

Endemic to just one mountain range in southernmost Oaxaca, Mexico, this hummingbird is locally common in its preferred cloud-forest habitat which is, however, unprotected and being rapidly destroyed.

DISTRIBUTION The Oaxaca (or Blue-capped) Hummingbird is endemic to the Sierra Miahuatlán, an isolated mountain range in southernmost Oaxaca, Mexico. It has been found in two areas of the Sierra Miahuatlán, separated by c.60-70 km (see map under Distribution in White-tailed Hummingbird *Eupherusa polioerca*): in the west along the Puerto Escondido road (route 131) where it crosses the sierra; and to the east along the Puerto Angel road (route 175) at its intersection with the río Jalatengo (the species presumably ranges throughout the area between these two roads). Coordinates, distances and altitudes for this account, unless otherwise stated, are taken from Binford (1989).

Along the Puerto Angel road, at río Jalatengo, two female *Eupherusa* were collected in May 1962 (Rowley and Orr 1964) but were attributed to White-tailed Hummingbird (see relevant account); however, as the females of these two species are apparently inseparable (Binford 1989), it seems probable that these specimens pertain to *cyanophrys*. Subsequently, 21 Oaxaca Hummingbirds were seen (four collected) 5 km north of Pluma Hidalgo¹ (15°55'N 96°25'W at 1,525 m) during April and May 1964 (L. C. Binford *in litt.* 1991); a male and a female were taken in February 1965 near río Jalatengo at km 182² (15°58'N 96°27'W at 1,525 m, and apparently very close to the previous locality; specimens in AMNH and WFVZ), with 15 birds seen at La Soledad³ (c.15°53'N 96°25'W at 1,435 m) on one day in April 1988 (S. N. G. Howell *in litt.* 1991) and one seen 11 km south of there⁴ (at 1,100 m) in February 1974 (L. C. Binford *in litt.* 1991).

Along the Puerto Escondido road records come from between San Pedro Juchatengo in the north and San Gabriel Mixtepec, 27 km to the south (72 km by road). Localities along this stretch are as follows (distances given are along a straight line south of San Pedro Juchatengo, or north of San Gabriel Mixtepec): San Pedro Juchatengo⁵, 840 m (16°20'N 97°06'W); km 179⁶, 16 km south (specimen taken at 1,830 m) (16°13'N 97°07'W); km 181 (specimen at 1,770 m); km 182⁷, 17.5 km south (34 km south by road) at 1,830 m (16°12'N 97°07'W); km 183 (specimens at 1,585-1,830 m) and La Cima (km 184) (specimens at 1,585-1,830 m) – both localities at 17.5 km south (16°12'N 97°07'W: see Remarks 1); “Barranca Sin Nombre”⁸, 19 km south (17.5 km on the specimen) or 8 km north (28-29 km north by road on the specimen) at 1,435 m (c.16°11'N 97°07'W); km 193⁹, c.6.5 km north at 1,339 m (c.16°10'N 97°07'W: L. C. Binford *in litt.* 1991); km 195, 6.5 km north at 1,280 m (16°10'N 97°07'W); Jamaica Junction¹⁰ (km 212), 1.5-2.5 km north (6 km north by road) at 730 m (16°07'N 97°07'W); San Gabriel Mixtepec¹¹, 27 km south at 685 m (16°06'N 97°06'W) (specimens in AMNH, DMNH, FMNH, IBUNAM, MVZ, MZFC, WFVZ; also Rowley and Orr 1964, Rowley 1966, Binford 1989). Records also come from Cerro Verde¹², 17.5 km north-north-east of San Gabriel Mixtepec at 16°14'N 97°02'W, at 2,315-2,620 m (specimens in WFVZ); Cerro Verde has also been described as being 30 km east of Santa Rosa¹³ (16°10'N 97°07'W) and 30 km east of Lachao Nuevo – the precise locality of which is unknown but apparently close to Santa Rosa (specimens in AMNH, WFVZ) (Rowley 1966, Binford 1989; see Remarks 2).

POPULATION The Oaxaca Hummingbird is locally a fairly common to common permanent resident (S. N. G. Howell *in litt.* 1987, Binford 1989). Eight specimens (three males, five females) were collected in May 1963 near km 183 (Rowley and Orr 1964); 30 (16 females, 14 males in DMNH) were taken there between 30 November and 13 December 1964, six non-territorial breeding females were found in a 9 ha plot, also at km 183, during a breeding bird survey over 2-12 June 1965 (Webster 1965), and 2-4 birds were seen on four days in May 1964 at km 193 (L. C. Binford *in litt.* 1991). At La Soledad, 15 birds (some of which were singing) were seen in one morning in April 1988 (S. N. G. Howell *in litt.* 1991), and nearby 21 were seen (four collected) in four days (end of April and early May 1964) 5 km north of Pluma Hidalgo (see Distribution). Breeding has been confirmed on four occasions from near La Cima (Rowley 1966), a large percentage of other specimens (not mentioned above) also coming from within a few kilometres of La Cima (km 181-184). This all suggests that the species is indeed locally common at a number of localities along routes 131 and 175, but with the mountains between these two roads (and to the

east and west) remaining unexplored (and supporting suitable habitat) and almost certainly harbouring the species, it remains impossible to assess the overall situation.

ECOLOGY The Oaxaca Hummingbird is a permanent resident, restricted primarily to cloud-forest and the upper reaches of tropical semi-deciduous forest, occasionally wandering (possibly seasonally) to lower elevations on adjacent mountain slopes (Binford 1989, S. N. G. Howell *in litt.* 1989). At km 183, near La Cima on the Puerto Escondido road (whence come the majority of records), the habitat is mostly cloud-forest with a thick underbrush in areas where windfalls have opened up the crown; the canopy is irregular owing to the various sizes and heights of the dominant tree species including *Pinus ayacahuite*, *P. oocarpa*, *Quercus brachystachys*, *Garrya laurifolia*, *Oreopanax peltatum*, *Parathesis calophylla*, *Saurauia oreophila*, *Solanum macrantherum*, and *Symplocos* sp., the commonest undershrub being the bamboo *Chusquea longifolia* (Webster 1965). Records from cloud-forest along this stretch of road come from localities at c.1,300-1,950 m (see Distribution). At río Jalatengo, also within this altitude range, the habitat has been described as tropical deciduous forest with gallery forest along the river and tributaries, with a pine-oak association on the steep hillsides (Rowley 1966). Nearby La Soledad is situated within a narrow belt of cloud-forest and coffee fincas between tropical semi-deciduous and pine-forest (S. N. G. Howell *in litt.* 1991). Higher elevations have been recorded on Cerro Verde where the range is c.2,300-2,600 m, lower altitudes being noted on either slope of the Sierra Miahuatlán, at 685-840 m (see Distribution). The vegetation at Jamaica Junction (730 m) on the Pacific slope has been described as tropical evergreen and tropical deciduous forest, with gallery forest along the streams (Rowley 1966). Although the species has also been noted as favouring forest edge (AOU 1983), this is probably a function of the relative ease of observation in such situations (S. N. G. Howell *in litt.* 1991).

Breeding has been confirmed on four occasions, all documented in Rowley (1966): the first nest, containing two young (one week old), was found on 1 October 1964 near La Cima (km 183 at 1,770 m), and was situated at the head of a very steep wet gulch, c.120 cm from the ground in the centre forks of a small bush; a second, containing two eggs, was found on 10 October 1964 at Cerro Verde, and was also in a small bush c.120 cm from the ground; the third, on the exposed root of a pine c.6 m from the ground on a road-cut bank, was located 4 km north of Lachao Nuevo (at 1,280 m between km 181-183 on the Puerto Escondido road: see Remarks 2) on 5 November 1964, and contained one young about a week old; the fourth, containing two eggs, was found on 3 May 1965, also around km 183, about 2.5 m from the ground in a small tree at the head of a small steep, dry canyon. Six females described as non-territorial breeders were recorded at this last site (km 183) over 2-12 June 1965 (Webster 1965), and 15 birds, some of which were “singing strongly”, were recorded at La Soledad on 19 April 1988 (S. N. G. Howell *in litt.* 1991). A female collected 5 November 1964 near La Cima was found to contain a “soft egg” (Binford 1989); and a male taken 11 June at Jamaica Junction (the only record from this locality) is apparently an immature (Rowley and Orr 1964, Binford 1989, L. C. Binford *in litt.* 1991). This last record is one of the three lower-altitude records, the others being on 2 March at San Pedro Juchatengo (in WFVZ), and 15 March 1987 at San Gabriel Mixtepec (in IBUNAM). The record from 11 km south of La Soledad, like these others, may represent post-breeding altitudinal movements, or just the “occasional wanderings to lower elevations” mentioned by Binford (1989).

Rowley (1966) claimed that the species appears to be solitary, it being rare for more than one individual at a time to be seen in a particular place. However, at La Cima in October 1964, several males were seen about 100 m from a brooding female (Rowley 1966), 30 individuals were collected at km 183 (near La Cima) in December 1964 (in DMNH), six non-territorial breeding females were recorded in a 9 ha plot, also at km 183 in June 1965 (Webster 1965), and 15 birds were seen on one day in April 1988 at La Soledad (S. N. G. Howell *in litt.* 1991), all of which seems to indicate that even if “solitary” the birds are locally or seasonally common (see Population).

THREATS In 1963, the Oaxaca Hummingbird occupied an area of cloud-forest essentially unspoiled by human activity (Rowley and Orr 1964). Only a few years later Rowley (1966) was concerned about the future of this species, the cloud-forest habitat in La Cima/Cerro Verde area being destroyed rapidly by the resident Indians, who were cutting and burning huge areas in preparation for planting corn; it was evident

that since 1963 much damage had already been done. Even at río Jalatengo, the vegetation was being quickly destroyed by fire and cutting (Rowley 1966). The species being apparently restricted to the Sierra Miahuatlán, steady destruction of the cloud-forest habitat remains its main threat (S. N. G. Howell *in litt.* 1989).

MEASURES TAKEN None is known.

MEASURES PROPOSED Immediate protection must be given to the remaining cloud-forest areas along and between the two roads that at present represent the known “centres” of abundance for this species. A survey of suitable habitat between the Puerto Escondido road, Cerro Verde and the Puerto Angel road should be undertaken to determine the bird's actual distribution and the state of its remaining habitat. An ecological study should be carried out in order to determine the nature of its local/seasonal movements. Once this has been done, a conservation strategy for the species, and indeed the cloud-forest of the Sierra Miahuatlán, can be implemented (see White-throated Jay *Cyanolyca mirabilis* account).

REMARKS (1) La Cima, in Binford (1989), is apparently located at km 184, 17.5 km south of San Pedro Juchatengo (or 38 km south, 34 km north by road) but has variously been described on specimens as 36.5 km north of San Gabriel Mixtepec, and 14.5 km south, 16 km south, 12 km south-east and 14.5 km south-west of San Pedro Juchatengo. Km 183, Barranca Sin Nombre, 4 km north of Lachao Nuevo, and a number of other localities mentioned on specimens are all very close to La Cima, at c.16°11'N 97°07'W.

(2) Lachao Nuevo (“San Juan Lachao Pueblo Nuevo” in Binford 1989) is untraced, but is apparently midway between La Cima and San Gabriel Mixtepec (Rowley 1966). Although Webster (1965) described “Lachao” as 3 km north-east of km 183 on the Puerto Escondido road, Binford (1989) suggested that it is possibly synonymous with (or close to) Santa Rosa near km 199, the coordinates (16°14'N 97°09'W) in OG (1956a) seemingly confirming that this is so.