One bird produced several times a series of squeaky notes, while perched on a boulder, once when very close to me. Maybe this was scolding. I never heard anything else than the scratchy calls and this squeaking.

- Three pairs seen between C3 and C4, from 2500m to 2150m, September 26. Note that for a large part on this stretch the trail is too far from the river to see or hear any Dippers.
- One bird and a pair seen between C4 and C5, from 2150m to 2000m, September 27. The remark in the previous paragraph applies here too.
- A pair at the river near C5, 2000m, October 2 and 3.
- One heard on the Rio Achirales near C5, 1750m, October 3.
- A pair seen and one bird heard along the Rio Lorayo, at and near C12, 2000m-2100m, October 17 and 18.

◆ I taped the calls. On the tape they are just audible with all the noise from the rushing water, but in reality the call is well audible from a distance.

155. *Catharus dryas* Spotted Nightingale-Thrush.

- 2 or 3 sang at C6, 1730m, October 4-5. One was seen singing, while it moved slowly along the bottom of a small quebrada.
- 1 was singing at C7, 1050m, October 6.
- 1, probably this species, was singing at C8, 1200m, October 7.
- 1, probably this species, was singing near the pass between the Rios Cambarí and Enimiri, 1440m, October 9.
- ◆ The song was taped.

156. *Turdus chiguanco* Chiguanco Thrush.

A common bird west of the mountains. East of the mountains, it was fairly common down to a lowest elevation of 2000m (C5).

- ◆ I taped the song and various calls.

157. *Turdus serranus* Glossy-black Thrush.

- 1 sang at C4, 2150m, September 27.
- 1 sang, and 2 or 3 were seen nearby, at C6, 1730m, October 3-4.
- 1 sang at C12, 2000m, October 17-18.
- ◆ I taped songs.

158. *Turdus nigriceps* Slaty Thrush.

This species was found in two different habitats:

- 3 males were seen in the *Polylepis*-clad ravine above C2, 2600m-2800m, September 25. Maybe these birds were only passing through, because I did not see this species in similar habitat at C11, about 3 weeks later.
- It was a very common bird in the tall forest at C9 and upstream along the Rio Cambarí, also in the not-so-tall forest around the pass, and down along the Rio Enimiri, 1050m-1450m, October 8-9. Birds were singing and calling intensely all day on October 9, probably because it was the first sunny day after a period of cloudy and relatively cold days (Slaty Elaenias sang all day too). Birds singing before dusk on October 8 at C9 did so from the highest, bare branches of tall trees, but birds singing during the following day were usually well hidden.
- ◆ I taped songs and the characteristic (alarm?) call. The call is a loud, scratchy 'tsok', emitted every few seconds. It seems that the bird is always well hidden while emitting this call.

159. *Turdus rufiventris* Rufous-bellied Thrush.

A common to abundant birds east of the mountains, both inside forest and in more open habitats. Inside forest the birds tended to be rather shy, but in open habitats (eg at C7) they behaved like Blackbirds in Europe. Near Samaipata (dpto. Santa Cruz), 1650m, in December '92, in rather open and disturbed habitats, *Turdus amaurochalinus* Creamy-bellied Thrush was conspicuous and easy to see, whereas the present species was much more of a skulker. In and around Tariquia, where *T. amaurochalinus* does not occur, both roles are filled by *T. rufiventris*.

The highest elevation where I found it was at C5, 2000m, October 1-3. It was found in all locations at lower elevation.

- ◆ I taped songs, and various calls. A remarkable call is the 'laughing' call mentioned in (Ref 3), which is often heard.

160. *Turdus albicollis* White-necked Thrush.

- 1 was heard singing while descending along the Rio Enimiri, about 1200m, October 9.

161. *Mimus dorsalis* Brown-backed Mockingbird.

Fairly common west of the mountains, the highest elevation was 2700m.

- ◆ I taped the song.

162. *Cyanocorax cyanomelas* Purplish jay.

A common bird east of the mountains.

- ◆ Calls were taped.

163. *Cyanocorax chrysops* Plush-crested Jay.

A common bird east of the mountains, the highest elevation was 1900m.

164. *Cyclarhis gujanensis* Rufous-browed Peppershrike.

A common bird in the foothills, often heard from Pampa Grande up to Emborozú, 850m-1300m.

- ◆ I taped songs.

165. *Vireo olivaceus* Red-eyed Vireo.

Regularly seen and heard east of the mountains, from the wet, mossy forest with glades at C12, 2000m down to the open, disturbed habitats along the Rio Emborozú, 900m.

- ◆ I taped the song.

166. *Anthus furcatus* Short-billed Pipit.

Not certain. A small party of at least 4 birds was present on a bare, stony slope between C2 and La Cumbre, 2700m, on September 28 and October 1.

Part of the original descriptions: "loud, short, chattering calls, in short, fast series; breast conspicuously streaked, rather broad and short streaks; a bit of buffy on the breast and lower down, but the flanks are white and unstreaked; the throat is white; the back is streaked, broad and rather scaly".

167. *Anthus lutescens* Yellowish Pipit.

- 3 singing birds were present at C7 and on the grasslands of Pampa Grande, 1050m, October 6-7.
- ◆ The song was taped.

168. *Anthus hellmayri* Hellmayr's Pipit.

Not certain. A single pipit was singing on an arid and rocky slope near C10, 2650m, October 18. It sang during display flights. The song consisted of chirping notes with regularly two emphatic 'keedee' notes, with the accent on the second note.

I did not see the bird very well, as I was rather in a hurry, but I made the following description: "...; makes a rather whitish impression; the back is very heavily streaked; the underside is white, with blackish streaking on the flanks; ...".

169. *Anthus bogotensis* Paramo Pipit.

Two (close together, pres. a pair) were seen well on the highest western slopes of Cerro Alto de Minas, 3200m, October 18. They were seen on the slope between the highest reaches of the *Polylepis*-clad ravine and the pass. The slope here is stony with bunchgrass, scattered big *Puyas*, small *Polylepis* scrub, and other plants. One of the birds sang once, the song ended with a long series of high- and equal-pitched notes.

An excerpt from my description: "the underside uniform dull brownish; very weakly and inconspicuously streaked, maybe a little on the breast, and a little more on the sides of the upper breast".

- ♣ The checklist does not mention this species for Tarija.

170. *Zonotrichia capensis* Rufous-collared Sparrow.

Everywhere a very common bird, except inside unbroken forest.

- ◆ I taped calls and songs. Birds on the western side of the mountains sang differently from those on the eastern side.

171. *Phrygilus unicolor* Plumbeous Sierra-Finch.

Only seen on the main mountain ridge. Very common on top of the ridge and on its highest slopes. The lowest elevation was about 2700m.

- ♣ The checklist does not mention this species for Tarija.

172. *Phrygilus plebejus* Ash-breasted Sierra-Finch.

- Fairly common between the main road and C1, 2000m-2150m, September 23.
- Several seen between C1 and C2, 2150m-2450m, September 24.
- A flock of about 10 between C2 and La Cumbre, 2650m, September 28.

173. *Phrygilus alaudinus* Band-tailed Sierra-Finch.

Five birds were seen in 3 locations between Oroza and C11, at 2500m-2700m, October 14-16.

174. *Lophospingus pusillus* Black-crested Finch.

About 7 were seen between the main road and Oroza, 2000m-2100m, September 23.

175. *Idiopsar brachyurus* Short-tailed Finch.

One pair, more probably two pairs, were seen very well from very close, high up on the eastern slope of Cerro Alto de Minas, at 3200m, in drizzling, foggy weather on October 17. The birds were quite tame, maybe because of the weather, and perched quietly on boulders, doing nothing, at times flying about a bit.

- ♣ The checklist does not mention this species for Tarija.

176. *Poospiza boliviana* Bolivian Warbling-Finch.

I am surprised that this bird has never been observed in Argentina (according to Ref 8), and is quite common at only 20km from the border! It is not as common as the next species, though.

- Two near Oroza, 2050m, and one between Oroza and C1, 2100m, September 23.
- Fairly common at: C1, 2150m, between C1 and C2, and at C2, 2450m; September 24-25.
- A party of 3 on October 14, at least 1 on October 15, and 2-3 on October 16 were seen at C10, 2600m.

177. *Poospiza hypochondria* Rufous-sided Warbling-Finch.

Fairly common west of the mountains.

- Common at C1, between C1 and C2, at C2, and for some distance towards La Cumbre, 2150m-2700m, September 24-October 1.
- Fairly common from west of the Rio Alizos up to where the trail enters the ravine leading up to C11, 2500m-2800m, October 14-18.

178. *Poospiza erythrophrys* Rusty-browed Warbling-Finch.

Fairly common at higher elevations, on both sides of the mountains. Usually seen in mixed flocks.

- On the western side, I found it in dense streamside vegetation at C10, 2600m, in Alder forest between C2 and La Cumbre at 2700m, and in *Polylepis*-clad ravines above C2 at 2700m and at C11 at 3100m.
- On the eastern side, it was seen many times from C3 at 2600m down to about 1800m, just before reaching C6.
 - ◆ I taped calls.

179. *Poospiza nigrorufa* Black-and-rufous Warbling-Finch.

- A single bird was seen twice at C2, 2450m, on September 24-25.

180. *Poospiza melanoleuca* Black-capped Warbling-Finch.

- A pair between the main road and Oroza, about 2100m, September 23.
- A party of 2 or 3 was seen just outside Padcaya, 2000m, September 28.

181. *Sicalis flaveola* Saffron Finch.

- Rather common west of the mountains, from the main road up to just above C2, 2550m.
- Several were seen in Pampa Grande, and a party of 3 near the Rio Achirales west of Pampa Grande, 1050m-1200m.

182. *Embernagra platensis* Great Pampa-Finch.

- Rather common between C1 and C2, at C2, and for some distance on the way to La Cumbre, 2150m-2550m, September 24-October 1.
- Several near Oroza, 2100m, October 14.
- At least 1 at C10, 2600m, October 14.
 - ◆ I taped the song.

183. *Volatinia jacarina* Blue-black Grassquit.

- A male was seen along the Rio Emborozú, 950m, October 9.

184. *Catamenia analis* Band-tailed Seedeater.

West of the mountains only.

- 2 were seen between the main road and Oroza, 2100m, September 23.
- Many were seen in mixed flocks with sparrows and other species of finches, from C2 to some distance on the way to La Cumbre, 2450m-2550m, September 25-October 1.
- Single birds were seen twice between Oroza and C11, at 2650m and 2750m, October 14 and 16.

185. *Catamenia inornata* Plain-colored Seedeater.

Fairly common at high elevations, mostly on the western slopes.

- A flock of about 10 was seen in the *Polylepis*-clad ravine above C2, at about 2800m, September 25.
- A small flock was seen halfway C2 and La Cumbre, 2700m, September 25.
- Several were seen near C3, 2600m, September 28 and October 1.
- Several near C10, and some on the way to C11, 2600m-2800m, October 14 and 16.
 - ♣ The checklist does not mention this species for Tarija.

186. *Arremon flavirostris* Saffron-billed Sparrow.

- A single bird and two together were seen at C7, 1050m, October 6.
- 1 was seen at C8, 1200m, October 8.

187. *Atlapetes fulviceps* Fulvous-headed Brush-Finch.

- On the western side: in an area with Alder forest between C2 and La Cumbre, 2700m; in streamside vegetation at C10, 2600m; in a *Polylepis*-clad ravine at C11 at 3100m.
- On the eastern side: very common in all habitats with sufficiently high vegetation, from areas with shrubs below La Cumbre at 2900m, down to C6, 1730m.
 - ◆ I taped various calls.

188. *Atlapetes torquatus* Stripe-headed Brush-Finch.

- 1 in a mixed flock at C5, 2000m, October 3.
- Several in mixed flocks at C6, 1730m, October 3.

189. *Pheucticus aureoventris* Black-backed Grosbeak.

- 1 in a mixed flock at C4, 2150m, September 27.

190. *Saltator aurantiirostris* Golden-billed Saltator.

- West of the mountains: a common bird, from the level and arid fields near the main road at 2000m, up to the *Polylepis*-clad ravine at C11 at 3100m.
- East of the mountains: a fairly common bird in open and level areas along the larger rivers, at 950m-1200m. It was seen or heard along the Rio Achirales, the Rio Chillaguatas, the Rio Cambarí and the Rio Emborozú.
- ◆ I taped songs on both sides of the mountains.

191. *Saltator rufiventris* Rufous-bellied Saltator.

A pair was seen at close quarters in the *Polylepis*-clad ravine in which C11 was located. I had passed by this spot already several times, on the same day and on the previous day, and the ravine is quite narrow, and that shows how inconspicuous these birds can be.

- ♣ The checklist does not mention this species for Tarija.

192. *Cyanocompsa brissonii* Ultramarine Grosbeak.

- A pair was seen, and a singing bird was taped, at C7, 1050m, October 6.
- A male was seen near the Rio Cambarí, 1000m, October 8.
- ◆ I taped a song.

193. *Chlorospingus ophthalmicus* Common Bush-Taner.

- West of the mountains: only once: 1 in a mixed flock in an Alder forest halfway C2 and La Cumbre, at 2700m, September 25.
- East of the mountains: a very common to abundant bird, the core species of most, if not all mixed flocks. In all more or less forested habitats, from C3, 2600m, down to C7, 1050m.
- ◆ I taped songs and calls.

194. *Thlypopsis sordida* Orange-headed Tanager.

- One was seen at C7, 1050m, October 6.
- Two together were seen at C8, 1200m, October 8.

195. *Thlypopsis ruficeps* Rust-and-yellow Tanager.

At least 3 in a mixed flock at C12, 2000m, October 17 and 18.

196. *Thraupis sayaca* Sayaca Tanager.

Common east of the mountains. The highest elevation was 2000m, at C5, where only a single bird was seen singing. It was common in all locations at lower elevations.

- ◆ I taped songs.

197. *Euphonia chlorotica* Purple-throated Euphonia.

Its typical call consisting of three identical notes 'dee-dee-dee' was heard, but I did not see it.

- 1 at C8, 1200m, October 7.
- 1 heard near Achiral, 1150m, October 8.

198. *Diglossa baritula* Slaty Flowerpiercer.

A male was seen between C7 and C8, at about 1300m, October 7.

199. *Parula pitiayumi* Tropical Parula.

Very common in forests at lower elevations on the eastern side of the mountains, with the highest elevation being about 1800m (between C5 and C6).

- ◆ Its song was taped.

200. *Geothlypis aequinoctialis* Masked Yellowthroat.

In shrubby habitats along rivers in the foothills.

- One probably taped at C7, 1050m, October 6-7.
- One seen at Achiral, 1130m, October 8.
- Several seen and possibly taped along the Rio Cambarí, 1000m-1200m, October 8-9.
- ◆ The song was probably taped.

201. *Myioborus brunniceps* Brown-capped Whitestart.

Observed in many different habitats.

- On the western side: a pair in the *Polylepis*-clad ravine above C2, about 2700m; and 2 or 3 singing in streamside vegetation at C10, 2600m.
 - On the eastern side: in various places, from between Cerro Alto de Minas and the Rio Lorayo, about 2500m, down to C7, 1050m.
- ◆ I taped the song.

202. *Basileuterus bivittata* Two-banded Warbler.

Common in the foothill forests, from C7 to the Rio Emborozú, 1050m-1250m.

- ◆ The song was taped.

203. *Basileuterus signatus* Pale-legged Warbler.

- Several in mixed flocks, and several in undergrowth along the nearby stream, at C6, 1730m, October 3-4.
- Common at C12, 2000m, October 17-18.

204. *Psarocolius decumanus* Crested Oropendola.

Fairly common in the foothills, from C7 to the Rio Emborozú, 850m-1250m. A small colony of 5 nests was seen along the Rio Emborozú.

- ◆ The song was taped.

205. *Cacicus chrysopterus* Golden-winged Cacique.

- 2 in a mixed flock at C4, 2150m, September 27.
 - Probably this species: 1 was heard calling at C7, 1050m; and 1 was heard calling at C8, 1200m.
- ◆ Songs and calls were taped.

206. *Molothrus badius* Bay-winged Cowbird.

A common bird in cultivated areas west of the mountains, especially around the fields between the main road and Oroza. It was common at C2, 2450m, and 1 was observed at C10, 2600m.

207. *Molothrus bonariensis* Shiny Cowbird.

- Two were seen at C7, 1050m, October 7.

208. *Carduelis magellanica* Hooded Siskin.

- Common at C2, 2450m, September 24-October 1.
- A party of 8 was seen near the Rio Emborozú, 900m, October 9.
- Common at C10, 2600m, October 14-16.

209. *Carduelis atrata* Black Siskin.

- About 15 were seen at C2, September 24 and 30.
- A bird was singing halfway Cerro Alto de Minas and the Rio Lorayo, at about 2800m, October 18. The song was not a continuous twitter, but consisted of un-siskinlike, loud, single and double notes. The bird was perched on top of a small shrub while singing.
- At least 5, halfway C10 and C11, about 2800m, October 18.

Mammals

Fox sp. I saw 2 foxes in eroded terrain at C1 at 2150m, and another one at C5, in *Podocarpus* forest with glades at 2000m. All three were surprisingly tame, the one at C5 trotted past me at a distance of only 10 meters or so! Description: body and tail silvery gray, with black stripes; tail long and very thick, with a black base and tip; head and legs light rufous, with much white on the head; head has some black areas. The body and tail of the fox on C5 were colored more like the legs.

Agouti or so. I disturbed a dark brown animal with the shape of an Agouti and the size of a rabbit, at C5, in *Podocarpus* forest with glades at 2000m. It rushed away, but I don't think it called.

And I saw some squirrels too.

Snakes

Twice I saw a snake on the western slopes, one at an altitude of 2750m and the other at 3100m. Both belonged to the same species. One was crossing the trail on a very stony slope with scattered *Polylepis* trees, between Honduras and La Cumbre. This animal was very tame, and moved slowly, so I could have a close look at it. The other, bigger one moved quickly into hiding under a stone, at only 2 meters from the stream in the *Polylepis*-filled ravine which leads up to the pass on Cerro Alto de Minas. Description of the first snake: length 40cm (the other was longer); thin, gradually becoming thinner towards the end, the end is very thin; the head is egg-shaped, with a flat egg-shaped shield on top; generally light brown, with an intricate pattern of dark-brown parallelogram-shaped markings and tiny black dots. I found it quite a pretty snake, for a snake.

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