

type-locality of *E. mirabilis* has been confused: an AMNH specimen is labeled “Charguayaco—8 miles [12.5 km] north of Cerro Munchique” (Pual Sweet *in litt.*), while Collar *et al.*¹ remarks the same specimen was labeled “Charguayaco—eight miles south of Cerro Munchique”. Elsewhere, the specimen is said to have been taken at Charguayaco, c.12.5 km north of Cerro Munchique^{3,5} at c.02°40'N 76°57'W⁶. The confusion is highlighted by the statement “12.5 km south or north of Cerro Munchique”⁴, yet both locations are either incorrect or misleading. Cerro Munchique is located in the south side of the Park known as “Sector 20 de Julio” (near Reserva Natural Tambito), while Cerro Charguayaco is located 7 km to the north-east and known as “Sector La Romelia”; both are within PNN Munchique.

On 1 April 1987, Mark Pearman reported the observation of one male and two females at “Planchón” (untraced locality), at 2,200 m on the road above La Gallera¹. Alvaro Negret, who had spent over a decade conducting ornithological fieldwork in the region, reported a male at the same location, in September 1990¹, but subsequent discussion revealed his own doubts concerning the accuracy of the observation. PNN Munchique contains c.35 hummingbird species, including several common species in the range of *E. mirabilis* that are easily confused in the field with either sex of that species, e.g. female Booted Racket-tail *Ocreatus underwoodii*, Greenish Puffleg *Haplophaedia aureliae*, Tyrian Metaltail *Metallura tyrianthina* and Tourmaline Sunangel *Heliangelus exortis*. The principal field mark of both sexes of *E. mirabilis* was considered to be the “enormously enlarged white leg puffs”⁵. In fact, while its leg puffs are somewhat larger than those of *H. aureliae*, they are not as conspicuous in the field as previously thought. In addition, the female’s leg puffs are considerably smaller than those of the male and reminiscent of *H. aureliae*. In these respects, Emerald-bellied Puffleg *E. alinea* has the most prominent and noticeable leg puffs.

From 1994–1998, 20 trips were undertaken in Sector La Romelia to study and provide unequivocal confirmation of *E. mirabilis* with photographic evidence. Fortunately, LAMH was able to pinpoint the type-location directly with Kjell von Sneidern, who guided Dunning in 1967, to the area and caught the birds for him. This place is known as “El Planchón” (untraced in Collar *et al.*¹), and is 49 km from the town of El Tambo (02°27'N 76°47'W). Two overgrown concrete slabs beside the road were once the site of a market place and house, where campesinos brought their local crops to market. Mist-nets were positioned on the banks of road-cuttings close to the concrete slabs near some red bromeliads with small white flowers according to von Sneidern (pers. comm.).

Discovery and ecology

After several years of searching, the species was finally rediscovered in November 1997, when a female *E. mirabilis* was observed and photographed feeding on *Clusia* sp. (Guttiferae). Regular observations during a noteworthy bloom of several bromeliad species in December–January at km 44 were unsuccessful in locating the species. In February a female was observed on a *Macleania* sp. (Ericaceae) and in March another female was photographed on a *Bomarea* sp. (Amaryllidaceae).

In late July 1998, after three days of observation at several *Cavendishia* sp. (Ericaceae) bushes a male *E. mirabilis* approached LAMH to within 1 m, allowing him to observe its magnificent iridescent green crown and indigo and coppery red underparts, and displayed aggressively in his presence. The male made eight visits to the flowering bush from 11h30–12h30, often perching in close proximity to LAMH. During this visit, three different females were observed throughout the day feeding at various times at the same *Cavendishia* sp. bushes and also on a common Melastomataceae (*Miconia* sp.) with small yellowish inflorescence which Mark Pearman had also recorded the species probably feeding on¹. The birds fed mostly in flight, occasionally clinging to florescences and perched—resting for a couple of minutes to clean their bill before flying into the forest. The same bushes were also visited by other hummingbird species (*Heliangelus exortis* and male *Boissonneaua flavescens*), but the female *E. mirabilis* exhibited no territorial behaviour, while *H. exortis* and *B. flavescens* fought each other. In early August, females were still visiting the bushes but no males were found.

In mid-November 1998, a male was repeatedly observed and photographed in a small forest clearing on a ridge, where it fed on three different plant species: a yellow flowering Rubiaceae (*Psychotria* sp.), a small orange flowering orchid found on bamboo *Chusquea* sp. (Gramineae) and *Bomarea* sp. The male was observed behaving aggressively toward *H. aureliae* in the forest interior. During this visit no females were observed, whilst a large number of female *O. underwoodii* fed on bromeliads.

Distribution and status

From these preliminary observations one can tentatively infer the ecological habits of *E. mirabilis*: the species favours the understorey to mid-levels (c.5 m) of lower montane wet forest, feeding in the forest interior and edges. *E. mirabilis* appears to be uncommon and remains incredibly localised within a 300 m radius of “El Planchón”. Despite considerable fieldwork, conducted throughout the Cerro Charguayaco, within a c.3 km radius of the type-locality at various altitudes, no other sightings have been made. Once the location was clearly established



1



4



2



5



3



6

Figures 1–3. Male Colourful Puffleg *Eriocnemis mirabilis*
(Luis A. Mazariegos H.)

Figures 4–6. Female Colourful Puffleg *Eriocnemis mirabilis*
(Luis A. Mazariegos H.)

in late 1997, observations were recorded on all subsequent trips. The sole location for the species is El Planchón on the western slope of Cerro Charguayaco, Sector La Romelia, PNN Munchique at 02°41'N 76°54'W between 2,220 and 2,240 m, and is 8.1 km from the La Romelia Park headquarters.

Mark Pearman¹ suggested that the species might perform seasonal altitudinal movements, in common with many other hummingbird species. The patchy distribution of both sexes throughout the year (Table 1) may indeed suggest seasonal wandering or the females may be less conspicuous due to breeding activity. However, the species' present status is probably attributable to a lack of fieldwork in the type-locality throughout the year, together with its elusive nature in an area of extreme climatic and topographic conditions.

Table 1. The annual distribution of Colorful Puffleg *E. mirabilis* in PNN Munchique, Colombia.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Male												?
Female												

Very steep terrain and seemingly perpetual rains and heavy mists (5,600 mm mean rainfall p.a.) characterise the Pacific slope highlands of PNN Munchique. The La Gallera road winds across a steep incline, 5 km either side of El Planchón, characterised by steep road-cuttings and numerous landslides. The sole access to forest here is just below El Planchón, along a disused mule track that descends from the road near the km 49 marker. The road's construction in the 1960s created many landslides and an associated mosaic of regenerating vegetation, particularly early successional flowering shrubs, which may have attracted considerable numbers of *E. mirabilis* in the 1960s. Whilst sporadic landslides still occur, the overall roadside landscape has altered and possibly with it the species' abundance.

Conservation

Although PNN Munchique National Park incorporates the only known locality for *E. mirabilis*, there appears little room for conservation optimism as forest clearance persists in the park. As noted above, *E. mirabilis* is extremely localised, having never been recorded away from the immediate vicinity of the type-locality, and appears restricted to perpetually mist-shrouded lower temperate wet forest on steep terrain. This habitat is not unique to the western flank of Cerro Charguayaco, but the La Gallera road is one of the few access routes that penetrates the steep Pacific-facing slopes in the Cordillera Occidental.

While we provide the first tentative ecological information for this species, much essentially remains unknown. However, we wish to draw

attention to the critical need for a year-long study at El Planchón in order to determine the species' status and ecological requirements. Quantifying its habitat requirements is vital in order to identify other possibly suitable areas for future surveys, allowing its distribution and threats to be ascertained. Research could easily be conducted at El Planchón as suitable facilities exist in the Park, just 8 km from the site. Research and conservation initiatives in Munchique should also consider the threatened Tanager-finch *Oreothraupis arremonops*, which can be regularly found foraging on roadside banks and short vegetation near the locality for *E. mirabilis*. Recent searches for the latter species 20 km south of El Planchón in Tambito have been unsuccessful².

El Planchón was an important weekly market site in the 1960s and 1970s, when the rural economy here was based on a kiwi-like fruit called "lulo", but a fungal disease and a lepidopteran pest destroyed the crop over a decade ago. Apart from the monetary aspect, the ecological benefit of this fruit crop is that it grows below the forest canopy, thus deterring forest logging on the park's borders, which continues to suffer high colonisation pressures. Of utmost and direct concern to the future of *E. mirabilis* is the old mule trail below El Planchón which has recently been cleared and widened by a colono and his four sons, who have commenced logging in the El Planchón area, clearly within the park.

LAMH has commenced a project to support the efforts of park guards in establishing the planting of lulo fruits again. This involves workshops with local communities situated in impact zones to involve them in conservation efforts and the utilisation of integrated pest management practices, with the use of natural microorganisms to control pests and disease. Several colonos dedicated to the exploitation of timber have shown their willingness to go back to their old practice of planting lulo which is more profitable with less effort for them. Governmental support for such projects is unlikely, as Colombia's current economic problems have caused the new government to slash the Ministry of the Environment (MMA) budget in half. Confidential information from MMA reported the funds invested in projects for national park conservation to be zero for the current presidential term. International and local non-governmental involvement and support is needed to provide local communities in high-impact zones with options in order for them to become involved in conservation efforts.

Access

Those wishing to visit PNN Munchique require permits to visit and stay. Basic accommodation is only available near the northern entrance of the park at La Romelia, although you must provide your own supplies. La Romelia and El Planchón are served by two daily "chiva" buses departing from El Tambo and Popayán. Permits are issued by Unidad

Administrativa Especial del Sistema de Parques Nacionales Naturales (UAESPNN) in Bogotá, Carrera 10 #20–30. Tel: 341-0676 Fax: 243-3004. Permits are available in Cali from Subregional Suroccidente of the Ministerio de Medio Ambiente, Avenida 3GN #37–70. Tel: 654-3719 and from Popayán: Dr. Bedoya, Calle 3 #5–73, Popayán. Tel: Popayán 239-932.

Acknowledgements

We are very grateful to all the staff at PNN Munchique, including Huber Efrén Pino, Raul Sanchez and Isaac Bedoya. Thanks are due to Kjell von Sneidern for his important information. Other people who have provided field assistance are: Alvaro Negret, Hector Fabio Mendoza, Javier Bustos, Ralf Strewe, Juan Carlos Luna and Maria del Mar Olives. We are very grateful to Paul Sweet (AMNH) for information and Thomas Zuechner and Jamie Simmons for their invaluable comments on the manuscript. This article is dedicated to our friend and colleague from Popayán, Alvaro Negret, who died in July 1998 having dedicated many years to studying and protecting the forests of Munchique and elsewhere in the Department of Cauca, and throughout Colombia.

References

1. Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, L. G., Naranjo, L. G., Parker, T. A. & Wege D. C. (1992) *Threatened birds of the Americas: the ICBP/IUCN Red Data Book*. Cambridge, UK: International Council for Bird Preservation.
2. Donegan, T. & Dávalos, L. (in press) Ornithological observations from Reserva Natural Tambito, Cauca, south-west Colombia: a tribute to Alvaro-José Negret. *Cotinga* 12.
3. Dunning, J. S. (1970) *Portraits of tropical birds*. Wynnewood, Pa.: Livingston Publ. Co.
4. Fjeldså, J. & Krabbe, N. (1990) *Birds of the high Andes*. Copenhagen: University of Copenhagen Zoological Museum & Svendborg: Apollo Books.
5. Hilty, S. L. & Brown, W. L. (1986) *A guide to the birds of Colombia*. Princeton: Princeton University Press.
6. Meyer de Schauensee, R. (1967) *Eriocnemis mirabilis*: a new species of hummingbird from Colombia. *Not. Naturae* 402: 1–2.

Luis A. Mazariegos H.

Carrera 5 No. 47-165, Cali, Colombia. E-mail: laverlam@laverlam.com.co.

Paul G. W. Salaman

Edward Grey Institute of Field Ornithology, Dept. of Zoology, University of Oxford, South Parks Road, Oxford, OX1 3PS, UK. E-mail: salaman@proaxis.com.