

This hummingbird is known from two localities in northern Peru, where it inhabits subtropical forest-edge shrubbery on very poor soils. At the one locality where it is common, its habitat borders cultivated areas.

DISTRIBUTION The Royal Sunangel is known from 22 specimens taken at two localities in the departments of Cajamarca and San Martín, northern Peru: (*Cajamarca*) above San José de Lourdes (c.5°02'S 78°51'W), at 1,800-2,200 m, east of the río Chinchipe valley in the Cordillera del Condor, where the species was discovered in June 1975 (Fitzpatrick *et al.* 1979, NK); and (*San Martín*) c.15 km on the Balsapuerto trail north-east of Jirillo (c.6°03'S 76°44'W), where two males were collected at 1,450 m in October and November 1983 (Davis 1986). It presumably occurs in part of the intervening region, i.e. in the foothills immediately south of the río Marañón, and possibly also north along the Peru–Ecuador border in Cordillera del Condor (Fitzpatrick *et al.* 1979), although its forest-edge habitat may occur only in the southern end of the mountains.

POPULATION In San Martín only two or three birds were recorded (two collected) during almost a month's survey in October and November 1983 (Davis 1986), while the species was common above San José de Lourdes during June 1975 and July 1976 (Fitzpatrick *et al.* 1979, Parker *et al.* 1982, NK).

ECOLOGY Unless otherwise stated, everything in this section is derived from Fitzpatrick *et al.* (1979). Records of this extremely localized hummingbird come from 1,450 m in San Martín, and between 1,800 and 2,200 m in Cajamarca (see Distribution). The southern extremity of Cordillera del Condor reaches an elevation of about 2,850 m, where it is capped by a dense but stunted cloud-forest growing on a leached, desiccation-prone sandstone substrate, subjected to daily rain almost throughout the year. To the south, this forest gives way abruptly to a mosaic of dense, bushy hillsides, grazed and frequently burnt grassland, and blackwater bogs in the shallow valleys between hills. The Royal Sunangel appears to be most numerous on the brushy slopes bordering the forest edge and along steep ravine banks, where the vegetation is characterized by abundant melastomes (at least three common species) and an undergrowth containing ericaceans and large stands of bracken fern: the brush is extremely dense, up to 1-2 m in height, and reaches heights of 4-5 m along ravines and near the forest border. The hummingbird has occasionally been sighted (and was once netted) inside the forest in areas where sparse canopy permitted a proliferation of understorey plants: the open bogs and burnt pastures to the south, and the forest at 2,450 m to the north, appear not to be frequented by the species. In San Martín, the bird was similarly recorded in mossy, stunted forest (with a canopy height of c.4 m), along the top of a short ridge rising abruptly from the surrounding upper tropical forest (Davis 1986).

In June and July both male and female showed a distinct preference for nectar from the flowers of the melastome *Brachyotum quinquenerve*, and nearly all flower visits were to that species, despite the presence of several other flowering plants, including two other species of melastome. *B. quinquenerve*, a low shrub, has abundant hanging flowers arranged serially along multiple stems, and the Royal Sunangel has to hover directly below and point its bill straight upward to take the nectar, or (as was the case in c.25% of flower visits recorded) by perching on the stem below the flower: nectar was invariably taken through the open end of the corolla. The birds also frequently foraged for small insects by sallying outward or upward several metres from an exposed perch to snatch aerial prey, and usually returned to the same perch. Birds were highly territorial, and male-chases were common: the territory sizes of males were estimated to be about 40-50 m in diameter, and all such territories contained good stands of *Brachyotum* in full bloom. Seven specimens taken in July had active gonads, at which time display was observed, and males were far more visible than females (also the case in early September: NK), all indicating that breeding was taking place (at least in late July), thus coinciding with the onset of the (relatively) dry season. Specimens taken in October and November were not in breeding condition (Davis 1986).

THREATS None is known, but the limited distribution of the species plus the close proximity of cultivated land in Cordillera del Condor renders it vulnerable.

MEASURES TAKEN None is known.

MEASURES PROPOSED A study to disclose the distributional status of this species should be undertaken. A protected area with a wide altitudinal range, so as to hold both the present species, other threatened birds such as Spot-winged Parrotlet *Touit stictopecta*, Ash-throated Antwren *Herpsilochmus parkeri* (hopefully), Cinnamon-breasted Tody-tyrant *Hemitriccus cinnamomeipectus* and perhaps the Orange-throated Tanager *Wetmorethraupis sterrhopteron* (see relevant accounts), and near-threatened species like Bar-winged Wood-wren *Henicorhina leucoptera*, should be established in the Cordillera del Condor.

REMARKS The female plumage and lack of leg-puffs clearly place this species in *Heliangelus*, where, however, it appears to have no very close relatives (Fitzpatrick *et al.* 1979).