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REMARKABLE SAKER FALCON (*FALCO CHERRUG*) BREEDING RECORDS FOR MONGOLIA

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ABSTRACT.—During 1994–95 surveys, we located over 80 Saker Falcon (*Falco cherrug*) breeding sites in Mongolia. Over half of the sites had features that were in some way remarkable or previously undescribed in the scientific literature. Ten were on utility poles, two on bridges, three on abandoned buildings and one was on a truck tire on a pole. Seven sites were very near buzzard nests and two more were in buzzard nests that were used the same season. Five sites were on cliff tops accessible by walking. Four were on very short cliffs, two were on broken/sloping cliffs and one was at the base of a cliff. Five were on the tops of stone pillars. Six were in very short elm trees. Nest composition was also sometimes remarkable: one was a suspended uric acid (excrement) platform without underlying support, three were trash nests and two were composed largely of bones.

KEY WORDS: *Saker Falcon*; Falco cherrug; *proximal nesting*; *Mongolian birds*; *nesting situations*; *Upland Buzzard*; Buteo hemilasius.

Falco cherrug registros de crías en Mongolia

RESUMEN.—Durante estudios en 1994–95, nosotros localizamos arriba de 80 *Falco cherrug* sitios de cría en Mongolia. Arriba de medio de los sitios tenían elementos que estabán en una manera extraordinario e nunca antes describido en la literatura científica. Diez estabán en postes, dos en puentes, tres en edificios abandonados y uno en una llanta de camioneta en un poste. Siete sitios fueron cerca de nidos de *Buteo buteo,* y dos mas estabán en los nidos de *Buteo buteo* que estabán usadas esa misma temporada. Cinco sitios estabán en precipicios accesible por caminando. Cuatro estabán en precipicios cortos, dos estabán en precipicios quebrados/inclinado y uno estaba en el base del precipicios. Cinco estabán en el cumbre de columnas de pierda. Seis estabán en árboles muy cortos. Composición de nidos también a veces estaba extraordinario: uno estaba suspendido en ácido uric plataforma sin soporte por de bajo, tres nidos eran de basura y dos estabán componida por mayoría de huesos.

[Traducción de Raúl De La Garza, Jr.]

The Saker Falcon (*Falco cherrug*) normally nests on cliffs (short and tall) and in tall trees (Brown and Amadon 1968, Cade 1982). Other species of large falcons are known to occasionally breed on man-made structures (Newton 1979) and one species, the Peregrine Falcon (*F. peregrinus*), regularly does so, at least in some parts of its range. Remarkably, in the eastern Sahara Desert, the Lanner Falcon (*F. biarmicus*) has been reported to breed in such odd situations as in abandoned motor vehicles and on the ground next to fuel cans (Goodman and Haynes 1989). The only published record of a saker possibly nesting on a man-made structure is Baumgart's (1978) reference to a pair that he believed "bred on a ruin" (Baumgart 1980).

During 1994–95 surveys across Mongolia, we located over 80 saker nests. At 78 of these sites, pairs were breeding the year of our visit. This paper summarizes unusual aspects of these breeding sites. We previously reported saker productivity using data from these samples (Ellis et al. 1995). In

Table 1. Features of Saker Falcon nests on man-made structures in Mongolia, 1994–1995.

SUPPORT TYPE	NUMBER NESTS	NEST HEIGHT (STRUCTURE HEIGHT) IN m
Powerline monopod	1	14 (23)
Telephone monopod	1	7 (8)
Powerline bipod	2	8 (9), 7 (8)
Powerline tripod	6	9 (11), 8 (10), 8 (9), 6 (8), 8 (9), 9 (9)
Bridges	2	1.4 (2.3), 2.0 (2.9)
Abandoned buildings	3	5 (7), 3.1 (3.1), 5 (6)
Truck tire on metal pole	1	11 (11)

the only previous study of saker breeding in Mongolia, Baumgart (1978) found several pairs, most of which were believed breeding in the montane forests near Ulaanbaatar.

METHODS

From May–July 1994 and 1995, our survey team, using 4-wheel drive vehicles, traversed 10 781 km in two survey loops beginning in Ulaanbaatar and extending into extreme northwestern Mongolia (1994) and extreme eastern Mongolia (1995). Inasmuch as improved roads are almost nonexistent except near Mongolia's largest cities, our meandering route was largely determined by the presence of potential raptor nesting habitat on the horizon.

At each site, we measured over 20 descriptive parameters. Most measurements were taken directly from taped segments of climbing ropes or using tape measures. Longer distances were estimated from photographs by proportional comparisons with humans of known height or segments of the cliff or other supports of known height or length. Access to powerpole tops was obtained by first shooting a tethered (nylon, monofilament fish line) arrow over a cross arm, hoisting a climbing rope attached to the monofilament, then using conventional climbing ascenders to scale the rope. Poles with ground wires were not scaled. Horizontal measurements were sometimes taken by pacing distances between nest sites. Long distance estimates are believed to be within 5% of their true value. Distances of 10 m or less are accurate to the nearest 2 cm.

RESULTS

We found 10 nests on power or telephone support structures (Table 1). Most of these were constructed by Upland Buzzards (*Buteo hemilasius*), Ravens (*Corvus corax*) or perhaps Black Kites (*Milvus migrans*). Only a small proportion of the poles in Mongolia are used by raptors because pole configurations usually will not support their nests. We found a few fallen nests below poles and more than 100 Upland Buzzard nests on the ground immediately adjacent to utility poles. Sakers never preempted these ground nests. Remarkably, the buzzards were able to fledge young even in areas where foxes (*Vulpes vulpes* and *Cynalopex corsac*) and wolves (*Canis lupus*) were believed to be common. The utility pole nests were in central and eastern Mongolia and were found only where trees and cliffs were absent. There are records of sakers nesting on utility pylons in Hungary (Bagyura et al. 1994) and a single record for the Lipetsk Region, south of Moscow, Russia (V.M. Galushin, pers. comm.).

Six saker nests were in truly remarkable situations. Two were on very low railroad bridges. One of these was only 1.4 m above water. A second was 2 m above the ground (Fig. 1). Three were on buildings. Two of these were in windows and one was on a rooftop only 3.1 m above ground. One nest was on a truck tire on top of a pipe at the edge of an abandoned Russian military post. All of these unusual nesting situations (Table 1) were in eastern Mongolia and far from sizeable cliffs or forests.

Although we frequently saw Saker Falcons chasing Upland Buzzards, we found seven situations where nests of the two species were in close proximity. Although Dementiev and Gladkov (1951) mention sakers nesting near other raptors, our observations in Mongolia suggest that sakers rarely nest within 200 m of buzzards. At the five exceptional sites, sakers were nesting 4.4–50 m from Upland Buzzards ($\bar{x}$ = 36 m). The most unusual of these nests was only 4.4 m from, and directly above, a buzzard nest (Fig. 2) containing 2 large fledglings. With the oldest saker nestling about 26 days of age, the female spent very little time on the nest except when feeding. From her roost, a Buddhist shrine 250 m away, she harried the buzzards when they came within 200 m of the nest. However, once on its nest, the buzzard could remain unmolested even when the falcon was on hers.

We found two sites where Saker Falcons had nested in nests that were later that same year re-

Figure 1. A saker nest 2 m from the ground on an active railroad trestle.

furbished by Upland Buzzards. At one of these, we found two saker eggs (one dimpled but sloshy and a second egg crushed and being consumed by dermestid larvae) beneath about 10 cm of recently added sticks. At the second nest, we found large, bright (not faded) eggshell fragments beneath about the same depth of sticks. The lack of fresh whitewash at egg level in both nests suggested that neither pair of sakers had hatched or fledged young.

Sakers also occasionally nested near eagles, but not nearly as close as to Upland Buzzards. We found two Steppe Eagle (*Aquila nipalensis*) nests, each approximately 1.5 km from saker nests. The nearest occupied Golden Eagle (*Aquila chrysaetos*) nest containing one nestling was estimated to be within 200 m of a saker brood, occupying one of the eagle's alternate nests.

Most Saker Falcon cliff nests are placed in inaccessible niches. However, we found five nests placed at the very tops of cliffs (Table 2). All of these were approachable from above by walking, with no climbing or descending required. These sites were sometimes beside an emergent boulder, but each nest could be easily entered by a wolf, and the eggs in one had been burned in a grass fire.

At four other sites, the nests were inaccessible, but the cliffs were very short (<6.5 m high, Table 2). Two other nests were on sloping or broken cliffs that were accessible from above, below, and/or the side. The most accessible scrape was on bare soil at the very base of a tiny, sloping cliff. It had nonetheless fledged at least two young just prior to our visit.

Five saker nests were on stone columns with little or no shade for either the brooding adult or the nestlings (Fig. 3). All of these pillars were steep enough to require climbing, but only the two tallest were secure from mammalian predators.

Although falcons do not build nests (Ellis 1993), one of our saker sites seems to violate this rule

Figure 2. A cliff top Saker Falcon nest with an Upland Buzzard nest 4.4 m below.

Table 2. Features of Saker Falcon nests on very short or broken cliffs.

LOCATION OF NEST	NUMBER NESTS	NEST HEIGHT (CLIFF HEIGHT) IN m
On accessible cliff top	5	8 (9), 3.1 (3.4), 3.7 (3.7), 5.5 (5.5), 5.2 (5.8)
On cliff face	4	3.0 (5.8), 4.0 (4.9), 4.1 (6.3), 3.2 (4.7)
On sloping or broken cliff	2	2.1 (2.7), 2.4 (2.7)
At cliff base	1	0.0 (ca 3)

(Fig. 4). It consisted of an unsupported uric acid (excrement) platform wedged into a crevice. A twig clinging to its underside evidenced that it was once underlain and supported by a stick nest.

Many saker nests contained trash collected by the previous occupants. In three of these, trash items were conspicuously important in their composition and long stringers of wire, twine, or cloth dangled from the rim. On the open steppe where few natural building materials are available other than grass, raptors of several species routinely use cast off clothing, machine parts, wire, bones, and tools as nesting material. In one Upland Buzzard nest, we even found paper money.

Dementiev and Gladkov (1951) previously reported a Saker Falcon nest in an elm tree (*Ulmus* sp.) in Mongolia. We found six instances of Saker Falcons using small elms in southeastern Mongolia. These were 2.7–4.0 m above the ground in elms ranging from 4.9–8.5 m tall. All of these were stick nests probably built by either Black Kites or Upland Buzzards. All but one tree provided a closed canopy, shading the nest.

Figure 3. A nest on a short, broad, unshaded pillar in southeastern Mongolia.

Figure 4. This nest is an unsupported uric acid platform, formerly underlain with a stick nest.

DISCUSSION

Saker Falcons are now known to breed in a wide variety of situations in Mongolia. Many of these were previously unreported for the saker and some are new for any large falcon. Probably the most remarkable structural supports were the two very low, railroad trestles and the elevated tire. From a behavioral viewpoint, the nest only 4.4 m from a buzzard nest was most remarkable. The saker's adaptability in using a wide range of breeding situations is, no doubt, a response to favorable prey populations in areas lacking large trees and cliffs.

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