

ORNITHOLOGICAL LITERATURE

SPECIAL REVIEW

VOICES OF THE NEW WORLD NIGHTJARS AND THEIR ALLIES (CAPRIMULGIFORMES: STEAT-ORNITHIDAE, NYCTIBIIDAE, AND CAPRIMULGIDAE). By J. W. Hardy, Ben B. Coffey, Jr., and George B. Reynard. ARA Records, P.O. Box 12347, Gainesville, Florida 32604-0347. 1989: 44-minute audio cassette, lengthy printed brochure with full documentation, color jacket photo of Gray Potoo (*Nyctibius griseus*) by R. A. Behrstock. \$10.00.

VOICES OF THE NEW WORLD OWLS (STRIGIFORMES: TYTONIDAE, STRIGIDAE). By the same authors and publishers. 1990:65-minute audio cassette, full printed documentation, jacket color photo of Vermiculated Screech-Owl (*Otus vermiculatus*) by R. A. Behrstock. \$10.00. — The printed brochures contain full scientific information on recording sources, recordists, dates, locations, and taxonomic evaluations. The combination of voices and documentation in systematic order is like a scientific monograph, but one in which a voice is worth a thousand words. Professional ornithologists will see that these two taxonomies overthrow the old system based on plumages. Bark and dry leaf patterns are too much alike to reveal relationships, while individual color differences exceed those between populations. The species on these cassettes are defined in the same way that the night birds recognize each other, by voice; and amateur ornithologists are given the means to identify the most difficult birds in the world.

The two cassettes evolved from a common ancestor, Hardy's (1980) "Voices of the New World Nightbirds," a long-play phonograph disc. That classic is remembered for Hardy's jacket cartoon worthy of a Picasso, and for inspiring all of us to fill the gaps. The three authors did the major field work, supplemented by bird tour leaders J. Arvin, R. Behrstock, S. Coats, T. H. Davis, D. Delaney, V. Emanuel, T. A. Parker III, J. and R. A. Rowlett, T. Schulenberg, and B. Whitney; regional or species specialists including W. Belton, M. Castelino, G. Clayton, D. Engleman, N. Johnson, C. König, J. C. and L. Magalhães, J. Marshall, J. P. O'Neill, R. S. Ridgely, M. Robbins, R. Straneck, J. Vielliard, J. Weske, E. O. Willis, and many other recordists and bioacoustic collections. Altogether 13 species of nightjars and 15 of owls, whose voices were unknown in 1980, were added to the original recording by Hardy.

Discovery came the hard way, after hilarious false starts, mistakes, and acrimonious debate by all of us. Like those erroneous 7-day incubation times that go back to Pliny, the bogus recording of the Northern Hawk Owl (*Surnia ulula*) goes back to the founding fathers of tape archives and has just been corrected by König. Mistaking the canopy tree-toad (*Anotheca*), for the voice of the Unspotted Saw-whet Owl (*Aegolius ridgwayi*) goes back to Irby Davis in the 1950s. Davis would mount the 42-inch parabola on the roof of his van before retiring to bed inside. When awakened by owls he would turn on the Nagra III tape-recorder, put on his headphones, and focus the parabola by turning a crank. He had to guess the identity of the singer outside in the dark. He guessed right most of the time, but his "Costa Rica mystery owl" was reincarnated in recent contributions to the night bird cassettes. Finally D. Delaney taped the real *Aegolius*, unmasking *Anotheca*.

In Yucatán, Davis switched songs between the Yucatán Poorwill (*Nyctiphrynus yucatanicus*) and the Yucatán Nightjar (*Caprimulgus badius*); it took the combined talents of J. Pierson, R. A. Rowlett, and B. Whitney to set things straight (Hardy and Straneck, Condor 91:193–197, 1989). The mellow trill of Belton's male Long-tufted Screech-Owl (*Otus sanctaecatarinae*) from Rio Grande do Sul (Frontispiece) was summarily dropped from early versions of the owl cassette because J. Vielliard insisted it is the peracnema toad (*Bufo*

peracnemis). Sure enough, Hardy's sonagrams of the toad and owl are remarkably similar; nevertheless, Belton confirmed that he recorded an owl moving about in the trees, and the call is now restored to the cassette.

We were bamboozled by the angry calls (still on the cassette) representing *O. sanctaecatarinae*, *O. atricapillus*, and *O. hoyi*. Behrstock and Marshall thought they all were *O. sanctaecatarinae*, so they went to São Paulo in August 1989 to clear up the toads and to confirm *O. sanctaecatarinae* at Fazenda Barreiro Rico. Afterwards, they would discover the unknown song of true Nattererian *O. atricapillus* in Paraguay, as collected by Mercedes Foster at Cerro Corá National Park (Frontispiece). To the rescue! What they actually found were the same birds, true *Otus atricapillus*, at both places and their songs were the pure, musical trill of *O. guatemalae*! The strident voice from Barreiro Rico that had deceived us was the apoplectic female *O. atricapillus* responding to territorial invasion. Such provoked songs are useless for taxonomic comparisons because they vary almost infinitely in complexity, overtones, and expansion of (instantaneous) pitch range as the angry bird changes from tone to noise. We thank our generous hosts who introduced us to the live, spontaneously singing males of *Otus atricapillus atricapillus*: J. C. and L. Magalhaes at Fazenda Barreiro Rico and N. Lopez-Kachalka at Cerro Corá. Behrstock and Marshall missed *O. sanctaecatarinae* and *O. hoyi* altogether—by hundreds of kilometers.

A welcome addition to the nightjar cassette is, at last, a trilled song for the Lesser Night-hawk (*Chordeiles acutipennis*), although it is not the long one uttered while perched. These are the only nightjars still unrepresented in voice archives: Rosenberg's Poorwill (*Nyctiphrynus rosenbergi*) of western Colombia and northern Ecuador, Salta Nightjar (*Caprimulgus saltarius*) of northwestern Argentina and adjacent Bolivia, White-winged Nightjar (*C. candidans*) of central Brazil and Paraguay, Cayenne Nightjar (*C. maculosus*) of French Guiana, Roraiman Nightjar (*C. whiteleyi*) of the Venezuelan tepuis, Sickie-winged Nightjar (*Eleothreptus anomalus*) of southeastern Brazil and northeastern Argentina, and the extinct Jamaican Pauraque (*Siphonorhis americana*) of Jamaica. Hardy (in litt.) has just learned that the White-winged Potoo (*Nyctibius leucopterus*) is rediscovered and taped near Manaus and that the song attributed to the Rufous Potoo (*N. bracteatus*) is probably a variant call of the Gray Potoo.

It is simple to judge relationships among nightjars because each species has one male advertising song. But with owls, on the second cassette, things get complicated because most species have two territorial songs, an A and a B, used in ritual duets of the pair. The female's voice is a third to a fifth higher in pitch than the male's and in some species is naturally harsh. That makes four songs per species for most Screech-Owls, with much, much more if we fool around with songs provoked by playback. By recording in stereo, you can sort out the antiphony of different sexes, adjacent pairs, and neighboring other species spacially. Yet Hardy et al. renounce this solution and have their stereo equipment neutered to mono for field use. But the safest way to tackle owl taxonomy is to stick to the pure, musical tones of the males. Several populations have no known "normal" song because they have been searched only by trolling with tape-recordings, which elicit gruff responses.

Although the owl cassette boasts recordings of all New World owls except the Peruvian species Maria Koepcke's Screech-Owl (*Otus koepckeae*) of Amazonas and Long-whiskered Owlet (*Xenoglaux loweryi*) of San Martín; still the A and B songs are not uniformly represented among the species of *Otus*. Let us note here which species on the cassette lack the unprovoked male songs suitable for comparisons:

Flammulated Owl (*Otus flammeolus*) from California. Normal (not bellicose) male, originally in stereo.

Eastern Screech-Owl (*O. asio*) from eastern United States. The lower-pitched songs are normal male A (whinny) and B (trill). Marshall's part originally in stereo.

Western Screech-Owl (*O. kennicottii*) from southeastern Colorado. Unprovoked pair duet of A (bouncing ball) but only the female's B (double trill). Originally in stereo.

Balsas Screech-Owl (*O. seductus*) from Colima. Harsh, provoked A (bouncing ball) song of female, then pair duet of B (double trills). Marshall's field notes mention mellow voices, but such spontaneous male songs have not yet been recorded on tape.

Pacific Screech-Owl *O. cooperi*, *lambi* race from Tehuantepec: Harsh, provoked A song of female followed by pair duet of B (double trills), mellow songs (Marshall, field notes) not yet recorded; nominate race from Guanacaste: Provoked pair duet, A. This taxon also has a double trill and mellow songs of the male (Marshall, field notes).

Whiskered Screech-Owl (*O. trichopsis*) from Miquihuana. Spontaneous A (trill) and B (Morse code) of male. Originally in stereo, impressive for the provoked calls during aggressive flight past microphone.

Tropical Screech-Owl (*O. choliba*) from Loreto. Unprovoked male's A (accented song) and B (short trill).

Peruvian Screech-Owl (*O. roboratus*) from Perú. Rapid, purring trills with prominent octave harmonic tone.

Bare-shanked Screech-Owl (*O. clarkii*) from Monteverde. Normal male songs A and B (Morse code) plus a female whine. All like *O. trichopsis* (Hardy in litt.), but slower.

Bridled Screech-Owl (*O. barbarus*) from San Cristóbal. Marshall has the spontaneous female, Behrstock the angry female response to play of "example 1."

Rufescent Screech-Owl (*O. ingens*) from Merida: Bouncing ball song, by an unprovoked male; from Ecuador: Same as the preceding except for less speed-up in the middle.

Cloud Forest Screech-Owl (*O. marshalli petersoni*) from Cajamarca. Normal male, higher-pitched than *watsonii*.

Tawny-bellied Screech-Owl (*O. watsonii*). Unprovoked male A songs: rapid trill from Taracoa, slow trill from Manu. Behrstock now has a B call, in Morse code, from La Selva Lodge, near Taracoa. An "A" trill of intermediate speed (3.7 notes/sec) is available from M. B. Robbins, proving that northern and southern populations are conspecific.

Variable Screech-Owl (*O. atricapillus atricapillus*) from São Paulo. Strident, highly outraged female, type A (long trill). All three of us have taped spontaneous, pure male tones A (trill) and B (bouncing ball) that are not on the cassette. A mellow female song is unknown in this population.

Long-tufted Screech-Owl (*O. sanctaecatarinae*) from Rio Grande do Sul. Harsh female A (trill) with mellow male A chiming in at the end. Both W. Belton and T. Parker have taped a normal male B (bouncing ball) that is not on the owl cassette. A mellow female song has never been heard.

Montane Forest Screech-Owl (*O. hoyi*) from Salta. Like the duet of *O. sanctaecatarinae*—a harsh female A with mellow male B (short, slow trill) answering farther off. R. Ridgely, R. Straneck, and König have all taped a very long, spontaneous male trill, not on the cassette. At only 11 notes per second, it is slower than the 13 or 14 notes per second usual for *O. atricapillus* and *O. sanctaecatarinae*.

Variable Screech-Owl (*O. atricapillus guatemalae*) from Nayarit and *O. a. napensis* from Huánuco. Spontaneous male A (long trill). The duetting female sings the same song about a fourth higher in pitch (Marshall, field notes) that has not been recorded on tape.

Vermiculated Screech-Owl (*Otus vermiculatus*) from Achiote Road. Spontaneous pair duet of incredibly short trills, setting a record for the genus.

Puerto Rican Screech-Owl (*O. nudipes*) from Ciales. Male A (mellow trill) followed by B (ghoulish duet of pair), all spontaneous and in antiphony with neighboring pairs. Originally in stereo.

Cuban Screech-Owl (*O. lawrencii*). Male unprovoked bouncing ball.

White-throated Screech-Owl (*O. albogularis*). Spontaneous pair duet of doublets. M. B. Robbins has available the even, A-type song, not on the cassette.

The brochure has a built-in propensity to create errors through the use of numbers keyed to species or vocal examples. We have convinced the authors of the cassettes to combine the numbered remarks with the species to which they refer; but the dangling example numbers are still to blame for transpositions such as these: Early versions of the owl brochure reversed the Manu and Taracoa *Otus watsonii*; in the current nightjar brochure, the order of examples for the Whip-poor-will (*Caprimulgus vociferus*) does not follow the cassette, which is first North Carolina, then New Jersey, and finally Michoacán for the gravel-voiced, southwestern form with pure white eggs. We suggest that the silver-throated maestro merely states the locality instead of reciting example numbers; for instance, "*Caprimulgus vociferus*, the Whip-poor-will, from North Carolina . . . from New Jersey . . . from Michoacán . . .," as we have done above. That would protect the many recordists from having their precious vocalizations wind up in the wrong taxon. Getting rid of the abominable example numbers would make the tape free-standing and the system self-correcting.

The cassettes are the triumph of cooperation between professionals and amateurs, benefiting especially from expertise of scientific tour leaders. The tapes are a valuable link with the past. Indeed, when the forest is cleared, the marsh drained, and the prairie paved, the sounds of birds in their natural settings can—besides providing study material—lift the spirits and give hope in a way that no study skin or photograph can. Where the habitat still stands but travel is dangerous, the study of bird sounds from tapes continues in the absence of further observations. It is no coincidence that the two owls not represented by voice are from Perú, currently one of the most volatile countries in South America.

There are still many things nightbirds say that are not on these cassettes, besides the missing species and spontaneous male calls we listed. There are some grunts and howls of the Black-banded Owl (*Ciccaba huhula*) and deep groans of the White-chinned Owl (*Pulsatrix koeniswaldiana*) that are needed. The vocabulary of the Band-bellied Owl (*P. melanota*) remains virtually unknown. Also required are the loud, gruff barks of the Rufous-legged Owl (*Strix rufipes*) and the high, thin nest-begging pleas of the Unspotted Saw-whet Owl (*Aegolius ridgwayi*). The pygmy-owls seem ripe for splitting, and there may be an unnamed potoo (or two) out there. The Buff-fronted Owl (*Aegolius harrisi*) jumps from the paramo fringes of Colombia and Venezuela across Amazonia to the lowland forests of Misiones, Argentina. The vocabularies of its disjunct populations need a work-up comparable to that of the Boreal Owl (*Aegolius funereus*), studied by König. All these novelties await discovery by a cadre of amateur and professional naturalists who enjoy a quest, and who are not intimidated by snakes, mosquitoes, or things that go bump in the night.—JOE T. MARSHALL, ROBERT A. BEHRSTOCK, AND CLAUS KÖNIG.

FRONTISPIECE.—VARIABLE SCREECH-OWL (*OTUS ATRICAPILLUS*) AND ITS RELATIVES.

We use the term "*atricapillus* superspecies" for the group of taxa shown here. They are related closely, they occupy two continents, and they nowhere overlap in distribution. Morphological distinctions are few and individual variation is extreme. Irides are yellow except that Peruvian Sira, Paraguay, and São Paulo birds have a brown iris in the dark phase, yellow in the red phase. Tarsus of the holotype of *cassini* is not shown because feathering is the same as the birds to each side of it. Tip of tarsus is less feathered within Panamá and on either side of Panamá than elsewhere. Tarsal feathering becomes luxuriant from Bolivia south, covering base of toes. If you want to see the whole owl, just put a straight-edged mirror on the midline.



Marshall, Joe T., Behrstock, Robert A, and König, Claus. 1991. "Special Review." *The Wilson bulletin* 103(2), 311–314.

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