

THE WILSON BULLETIN

A QUARTERLY MAGAZINE OF ORNITHOLOGY

Published by the Wilson Ornithological Society

VOL. 92, No. 1

MARCH 1980

PAGES 1-148

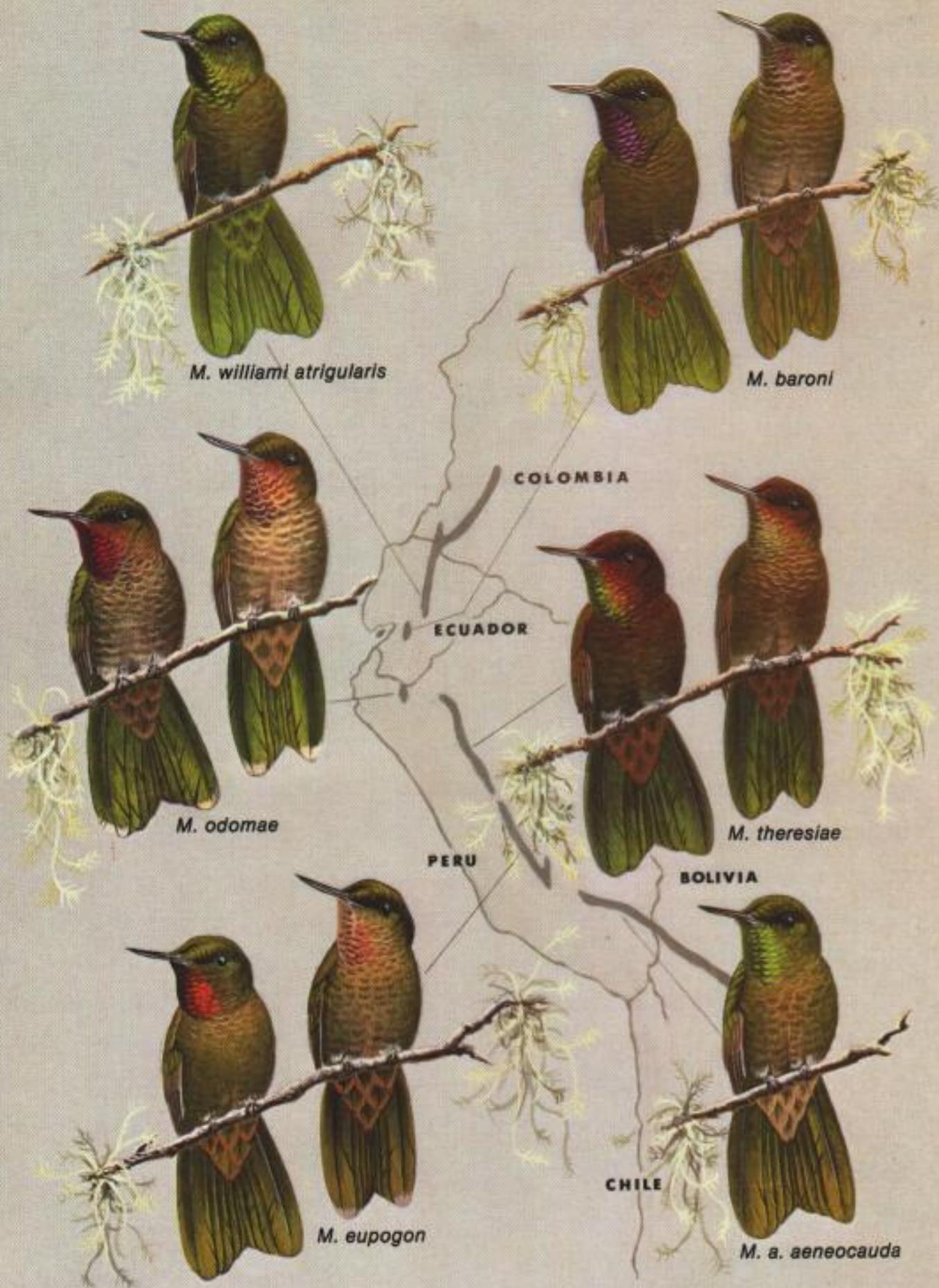
Wilson Bull., 92(1), 1980, pp. 1-7

A NEW SPECIES OF METALTAIL HUMMINGBIRD FROM NORTHERN PERU

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Recent fieldwork in the isolated cordilleras of Peru by personnel of the Louisiana State University Museum of Zoology and other institutions has resulted in the discovery of several new high Andean birds (Blake and Hocking 1974, Weske and Terborgh 1974, Lowery and Tallman 1976, O'Neill and Parker 1976). In October 1977 during a preliminary LSUMZ expedition to the Divisoria de Huancabamba, Department of Piura, Peru, I collected 2 specimens of a previously undescribed metaltail hummingbird. The specimens were stolen in Peru before they could be critically compared with museum material but field sketches of the birds showed sufficient differences from other species of *Metallura* to suggest they represented an undescribed form. A LSUMZ field party returned to the region in 1978 and fortunately obtained 5 skins and 1 complete skeleton of this new form.

In the genus *Metallura*, the related forms *recisa*, *williami*, *primolinus*, *atrigularis*, *baroni*, *theresiaae*, *eupogon*, *aeneocauda* and *malagae* form a superspecies group (Fig. 1) of uncertain relationships (*M. tyrianthina* and *M. phoebe* (Black Metaltail) are locally sympatric with members of this group). Peters (1945) merged *primolinus* and *atrigularis* into *M. williami* and reduced *baroni* to an isolated subspecies of *eupogon*. Consequently Zimmer (1952) combined *malagae* and *aeneocauda*, but considered *baroni* to be specifically distinct and states (Zimmer 1952:10): "The remaining three forms (*baroni*, *theresiaae*, *eupogon*) are more divergent from the general pattern of the series, and it is probably best to give each of them individual specific status until specific relationships can be more positively demonstrated." Wetmore (1970) considered the newly described *recisa* as a subspecies of *primolinus*, which he raised to specific level on the basis



M. williami atrigularis

M. baroni

M. odomae

M. theresiae

M. eupogon

M. a. aeneocauda

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Hummingbirds of the *Metallura aeneocauda* superspecies
(females to right when shown).

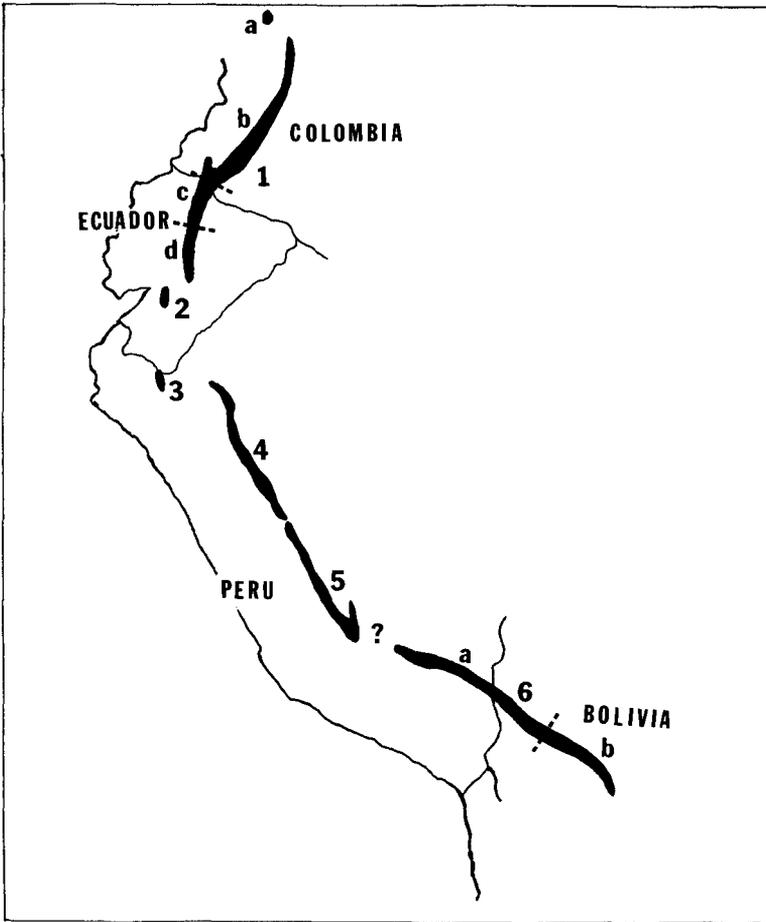


FIG. 1. Distribution of the *aeneocauda* superspecies: (1) *Metallura williami* [including (a) *recisa*, (b) *williami*, (c) *primolinus*, (d) *atrigularis*]; (2) *M. baroni*; (3) *M. odomae*; (4) *M. theresiae*; (5) *M. eupogon*; (6) *M. aeneocauda* [including (a) *Aeneocauda* and (b) *malagae*].

of tail coloration. Since *aeneocauda* (Gould) 1846 has priority, the group can be called the *aeneocauda* superspecies (see Zimmer 1952). The possible relationship of *M. iracunda* (Perija Metaltail) and *M. phoebe* to the *aeneocauda* group should be investigated. The new species clearly belongs to the *aeneocauda* superspecies, and fills what had been an apparent gap in the range of that superspecies (see frontispiece).

TABLE 1
RANGES AND MEANS (MM) OF SELECTED *METALLURA* OF THE *AENEOCAUDA* SUPERSPECIES

	N	Wing (chord)	Tail	Culmen from feathers
<i>baroni</i>	3 ♂♂	56.4–58.0 (57.1)	37.9–38.8 (38.4)	12.7–13.4 (13.2)
	1 ♀	54.8	37.2	13.0
<i>odoniae</i>	3 ♂♂	59.2–60.7 (59.7)	40.2–40.9 (40.5)	13.8–14.4 (14.1)
	4 ♀♀	54.6–57.7 (56.3)	38.4–41.0 (40.2)	13.5–14.3 (13.8)
<i>theresia</i>	4 ♂♂	60.5–65.1 (62.6)	40.7–43.4 (42.3)	12.5–12.8 (12.6)
	3 ♀♀	58.1–60.4 (59.2)	40.3–41.1 (40.8)	12.4–13.3 (12.8)
<i>eupogon</i>	7 ♂♂	62.5–65.4 (64.4)	41.0–43.8 (42.9)	11.6–13.6 (12.8)
	3 ♀♀	59.3–59.4 (59.3)	39.6–40.7 (40.2)	11.9–12.6 (12.3)

Metallura odoniae sp. nov.

NEBLINA METALTAIL

HOLOTYPE.—Louisiana State University Museum of Zoology no. 87547; adult male from Cerro Chinguela, ca. 5 km northeast of Sapalache, elevation approximately 2900 m (9500 ft), 05°07'S, 79°23'W; Department of Piura, Peru; 10 June 1978; netted and prepared by Richard D. Semba; original number 535.

DIAGNOSIS.—A medium-sized, sexually dimorphic *Metallura* of the *aeneocauda* superspecies. Gorget in males reddish purple, not green, orange, violet, or black as in other members of the superspecies. In females, chin, throat and upper breast speckled with Scarlet discs (capitalized color names are from Ridgway 1912) not restricted to central throat as in *theresia* and *eupogon*. Both sexes lighter below than other members of the *aeneocauda* superspecies. Bill of *odoniae* longer than those of nearest allopatric of *baroni*, *theresia* and *eupogon*; not apparently overlapping with respective sexes (Table 1).

DESCRIPTION OF HOLOTYPE.—Crown, hind neck, back, wing coverts and rump iridescent dark green; chin and gorget Amaranth Purple; superorbital and postorbital areas bronzy olive grading to rich coppery bronze on auriculars, lateral throat and sides of neck surrounding gorget; underparts olive-bronze with buffy white subterminal bars giving the lower breast and belly a spotted aspect. Plumes at vent white and fluffy; feathers on lower belly edged terminally with tan; undertail coverts bronzy green, broadly edged with buffy cinnamon. Remiges dark purplish brown; small coverts on carpal region of wing cinnamon-buff. Rectrices seen from above and against the light, dark olive; with the light, shining dark steel-blue. From below rectrices are shining golden green; outermost pair tipped on inner and outer web with pale gray. Soft part colors in life: bill black; iris dark brownish black; feet black.

SPECIMENS EXAMINED.—*M. w. williami* (FMNH) 2♂♂ Purace, Department of Cauca, 1♀ Malvasa, Department of Cauca and (LSUMZ) 1♂ El Crucero, Department of Cauca, Colombia; *M. w. atrigularis* (LSUMZ) 2♂♂ Loma Magdalena, Prov. Morona-Santiago, Ecuador; *M. baroni* (AMNH) 3♂♂, 1♀ Cuenca, Ecuador; *M. odoniae* (LSUMZ) 1♂, 4♀♀ Cerro Chinguela (FMNH) 2♂♂ “above Huancabamba,” Peru; *M. theresia* (LSUMZ) 8♂♂, 6♀♀ Cordillera Colon, 1♂, 1♀ above Balsas, Department of Amazonas, 3♂♂, 2♀♀ Zapa-

tagochoa, Department of Huánuco, Peru; *M. eupogon* (FMNH) 3♂♂, 3♀♀ Huánuco Mts. (AMNH) 2♂♂ Maraynioc (LSUMZ) 3♂♂ NE Comas, Department of Junin; *M. a. aeneocauda* (LSUMZ) 2♂♂, 1♀ near Ollantaytambo, Department of Cuzco, Peru, *M. a. malagae* (LSUMZ) 1♂, 4♀♀ Chapare, and 1♂ Incachaca, Bolivia.

DISTRIBUTION. —So far, known only from the edge of uppermost forest into paramo from ca. 2600 m–3000 m of the Divisoria de Huancabamba, Department of Piura-Cajamarca, Peru.

ETYMOLOGY.—I take pleasure in naming this new form for Babette M. Odom of Orange, Texas, who has generously supported the LSUMZ field program in Peru as part of her long-standing interest in avian natural history. The proposed English name, Neblina Metaltail, refers to the foggy conditions on the wet, windswept shrublands above timberline on Cerro Chinguela where this hummingbird lives.

REMARKS

M. odomae differs from other members of the *aeneocauda* group in various details consistent at the superspecific level. *M. odomae* females are lighter below than females of *M. w. williamsi* (Viridian Metaltail), *M. baroni* (Violet-throated Metaltail), *M. theresiae* (Coppery Metaltail), *M. eupogon* (Fire-throated Metaltail), and *M. a. aeneocauda* and *M. a. malagae* (Scaled Metaltail). Females of all forms have buffy throats covered with scattered iridescent discs. The breast and belly feathers, with buff or buffy white subterminal bars, have terminal green discs which are smallest (thus making the underparts lighter) on *M. odomae*, *M. baroni* and *M. a. aeneocauda* progressing on a graded series to wider, darker green discs on *M. theresiae* and *M. eupogon*. Dorsally female *M. odomae* are nearly indistinguishable from examples of *M. a. aeneocauda*, *M. a. malagae* and *M. w. williamsi*, but lack the olive-bronze highlights of *M. baroni*, the coppery red colors of *M. theresiae* and the bronzy reflections of *M. eupogon*.

Males of *M. odomae* are lighter below than the other allospecies. The subterminal buffy white bars of the underparts give a scaled appearance to *M. odomae* similar to that of *M. a. aeneocauda*. *M. w. williamsi*, *M. w. atrigularis*, *M. baroni*, *M. theresiae* and *M. eupogon* have uniformly dark green underparts with very little suggestion of barring or scaling. Dorsally, *M. odomae* males are intermediate in color between the bronzy-backed *M. eupogon* and the green-backed *M. w. williamsi*, *M. w. atrigularis*, *M. a. aeneocauda* and *M. a. malagae*. Gorget colors in males of the *aeneocauda* superspecies vary from green (*recisa*, *williamsi*, *primolinus*, *theresiae*, *aeneocauda* and *malagae*) to orange (Grenadine Red) in *M. eupogon* (gorget narrower than depicted in frontispiece), reddish purple in *M. odomae*, violet in *M. baroni* and black in *M. w. atrigularis*. Gorget discs in females are not noticeably different in color from gorgets of males except in *M. odomae* (see DIAGNOSIS). Pale tips are present in the outer rectrices of all female *Metallura*, but in males of the *aeneocauda* group,

pale tips are conspicuous only in *M. odomae* (faintly present in *M. a. aeneocauda* of Cuzco). The longer bill of *M. odomae* suggests a niche shift relative to its nearest allopatric relatives (*baroni*, *theresiae* and *eupogon*).

HABITAT AND FIELD OBSERVATIONS

Two male specimens in the Field Museum of Natural History identified as "*Metallura eupogon baroni*" proved to be referable to the new form. The collecting locality recorded on the tags by C. Kalinowski in 1954, "Huancabamba, Department of Piura, Peru, 2600 m," probably refers to the crest of the cordillera northeast of Huancabamba along the Huancabamba-Namballe mule trail (=LSUMZ "Cerro Chinguela").

On Cerro Chinguela, *M. odomae* was found in pajonal similar to treeline habitats found in many other locations in Peru along the wet eastern slope of the Andes. The LSUMZ specimens of the type series were captured in a series of nets placed along lanes cut through tongues of stunted forest extending upward along ravines into the paramo and isolated clumps of elfin forest well separated from the forest below (Fig. 2). The *odomae* collected in 1977 were discovered during a wet snowstorm (ca. 5°C with moderately heavy winds). One of the individuals was foraging on the white flowers of storm flattened, dwarf ericaceous shrubs partly concealed by grass. The bird flew low from shrub to shrub, often alighting on prostrate sheaths of grass to probe protruding flowers. During the snowstorm, which lasted for over an hour (most snow melted on contact with the rain drenched slope), I observed *Pterophanes cyanopterus* (Great Sapphire-wing), *Coeligena lutetiae* (Buff-winged Starfrontlet), *Eriocnemis vestitus* (Glowing Puffleg), *M. tyrianthina* (Tyrian Metaltail) and *Chalcostigma herrani* (Rainbow-bearded Thornbill) foraging in more sheltered ravines and the leeward sides of elfin forest clumps. No call notes, songs or flight displays of *M. odomae* were noted by any expedition member. No *M. odomae* examined had enlarged gonads (6–24 June, 22 October).

TAXONOMIC RELATIONSHIPS

The relationships of Andean hummingbirds are poorly understood, and the existence of questionably isolated taxa hinders the application of the biological species definition (Mayr 1963). Morphological and behavioral characters and geographical isolation, however, permit inferences concerning species limits between allopatric populations whose potential for interbreeding cannot be determined with certainty.

Members of the *aeneocauda* superspecies are restricted to wet treeline-paramo habitats between 2600? and 4000 m elevation from the Andes of Colombia south to Bolivia (Fig. 2). *M. odomae* is separated geographically by unsuitable habitat from the nearest populations of *baroni* (200 km),



FIG. 2. Isolated grove of elfin cloud forest in páramo on Cerro Chinguela near the type locality of *Metallura odomae* (photograph by Theodore A. Parker, III).

theresia (120 km) and *eupogon* (640 km). Recent work on the Pleistocene speciation of Andean birds (e.g., Vuilleumier 1969) has shown similar patchy distributions of other high Andean hummingbirds (*Oreotrochilus*, *Chalcostigma*). Present-day distribution patterns of the *aeneocauda* superspecies may represent relictual interglacial refugia, with much reduced or no gene flow between them. Although the paucity of information on the biology of *Metallura* does not yet permit a thorough systematic revision of the *aeneocauda* superspecies, evidence from central Peru suggests isolating mechanisms have developed between several forms. Specimens of *theresia* and *eupogon*, from the Cordillera Carpish and the Huánuco Mountains, respectively (separated by the narrow arid intermontane valley of the Río Huallaga, Department of Huánuco, Peru), show no evidence of intergradation. Unfortunately, no specimens have been taken in the area between the known ranges of *eupogon* (Cordillera Vilcabamba) and *aeneocauda* (Urubamba Valley) in the Department of Cuzco, Peru.

Until contradictory information is available, I consider the genetically isolated, morphologically differentiated taxa as allospecies (*M. baroni*, *M. odomae*, *M. thesiae*, *M. eupogon*) and follow Zimmer (1952) in merging *recisa*, *williamsi*, *primolinus* and *atrigrularis* (= *M. williamsi*) and *aeneocauda* and *malagae* (= *M. aeneocauda*). I recommend a north to south

linear arrangement of taxa, with *M. odomae* placed between *M. baroni* and *M. theresiae*.

ACKNOWLEDGMENTS

J. W. Eley, T. S. Schulenberg, T. A. Parker, III, R. D. Semba and D. R. Hunter provided moral support and companionship during the 1977 and 1978 expeditions. I appreciate the opinions and discussion freely offered by J. V. Remsen, H. D. Pratt, J. P. O'Neill and G. L. Graham. O'Neill, Pratt, Graham, S. Y. Graves and M. D. Williams commented on several early drafts of this paper. The referees K. C. Parkes and J. W. Fitzpatrick made valuable comments on the manuscript. I thank J. W. Fitzpatrick (Field Museum of Natural History) and J. Farrand, Jr. (American Museum of Natural History) for providing comparative material. I commend John O'Neill for his artistic and scientifically useful frontispiece.

Arturo and Helen Koenig, Manuel and Isabel Plenge and Gustavo del Solar continue their gracious *ayuda* to all LSUMZ personnel during necessary stays in Lima and Chiclayo. I am especially indebted to Manuel Sanchez S. whose help on the 1976, 1977 and 1978 expeditions has been indispensable.

I am grateful to John S. McIlhenny, H. Irving and Laura R. Schweppe, and Babette M. Odom for their support of the LSUMZ fieldwork. Antonio Brack E., Marc Dourojeanni R., Susana Moller H. and Carlos Ponce P. of the Direccion General Forestal y de Fauna of the Ministerio de Agricultura, Lima, Peru, continue their support of the LSUMZ field studies and issued the necessary permits. I also acknowledge the continued collaboration of Aero Peru.

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70893. ACCEPTED 16 OCT. 1979.