



Immature Orange-breasted Falcon *Falco deiroleucus*
(Ruth Maier)

First records of the Orange-breasted Falcon *Falco deiroleucus* in central Amazonian Brazil, with short behavioural notes

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Oito observações do escasso e de area restrita Falcão-de-peito-vermelho *Falco deiroleucus* no centro Amazonense, Brasil, área em que até então esta espécie era considerada ausente, é descrita em detalhe. O habitat e comportamento da espécie são comparados e contrastados com aqueles do Cauré *F. ruficularis*. Sua similaridade com o Cauré é enfatizada e pontos que ajudam a identificação correta desta enigmática espécie apresentada são indicados. Observadores são aconselhados a examinar cuidadosamente todos os Caurés no caso de que este seja seu muito mais escasso parente.

Introduction

The Orange-breasted Falcon *Falco deiroleucus* is something of an enigma, being one of the world's least known and perhaps rarest falcons⁵, known from approximately 50 museum specimens worldwide. Its close resemblance to the much commoner Bat Falcon *F. ruficularis*, combined with poor plumage descriptions in most field guides, has resulted in many problems in its correct field identification. Geographical variation in races of Bat and Orange-breasted Falcons and field identification are covered in Howell & Whittaker⁷.

The species is described as rare or very rare^{6,12,14,15,16}. Despite this, *F. deiroleucus* is known to have an extensive geographic range of between 10-12 million km², although patchy and very local in occurrence. The reason for its rarity is not fully understood. It is found from south-eastern Mexico, locally through Central America to South America south to Bolivia, east of the Andes in Brazil and northern Argentina, and has been recorded on Trinidad¹⁰.

Cade⁵ states "It may be entirely absent from the central Amazon basin". Published records from the Brazilian Amazon basin are few; Sick¹⁵ reports one in Santarém, and another from the Ilha de Marajó at the mouth of the River Amazon in Pará, east Amazonian Brazil. Recent unpublished sight records from the Amazon basin of singles (B. M. Whitney & J. F. Pacheco pers. comm.) come from the Ilha de Marajó, Pará, and at Alta Floresta, northern Mato Grosso. K.J. Zimmer and I observed an immature in November 1994 at Boa Vista, on the Rio Branco, Roraima.

Records and behavioural notes

Here I report eight records of individual *F. deiroleucus* made during opportunistic observations in central Amazonian Brazil between January 1989 and July 1995, of which 75% were along rivers and 62.5% from the Rio Negro, Amazonas, alone.

The first was an immature during the 1988 Manaus Christmas Bird Count¹. It was found by Mario Cohn-Haft and Rita Mesquita on 18 December in the Manaus industrial district, along a road through *terra firme* forest. The bird was in characteristic immature plumage (see Howell & Whittaker⁷), the white thighs being heavily marked with mostly black chevrons. A few orange feathers were starting to appear on parts of the bird's thighs. The following day it was relocated in the same area and I was able to observe it at close range. The bird was perched at the forest edge, 30 m from the road, on a dead snag about 20 m up (which afforded a good vantage over the surrounding forest) and was very confiding, allowing close approach on foot. After six minutes the bird flew off strongly over the forest canopy giving two call notes, described as "kyow, kyow"⁷, and disappeared.

On 6 June 1990 an adult, which judging by its large size and head shape was probably a female, was perched about 20 m up on a dead snag at the edge of a long thin river island in the Anavilhanas group, c. 60 km along the Rio Negro from Manaus. The bird remained motionless and was presumably hunting from its vantage point. It provided excellent views as we passed close by in a large boat.

Another adult, probably a male, was located on 27 September 1991 on the west bank of the Rio Negro, 10 km south of Nova Airão, which is

situated opposite the Anavilhanas river islands. It was c. 500 m from the bank of the Rio Negro, perched about 30 m up on a bare branch of a dead tree at the edge of a man-made clearing. The higher ground bordering this virgin *terra firme* forest had been cleared and planted with small citrus fruit trees. It was observed for 35 minutes, during which time it flew only once. Its strong wing beats suggested a Peregrine Falcon *F. peregrinus* as the bird made a large circular sweep over the forest, disappearing from view. It returned to the same perch after about five minutes and remained perched motionless, still-hunting, until I left 15 minutes later.

On 17 March 1993 while travelling through the Anavilhanas islands, two separate adults were observed. The first, probably a male, was at 09h45 on the Paran do Apua, 110 km north of Manaus. It was perched on a dead branch in a treetop at 25-30 m and presumed to be still-hunting. Its position on the edge of the long thin island allowed it to overlook the channel (Paran) across to another river island 300 m away. During my observations (8-10 minutes), it moved only to scratch its head with its oversized feet.

Later that day, at 16h30, on the Ilha Terra Preta, c. 125 km north-west of Manaus, I located an adult female. It was perched on a snag in a dead emergent tree at c. 25 m, the highest vantage point on the edge of a river island. The bird was observed drying off after a recent heavy rainstorm for seven minutes. As the boat was leaving I heard the excited calling of a Bat Falcon and a pair appeared above the canopy flying towards the *F. deiroleucus*, which they proceeded to mob. The latter ducked its head and viewed the pair. The Bat Falcons dived at it twice more before disappearing from view. The Orange-breasted Falcon may have been near an active Bat Falcon nest (the preferred nesting sites are hollows in dead emergent trees) or recently arrived in the pair's territory. This was the first time I recorded two separate birds in a day, perhaps suggesting some local movement or migration into the area.

A large female was found on 18 August 1993, again from a boat passing through the Paran de St. Antonio c. 220 km north-west of Manaus and the Anavilhanas islands. Due to poor light and its position (atop a large two-pronged dead tree c. 20 m high and 30 m from the river island edge), I was unable to determine the bird's age. After several minutes the bird left in fast horizontal powerful flight above the canopy. The alarm calls of Grey-rumped Swifts *Chaetura cinereiventris* feeding above the island made me

suspect she had been still-hunting. After 80-100 m flight, she was momentarily lost to sight behind an emergent tree. Almost immediately the bird reappeared banking round the crown of the tree and returned to the original perch, apparently preyless. However, on arrival at the perch, the right foot passed to the bill what was apparently a dragonfly (Odonata). The bird lowered its head and ripped at the presumed dragonfly held between her talons five times, jerking the head after each, before swallowing it. This is apparently the first record of insect prey being taken by the species.

An adult female was at the northern end of the Anavilhanas on 13 July 1995 at the Paran Camanau. Initially observed flying across the Paran, the bird landed in some small branches in the crown of a large tree on the edge of a river island. I was able to approach in a small boat and after about 10 minutes it flew 200 m, before landing in another tree on the edge of the island. This time it landed 1 m below the crown in thin branches covered with fresh green foliage which concealed it for still-hunting. Festive Parrots *Amaona festiva*, Green Oropendolas *Psarocolius viridis* and Yellow-rumped Caciques *Cacicus cela* were arriving at a nearby roost. Presumably it was still-hunting these birds, although no attacks were observed. Parrots have been reported as an important prey item for the species^{5,8}.

An adult male was observed the following day, 20 km along the Rio Branco, an important white water tributary of the Rio Negro in Roraima. The bird was still-hunting from a large dead stump concealed within the crown of a large tree located on the edge of an oxbow connected to the river. On close approach in a small motorboat I observed it head-bobbing nervously, a behaviour much commoner in Bat Falcons. The bird remained on the perch for the 15 minutes until I left.

Orange-breasted Falcon was traditionally considered to occur in humid forests in foothills and mountains with cliffs or rock ledges for breeding^{6,11}. This habitat is unavailable in the lowland rainforest of central Amazonian Brazil and is only marginal around the periphery of the Amazon basin. Its discovery in central Amazonia represents not only a considerable range extension⁵, but also reveals that habitat previously considered inappropriate is utilised by the species.

Five (62%) of the above records were made on boat trips along the black water (high in tannic acid) Rio Negro, the largest tributary of the Amazon at 1,020 km. It flows south-east from the Venezuelan and Colombian borders to join the Amazon beyond Manaus. The Anavilhanas, the

world's second largest river archipelago (containing several hundred long sinuous islands), produced 50% of my records. The islands extend for approximately 130 km, with the first of the group being located c. 40 km upstream of Manaus. Most are only a few hundred metres wide, some less than 100 m but several of the larger islands are up to 40 km long and possess long shallow lakes. The habitat on the islands is *igapó* forest (blackwater flooded forest). Further upstream on some of the larger older islands, which rarely flood, the vegetation is structurally akin to *terra firme* forest.

Habitat

My observations have revealed an apparent preference for forested river edge (75% of records) notwithstanding the fact that this habitat is much more frequently and easily sampled than forest away from rivers. An immature seen by K.J. Zimmer and myself in Roraima was also found in similar habitat. Such a preference has already been documented from Peru and French Guiana^{13,17}. Boyce⁴ reports that they favour hunting along river island forest edges, or by clearings in *terra firme* forest. My two other records were within 500 m and 1 km of the Rio Negro, at the edge of *terra firme* forest by man-made clearings.

Behaviour

Personal observations of Bat and Orange-breasted Falcons demonstrate that they favour still-hunting from high prominent perches which afford vantage points over large areas of undisturbed forest or forest edge. These are typically in the tallest part of a tree and often dead snags, ideal for aerial attacks. All observations of *F. deiroleucus* involved singles, still-hunting from such perches. In contrast Bat Falcons are often in pairs within 500 m of one another and usually in the same tree.

Both species launch from their high lookouts into swift aerial chases above the canopy (P. Jenny in Cade⁵ and pers. obs.). Such chases usually end with the bird returning to the same perch regardless of its success. I have also observed *F. rufigularis* pursuing prey a metre or so above ground along dirt roads through *terra firme* forest, over water and even open pasture with scattered bushes and trees. Another hunting technique of *F. rufigularis*, evident during the evening, is to swoop down from a height, outchasing bats and crepuscular owl-butterflies before catching them in an upward swoop. I have also noted this behaviour around midday for catching large insects such as dragonflies and butterflies particu-

larly over large waterbodies, including rivers. Bats are also an important part of the diet of Orange-breasted Falcon⁹.

Cade⁵ and Jenny⁹ note pigeons, doves, parrots, swifts, martins and bats as the main prey of *F. deiroleucus*, whilst Sick¹⁵ records ground-doves and nothuras (tinamous). *F. rufigularis* principally takes bats and insects (pers. obs.). I have also observed the species take birds such as swifts, swallows, sandpipers and even a Paradise Jacamar *Galbula dea*.

Identification

To most observers the overall shape, size and plumage pattern of the two falcons are almost identical. The subtle plumage differences are poorly documented in the Neotropical field guides. Particular attention should be given to the different racial plumages of *F. rufigularis* over its wide distribution, as well as racial differences in *F. deiroleucus* in Central America and South America⁷.

I carefully studied the much commoner *F. rufigularis*, familiarising myself with its shape, size, plumages, voice and behaviour. This greatly increased my chances of finding and identifying *F. deieroleucus*. Even after working studying *F. deiroleucus* for several years in Guatemala and Ecuador, Jenny and Cade⁸ state that "in the field it was often very difficult to differentiate between this falcon and the similar, but more abundant, *F. rufigularis*". Great care must be taken with its field identification. As both species habitually perch high on exposed tree snags, I strongly recommend that all falcons found under such circumstances be given careful scrutiny. For a recent review of field identification see Howell & Whittaker⁷. I strongly suggest that careful study of *F. rufigularis* would greatly increase the chances of correctly identifying the much rarer *F. deiroleucus*.

Summary

Observations from central Amazônia have demonstrated that a population of *F. deiroleucus* exists in an area where it was previously thought absent⁷. The identification of *F. rufigularis* requires care and observers should be aware of the possibility of encountering *F. deiroleucus* in new areas. Further data are required to establish the habitat requirements of *F. deiroleucus* over its extensive range and whether it performs regional movements.

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