

81, and 77% of nests were lost to predation and other causes for Ocellated Antbird (*Phaenostictus mcleannani*), Spotted Antbird (*Hylophylax naevioides*), and Bicolored Antbird (*Gymnophaps leucaspis*), respectively (Willis 1974). Even if experimental figures are off by 10% or more, predation must nonetheless exercise a strong influence on populations of species nesting on or near the ground (i.e., < 0.5 m; some antbirds, tinamous). Morton (in Karr 1982) attributed the decline in reintroduced Musician Wren (*Cyphorhinus aradus*) populations on BCI to predators on and near the ground.

Loss of bird species on BCI since formation of Gatun Lake in 1914 has been attributed to a variety of causes— island size, loss of second growth habitat, maturation of young forest, competition, lack of wet refugia, and inability to colonize (Willis and Eisenmann 1979, Karr 1982). Predation also may be a factor (Willis 1974, Karr 1982), and results from our study support this contention, especially for ground-nesting species. Nest type, however, does not seem to be as important a factor as nest location in determining predation pressure, despite a trend for closed nests to be better protected from predation. Lack of a nest-type effect may reflect the identity of nest predators. Manipulation of nests may be accomplished more readily if nest predators were mammals, and differences in predation rates of open and closed nests may only reflect differences in the rate at which nest types are found. Nests above ground, however, are probably encountered less frequently by mammalian predators (Ricklefs 1969), suggesting that, above ground, nest type may play a larger role in determining predation pressure. In our study, all occurrences of predation above ground were recorded from open cup nests. We suggest that predation by snakes may play a more important role for nests located above ground.

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ADDITIONS TO THE AVIFAUNA OF BOLIVIA, PART 2

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AND

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We here report additions to the bird species known from Bolivia that have come to light since Remsen and Ridgely (1980). Most of the specimens were collected by Richard S. Crossin on an expedition to Dptos. Santa Cruz, Chuquisaca, and Tarija, 1972–1973, for the Field Museum of Natural History (FMNH); by Roy Steinbach in Chiquitos province, Dpto. Santa Cruz, 1973, also for FMNH; or by Kenneth E. Stager and S. C. Bromley on an expedition to

Dptos. Tarija and Chuquisaca, 1957, for the Los Angeles County Museum (LACM). In the second section of the paper, we report new information concerning additional species only recently added to the birds known from Bolivia.

The following species are here recorded for the first time from Bolivia:

Aegolius harrisii. Buff-fronted Owl. Crossin collected an adult male (FMNH 293621) in cloud forest 28 km W of Comarapa, 8,400 ft. (2,560 m), Dpto. Santa Cruz, on 27 March 1973. Meyer de Schauensee (1966) recorded no Andean specimens between Ecuador and Jujuy, Argentina. There is also a recent, unpublished record from Peru: P. Hocking and G. Lopez collected two specimens (FMNH 285086, 287773) at Yurinaqui Alto, Dpto. Junín on 6 January and 6 July 1969. Further collecting may show that *Aegolius harrisii* is locally distributed in the subtropical and temperate zones of the Andes from Venezuela to northwestern Argentina. The Argentine population was

recently named *A. h. dabbenei* by Olrog (1979), but we have no comparative material of that race.

Nyctibius leucopterus. White-winged Potoo. Remsen, with Jo Ann and Tom Heindel, collected a female (LSUMZ 90537; ovary 7×6 mm, largest ovum 3.5 mm diameter; 185 g, heavy fat; iris bright yellow-orange, bill black, tarsi and feet cream; prep. by L. Hale) on 3 August 1979 at about 21:00 h at Sacramento Alto, 2,575 m, 8 km by road N Chuspipata, Dpto. La Paz.

This species was previously known from only five specimens from widely scattered localities: the type specimen from "Ambato," Ecuador (Ridgway 1912), although it is unlikely that the specimen came from Ambato itself (Chapman 1926); a "Bogota" skin presumably from somewhere in eastern Colombia (Ridgway 1912, Peters 1940); a specimen from Florente, 1,800 m, eastern slope of the Andes in Nariño, Colombia (FMNH 287938); Boca de Monte, 2,400 m, Táchira, Venezuela (Meyer de Schauensee and Phelps 1978); and Conquista, Bahía, Brazil (Chapman 1926, Peters 1940). The elevations for the three specimens for which a precise locality is known indicate that this species is a montane, cloud forest form, not a tropical zone species as reported by Meyer de Schauensee (1966, 1970).

Chaetura andrei. Ashy-tailed Swift. A specimen (Carnegie Museum, CM 119330) collected by J. Steinbach at Yacuiba, Dpto. Tarija, on 10 February 1916, is the first record for Bolivia. The following specimens were collected by Bromley: one (LACM 35493) 30 km SE of Carandaiti, Dpto. Chuquisaca, on 11 October 1957, and two (LACM 35494, 35495) 15 km SW of Capirenda, Dpto. Tarija, on 20 September 1957. This species has been recorded as close to Bolivia as northern Paraguay and northwestern Argentina in Tucumán and Salta (Meyer de Schauensee 1966). Short (1975) listed this species from Bolivia without giving details.

Furnarius cristatus. Crested Hornero. The following specimens (LACM 35766–35771) were collected by Stager and Bromley in August–November 1957: three at 30 km SE of Carandaiti, Dpto. Chuquisaca; and two at 3 km NW of Capirenda and one at 7 km NE of Capirenda, Dpto. Tarija. This species was previously known from Bolivia only from R. S. Ridgely's sight records from south of Villamontes, Dpto. Tarija (Remsen and Ridgely 1980).

Asthenes baeri. Short-billed Canastero. The following specimens (LACM 35774–35776) were collected by Bromley and Stager in 1957: two at Capirenda, Dpto. Tarija, one on 9 July and one on 24 August; and one at 12 km SW of Capirenda on 6 September. The nearest previously known localities are in northwestern Argentina (Meyer de Schauensee 1966) and extreme western Paraguay at Guachalla, only a few miles from the Bolivian border (specimens at FMNH).

Hirundo pyrrhonota. Cliff Swallow. Bromley collected one (LACM 35822) 30 km SE of Carandaiti, Dpto. Chuquisaca, on 11 October 1957. This migrant from the Northern Hemisphere has been recorded from southwestern Brazil in Mato Grosso, from Paraguay, and from northwestern Argentina (Meyer de Schauensee 1966), and was expected in Bolivia.

Cinclus schultzi. Rufous-throated Dipper. Two specimens (FMNH 294444, 294445) were collected by Crossin 25 km NW Entre Rios, Dpto. Tarija, 5,400 ft, on 5 January 1973. François Vuilleumier (pers. comm.) glimpsed a dipper that was almost certainly this species at or near Crossin's locality on 8 December 1967. This species was formerly known only from northwestern Argentina (Meyer de Schauensee 1966), where considered rare and local (King 1981). The nearest locality at which the northern Andean *C. leucocephalus* has been taken is Samaipata, western Dpto. Santa Cruz, leaving a gap of approximately 385 km between the known ranges of the two species.

Tachyphonus rufus. White-lined Tanager. R. Steinbach

took a male (FMNH 296446) at Santa Elena, 550 m, 30 km west of Santiago, Prov. Chiquitos, eastern Dpto. Santa Cruz, on 14 July 1973, and a female (FMNH 296447) at Santiago, 700 m, on 9 May 1973. The nearest previously reported records are from Brazil in Mato Grosso and from Paraguay (Storer 1970).

Basileuterus hypoleucus. White-bellied Warbler. As predicted by Short (1975), this species has been found in eastern Bolivia. R. Steinbach took one male, two females, and one unsexed (FMNH 295465–295468) at Santiago, 700 m, Prov. Chiquitos, between 23 January and 5 March 1973, and a female (FMNH 296434) at Sansabá, 620 m, Prov. Chiquitos, on 4 June 1973. The nearest previously reported records are from Brazil in Mato Grosso and from Paraguay (Lowery and Monroe 1968).

We would also like to report the following additional information for species recorded only recently from Bolivia (primarily by Blake 1977, Remsen and Ridgely 1980, Parker et al. 1980, and Cardiff and Remsen 1981):

Eudromia elegans. Elegant Crested-Tinamou. Banks (1977) reported a chick from Bolivia that was probably of this species; it was collected by Stager at 15 km NE of Capirenda, Dpto. Tarija, on 4 August 1957 (LACM 35339). Although Bolivia was recently included in the range of this species by Blake (1979), the chick cannot as yet be positively identified to species (Banks, pers. comm.); since *E. formosa* could also possibly occur in southeastern Bolivia, it seems best not to assume that the record pertains to *E. elegans*.

Podilymbus podiceps. Pied-billed Grebe. Remsen and Ridgely (1980) reported specimens from Dptos. Cochabamba and Santa Cruz, the first records for Bolivia. Bromley and Stager collected the following specimens (LACM 35347–35349) in July and August 1957: one at 30 km SE of Carandaiti, Dpto. Chuquisaca, one at 3 km NW of Capirenda, and one at Capirenda, Dpto. Tarija.

Dendrocygna bicolor. Fulvous Whistling-Duck. Remsen and Ridgely (1980) reported the first record for Bolivia, a specimen from Dpto. Santa Cruz. Bromley collected one (LACM 35362) 7 km NW of Capirenda, Dpto. Tarija, on 23 November 1957.

Accipiter superciliosus. Tiny Hawk. Remsen and Ridgely (1980) reported specimens from Dpto. Santa Cruz, the first published records for Bolivia. A previously unpublished specimen (CM 119895) was collected by J. Steinbach at Buena Vista on 25 May 1925.

Falco deiroleucus. Orange-breasted Falcon. Remsen and Ridgely (1980) reported a specimen of this species from Buena Vista, western Dpto. Santa Cruz, the first record for Bolivia. R. Steinbach took a female (FMNH 295961) at Cerro San Micerato, 830 m, Prov. Chiquitos, in eastern Dpto. Santa Cruz, on 4 April 1973.

Falco peregrinus. Peregrine Falcon. Lönnberg (1903) published a record of a specimen of *F. p. cassini* from Tolomosa, Dpto. Tarija, that predates records reported by Remsen and Ridgely (1980).

Penelope superciliaris. Rusty-margined Guan. Blake (1977) listed *Penelope superciliaris* for the first time in Bolivia. His record was based on an adult male and an immature female (FMNH 295965–295966) taken by R. Steinbach at Santiago, 700 m, Prov. Chiquitos, eastern Dpto. Santa Cruz, in May 1973. The partially grown female is in wing molt, with the first to fifth primaries adult, the sixth growing, and seventh to tenth worn juvenal. This accords with an age of 70–90 days in Stresemann and Stresemann's (1966) chronology of wing development.

Chamaepetes goudotii. Sickle-winged Guan. Cardiff and Remsen (1981) reported the first records for this species for Bolivia. Three additional specimens (LSUMZ 101241 (skeleton), 101652–101653) were collected at the edge of humid cloud forest ca. 1 km S Chuspipata, 3,050 m, Dpto. La Paz, in August 1981 by David Wiedenfeld and Scott M. Lanyon.

Neocrex erythrops. Paint-billed Crane. This is another species first listed from Bolivia by Blake (1977:511). His record is based on a male (FMNH Conover coll. 25482) taken by R. Steinbach at Santiago, 700 m, Prov. Chiquitos, eastern Dpto. Santa Cruz, on 17 April 1973. There is also a specimen (CM 50946) collected by J. Steinbach at Buena Vista, Dpto. Santa Cruz, on 30 October 1914. This species is known from the lowlands of surrounding countries (Blake 1977, Ripley 1977), and so its presence in eastern Bolivia is not unexpected. However, a specimen (LSUMZ 95596) from the highlands of Bolivia at Calacoto, 3,375 m, Dpto. La Paz, is truly surprising; this bird, an emaciated male, was captured in a garden in a suburb of La Paz on 10 October 1979 and presented to Tom and Jo Heindel. This specimen matches very closely the single LSUMZ specimen of the nominate race from coastal northwestern Peru; a more extensive comparison of material, however, would be necessary before this individual can be confidently assigned to subspecies.

Coccyzus erythrophthalmus. Black-billed Cuckoo. Remsen and Ridgely (1980) reported specimens from Dpto. Cochabamba, the first published records for Bolivia. A previously unpublished specimen (CM 79114) was collected by J. Steinbach at Buena Vista, Dpto. Santa Cruz, on 27 January 1917.

Dromococcyx pavoninus. Pavonine Cuckoo. Remsen and Ridgely (1980) reported the first record for Bolivia, a specimen from Dpto. Santa Cruz. This species was heard daily by Remsen and T. A. Parker III at Serranía Bellavista, 35 km by road N Caranavi, 1,650 m, Dpto. La Paz, in June 1979; one (Delaware Museum of Natural History 67499) was netted there by C. Greg Schmitt on 15 June. This species was also heard occasionally by Remsen at Serranía Bellavista, 47 km by road N Caranavi, 1,350 m, in July 1980. Additionally, three specimens (LSUMZ 101257 [skeleton], 101689–101690) were collected by Scott M. Lanyon and T. S. Schulenberg on the Río Beni, ca. 20 km by river N Puerto Linares, 600 m, Dpto. La Paz, in June and early July 1981. This seldom seen inhabitant of humid forest understory is detected mainly by voice or mist-net captures. It probably occurs throughout Dptos. La Paz and Cochabamba in humid foothill forest at the eastern base of the Andes. The song is a series of far-carrying, clear, monotonic notes, easily imitable, that together last about 1 s; "hoo, hee, ho-heé-he," the first and third notes lower-pitched than the others.

Ciccaba huhula. Black-banded Owl. Remsen and Ridgely (1980) reported the first records from Bolivia, two specimens from Dpto. Santa Cruz. Additional specimens were collected at Buena Vista, Dpto. Santa Cruz, by J. Steinbach on 20 June 1923 and 30 January 1926 (CM 119826, 119920) and by F. Steinbach on 10 June 1938 (FMNH 101865). S. W. Cardiff also collected a specimen (LSUMZ 95626) at Serranía Bellavista, 47 km by road N Caranavi, 1,350 m, Dpto. La Paz, on 20 July 1980, in humid Upper Tropical Zone forest.

Nyctibius grandis. Great Potoo. The only published record of this species from Bolivia is that of Olrog (1963) from San Juan, Dpto. Beni. Unpublished specimens had been collected previously by J. and F. Steinbach in Dpto. Santa Cruz at Palmarito, Río San Julian, Prov. Chiquitos, on 29 and 30 May 1918 (CM 80297–80298); at Río Surutú on 18 April 1928 (CM 119967) and 13 October 1938 (FMNH 179243); and at Buena Vista on 7 November 1929 (CM 120569), 25 April 1952 (LSUMZ 37341), and 8 August 1958 (LSUMZ 37340).

Uropsalis lyra. Lyre-tailed Nightjar. Remsen and Ridgely (1980) reported this species from Bolivia for the first time, a specimen from Dpto. Cochabamba. R. Crossin collected a female (FMNH 293623) 25 km northwest of Entre Rios, 5,400 ft (1,650 m), Dpto. Tarija, on 4 January 1973, a considerable southerly range extension. Also, T. A. Parker III collected a female (LSUMZ 90539) at Ser-

rania Bellavista, 1,550 m, 39 km by road N Caranavi, Dpto. La Paz, on 20 June 1979.

Calliphlox amethystina. Amethyst Woodstar. The only previous record for this species from Bolivia is a specimen collected by M. A. Carriker at Huanay (=Guanay) in the forested lowlands of Dpto. La Paz (Bond and Meyer de Schauensee 1943). R. Steinbach collected a female and an immature male (FMNH 296057–296058) on 2 and 10 February 1973, respectively, at Santiago, 700 m, Prov. Chiquitos, eastern Dpto. Santa Cruz.

Cranioleuca curtata. Ash-browed Spinetail. Remsen and Ridgely (1980) reported a specimen from Dpto. Cochabamba, the first published report for Bolivia. There are three other specimens from Dpto. Cochabamba: one (CM 119677) collected by J. Steinbach at Incachaca, 1,500 m, on 11 July 1921, and two by F. Steinbach at "Yungas de Cochabamba" on 10 July 1927 (CM 120403) and 15 November 1927 (FMNH 110362). A male (LSUMZ 98248) collected at Abra de Maruncunca, 2,000 m, 10 km SW San Juan del Oro, Dpto. Puno, Peru, by T. S. Schulenberg on 30 November 1980 bridges the gap between records from Dpto. Cuzco and Dpto. La Paz (sight records by T. A. Parker III and Remsen at Serranía Bellavista, 1,650 m, 35 km by road N Caranavi in June 1979).

Hemitriccus granadensis. Black-throated Tody-Tyrant. Parker et al. (1980) reported the first specimens for Bolivia. Two (LSUMZ 96370–96371) were collected by S. W. Cardiff in humid cloud forest at Cotapata, 4.5 km WNW Chuspipata, 3,300 m, Dpto. La Paz, in June 1980. The three Bolivia specimens fit Carriker's (1931) description of *H. g. caesius*, previously known only from the type specimen from Dpto. Puno, Peru (Traylor 1979). Also, the Bolivia specimens are virtually identical to three (LSUMZ 98519–98521) collected by L. C. Binford and T. S. Schulenberg in Dpto. Puno near the type locality of *caesius*.

Suiriri suiriri affinis. Suiriri Flycatcher. Remsen and Ridgely (1980) reported Ridgely's sight records of *affinis* as the first records for Bolivia; however, Gyldenstolpe (1945) had already reported *affinis* from several localities in Dpto. Beni. Furthermore, Traylor (1979, 1982) summarized previous data indicating that *affinis* intergrades with *S. s. suiriri* in northeastern Paraguay and is best treated as a subspecies of *S. suiriri*, not as a full species as recommended by Short (1975).

Catharus fuscescens. Veery. Remsen and Ridgely (1980) listed the first record for this species from Bolivia, a specimen from Dpto. Santa Cruz. R. Steinbach collected a male and a female on 2 and 4 March 1973, respectively, (FMNH 295425, 295427) from Santiago, 700 m, Prov. Chiquitos, eastern Dpto. Santa Cruz. Also, F. Steinbach collected a male (FMNH 181674) at Cochabamba, ca. 2,600 m, Dpto. Cochabamba on 9 November 1937. All three FMNH specimens are in first winter plumage and belong to the western race *salicicolus*.

Turdus leucomelas. Pale-breasted Thrush. The only previous Bolivian record of this species is that of Bond (1956) from Teoponte, on the Río Kaka, Dpto. La Paz, an area of mixed forest and savanna. R. Steinbach collected a series (FMNH 295432–295438; 296349–293353) in Prov. Chiquitos, 600–900 m, eastern Dpto. Santa Cruz, from 19 January to 4 June 1973. Six are young of the year in spotted plumage, 19 January–6 March; one in late February has almost completed post-juvinal molt but the majority have not yet begun. One adult taken 4 February is in abraded plumage, just beginning post-nuptial molt. The five birds taken in May and June are all in fresh plumage; two are adults and three are first winter birds with pale-tipped wing coverts.

Dendroica fusca. Blackburnian Warbler. This species was known from Bolivia only from J. A. Heindel's sight record from Dpto. La Paz (Parker et al. 1980). She (pers. comm.) subsequently saw another brightly plumaged male

at the same locality on 19 January 1980. Also, T. S. Schulenberg collected a male (LSUMZ 98920) at Abra de Maruncunca, 10 km SW San Juan del Oro, 2,000 m, Dpto. Puno, Peru, only about 15 km from the Bolivian border.

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