

The roost of *Progne* martins at Paranam, Surinam, including documentation of two species new for the country

Otte Ottema and Foek Chin-Joe

Received 25 September 2009; final revision accepted 5 February 2012
Cotinga 34 (2012): 15–18

La refinera de la Compañía Surinamés del Aluminio, en Paranam, es un sitio de refugio muy importante para martines del género *Progne*. El número total varía desde 3.500 en diciembre hasta 150.000 en agosto. Se desarrollaron ocho censos entre diciembre de 2007 y noviembre de 2009 para registrar las especies presentes, y sus números relativos y fenología. Se identificó cinco especies y siete taxones: Martín Pechigrís *Progne c. chalybea* y *P. c. macroramphus*, Martín Pechipardo *P. t. tapera* y *P. t. fusca*, Martín Sureño *P. elegans*, Martín Purpúreo *P. subis* y Martín Caribeño *P. dominicensis*. Las dos últimas especies citadas se documentaron con fotografías y son nuevas especies para Surinam. *P. dominicensis* estuvo presente todo el año en números que variaron de 70 a 200 durante el periodo reproductivo de la especie, y 1.100–1.700 en el periodo no reproductivo. Se discute además los problemas de identificación provocados especialmente por variaciones dentro de una misma especie.

The senior author's first encounter with the *Progne* roost at Paranam was in 2001. The roost is sited at a bauxite / alumina refinery plant owned by the Suriname Aluminium Company, L.L.C. (Suralco). Faeces dropped by the tens of thousands of roosting martins cause significant problems, therefore Suralco hired OO to find a bird-friendly method of removing them. Using gas-cannons and fireworks it was possible to prevent the birds from roosting in the most critical sites, but it proved impossible to 'evict' them from the plant, forcing Suralco to accept the situation. The most interesting period was May–September when austral migrants were present. All austral migrant species of *Progne* were already known for Surinam, but OO realised that this was the place to search for boreal migrants, which had never been recorded in the country. It seemed probable that Purple Martin *P. subis* should occur, as well as Caribbean Martin *P. dominicensis*, whose non-breeding range is poorly known. Firstly, OO made contact with J. van den Bergh, safety and environmental officer of Suralco. Then FC-J, an employee at the plant, was given responsibility to deal with the problem posed by the martins. On 27 December 2007 we commenced observations. Here we present the results of eight surveys conducted in 2007–09 and several observations by FC-J on other dates.

Methods

Surveys were made on 27 December 2007, 18 January 2008, 1 April 2008, 15 May 2008, 25 July 2008, 12 December 2008, 23 June 2009 and 6 November 2009. FC-J also photographed birds at the plant on 2 July 2007. Survey dates were chosen in order to establish the presence of boreal migrants and to cover a range of dates when each taxon might be present. Between 17h00 and 18h00 we searched for groups of *Progne* gathering in the environs

of the plant, to photograph them in daylight. Post-sunset, we checked roosting sites, firstly the high-voltage electrical wires and the 10 m-high metal structure towers connecting them. The birds perch on the wires and metal structures, as well as in and on open buildings. Using strong spotlights we observed the birds through binoculars, and interesting individuals were digiscoped by FC-J. We identified the different taxa and estimated their numbers, searching the entire plant during each nocturnal survey. In May–August when total numbers exceeded 100,000 individuals, c.50–60% were perched so high that they could not be identified. Numbers of the most abundant taxa were then estimated by extrapolation, the others by counting minimum numbers.

Results

The results of the eight counts are shown in Table 1. Individuals of the various taxa perched in mixed groups, but not randomly. Birds that belonged to the same taxon perched in small groups mixed with other taxa, but *P. tapera fusca* often roosted in large homogenous groups. Some lone birds perched between other taxa but never far from others belonging to the same taxon.

FC-J also photographed birds at the plant on 2 July 2007. Several of these were subsequently identified as *P. subis* (Figs. 1–2) by D. F. Lane, and these photographs represent the first documentation of the species in Surinam, as well as proving that the species is already present in early July (see Conclusions).

On 27 December 2007 we failed to identify *P. dominicensis*, although from photographs taken that night we were subsequently able to confirm this species' presence through observations made on 18 January 2008. These photographs represent the first documentation

Table 1. Presence and numbers of *Progne* taxa during different months at the Paranam plant in Surinam. – = not present; x = present but not counted.

Taxon	18 January 2008	1 April 2008	15 May 2008	23 June 2009	25 July 2008	6 November 2009	12 December 2008	27 December 2007
<i>P. c. chalybea</i>	x	x	x	x	x	450	900	x
<i>P. chalybea macroramphus</i>	–	1,500–2,000	85,000–90,000	x	100,000–140,000	–	–	–
<i>P. t. tapera</i>	1,500	1,200	>20	x	x	420	2,000	x
<i>P. tapera fusca</i>	–	x	10,000–15,000	x	5,000–15,000	–	–	–
<i>P. subis</i>	>20	>10	–	–	>30	30	>30	>35
<i>P. elegans</i>	–	>7	>10	x	>12	–	–	–
<i>P. dominicensis</i>	x	x	>200	>200	>70	1,700	1,100	x
Totals	3,000–3,500	3,000–3,500	>100,000	?	110,000–150,000	2,600	4,000	3,000–3,500

for the species in Surinam (Fig. 4). Neither *P. subis* nor *P. dominicensis* had previously been recorded in the country^{3,5,8,9}, although Paynter⁶ mentioned a record of the first-named dated 9 October. The wintering grounds of both these species are not well known, but the available evidence, summarised by Paynter⁶ and Turner¹², suggests that *P. subis* principally spends the non-breeding season in eastern Bolivia and parts of Amazonian, southern and south-east Brazil, where several huge roosts are known, e.g. c.60,000 birds at a petroleum refinery near Manaus, Amazonas, in November and December 1984, which roost also contained an additional 40,000 *P. chalybea* and *P. tapera*¹¹.

Identification problems

Within the genus *Progne*, variation among conspecifics is large, with the exception perhaps of Brown-chested Martin *P. tapera*. Many photographed birds could not be identified with certainty, but some of the most interesting images were uploaded to Jan Hein Ribot's website (<http://webserv.nhl.nl/~ribot/english/progne.htm>). Despite our requests for help with identification of these birds, we received no suggestions. The best-known species is undoubtedly Purple Martin, which exhibits both sexual dimorphism and delayed plumage maturation, with four different and identifiable plumages. The adult and subadult plumages of both sexes differ⁴, but from our observations we discovered that subadult male plumages also change rapidly during the year as the birds moult. If this is the case in other *Progne* species, then the challenge of making positive identifications should not be under-estimated. We assumed that these unidentified *Progne* belonged to the same species we otherwise recorded at the plant.

Hybridisation represents an additional problem. The breeding ranges of the southern subspecies of

Grey-breasted Martin *P. chalybea macroramphus* and Southern Martin *P. elegans* overlap in the southern Chaco, where they hybridise^{1,10} (cf. Figs. 6–7).

Some authors have claimed that males of *P. subis* and *P. elegans* cannot be safely separated in the field, although differences in the length and shape of the tail are mentioned^{5,8}. Comparing some of our images, male *P. subis* (Fig. 2) has a visibly shorter tail and much less deep fork than male *P. elegans* (Fig. 3). We consider that with experience and care this feature can be used to safely identify males of the two species.

Discriminating between resident Grey-breasted Martins *P. c. chalybea* and migrant *P. c. macroramphus* is extremely difficult. However some *P. c. macroramphus*, presumably males, have longer tails with deeper forks (Fig. 5).

Between groups of *P. dominicensis* we noticed individuals that were identical to adult males of this species, except that a paler, whitish-grey throat replaces the dark bluish-black throat. These birds might be second-year males. Juveniles have pale throats, but are brown (F. E. Hayes pers. comm.). They perched in the same way, which behaviour differs from that of other taxa. Most *Progne* preferred to perch on wires while roosting, but also used the steel towers. *P. dominicensis* exclusively perched on the horizontal parts of these towers, whereas the other taxa perched with their tail protruding over the edge. *P. dominicensis* perched more horizontally, with the tail held above the surface (Fig. 4).

It is possible that Cuban Martin *P. cryptoleuca* migrates to Surinam and roosts at the plant, but this species' identification will prove extremely difficult. Males cannot be separated from those of *P. subis*^{5,8,9}, while some confusion appears to surround the female's appearance: Garrido & Kirkconnell² stated that in this plumage the bird has a brown throat, breast and sides, and an unstreaked belly,



Figure 1. Two female Purple Martins *Progne subis*, Paramam, Surinam, 2 July 2007 (Foek Chin-Joe)



Figure 2. Male Purple Martin *Progne subis*, Paramam, Surinam, 2 July 2007 (Foek Chin-Joe)



Figure 3. Male Southern Martin *Progne elegans*, Weg naar Zee, north of Paramaribo, 28 July 2007 (Dominiek Plouvier)



Figure 4. Male Caribbean Martin *Progne dominicensis*, Paramam, Surinam, 18 January 2008 (Foek Chin-Joe)



Figure 5. Grey-breasted Martins *Progne chalybea macroramphus*, Weg naar Zee, north of Paramaribo, 28 July 2007 (Dominiek Plouvier)

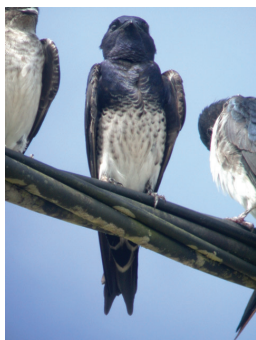


Figure 6. Hybrid Grey-breasted Martin *Progne chalybea macroramphus* and Southern Martin *P. elegans*, French Guiana, August 2004 (Alexandre Renaudier)



Figure 7. Hybrid Grey-breasted Martin *Progne chalybea macroramphus* and Southern Martin *P. elegans* (middle bird), Paramam, Surinam, 19 July 2007 (Foek Chin-Joe)

and is thus very similar to female *P. dominicensis*, just as claimed by Hilty⁵ and Restall *et al.*⁸, whereas Ridgely & Tudor⁹ claimed that it is essentially identical to female *P. chalybea*. Raffaele *et al.*⁷ is the only field guide to provide fuller details of how to separate *P. subis*, *P. cryptoleuca* and *P. dominicensis* in their female plumages.

Conclusions

From November to April c.3,500 *Progne* are present at the plant. Numbers thereafter increase, reaching >150,000 in August. From late August numbers decrease again. Five species, and seven taxa, use the plant to roost: *P. c. chalybea*, *P. chalybea macroramphus*, *P. t. tapera*, *P. tapera fusca*, *P. subis*, *P. elegans* and *P. dominicensis*. The period that each taxon is present at the plant is shown in Table 2.

Table 2. Presence at the Paranam plant of each *Progne* taxon.

<i>P. c. chalybea</i>	year-round
<i>P. c. macroramphus</i>	late March to October
<i>P. t. tapera</i>	year-round
<i>P. t. fusca</i>	late March to October
<i>P. subis</i>	early July to April
<i>P. elegans</i>	late March to October
<i>P. dominicensis</i>	year-round

These results are based on our counts at the plant supplemented by data from the literature^{5,8,9}. Austral migrants—*P. chalybea macroramphus*, *P. tapera fusca* and *P. elegans*—arrive from late March with the last birds departing during October. In contrast, *P. c. chalybea* and *P. t. tapera*, which breed in Surinam³ are present year-round. *P. subis* is present early July–April, which might appear surprising given that it is a boreal migrant, but this is easily explained. Purple Martin has a large breeding range in North America, from Florida and Baja California in the south to Canada in the north¹¹, and is single-brooded⁵. In the southern USA breeding commences as early as February, and return migration starts in July (B. O'Shea pers. comm.). In Belize the first southbound *P. subis* are observed in the last week of June, and by the first week of July migration is in full swing (H. L. Jones pers. comm.). Birds already present in Surinam in early July presumably breed in the southern USA, while those still present in April must breed in northern North America, where the nesting season does not begin until May or even mid June in Canada¹². On the other hand, Paynter⁶ already suggested that immature Purple Martins might, at least occasionally, oversummer in South America. This possibility remains to be confirmed or refuted. Surprisingly, *P. dominicensis* is present year-round, with 200 during the species' breeding season and up to 1,700 in other months.

Acknowledgements

We thank Suralco for hospitality and cooperation. Further we thank Jan van den Bergh, Rob Clay, Floyd Hayes, Lee Jones, Dan Lane, Kini Roesler and Brian O'Shea for their help in various ways. We also thank our referees, David Wiedenfeld and James Hill, and the editor, Guy Kirwan, for their considerable input.

References

1. Eisenmann, E. & Haverschmidt, F. (1970) Northward migration to Surinam of South American martins (*Progne*). *Condor* 72: 368–369.
2. Garrido, O. H. & Kirkconnell, A. (2000) *Field guide to the birds of Cuba*. Ithaca, NY: Cornell University Press.
3. Haverschmidt, F. & Mees, G. F. (1994) *The birds of Suriname*. Paramaribo: VACO NV.
4. Hill, J. R. (2002) Tattletails: how to tell the sex and age of Purple Martins by their undertail coverts. *Purple Martin Update* 11(4): 16–17.
5. Hilty, S. L. (2003) *Birds of Venezuela*. Princeton, NJ: Princeton University Press.
6. Paynter, R. A. (1995) *Nearctic passerine migrants in South America*. Cambridge, MA: Nuttall Ornithological Club.
7. Raffaele, H., Wiley, J., Garrido, O., Keith, A. & Raffaele, J. (1998) *Birds of the West Indies*. London, UK: Christopher Helm.
8. Restall, R., Rodner, C. & Lentino, M. (2006) *Birds of northern South America*. London, UK: Christopher Helm.
9. Ridgely, R. S. & Tudor, G. (1989) *The birds of South America*, 1. Oxford: Oxford University Press.
10. Short, L. L. (1975) A zoogeographic analysis of the South American Chaco avifauna. *Bull. Amer. Mus. Nat. Hist.* 154: 165–352.
11. Sick, H. (1997) *Ornitologia brasileira*. Rio de Janeiro: Ed. Nova Fronteira.
12. Turner, A. K. (2004) Family Hirundinidae (swallows and martins). In: del Hoyo, J., Elliott, A. & Christie, D. A. (eds.) *Handbook of the birds of the world*, 9. Barcelona: Lynx Edicions.

Otte Ottema

Louis Goveiastraat 3, Blauwgrond, Paramaribo, Surinam. E-mail: otteottema@yahoo.com.

Foek Chin-Joe

E-mail: foek.chinjoe@gmail.com.