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## A NEW SPECIES OF PYGMY-OWL (STRIGIDAE: *GLAUCIDIUM*) FROM THE EASTERN ANDES

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ABSTRACT.—A new species of pygmy-owl (*Glaucidium parkeri* sp. nov.) from the eastern slope of the eastern Andes of Ecuador and Peru is described. This subcanopy dwelling species appears to be uncommon in subtropical forest on outlying ridges of the main Andean chain between 1450 and 1975 m elevation. Plumage and vocalizations indicate that it is allied to the Least Pygmy-Owl (*G. minutissimum*) complex. *Received 8 Nov. 1993, accepted 8 May 1994.*

In 1969 and 1970, John Weske and John Terborgh mist-netted two pygmy-owls along the eastern slope of the Andes in central Peru (Deptos. Ayacucho and Huánuco) that were identified as *Glaucidium minutissimum* based on their small size. Nearly three years ago, during the initial stages of our revision of the *Glaucidium minutissimum* complex (Howell and Robbins 1995), we independently examined these specimens in the American Museum of Natural History (AMNH 820933, 820647) and concluded that they represented an undescribed taxon. Aside from the data on the specimen labels, nothing was known about this taxon until Bret Whitney sent us a tape recording that he made on 21 January 1991 of a probable *G. minutissimum* at 1660 m on the lower slopes of Volcán Sumaco, Prov. Napo, Ecuador. When Robbins listened to Whitney's tape, he realized that birds he had tape recorded between 1700 and 1975 m in the Cordillera de Cutucú (Library of Natural Sounds, Cornell Laboratory of Ornithology, #41504; Robbins et al. 1987), and originally identified as *G. jardinii*, were referable to the same species as in the Whitney recording.

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*Glaucidium parkeri* sp. nov. and the Least Pygmy-Owl (*Glaucidium minutissimum*) complex. 1: *G. palmarum* (Colima Pygmy-Owl); DMNH 23956. 2: *G. sanchezi* (Tamaulipas Pygmy-Owl; female on left, male on right); DMNH 52842, 52843. 3: *G. griseiceps* (Central American Pygmy-Owl; purple circles indicate apparently disjunct populations); LSUMZ 80177. 4: *G. parkeri* sp. nov. (Subtropical Pygmy-Owl; black circles indicate specific localities); ANSP 185160. 5: *G. hardyi* (Amazonian Pygmy-Owl; sonogram courtesy of J. W. Hardy and ARA records); LSUMZ 132017. 6: *G. minutissimum* (Brazilian Pygmy-Owl); FMNH 302147. Painting by Sophie Webb.

Given the elevational range and distribution of the above records we strongly suspected that the Peruvian specimens and the vocalizations of the Ecuadorian birds represented the same undescribed taxon. Confirmation of this was finally obtained when Francisco Sornoza Molina, while conducting avifaunal inventory work for the Academy of Natural Sciences of Philadelphia (ANSP) and the Museo Ecuatoriano de Ciencias Naturales, Quito (MECN), tape recorded and collected a *Glaucidium* from ca 20 m up in the subcanopy of a tree on 22 July 1992 at 1600 m in southeastern Ecuador (Prov. Zamora-Chinchipec; 04°37'S, 78°58'W). Sornoza's specimen (ANSP 185160) clearly is referable to the same species as the Weske and Terborgh specimens, and the vocalizations that he procured are like those of the Whitney and Robbins' recordings. We propose to name this distinctive new pygmy-owl

***Glaucidium parkeri* sp. nov.**  
Subtropical Pygmy-Owl

**HOLOTYPE.**—Academy of Natural Sciences of Philadelphia, No. 185160; adult male (testes 6.0 × 3.5 mm; no bursa), Ecuador: Prov. Zamora-Chinchipec; Panguri, ca 12 km NE San Francisco del Vergel, 04°37'S, 78°58'W, elevation 1600 m; 22 July 1992; collected by F. Sornoza Molina. Recordings of voice deposited at the Library of Natural Sounds, Cornell Laboratory of Ornithology (LNS #63426).

**DIAGNOSIS.**—Its small size, unmarked mantle, song, and ecological requirements clearly place *parkeri* within the *G. minutissimum* complex (includes *G. griseiceps*, *G. hardyi*, *G. minutissimum*, *G. palmarum*, and *G. sanchezi*; Howell and Robbins, 1995). In plumage, *parkeri* is the most distinctive member of the complex: distinguished from all members of the complex by the relatively large and distinct white crown and scapular and upper wing covert spots (see frontispiece). Banding (irregular shaped white spots) on the wings, unlike the buffy bands in all other members of the complex. Dorsum, upper chest, and the ventral streaks are less rufous than in all other taxa of the *minutissimum* complex.

**DESCRIPTION OF HOLOTYPE.**—Capitalized color descriptions and numbers follow Smith (1975, 1981). Crown grayish-brown (closest to Hair Brown 119A but with a distinct grayish tone). Entire pileum and sides of face with conspicuous white spots bordered with dark brown (Sepia 119). Concealed white nuchal collar. Back, scapulars, upper wing coverts, and rump dark brown (closest to Sepia 219) with dull olivaceous-rufous wash, to outer edge of wing coverts and secondaries. Scapulars and upper wing coverts with bold white spots. Primaries and secondaries darker than dorsum (closest to Sepia 119), with conspicuous, irregularly shaped white spots on the outer webs and concealed, larger white spots on the inner webs. Tail blackish (closest to Sepia 119) with five incomplete white bands that appear as irregularly shaped spots. Underparts, from chin to crissum, white. Throat feathers tipped apically with dark brown (closest to Sepia 219). Sides of chest medium brown (closest to Hair Brown 119A) with a few inconspicuous white spots. Broad, ill-defined dull olivaceous rufous-brown (closest to Hair Brown 119A, but with dull olive-rufous wash) streaks on lower chest, flanks, and abdomen. Soft part colors: irides yellow; bill greenish-yellow; toes yellow.

**MEASUREMENTS OF HOLOTYPE.**—Wing (chord) 91.8 mm, tail 48.5 mm, bill (from cere) 11.2 mm, mass 62 g.

**ETYMOLOGY.**—We take great pleasure in naming this new owl in honor of the late Theodore A. Parker, III who for over twenty years accumulated an unparalleled knowledge

of Neotropical birds and graciously shared his vast expertise with all. Robbins, and a number of the people who contributed vocal material and information to this and the subsequent paper, owe special gratitude to Ted for his friendship and encouragement throughout their Neotropical careers.

**SPECIMENS EXAMINED.**—The taxonomy that follows is documented in Howell and Robbins (1995). The following list is of specimens (N = 151) that we examined. In addition to the material listed below, we received morphometric data for three *G. griseiceps* from Costa Rica, and four *G. minutissimum* and one *G. hardyi* from Brazil (see acknowledgments).

*Glaucidium parkeri*: type locality; Peru: Depto. Huánuco; Cerros del Sira, 09°25'S, 74°44'W, elevation 1550 m (AMNH 1 male); Depto. Ayacucho; Huanhuachay, 12°43'S, 73°47'W, elevation 1660 m (AMNH 1 male).

*Glaucidium palmarum*: all from Mexico. Sonora: Mirasol (LSUMZ 11 males, 3 females; WFFVZ 6 males, 2 females; DMNH 1 male); El Aguaji, Quintero (DMNH 1 male); Sierra Tamaru, Guirocoba (LSUMZ 1 female); Sinaloa: San Miguel (MLZ 1 male, 1 female); NE Rosario (MLZ 1 male); Cacalotan (MLZ 1 female); Cosala (MLZ 3 males); Nayarit: San Blas (LSUMZ 1 female; DMNH 1 male, 1 female); Chacala (MLZ 2 males); Las Varas (MLZ 1 male; DMNH 3 males, 1 female); E Compostela (DMNH 1 female); Tepic (DMNH 1 male); S Santiago (MLZ 1 male, 1 female); Santa Teresa (MLZ 1 male); Jalisco: SSW Autlán (WFFVZ 4 males, LSUMZ 4 males, DMNH 1 male, 1 female); S Puerto Vallarta (DMNH 2 males); Suchitlán (DMNH 2 males, 1 female); Colima: Tecolapa (LSUMZ 1 male); Cerro Chino (LSUMZ 5 males; WFFVZ 1 male; Pueblo Juarez (LSUMZ 4 males, WFFVZ 2 males, 1 female; DMNH 3 males, 1 female); Pueblo Nuevo (DMNH 2 males); S Colima (WFFVZ 2 males); Guerrero: El Naranjo (USNM 1 male); Zirandaro (MLZ 1 male, 1 female); Mexcala (MLZ 1 male, 3 females); Oaxaca: Puerto Escondido (LSUMZ 7 males); Morelos: Xicatlacotla (MLZ 2 males); E Cuernavaca (WFFVZ 1 male, DMNH 1 male).

*Glaucidium sanchezi*: all from Mexico. Tamaulipas: NW Gomez Farias, Rancho del Cielo (BMNH 2 males; DMNH 1 male, 4 females); San Luis Potosí: Cerro Coneja (LSUMZ 3 males, 1 female); Cerro San Antonio (LSUMZ 1 male); Xilitla (LSUMZ 1 male).

*Glaucidium griseiceps*: Mexico: Tabasco; S Chontalapa (LSUMZ 1 male); SW Ocuápan (LSUMZ 1 male); Oaxaca: Valle Nacional (LSUMZ 1 male); Piedra Blanca (AMNH 1 male); Chiapas: Palenque (MLZ 1 male); Guatemala: no locality (USNM 2 unsexed; FMNH 1 unsexed); Honduras: Lake Yojoa (CMNH 1 male); Panama: Panama; Peluca (USNM 1 male); Darién; mouth Río Tuquesa (USNM 1 male); Cerro Tacarcuna (LSUMZ 1 female); Colombia: Socarré, Río Sinú (USNM 1 male).

*Glaucidium hardyi*: Peru: Depto. Ucayali; Río Curanja, Balta (LSUMZ 1 female); Depto. Madre de Dios; Río Tambopata, Collpa (FMNH 1 male); Bolivia: Depto. Pando, Cobija (LSUMZ 2 males); Brazil: Río Solimões, Caviana (CMNH 2 males); Rondônia; Cachoeira Nazaré, Río Jiparana (FMNH 1 male).

*Glaucidium minutissimum*: Brazil: "interior state of Bahia", (AMNH syntypes 2 unsexed); São Paulo (FMNH 1 male); no locality, (AMNH 1 male, 1 female, 1 unsexed; ANSP 1 male, 4 unsexed; USNM 1 unsexed; FMNH 1 unsexed).

**VOCALIZATIONS EXAMINED.**—All localities represent a single bird unless otherwise noted in parentheses. Three of the following recordings are from Hardy et al. (1990).

*Glaucidium parkeri*: Ecuador: Prov. Napo, Volcán Sumaco; Prov. Morona-Santiago, W slope Cord. de Cutucú (2) and Cord. del Condor, Coangos; Prov. Zamora-Chinchiipe, Panguri.

*Glaucidium palmarum*: all from Mexico. Sinaloa: NW Villa Union (2); Jalisco: N Barra de Navidad; Colima: Colima-Minatitlan Road; SE Ciudad Colima; Morelos: ESE Cuernavaca.

*Glaucidium sanchezi*: all from Mexico. Tamaulipas: Rancho del Cielo (5); San Luis Potosí: W El Naranjo (4).

*Glaucidium griseiceps*: Mexico: Veracruz, Uxpanapa; Oaxaca, S Valle Nacional; Chiapas, Palenque; Belize: W Gallon Jug (2); Guatemala: Depto. Peten, Tikal; Depto. Isabal, Cerro San Gil; Depto. Retalhuleu; Costa Rica: Braulio Carrillo National Park (2); Prov. Limon, Cahuita National Park; Panama: Prov. San Blas, "Nusagandi"; Darién, Cerro Pirre (3); Colombia: Chocó, Parque Nacional Los Katíos; Ecuador: Prov. Esmeraldas, NW Alto Tambo (2).

*Glaucidium minutissimum*: all from Brazil. São Paulo, Bissucanga; Espírito Santo, Linhares; Bahia, Boa Nova.

*Glaucidium hardyi*: Brazil: Rondônia, Jiparana.

#### REMARKS

*Individual variation.*—The two male Peruvian specimens of *G. parkeri* virtually are indistinguishable, and these two vary only slightly in plumage from the male holotype from southeastern Ecuador. The holotype is slightly darker, with even less of a rufous brown tinge to the dorsum and the streaking on the ventral surface, than the two Peruvian males. In addition to the diagnostic plumage characters, *G. parkeri* may be distinguished from its two geographically closest relatives, the recently described Amazonian Pygmy-Owl (*G. hardyi*) (Vielliard 1989) and the widespread Central and Pacific-slope South American *G. griseiceps* (Howell and Robbins 1995) by morphometrics. Male *G. parkeri*, on average, are heavier than male *G. hardyi* (two-tailed *t*-test,  $P < 0.05$ ; Table 1 in Howell and Robbins 1995). *Parkeri* averages shorter in wings and is heavier than male *G. griseiceps* (two-tailed, *t*-test,  $P < 0.05$ ,  $P < 0.01$ , respectively; table 1 in Howell and Robbins 1995).

*Song.*—The song of *G. parkeri* is typically three notes (range 2–4 notes/song) and is characterized by a consistent increase in the length of the inter-note interval (vs a more-or-less regular pacing in other forms with songs of three or more notes). This is most pronounced between the final two notes and gives the effect of a hesitation before the last note of each song; this is unique among New World *Glaucidium* (Howell and Robbins 1995).

*Distribution.*—In addition to the localities listed above, *G. parkeri* was found by its namesake and Jaqueline Goerck at an Ecuadorian military camp, Coangos, near the northern end of the Cordillera del Condor, Prov. Morona-Santiago, on 20 July 1993 (ca 03°29'S, 78°14'W). A single bird responded to *Glaucidium* imitations by Parker between 08:00 and 08:15 h at 1450 m. It perched on a bare branch of a tall tree over 30 m above the ground.

The elevational ranges of *G. parkeri* and *G. sanchezi* are unique within the *G. minutissimum* complex (Howell and Robbins 1995). With the exception of the northeastern Mexican *G. sanchezi*, all records of *par-*

*keri*, 1450–1975 m (N = 6 localities), are above the upper elevational records of other members of the *G. minutissimum* complex. *Glaucidium palmarum* has been recorded as high as 1500 m in dry, pine-oak woodland of western Mexico (Buchanan 1964), *G. griseiceps* has been recorded in humid evergreen forest up to ca 1300 m in Oaxaca, Mexico (Binford 1989; Howell, pers. obs.), on the Pacific slope of Guatemala (B. Whitney, tape recording), and ca 1000 m at Cerro Pirre, Darién, Panama (Robbins et al. 1985). *G. minutissimum* has been recorded in evergreen forest up to 1000 m in eastern São Paulo, Brazil (D. Stotz, pers. comm.).

The Andean Pygmy-Owl (*G. jardiinii*) replaces *G. parkeri* above ca 2000 m on the eastern slope of the Andes. The lower elevational range of *parkeri* remains to be ascertained, but we do not believe that it is determined through competitive exclusion by congeners. *Glaucidium hardyi* has not been recorded above ca 350 m, and it is unknown from Colombia, Ecuador, and north of the Río Amazonas and west of the Río Ucayali drainage in Peru (König 1991; T. Parker, pers. comm.; LSUMZ, unpubl. data). Moreover, given that *hardyi* and the Ferruginous Pygmy-Owl (*G. brasilianum*) broadly overlap in range and are quite divergent in habitat preferences, we suspect that there would be no exclusion between the distantly related *parkeri* and *brasilianum* if they should meet in the Andean foothills. Because it is restricted to humid subtropical forest, *parkeri* would not contact the recently described *G. peruanum* (König 1991), because the latter species is found only in arid montane forest and deserts of Chile, Peru, and western and southern Ecuador.

All six *G. parkeri* localities are on outlying ridges from the main Andean chain. It is conceivable that *parkeri*, like other taxa that appear to be found only on semi-isolated ridges (e.g., *Heliangelus regalis*, *Hemitriccus cinnamomeipectus*, Fitzpatrick et al. 1979, Fitzpatrick and O'Neill 1979, respectively), may be restricted to such ridges. We predict that *parkeri* will be found at least as far north as southeastern Colombia.

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#### LITERATURE CITED

- BINFORD, L. C. 1989. A distributional survey of the birds of the Mexican state of Oaxaca. Ornith. Monogr. No. 43.
- BUCHANAN, O. M. 1964. The Mexican races of the Least Pygmy-Owl. Condor 66:13–112.
- FITZPATRICK, J. W. AND J. P. O'NEILL. 1979. A new Tody-tyrant from northern Peru. Auk 96:443–447.
- , D. E. WILLARD, AND J. W. TERBORGH. 1979. A new species of hummingbird from Peru. Wilson Bull. 91:177–186.
- HARDY, J. W., B. B. COFFEY, AND G. B. REYNARD. 1990. Voices of the New World owls (Strigiformes: Tytonidae, Strigidae). ARA Records. Gainesville, Florida.
- HOWELL, S. N. G. AND M. B. ROBBINS. 1995. Species limits in the Least Pygmy-Owl (*Glaucidium minutissimum*) complex. Wilson Bull. 107:7–25.
- KÖNIG, C. 1991. Zur taxonomie und ökologie der sperlingskauze (*Glaucidium* spp.) des Andenraumes. Okol. Vogel 13:15–76.
- ROBBINS, M. B., T. A. PARKER, III, AND S. E. ALLEN. 1985. The avifauna of Cerro Pirre, Darién, Eastern Panama. In P. A. Buckley, M. S. Foster, E. S. Morton, R. S. Ridgely, and F. G. Buckley (eds.), Neotropical ornithology. Ornithol. Monogr. No. 36:198–232.
- , R. S. RIDGELY, T. S. SCHULENBERG, AND F. B. GILL. 1987. The avifauna of the Cordillera de Cutucú, Ecuador, with comparisons to other Andean localities. Proc. Acad. Nat. Sci., Philadelphia 139:243–259.
- SMITHE, F. B. 1975. Naturalist's color guide. Amer. Mus. Natl. Hist., New York, New York.
- . 1981. Naturalist's color guide, part III. Amer. Mus. Natl. Hist., New York, New York.
- VIELLIARD, J. 1989. Uma nova espécie de *Glaucidium* (Aves, Strigidae) da Amazônia. Rev. ta. Bras. Zool. 6:685–693.

#### COLOR PLATE

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