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Simultaneous Multiple Nests of Calliope Hummingbird and Rufous Hummingbird

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ABSTRACT.—We report the first cases of simultaneous double brooding known for Calliope Hummingbird (*Stellula calliope*) and Rufous Hummingbird (*Selasphorus rufus*) from observations of two females

in Montana. Each female laid two eggs and started incubating while feeding large young in a nearby nest, and each successfully fledged young from both nesting attempts. Simultaneous multiple nests have been documented for five other hummingbird species that breed north of Mexico, suggesting the behavior is widespread in the family outside the tropics. Factors that might allow rapid re-nesting in temperate species include young that begin to feed themselves within a week after fledging, and longer day length that allows more time for females to forage than would be available in the tropics. Received 5 February 2012. Accepted 2 April 2012.

Reports of female hummingbirds simultaneously caring for eggs and young from successive nesting attempts date to the mid-1930s when Skutch (1935:258) watched a female White-eared Hummingbird (*Hylocharis leucotis*) feed a fledgling between bouts of incubation at what he assumed was her second nest of the season. Rapid multiple brooding has since been documented or strongly suspected for at least nine other species, the successive attempts beginning soon after young from an earlier attempt have fledged (Blue-throated Hummingbird [*Lampornis clemenciae*], Williamson 2000; Lucifer Hummingbird [*Calothorax lucifer*], Scott 1994; Anna's Hummingbird [*Calypte anna*], Maender et al. 1996; Allen's Hummingbird [*Selasphorus sasin*], Pitelka 1951), or overlapping when a female lays eggs and begins incubation while feeding large young at another nest (Broad-billed Hummingbird [*Cyananthus latirostris*], Baltosser 1989; Ruby-throated Hummingbird [*Archilochus colubris*], Nickell 1948; Black-chinned Hummingbird [*A. alexandri*], Cogswell 1949; Costa's Hummingbird [*Calypte costae*], Baltosser and Scott 1996; Broad-tailed Hummingbird [*Selasphorus platycercus*], Bailey 1974). Females of some species in the first group may build a second nest while feeding nestlings but have not been documented laying eggs until after the first brood has fledged (e.g., Anna's Hummingbird, Scarfe and Finlay 2001; Allen's Hummingbird, Legg and Pitelka 1956). We provide the first report of overlap nesting in two other species, the Calliope Hummingbird (*Stellula calliope*) and Rufous Hummingbird (*Selasphorus rufus*). The female laid a second clutch in each case and began incubating while provisioning large young in a nearby nest. We also consider the factors that enable some hummingbirds to initiate breeding attempts in

rapid succession despite the challenges of uniparental care of altricial young.

OBSERVATIONS

On 3 July 2001, NB, GB, and John Vanderpoel were shown two Calliope Hummingbird nests in a rural backyard near Red Lodge, Montana. Each nest was in a quaking aspen (*Populus tremuloides*) ~2.7 m above ground; the nest trees were 14 m apart. One nest contained two eggs and the other had two large nestlings that were ~1 week from fledging. They watched the nests for 4 hrs on 3 and 4 July and witnessed several instances in which the female incubated for ~15 min at one nest and then disappeared from view for 5–10 min before returning to feed the young in the other nest. The female at times flew directly to the nest with eggs and incubated after feeding young at the other nest, verifying she was the same parent that attended each nest. The homeowners later reported that two young fledged from each nest.

On 27 June 2008, DAL found a Rufous Hummingbird nest with two eggs ~1 m above ground in a Douglas-fir (*Pseudotsuga menziesii*) sapling near Seeley Lake, Montana. He later watched the female leave the first nest and fly to a second nest ~6 m above ground in a larger Douglas-fir 20 m from the first nest. The second nest contained one large nestling that was within 1 week of fledging. On 2 July, DAL, NB, and Bob Martinka watched and photographed the female as she fed the nestling at the high nest and then flew directly to the low nest and incubated. The single young from the high nest disappeared (presumably fledged) a day or two later, and the two young that hatched at the low nest fledged in early August.

DISCUSSION

Successful multiple nesting attempts in rapid succession have been documented for at least 12 species of hummingbirds whose breeding ranges occur wholly or partly north of the tropics. Two nests can be occupied simultaneously for seven of these species, one with large young, and the other with recently laid eggs. Overlap nesting probably occurs regularly in species for which it has been observed and likely will be documented in other temperate hummingbird species. At least six species of strictly tropical hummingbirds are known to raise more than one brood per year (Schuchmann 1999), but overlap nesting has not

been reported (Haverschmidt 1958:143, Skutch 1973:81, Schuchmann 1999:514). Presumably, the mild climate experienced by resident hummingbirds in the tropics allows females to nest multiple times without constraints of weather and migration that cause some double-brooded females of temperate species to renest so quickly that nest construction, laying, and start of incubation must occur before young from a previous attempt have fledged.

Hummingbirds are unusual among species with altricial young because parental care is performed solely by the female. Female hummingbirds may seem poorly suited for attending two nests simultaneously because they receive no assistance from their mates or from nest helpers (cooperative breeding is unknown in trochilids). Female-only care by birds with altricial young is confined to species that eat fruit or nectar (Cockburn 2006). Perhaps the energy-rich diet of nectar, rapid absorption of nutrients (Schuchmann 1999), ability to enter torpor during energy shortages (Calder 2002), and longer day length at higher latitudes allow females of temperate species to maintain a positive energy balance while simultaneously producing a second clutch of eggs and provisioning large nestlings.

Rapid renesting appears to be a viable reproductive strategy for temperate-breeding hummingbirds in terms of fledgling production, but nothing is known about survival of fledglings from single-brooded versus multi-brooded females. Young from first broods must be able to care for themselves shortly after fledging for the strategy to be evolutionarily successful.

Little has been published on the postfledging biology of wild hummingbirds, but the period of parental dependency is thought to be short, from a few days to a few weeks (Stiles 1973, Baltosser and Scott 1996, Robinson et al. 1996, Russell 1996, Baltosser and Russell 2000). Young Broad-billed, Anna's, and Costa's hummingbirds raised in outdoor aviaries can start feeding themselves 7 days after fledging, although they are provisioned for longer periods if their mothers do not attempt to renest (Karen Krebs, pers. comm.). Incubation constancy normally ranges from 60 to 85% in hummingbirds (Skutch 1962, Baltosser 1996, Calder 2002). Thus, it is not unusual for hummingbird eggs to be left unattended for brief periods, as would be necessary when females overlapped two nesting attempts.

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