

NOCTURNAL CHICK PROVISIONING BY BLACK SWIFTS

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The Black Swift, *Cypseloides niger*, is the single North American breeding species in the Cypseloidinae, a mostly tropical New World subfamily of swifts (Apodidae). Members of this subfamily have the well-known habit of nesting on damp, dark rock surfaces near or behind waterfalls (Knorr 1961, Collins 1968, Marin and Stiles 1992). Unlike other western swifts, Black Swifts bring food back to their single chicks only after intervals of several hours and possibly only once a day (Michael 1927). Food for the chick is carried in a large compacted mass in the esophagus rather than as a smaller bolus transported in the mouth as in Vaux's Swift, *Chaetura vauxi* (Chaeturinae; Bull and Beckwith 1993), and the White-throated Swift, *Aeronautes saxatalis* (Apodinae; Collins pers. obs.).

The large mass of esophageal food can be fed to a chick over a short time (3–8 minutes), as previously noted (Grant 1966, Collins 1998). Adult Black Swifts collected at nocturnal roosts with large quantities of insect food in their esophagus (Collins and Landy 1968) suggest that their single chick may be provisioned in increments over several hours, including well after dark. At Lawlor Falls, a Black Swift nesting colony in the San Jacinto Mountains of southern California (Foerster 1987, Foerster and Collins 1990), Peterson photographed nocturnal provisioning of chicks. On 8 and 9 August 1987, he set up a camera to photograph a Black Swift nest containing a half grown chick; photographs were taken automatically every 2 minutes from 20:00 to 03:00 Pacific Daylight Time. The pictures show an adult on the nest from 20:36 to 20:42, during which time the chick was fed at least twice (Figure 1). What appeared to be the same adult reappeared on the nest from 21:38 to 21:44 and again fed the chick at approximately 21:42. This was 58–60 minutes after the initial feeding and at least 45 minutes after full darkness. The earlier observations of adults roosting at night with food in the esophagus (Collins and Landy 1968) suggest that such nocturnal provisioning bouts may not be unusual in the Black Swift and possibly other cypseloidine swifts. As discussed by Collins (1998), transport of large quantities of food in the esophagus and feeding of chicks only after long intervals may permit cypseloidine swifts to exploit greater foraging ranges and specialize on patchily distributed but calorically dense swarming insects, such as winged ants and termites, recorded as prominent food items of these swifts (Collins and Landy 1968, Foerster 1987).

Some other diurnal birds, such as the storm-petrels and small alcid, also feed their chicks nocturnally. In these cases nocturnal feeding is most likely related to predator avoidance by the adults. Cypseloidine swifts consume swarming insects, some of which are more abundant near dusk. Their nocturnal feeding of chicks is thus more a product of near-dusk foraging and late return to the nest with a large quantity of food, which can be incrementally fed to the chick over several hours.

LITERATURE CITED

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NOTES



Figure 1. Black Swift chick being fed by adult on nest at Lawlor Falls at dusk (20:28 P.D.T.)

Photo by B. Moose Peterson.

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