

Short Communication

New vocalizations by the koklass pheasant *Pucrasia macrolopha*

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Koklass pheasant *Pucrasia macrolopha biddulphi* are secretive birds found in temperate broadleaf, conifer and sub-alpine oak forests between 2100 m and 3300 m (Madge et al., 2002). Koklass spend most of the day skulking through dense forest undergrowth where visual encounters are typically rare and short-lived. As a result, accounts of the species are few and far between and much of its natural history is unknown.

Although the koklass pheasant is infrequently seen, males emit calls that are conspicuous and distinct, several of which have been previously described (Severinghaus, 1979; Lelliott, 1981). The most apparent is a territory call made by breeding males during mornings and evenings from April to June. The consistency with which males exhibit vocalization has made the call count technique the most efficient method for sampling koklass pheasant abundance (Gaston, 1980; Khan & Shah, 1987; Nawaz et al., 2000; Kaul & Shakya, 2001; Ramesh, 2003).

This short communication describes individual differences among the male territory calls, as well as a male call not previously reported. These observations were made while conducting 40 morning call counts in the Great Himalayan National Park, Himachal Pradesh, India from early April to late May 2008.

The most recurrent koklass call heard during the study was the male territory call, previously noted as "kok-kok-kok...kokras" or "khwa-kak" (Severinghaus, 1979; Lelliott, 1981). A hoarse choir ranging from 4-20 birds began to call almost simultaneously shortly after dawn, at a time ranging from 05:00 (in late May) and 05:20 (in early April). While the majority of males resembled one another in call pitch and tempo, individual males were occasionally

audibly distinct. These individuals featured variations in call tempo (typically slower than the average male), pitch (higher or lower than the average male) and hoarseness (more hoarse or more pure-toned than the average male). Although the number of individuals were not consistently recorded, usually one or two males per call count were distinguishable from the other calling males.

In the minutes immediately preceding a male's territory call, I occasionally heard a short, distinct sound emitted from a male. The single, hoarse "kok" was of identical or slightly lower pitch than the first note of the full territory call, but often with less intensity, resembling an interrupted territory call. The sound reminded the observers of a "warm up call," as if the male was preparing its voice for the more demanding calls of the morning.

One to three males were heard emitting this "warm up call" during approximately half of the call counts, or on 20 mornings. Although data on the call was not meticulously recorded, 19 birds were observed repeating between one and five (most often three) "warm up calls" within the 15 minutes prior to beginning their territory calls, after which the "warm up" was not repeated. During his Ph.D. study between 1995 and 2000, K. Ramesh also observed koklass at the same study site infrequently emitting similar single-note calls during the day and evening (*pers. comm.*).

The meaning of this call is unclear. Field conditions at the time of calling did not appear to warrant an alarm response; thus, the sound is not likely a warning call. Since males are known to call in solitude, the chance is low that the sound was stimulated by direct interaction between birds. In the field, the calls reminded

me most of singers warming up their voices. If the pheasant syrinx is as impacted by cold weather as the mammalian larynx, then this analogy may carry validity, with some males strengthening their voices through "warm up calls" before initiating complete territory calls.

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Biographical sketches

JENNIFER MILLER is a PhD student at the Yale School of Forestry and Environmental Studies. She collected the data for this article while on a Fulbright Scholarship in India, where she investigated the impacts of community-oriented conservation on pheasant abundance in the Great Himalayan National Park in collaboration with the Wildlife Institute of India. Her current research interests include conservation in developing countries and mitigating influences of climate change on wildlife and rural human communities.