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WING-FLASHING BEHAVIOR IN THE WHITE-CAPPED DIPPER (*CINCLUS LEUCOCEPHALUS*)

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Comportamiento de aleteo del Mirlo Acuatico Gorriblanco (*Cinclus leucocephalus*).

Key words: White-capped Dipper, *Cinclus leucocephalus*, wing-flashing, foraging.

From 19 July to 25 July 1998, at Quebrada Las Palmas near Chontalí (5°40.0'S, 79°12.2'W, 2220 m a.s.l.), while in the Dept. Cajamarca, Peru, I observed several White-capped Dippers (*Cinclus leucocephalus leuconotus*) wing-flashing as they foraged in a swiftly flowing stream. Though Fjeldså & Krabbe (1990) described wing-flicking in the White-capped Dipper, it was not associated with foraging, nor was it described as a method for displaying the underwing pattern.

The dippers had a predictable daily routine. They flew singly upstream, chose a foraging site, worked the site, and then flew on to the next site. Several birds used the same flight route, but for the most part only one foraged at a site at any one time. They favored walking on large submerged rocks in the fastest-flowing portions of the stream. Some skill was required to forage in this way, because juvenile birds sometimes slipped in the current and fell into the water. Learning to navigate the rocks in fast water is part of the development process in at least one other cinclid (*C. cinclus*) as reported by Yoerg (1994, 1998). As the more experienced birds worked the rocks, they walked with quick, jerky movements. They frequently paused and spread their wings for a few seconds, displaying the large white patch on their secondaries, and then plunged their heads underwater, presumably to obtain prey. The wing-spreading action consisted of a quick succession of movements rather than a smooth transition from closed to open.

The purpose of wing-flashing behavior has yet to be explained. The Mimidae are well-known for the behavior in association with aggression and foraging (Hailman 1960, Mueller 1971, Derrickson & Breitwisch 1992). The behavior is most common in the Northern Mockingbird (*Mimus polyglottos*) which often flares its wings, displaying a white wing-patch, while foraging on the ground (Hailman 1960, Derrickson & Breitwisch 1992). At least three other mimid species, with uniformly colored wings, have been observed to wing-flash: Chalk-browed Mockingbird (*M. saturninus*), Tropical Mockingbird (*M. gilvus*) and Brown Thrasher (*Toxostoma rufum*)(Whitaker 1957). Other non-mimid species, lacking

underwing patches, such as the European Starling (*Sturnus vulgaris*), Roadrunner (*Geococcyx californianus*), and Least Bittern (*Ixobrychus exilis*), have also been reported to forage while wing-flashing (Hailman 1959). Selander & Hunter (1960) suggested that this behavior functions to startle hidden insects, making them easier to see and catch. If this is true for the dippers, then stomach contents should reveal a high proportion of motile organisms.

I examined stomach contents from five White-capped Dippers collected at my observation locality. The contents were largely small stones and plant matter, with some planktonic (clear-bodied, non-motile) organisms, small eggs, and a few insect parts (beetle elytra, wings). However, the stomach with the greatest insect matter came from a shot bird, whereas the others had been netted, suggesting digestion of stomach contents while birds were trapped in nets. The dippers clearly do not restrict their diet to mobile organisms with the ability for active escape.

Within the Cinclidae, wing-flicking and tail-flicking are well known, although the behavior is not associated with foraging but with inter-specific communication and predator avoidance (Spitznagel 1996). Only the South American cinclids display the more exaggerated flashing behavior (Salvador *et. al.* 1986). The Rufous-throated Dipper (*C. schulzi*) of Argentina and Bolivia is known to wing-flash while perched (A. Jaramillo pers. com., Salvador *et. al.* 1986). It is also the only other dipper to have a white underwing-patch. The White-capped and the Rufous-throated dippers also lack the diving behavior found in the other three members of this family (Fjeldså & Krabbe1990). Although loss of a feature does not necessarily result in compensatory function in a replacement feature, it is worth further investigation to compare foraging behavior in all the dippers and the relevance of wing-flashing in the South American representatives.

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