MARVELLOUS SPATULETAIL *Loddigesia mirabilis* **V**[9]

This uncommon hummingbird is confined to one slope in a single valley of northern Peru. Its small distribution renders it vulnerable, but it is apparently not immediately threatened.

DISTRIBUTION The Marvellous Spatuletail (see Remarks 1) appears to be confined to the right bank of río Utcubamba (an affluent on the right bank of the río Marañón), Bongara and Chachapoyas provinces, Amazonas department, northern Peru. Birds have been recorded from at least seven localities in three general areas, these being (from north to south, with coordinates from Stephens and Traylor 1983):

(*Bongara province*) below an old sawmill c.30 km by road from Pedro Ruiz (= Ingenio, at c.5°56'S 79°59'W) towards Florida (adjacent to Lago Pomacochas, at 5°50'S 77°55'W), where birds were seen at c.2,135 m in December 1974 (Parker 1976) and July 1983 (Gardner 1986), with specimens collected in May 1985, and further sightings in March 1986 (M. Kessler *in litt*. 1988);

(*Chachapoyas area*) Chachapoyas (6°13'S 77°51'W), source of the type-specimen, with another (in BMNH) taken in October 1897, at 2,335 m (Bourcier 1847, Salvin and Hartert 1892, Rothschild 1896, Baron 1897; see Remarks 2); Osmal (untraced, but believed to be near Chachapoyas and Tamiapampa: Vaurie 1972), a source of old sightings (Taczanowski and Stolzmann 1881); Levanto (6°16'S 77°49'W), at 2,590-2,745 m (Baron 1897, Zimmer 1953a, Bond 1954b); Tamiapampa (c.6°20'S 77°52'W), where at 2,680 m, two specimens (in BMNH) were collected in October 1873 and November 1879 (Taczanowski and Stolzmann 1881, Salvin and Hartert 1892; see Remarks 2);

(*Leimebamba area*) north of Leimebamba (c.6°41'S 77°47'W), at 2,200 m, where a male was seen in May 1977 (Boeke 1978, also Baron 1897); and San Pedro (possibly = San Pedro de Leimebamba, both untraced), 4-5 hours south-east of Leimebamba, on the right bank of the río Utcubamba, where birds have been recorded between 2,620 and 2,900 m (Baron 1897, Zimmer 1953a, Ruschi 1964).

The assertion by Greenewalt (1966) that this species occurs in Luya province (mainly situated on the left bank of the Utcubamba) seems based on Ruschi (1965a), who gave a number of thitherto unknown localities, namely: Durasno Pampa, Pomacochas, Chilimbote, Barro Negro, Cordillera Calla-Calla (3,700 m), Montevideo, Maino, Yeso, Luya, Lamud, Santo Tomás, Caclic (1,700 m), Coloco, Colcamar, San Carlos and Puso, all between 5°50' and 7°00'S (see Measures Proposed).

POPULATION Although over 50 specimens have been collected, this hummingbird has been described as "uncommon" (Taczanowski and Stolzmann 1881, Parker *et al*. 1982), albeit with no evidence of any decline during the last 100 years. An average of seven birds were noted daily along 3 km of prime habitat during a five-day survey (Parker 1976). The distance between the northern- and southernmost known localities is c.120 km, and while the width of the zone it inhabits is harder to measure, it probably averages about 10 or 20 km (Ruschi 1965a, NK). An investigation of how much of this c.2,000-3,000 km^2 holds suitable habitat is needed before population estimates can be attempted (see Measures Proposed).

ECOLOGY The Marvellous Spatuletail has been found between 2,100 m and 2,900 m, but at least at one site suitable habitat continues down to 1,830 m (Parker 1976), with Ruschi (1965a) reporting it as low as 1,700 m and as high as 3,700 m (see Distribution). It inhabits forest edge, second-growth and montane scrub, in a general region of open country with fields, pasture and shrubbery and a system of small valleys and gorges supporting more luxuriant vegetation, sometimes even small tree groves, but mainly impenetrable, thorny *Rubus* thickets admixed with a few *Alnus* trees; it is these latter thickets that are most favoured by the bird, especially where they border wooded areas (Taczanowski and Stolzmann 1881, Baron 1897, Ruschi 1964, Parker 1976, Parker *et al*. 1982, M. Kessler *in litt*. 1988).

Birds are usually found alone (Parker 1976), and move constantly throughout the day (Taczanowski and Stolzmann 1881). They move through bushes faster and with greater manoeuvrability than other hummingbirds (Taczanowski and Stolzmann 1881), usually staying hidden within dense, low thickets, and only paying brief foraging visits to flowers (Parker 1976), from which they are easily displaced by other hummingbirds such as Green-tailed Trainbearer *Lesbia nuna*, Green Violetear *Colibri (thalassinus) cyanotus* and Sparkling Violetear *Colibri coruscans* (Taczanowski and Stolzmann 1881, Baron 1897, Ruschi 1965a, Parker 1976). Observations have identified occasional feeding from *Rubus*

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sp., from a tree called “tolo” (unidentified, but probably a myrtacean), and sometimes the violet flowers of a pepper called “aji” (unidentified, and only seen visited by females), but the most favoured food-plant is apparently the red-flowered lily *Alstroemeria* (*Bomaria formosissima*, Herb.): this flower, which blooms from August to late November, is avoided by *Lesbia* (the only feeding attempt seen by that species was immediately disrupted), and the spatuletail was found wherever *Alstroemeria* occurred, sitting atop the flower while extracting nectar (Taczanowski and Stolzmann 1881). Baron's (1897) only reference to food plants is a note that the dominant *Lesbia* makes it difficult for *Loddigesia* to feed from raspberry flowers *Rubus* sp. Parker (1976) mainly saw females, and noted feeding from a shrub with clusters of small, tubular lavender flowers in late December. Boeke (1978) saw consistent feeding by an adult male from the bright red, tubular flowers of the native labiate *Satureja sericea* in late May, and noted that the spatuletail fed from these flowers only, despite the presence of several other blooms used by hummingbirds. Once an adult male was seen drinking from a waterfall in a small stream just before sunset (Taczanowski and Stolzmann 1881).

Adult males are greatly outnumbered by females and immature males, and are also shier (Taczanowski and Stolzmann 1881). In late December at the northernmost known locality females outnumbered immature males five to one, and only two out of some 35 sightings were of adult males (Parker 1976). At Osmal and Tamiapampa, leks of 2-3 and 5-8 immature males respectively displayed in November: adult males were rarely seen at the leks, but females were usually present; and at Tamiapampa the lek was on an open plateau with scattered bushes and no flowers, the area thus serving only for display (Taczanowski and Stolzmann 1881). Different observations (and interpretations) of the display are described by Taczanowski and Stolzmann (1881), Baron (1897) and Greenewalt (1966). Display has been observed in late October (Baron 1897), November (Taczanowski and Stolzmann 1881) and May (M. Kessler *in litt*. 1988): moss for nest-building was gathered by a female in November (Taczanowski and Stolzmann 1881); a bird with greatly enlarged gonads was taken in February (specimen in AMNH); and nine birds with slightly enlarged gonads in December, January and February (specimens in AMNH, ANSP and USNM), suggesting a breeding period during the rainy season from late October to early May.

THREATS Though continuous forests are being cut throughout the Marañón valley, this hummingbird's apparent preference for forest edge and isolated woodlots high on steep slopes may ensure its survival in spite of heavy cultivation in its restricted range (Parker 1976). The only known capture for aviculture is that of six birds in October 1962 (Ruschi 1964, Greenewalt 1966). If the species were to be taken in large numbers, it might become seriously threatened.

MEASURES TAKEN While exportation from Peru of all hummingbirds inhabiting humid tropical forest is prohibited, export permits can be given for species of other habitats, such as Marvellous Spatuletail: however, all exports are controlled (Inskipp 1987), and at present it seems unlikely that permits to export large numbers of this species would be issued (NK) (see also Measures Proposed). In 1987 all hummingbirds became subject to CITES legislation, with most species, including the present one, going on Appendix II (WTMU 1988). There are apparently no protected areas within the range of the species.

MEASURES PROPOSED A survey to determine the size of the total population and to investigate possible migration and other ecological aspects of the species needs to be made. The extent to which degraded habitat can support viable populations also requires assessment, and a protected area may be appropriate once a suitable site can be identified. Survey and conservation initiatives within the upper Marañón valley should be incorporated into a broader investigation of other sympatric threatened species in the region, for which see the equivalent section under Peruvian Pigeon *Columba oenops*. There appears to be no confirmation of the Marvellous Spatuletail occurring at the localities mentioned by Ruschi (1965a), or indeed anywhere in Luya province (see Distribution), and it would be appropriate to investigate these claims.

REMARKS (1) The Marvellous Spatuletail is the only member of its genus. (2) Concerning O. J. Baron's specimens labelled “Chachapoyas” Baron (1897) included under the name Chachapoyas a former

hacienda on a ridge of wooded mountains four hours south-east of Chachapoyas, and stated that this hacienda was once the hunting ground of J. Stolzmann. Stolzmann collected on the farm Tamiapampa, which is situated 12 km south of Chachapoyas, on the edge of the Puma-Urcu forest (given as 4 km south of Chachapoyas by Taczanowski 1884-1886), which connects with the east Andean forested slopes towards the río Huayabamba (Taczanowski 1882), and it seems likely that this is the locality visited by Baron (NK). However, there is a slight possibility that Baron was referring to Osmal, a nearby site (untraced by Stephens and Traylor 1983), where Stolzmann also observed this species (Stolzmann and Taczanowski 1881).