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EGYPTIAN VULTURES (*NEOPHRON PERCNOPTERUS*) ATTACK GOLDEN EAGLES (*AQUILA CHRYSÆTOS*) TO DEFEND THEIR FLEDGLING

KEY WORDS: *Egyptian Vulture*; *Neophron percnopterus*; *Golden Eagle*; *Aquila chrysaetos*.

The Egyptian Vulture (*Neophron percnopterus*) is a medium-sized migratory scavenger which nests on rocky cliffs. It is territorial, and actively defends the area around the nest (Bergier and Cheylan 1980, *Alauda* 48:75–97). Egyptian Vultures frequently attack immature and adult conspecifics near the nest (Donázar and Ceballos 1990, *Ecología* 2:275–291), as well as other cliff-nesting birds including the Eurasian Kestrel (*Falco tinnunculus*), Peregrine Falcon (*Falco peregrinus*), Eurasian Griffon (*Gyps fulvus*), Red-billed Chough (*Pyrrhocorax pyrrhocorax*), and Common Raven (*Corvus corax*; F. Fernández pers. comm.). These species also attack nesting Egyptian Vultures, mainly in order to defend their own territories, but sometimes to steal food that adult vultures bring to the nest (Elosegui 1989, Vautour fauve (*Gyps fulvus*), Gypaète barbu (*Gypaetus barbatus*), Percnoptère d’Égypte (*Neophron percnopterus*): synthèse bibliographique et recherches. Acta Biologica Montana. Serie documents de travail 3. C.B.E.A., U.P.P.A., Pau, France)

Egyptian Vultures have few predators; Common Ravens are the primary predators on eggs (Fernández 1994, Separata de Biblioteca 9. Ayto. de Aranda de Duero, Aranda de Duero, Burgos, Spain), and mammals such as the stone marten (*Martes foina*) and the fox (*Vulpes vulpes*) and raptors such as the Eurasian Eagle-Owl (*Bubo bubo*) and the Golden Eagle (*Aquila chrysaetos*) occasionally take chicks (Elosegui 1989). There are few documented encounters between Golden Eagles and Egyptian Vultures (Fernández 1994), though the two species have similar habitat requirements and sometimes feed simultaneously on the same carcasses (P. Mateo unpubl. data). We here report a nesting pair of adult Egyptian Vultures attacking a pair of Golden Eagles in order to defend a fledgling vulture.

The study area (1250 km²) is a mountainous region in northwestern Spain; elevations range from 90 to >2000 m.a.s.l., providing many limestone cliffs suitable for raptor nest sites. In 2006, we estimated a breeding population of 14 pairs of Egyptian Vulture (P. Mateo and P. Olea unpubl. data); the nesting population of Golden Eagles was estimated to be approximately 13 breeding pairs (Sanz 2006, Fauna Vertebrada de la Montaña Oriental Leonesa, Grupo de Acción Local Montaña de Riaño, León, Spain).

During a visit to an Egyptian Vulture territory on 14 August 2006 at 1800 H local time, we located two adults and one fledgling flying approximately 1 km from the nest. The three birds flew 50 m over the ground, alternating soaring and gliding. The adults were approximately 100 m away from the fledgling. An adult Golden Eagle, coming from the opposite side of the valley, flew close over the vulture fledgling (ca. 10 m). The adult vultures immediately flew back towards the fledgling. One minute later, the eagle flew back towards the vultures and both adult vultures dived at the eagle. The two adults dived at the eagle >10 times in ca. 3 min. The Golden Eagle did not show any aggressive behavior while being attacked by the vultures. Three Eurasian Griffons came from the top of the valley, probably attracted by the presence of the other raptors. Simultaneously, another Golden Eagle joined the group from the same direction as the first. The Eurasian Griffons glided for a while and then flew away. The adult Egyptian Vultures chased the eagles, soaring up in circles. Finally, the eagles abandoned the group and the Egyptian Vultures continued flying together. The entire encounter lasted ca. 20 min. Aggressive encounters between Golden Eagles and Egyptian Vultures are infrequent; we have observed similar events only once in more than 600 hr (2 yr) of monitoring Egyptian Vultures. Other researchers who have been studying Egyptian Vultures for decades (e.g., Donázar and Ceballos 1988, *Ardeola* 35:3–14; Donázar et al. 2002, *Biol. Conserv.* 107:89–97) have observed attacks against Golden Eagles only once (J. Donázar pers. comm.).

Theory predicts that if parental investment increases as the breeding season advances, the intensity of parental defense should also increase proportionately (Barash 1975, *Wilson Bull.* 87:367–373, Andersson et al. 1980, *Anim. Behav.* 28:536–542). Although other factors can influence defensive behavior (e.g., sex, longevity of adults, type of predator, and duration of exposure to predator; Knight and Temple 1986, *Auk* 103:318–327), the reproductive value hypothesis may explain why the Egyptian Vultures aggressively defended their fledgling against a predator as powerful as the Golden Eagle. A similar phenomenon has been observed in other raptor species (Fisher et al. 2004, *Can. J. Zool.* 82:707–713).

The Egyptian Vulture is classified as Endangered (IUCN Red List of Threatened Species 2007, <http://www.iucn.org/themes/ssc/redlist.htm> [last accessed 22 October 2007]), so information on the factors limiting its population may be of conservation value (Donázar 2003, Alimoche común *Neophron percnopterus*. Pages 166–167 in R. Martí and J. Del Moral [Eds.], Atlas de las aves reproductoras de España, Dirección General de Conservación de la Naturaleza-Sociedad Española de Ornitología, Madrid, Spain). Interspecific competition and predation may result in nest abandonment or nest failure (Martínez and Blanco 2002, *Ardeola* 49:297–299), although some authors have found that interspecific aggression