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GALAPAGOS MOCKINGBIRD KLEPTOPARASITIZES CENTIPEDE[1]

ROBERT L. CURRY
Division of Biological Sciences, University of Michigan, Ann Arbor, Michigan 48109 USA

Key words: Galápagos; mockingbirds; Mimidae; Nesomimus; *centipedes;* Scolopendra; *kleptoparasitism; opportunistic foraging.*

Kleptoparasitism of arthropods by birds is rare. In a review of kleptoparasitism in birds, Brockman and Barnard (1979) cited two examples involving arthropod hosts: antbirds occasionally steal prey from tropical army ants; and a few North American land birds, especially House Finches (*Carpodacus mexicanus*; Brockman 1980), sometimes kleptoparasitize digger wasps. Here I describe an additional example of a bird kleptoparasitizing an arthropod. In this instance, a Galápagos mockingbird, *Nesomimus parvulus,* stole food from a Galápagos centipede, *Scolopendra galapagaea.*

I made the following observations on Isla Genovesa, Galápagos, during my research on cooperative breeding in Galápagos mockingbirds (see Kinnaird and Grant 1982; Curry, in press). While making a routine census of the study area on 9 January 1985, I encountered a banded adult mockingbird that was inspecting shallow crevices between flat plates of lava that covered the ground. Shortly after I found the bird, it stopped foraging and walked to the edge of a narrow crevice where a centipede about 20 cm long was moving in the litter. The mockingbird stood motionless watching the centipede for 20 sec and then suddenly thrust its head into the crevice. It withdrew immediately holding in its bill a large wingless cricket that had either been flushed or captured by the centipede. The bird jumped upward, avoiding the head of the centipede which partially emerged from the crevice, and backed away a few meters. The centipede immediately resumed foraging in the crevice.

The mockingbird ate the cricket and returned to its position above the crevice. After staring downward for 60 sec, the mockingbird again reached into the crevice. This time I saw it take another large cricket directly from the centipede's mouthparts. The centipede crawled completely out of the crevice and approached the mockingbird; the bird jumped back with its wings raised and retreated. After the bird had moved off about 3 m, the centipede returned to the crevice. The mockingbird spent 3 min eating this cricket and then returned to the crevice at the point where I had last seen the centipede. The bird waited at the crevice 70 sec and then walked away, resuming normal foraging; it did not search further for the centipede.

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This is a clear but isolated case of kleptoparasitism by a mockingbird. It is the only observation of its kind I have made in Galápagos, though I spent 20 months studying mockingbirds between 1981 and 1985. I know of no previous reports of kleptoparasitism by mockingbirds in the islands.

Why isn't kleptoparasitism of centipedes by Galápagos mockingbirds more common? Opportunistic behavior should facilitate the evolution of kleptoparasitism (Brockman and Barnard 1979), and the four species of Galápagos mockingbirds (*Nesomimus* spp.) are certainly opportunistic. Throughout the archipelago mockingbirds have broad diets that include many different animal foods including insects, lizards, carrion, feces, seabird regurgitate, and seabird eggs (Bowman and Carter 1971), morsels picked from the teeth of sleeping sea lions (*Zalophus californianus*) (Trimble 1976) and, on some islands, ticks and live skin pulled from land iguanas (*Conolophus subcristatus* and *C. pallidus*) (Christian 1980). Española Mockingbirds (*N. macdonaldi*) even feed on blood from live marine iguanas (*Amblyrhyncus cristatus*), sea lions, and seabird chicks (Curry and Anderson, in prep.). The incident described above is an additional example of a Galápagos mockingbird opportunistically exploiting another animal, yet kleptoparasitism of this kind occurs only rarely.

Four factors are probably involved in preventing kleptoparasitism of centipedes by Galápagos mockingbirds from becoming more common.

1) Mockingbirds seldom interact with centipedes. Centipedes are neither abundant nor gregarious in the habitats where I studied, and they are primarily nocturnal. When centipedes are active during daylight hours they tend to remain hidden under lava plates. Encounter rates are probably low enough to prevent mockingbirds from specializing as centipede kleptoparasites even though large crickets, such as those I saw taken from the centipede, are valuable food items that are readily eaten by adult mockingbirds or fed to nestlings.

2) Centipedes are valuable mockingbird prey. When a mockingbird finds a centipede, it usually tries to eat it rather than attempting to kleptoparasitize it. I frequently saw mockingbirds, sometimes in groups, attack and kill centipedes on Genovesa, Española, and Champion, and I saw them feed small centipedes to nestlings on Genovesa and on Santa Cruz. Bowman and Carter (1971) also saw mockingbords eat centipedes on Darwin and Santa Cruz. Occasional kleptoparasitism of centipedes by mockingbirds, then, has probably derived from predation (Brockman and Barnard 1979).

3) Most centipedes are small. These are probably unable

to capture prey that a mockingbird would steal in preference to eating the centipede itself. Only on those rare occasions when a mockingbird meets a large centipede does kleptoparasitism become a potentially profitable alternative to predation. Not only are large centipedes capable of capturing prey worth stealing, but they are also difficult to eat; mockingbirds can break off and eat the legs of large centipedes, but are seldom able to kill them.

4) Interaction with large centipedes may be risky. Though mockingbirds readily eat even very large centipedes that are dead, they are exceedingly cautious when attacking large living centipedes. In contrast, I saw Short-eared Owls (*Asio flammeus*) and Yellow-crowned Night-Herons (*Nyctanassa violacea*) eat large centipedes without hesitation. At least four banded mockingbirds in the Genovesa study area may have been killed by centipedes; I found their intact carcasses in the same kinds of crevices where I most often saw centipedes and where the incident described above took place. (Owls are the only other significant predator of mockingbirds on Genovesa and they usually dismember their kills.) Individual *N. parvulus* weigh roughly 50 g; the largest centipede I measured on Genovesa was roughly 30 cm long and weighed 23 g. Smaller *Scolopendra* centipedes in other regions can kill mice and small birds (Cloudsley-Thompson 1958) and Galápagos residents claim that *Scolopendra galapagaea* can kill small dogs; they can also inflict a painful bite that produces severe swelling in humans (B. Barnett, pers. comm.). A mockingbird may risk its life if it interacts with a large centipede even if its goal is kleptoparasitism rather than predation.

I suggest that risk of injury or death, combined with rarity of encounters between mockingbirds and centipedes that are too large to eat, prevents kleptoparasitism of centipedes by Galápagos mockingbirds from becoming more common.

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THE SYSTEMATIC STATUS OF *CRANIOLEUCA FURCATA* TACZANOWSKI (FURNARIIDAE)[1]

GARY R. GRAVES
Department of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560 USA

Key words: Cranioleuca; furcata; *spinetail;* curtata; *Andes; Taczanowski; Furnariidae.*

Taczanowski (1882) described *Cranioleuca furcata* from two specimens collected by Sztolcman (=Stolzmann) at Chirimoto (1,646 m), Dpto. Amazonas, Peru. The validity of the species remained unquestioned for nearly 60 years, probably due in part to the relative inaccessibility of the type specimen and the lack of comparative material from the Andes. Without examining the type, Bond (1945) considered *furcata* to "probably be the immature" of the Ash-browed Spinetail (*Cranioleuca curtata*; Sclater 1869), which ranges from Colombia along the eastern slope of the Andes to central Bolivia (Parkes, unpubl.). Peters (1951) listed *furcata* as a species, but with a query, citing Bond's opinion. Meyer de Schauensee (1966) gave *furcata* a full entry, but stated "from the description one would suspect this to be the young of *curtata.*" Later, he (Meyer de Schauensee 1970) omitted any reference to *C. furcata* in his guide to South American birds.

Vaurie (1971, 1980) examined the single surviving cotype, in the Instytut Zoologiczny of Warsaw and concluded that *furcata* was a valid species. Following his examination of the Warsaw specimen, Vaurie (1971) identified three "ochraceous" immature specimens of *Cranioleuca* in the "abajo chaco," Rio Oyacachi (ca. 1,500–2,000 m) on the eastern slope of the Ecuadorian Andes. A third specimen identified by Vaurie as belonging to *C. furcata* was taken at Chaupe (1,860 m), Dpto. Cajamarca, northern Peru (AMNH 181344). These specimens had been included by Chapman (1924) in the type series of *C. curtata* "*griseipectus*" (=*C. curtata cisandina*). The Chaupe specimen was subsequently identified as *C. curtata cisandina* (Bond 1945).

Although Morony et al. (1975) adopted Vaurie's (1980)

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