J. Raptor Res. 38(3):290

COMMENSAL FORAGING BY A RED-SHOULDERED HAWK (*BUTEO LINEATUS*) WITH WILD TURKEYS (*MELEAGRIS GALLOPAVO*)

On 6 August 2003, I observed an instance of commensal foraging by a Red-shouldered Hawk (*Buteo lineatus*) with Wild Turkeys (*Meleagris gallopavo*). I began watching a flock of 15 adult turkeys at 0745 H from a distance of 250 m (through 10 × 40 binoculars) as they foraged in a weedy, grazed pasture bordered by an oak-hickory (*Quercus-Carya*) woodlot near the mouth of Crooked Creek on the White River, Marion County, Arkansas (36°13.6′N, 92°28′W). At 0900 H a juvenile Red-shouldered Hawk flew across the pasture toward the turkeys and perched on a low branch at the forest edge. As the hawk approached, the turkeys cackled and ran into the forest but all emerged from cover within 1–2 min and resumed feeding in the pasture some 5–15 m from the forest edge. Over the next 90 min, the hawk followed the turkeys as they meandered 225 m southward along the ecotone. On five occasions the hawk dropped to the ground from a low perch (2–4 m above ground) at the edge of the woodlot to capture small prey items with its talons. After consuming the prey on the ground, the hawk would walk a few steps, pause, and then fly to another perch within 5–8 m of the leading front of the turkey flock. The turkeys showed little reaction to the hawk except for one hen, which feigned a lunge toward the hawk on the ground from ca. 5 m away. The observations ended when the turkeys and hawk moved out of sight around a bend of the woodlot.

About an hour later, I followed the path of the turkeys and found grasshoppers (primarily *Syrbula admirabilis, Arphia simplex, Cortophaga viridifasciata, Hippiscus ocelote,* and *Dissosteira carolina*) to be fairly abundant in the pasture. It seems probable that the hawk was feeding on grasshoppers flushed by the turkeys. This observation appears to be the first report of commensal foraging by the Red-shouldered Hawk (Crocoll 1994, *In* A. Poole and F. Gill [EDS.], The birds of North America, No. 107. The Academy of Natural Sciences and American Ornithologists' Union, Washington, DC U S.A.). I thank Bill Pranty, Michael McCrary, and Jerry Mastel for comments on the manuscript and Bob Yeider for hospitality on the White River.—**Gary R. Graves (e-mail address: graves.gary@nmnh.si.edu), Department of Zoology, MRC-116, National Museum of Natural History, Smithsonian Institution, P.O. Box 37012, Washington, DC 20013 U.S.A.**

Received 5 September 2003; accepted 21 March 2004
Associate Editor: Michael I. Goldstein

J. Raptor Res. 38(3):290–292

NOTES ON A RANGE EXPANSION AND SUMMER DIET OF THE MOUNTAIN CARACARA IN THE ANDES OF SOUTH-CENTRAL CHILE

The Mountain Caracara (*Phalcoboenus megalopterus*) ranges from sea level to 5000 m in Perú, Bolivia, northwestern Argentina, and Chile (Araya and Millie 1996, Guía de campo de las aves de Chile, 7th Ed., Editorial Univer., Santiago, Chile; González and Malaga 1997, *Ornithol. Neotrop.* 8:57–69). Although the species is known to inhabit much of Chile (18–33°S; Araya and Millie 1996), the southern limit of its distribution is unclear in the literature. Based on a bird collected by Bridges in 1843 (Fraser 1843, *Proc. Zool. Soc. Lond.* 11:108–121), various authors list the Mountain Caracara's southern-range limit as Colchagua (34°35′S, 71°24′W; Hellmayr 1932, Birds of Chile, *Field Mus. Nat. Hist. Publ., Zool. Ser.* 10:1–472, Goodall et al. 1951, Aves de Chile, Vol. 2, Platt Editores Gráficos, Buenos Aires, Argentina). The Bridges' collection site is not exactly known, but it has been assumed to be the Colchagua Province (Paynter 1988, Ornithological Gazetteer of Chile, Mus. Comp. Zool. Harvard Univ., Cambridge, MA U.S.A.). Following Philippi (1964, *Invest. Zool. Chil.* 11:1–74), other authors have extended the southern limit of the Mountain Caracara's range south to Talca (Johnson 1965, The birds of Chile, Vol. 2, Establ. Gráficos, Buenos Aires, Argentina; Fjeldså and Krabbe 1990, Birds of the high Andes, Appolo Books, Svendborg, Denmark). Philippi (1964), however, does not

explain the rationale for this extension, and it is not clear if he refers to the city of Talca (32°25′S, 71°40′W) or the province (34–35°S, 70–72°W).

Recently, Figueroa et al. (2000, *Bol. Chil. Ornitol.* 7:2–12) recorded the Mountain Caracara in the Huemules del Niblinto Nature Sanctuary and National Reserve (henceforth, Niblinto Sanctuary; 36°45′S, 71°30′W) near Nevados de Chillán in the Andes mountain range, ca. 140 km south of the southern boundary of Talca province. This record potentially represents a new southern limit of the distribution of the Mountain Caracara. Figueroa et al. (2000) mentioned that the caracaras were recorded in the vicinity of Baul Mountain (36°44′56″S, 71°29′12″W), but did not give details about those observations.

Here, we describe observations of Mountain Caracaras made during three consecutive years in the same area studied by Figueroa et al. (2000). Niblinto Sanctuary is a rugged area ca. 10 000 ha in size, with elevations ranging from 800–2200 m and slopes up to 45°. Topography includes valleys, plateaus, and numerous ridges dissected by deep ravines that carry water during winter and spring. The vegetation is composed primarily of mixed-deciduous *Nothofagus* forests and shrublands characterized by a diversity of high-Andean species (Figueroa et al. 2000). The Niblinto Sanctuary is a jointly managed private/public wildlife protected area forming part of the Nevados de Chillán, a priority site for biodiversity conservation in Chile (Muñoz et al. 1996, Libro rojo de los sitios prioritarios para la conservación de la diversidad biológica en Chile, Corporación Nacional Forestal, Santiago, Chile).

On 26 February 2001, two adult Mountain Caracaras were seen around Baul Mountain in the Niblinto Sanctuary The next day, a juvenile Mountain Caracara (identified by plumage; Brown and Amadon 1968, Eagles, hawks and falcons of the world, Vol. 1, Country Life Books, London, U.K.) was seen in the same area. On 29 January 2002, two adult Mountain Caracaras were perched on the north slope of Colchon Mountain, 5 km southwest of Baul Mountain On the same day, two adult Mountain Caracaras were also observed near Las Yeguas Mountain, 4 km northeast of Colchon Mountain and 3 km northwest of Baul. On 23 February 2002, two adults were seen chasing a juvenile around Baul Mountain. More recently, on 2 February 2003, one adult Mountain Caracara was seen near Baul Mountain.

Because only one or two individual Mountain Caracaras were observed at each sighting, we are not sure if more than one pair occurred at our study site. Diurnal raptors frequently exhibit long local movements (Newton 1979, Population ecology of raptors, T. & A.D. Poyser, London, U.K.) and so our records may correspond to only one pair Even so, we believe that sightings of the Mountain Caracara obtained during three consecutive yr in the Niblinto Sanctuary are sufficient evidence to extend the species' southern distributional range. Including these records of the Mountain Caracara, a total of 12 diurnal and four nocturnal raptors have been recorded in the Niblinto Sanctuary (Figueroa et al. 2000), supporting the importance of this site for the conservation of Andean biodiversity (Muñoz et al. 1996).

During our study period in the Niblinto Sanctuary, we also obtained limited information on the diet of Mountain Caracaras. From 24–28 February 2001, we collected 20 pellets below a cliff on Baul Mountain, where a Mountain Caracara pair was observed roosting. We observed the roosting site from dawn to sunset (0700–2100 H) for all 5 d using a telescope (60×) and binoculars, and pellets were collected every morning or afternoon. During this period, no other raptors were observed on the cliff. The Mountain Caracara's pellets were similar in appearance to pellets of the Chimango Caracara (*Milvago chimango*) and Crested Caracara (*Polyborus plancus*; pers. obs.). Pellets were dissected in the laboratory using forceps to separate all prey remains. Because most of the pellets were broken, we were unable to obtain quantitative information on diet; however, we attempted to identify prey remains and thus develop a qualitative description of the diet of this Mountain Caracara pair.

Of all prey items identified ($N = 54$), most were insects (94%; identified by head capsules and elytra). Coleopterans (genera: *Epipedonata, Ectinogonia, Polycesta, Tibionema, Ryephenes, Sphenognathus, Aegorhinus*) predominated (89%), although some Orthopterans (*Aucacris* spp.) were noted (5%). The Plain-mantled Tit-Spinetail (*Leptasthenura aegithaloides*; identified by feathers), an unidentified bird, and the great rock rat (*Aconaemys fuscus*; identified by skull) were the only vertebrate species detected, each accounting for 2% of the prey items recorded. The large number of terrestrial insects found in the pellets is consistent with the Mountain Caracara's foraging habits. This species is adept at ground foraging, scratching, and stamping to disturb insects living underground or beneath rocks (Jones 1999, *Wilson Bull.* 11:437–439).

Although our information is limited, our results are similar to information on this raptor's diet reported by others (Johnson 1965, Brown and Amadon 1968). To our knowledge, however, no study has used pellets to assess diet of this species. Perhaps, pellets are difficult to find because areas typically inhabited by Mountain Caracaras are rugged and inaccessible. Because our data are based on a small and geographically-limited sample, further investigation is necessary to understand the food habits of this little known caracara.

This publication is part of the Huemul Deer Conservation Project financed by the Zoological Society of Frankfurt of the Comité Pro Defensa de la Fauna y la Flora, Chile, and of the Andean Raptors project financed with private funds. We thank Rodrigo López who provided support, Diane Haughney for helping us with the English translation, and Benito González, Roberto Schlatter, and Rodolfo Figueroa for supporting our work. Collection of field data was

made possible by the collaboration of Alberto Trostel, Juan Sepúlveda, Loreto Gómez, and Ishbak Shehadeh. Three anonymous referees helped improve the manuscript.—**Ricardo Figueroa Rojas (e-mail address: asio@tie.cl), Sergio Alvarado Orellana, and E. Soraya Corales Stappung, Estudios para la Conservación y Manejo de la Vida Silvestre Consultores, Blanco Encalada 350, Chillán, Chile.**

Received 13 November 2002; accepted 27 December 2003
Associate Editor: Joan L. Morrison

J Raptor Res. 38(3):292–293

AN EXAMPLE OF COOPERATIVE HUNTING BY SAKER FALCONS IN HUNGARY

Cooperative or social hunting has been described for several diurnal raptors, including Sooty Falcons (*Falco concolor*), Eleonora's Falcons (*F. eleonorae*) (Walter 1979, Eleonora's Falcon: adaptations to prey and habitat in a social raptor. University Chicago Press, Chicago, IL U.S.A.), and Harris' Hawks (*Parabuteo unicinctus*; Mader 1976, *Living Birds* 14:59–85; Bednarz 1995, Harris' Hawk [*Parabuteo unicinctus*]. *In* A. Poole and F. Gill [EDS.], The birds of North America, No. 146. The Birds of North America, Inc., Philadelphia, PA U.S.A.). The strategy involves a pair hunting together, with one bird flying ahead to flush or disrupt the prey and the other usually following behind to capture the prey. Some social species group or flock-hunt cooperatively (Ellis et al. 1993, *BioScience* 43:14–20). Lanner Falcons (*F. biarmicus*), Brown Falcons (*F. berigora*), and Aplomado Falcons (*F. femoralis*) have been observed hunting in cooperative pairs (Hector 1986, *Ethology* 73:247–257; Mooney 1989, *Corella* 13:18–21; Leonardi 1999, *J. Raptor Res.* 33: 123–127), but the strategy is poorly documented for other large falconids such as the Saker Falcon (*F. cherrug*). Based on our review of literature only Gorman (1998, *Buteo* 10:103–104), reported observations that suggested possible cooperative hunting by sakers.

Sakers feed mainly on small mammals, but also take a variety of birds and other animals (Cade 1982, The falcons of the world. Comstock/Cornell University Press, Ithaca, NY U.S.A.). In Hungary, sakers forage largely on feral pigeons (*Columba livia*) and ground squirrels (Susliks, *Spermophilus citellus*), and often nest on artificial boxes and platforms recently placed on electrical towers (Bagyura et al. 1994, Pages 391–395 *in* B.-U. Meyburg and R.D. Chancellor [EDS.], Raptor conservation today. World Working Group on Birds of Prey, Berlin, Germany; Bagyura et al. 1994, Pages 397–401 *in* B.-U. Meyburg and R.D. Chancellor [EDS.], Raptor conservation today. World Working Group on Birds of Prey, Berlin, Germany; Baumgart 2000, Pages 295–299 *in* R.D. Chancellor and B.-U. Meyburg [EDS.], Raptors at risk. World Working Group on Birds of Prey, Berlin, Germany). Regardless of prey, sakers catch most of their prey on or near the ground and are generally less aerial hunters than Peregrine Falcons (*F. peregrinus*) or Gyrfalcons (*F. rusticolus*; Cade 1982). Sakers typically hunt from an elevated perch providing a commanding view of the terrain, then launch after prey, flying rapidly close to the ground, and capture prey on the ground. Sakers will also hover briefly like a large kestrel, particularly when searching for prey that has taken cover (Clark 1999, A field guide to the raptors of Europe, the Middle East, and North Africa. Oxford University Press, New York, NY U.S.A.; Forsman 1999, The raptors of Europe and the Middle East: a handbook of field identification. T. & A.D. Poyser, London, U.K.).

On 28 May 2003 at 0900 H local time, we observed one adult male and female saker (a breeding pair that later fledged two young; I. Sándor pers. comm.) 400 m away perched together on a 40 m electrical tower with a nesting platform in Hortobágy National Park, 35 km west of Debrecen in northeastern Hungary. After 10 min of observation the larger female flew west, followed immediately by the smaller male <3 sec later. Both sakers flew rapidly <50 m above ground level toward a cornfield <1 km distant. The female, first to arrive, dove to the ground and flushed a female Ring-necked Pheasant (*Phasianus colchicus*), which quickly dropped back into the field after the male made a subsequent passing attack. Both sakers hovered and made multiple dives for <20 sec at the location where the pheasant landed, again without making apparent contact, and then landed together on the ground, at which point both falcons and prey were out of view. Less than 30 sec later the pheasant became airborne (<5 m) briefly once again and was chased to the ground out of view by one of the falcons (sex undetermined).

Approximately one min later, an adult male Marsh Harrier (*Circus aeruginosus*) flew <10 m over the area and was chased by one of the sakers. The harrier landed on a low pile of cow dung and hay about 75-m away and the saker