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Wilson Bull., 109(1), 1997, pp. 173–177

A description of nests and behavior of the Gray-headed Kite.—The Gray-headed Kite (*Leptodon cayanensis*), a little-known Neotropical raptor (Blake 1977, Brown and Amadon 1989, del Hoyo et al. 1994); occurs in lowland tropical forests from central-eastern Mexico to northern Argentina (Brown and Amadon 1989). Only one nest and two clutches of the species have been described (del Hoyo et al. 1994). Here, I describe three nesting attempts, one egg, and behavior of Gray-headed Kites in Tikal National Park, Guatemala during 1991 and 1993.

Study area and methods.—Tikal National Park (17°13'N, 89°36'W) is in a lowland, dry, semi-deciduous, tropical forest with an annual mean rainfall of 1348 mm (1989–1992, pers. obs.). Several forest types, which occur along topographical drainage, soil type, and moisture gradients (Schulze 1992) have been described for the park. Two extremes of this forest type continuum are upland or high-ground forests (tall, semi-evergreen forests on well-drained shallow soils) and the bajo forests (low in stature, open canopy with dense understory, and occurring in low-lying sites of deep clay-rich soils, subject to seasonal flooding and drought). Nest observations were made from ground level with 10× binoculars at distances of 35 to 50 m. Kites were caught with a noose carpet placed on the nest during incubation (see Newton 1986). Measurements (nearest 1.0 mm) were taken with a dial caliper and scale (Palmer 1962), and weight (nearest 1.0 g) was taken with a 1000-g Pesola spring balance. Kites were fitted with radio transmitters (Holohil Systems Ltd., Woodlawn, Ontario) which weighed 12 g (1.8–2.2% of body weight). Transmitters were attached to the birds by a backpack harness (Kenward 1987). Harness material was constructed of teflon tubing and flexible cable coated with rubber and secured by cotton thread and a crimped brass tube, respectively. A foam pad was attached to the base of the transmitter between the bird's back and the transmitter.

Results.—On 20 April 1991 I found a pair of Gray-headed Kites constructing a nest 24.4 m up in a 27 m palo de danto (*Vatairea lundellii*), (DBH 65.3 cm), in an area of transition from bajo forest to upland forest with emergent mahogany (*Swietenia macrophylla*) trees. The nest was loosely constructed of approximately 100 dried twigs and measured 40.0 cm in length by 33.0 cm in width and 8.0 cm deep. On 1 May, one of the kites was incubating. On 5 May, during 2.5 h of morning observations, I observed an incubation exchange between the two adults. The entering bird (sex unknown) uttered a soft cat-like “meow” call, flew in, and perched 5 m from the nest. The incubating bird stood, stretched, and made a weak chatter call to the perched bird, then flew south. The perched kite settled down on the nest to incubate. On May 9, I observed the nest from dawn (05:15) to dusk (18:30) MST. On my arrival, one kite was observed incubating. At noon a bird gave a feeble cat-like “meow” call from the east. Six minutes later a Gray-headed Kite entered the nest area, perched, then eight minutes later flew to the nest. The incubating bird then stood, stretched, and flew east out of view. The second bird settled on the nest and began incubating 2 min later. On May 18, I visited the nest from 05:30 to 07:30; on arrival there was a incubating bird on the nest. At 06:49 second kite approached with a dry twig and perched 5 m away from the nest. At 06:51 the incubating kite stood, stretched, and flew away. The second kite flew to the nest and placed the twig on it. By 07:05 the second bird began incubating. A single egg was in the nest on 21 May 1991. It measured 54.8 × 42.1 mm and weighed 49.0 g. The large end of the egg was a solid faded purplish brown that extended one-third the length; the other two-thirds were dirty white, spotted throughout with small rusty-brown spots.

On 21 May at 07:00, the incubating kite was trapped, measured, weighed, banded, radio tagged, and released. This bird returned immediately to continue nest duties. Several hours later the other pair member was trapped at the nest, measured, weighed, banded, radio tagged, and released. The first adult weighed 643 g. Its tail length was 261 mm, body length 521 mm, wing length 332 mm, hallux 23.2 mm, tarsus length 48 mm, middle toe 33 mm, and tarsus width 11.9 mm. I suspect this bird was a female because the weight was similar to those reported by Friedmann (1950), Blake (1977) and Brown and Amadon (1989) for females. The second Gray-headed Kite weighed 553 g, and its tail was 248 mm, body length 499 mm, wing length 321 mm, hallux 20.8 mm, tarsus length 48 mm, and tarsus width 8.4 mm. All these measurements are in the range of males reported by Friedmann (1950), Blake (1977), Brown and Amadon (1989). Both birds had blue-gray irises, gray-brown pupils,

gray-blue ceres, short, thick and heavily scaled toes, and blue-gray, scutellate, short, tarsi with thick scales. The bird believed to be the female had white underwing linings, while the presumptive male had black underwing linings.

On 28 May 1991, the adult thought to be the female was found dead below the nest. The bird had been plucked, and its breast and wing tissue were missing. Potential local predators included large raptors such as Ornate Hawk-Eagles (*Spizaetus ornatus*) and Crested Eagles (*Morphnus guianensis*). There was an occupied Ornate Hawk-Eagle nest 300 m NW of the kite nest. The egg was collected several days after this incident, when it became apparent that the male had abandoned the nest. The egg was deposited in the collection of the Western Foundation of Vertebrate Zoology (WFVZ 164,697).

A second nest containing a dead nestling was found on 3 July 1991, when an adult was observed leaving and returning to the same area several times within the forest. Another dead nestling was found on the ground at the base of the nest tree. The nest tree was a chicozapote (*Manilkara zapota*), 25 m tall and 88 cm DBH, located in an area of bajo forest. The nest was 22 m above the ground. Its construction was similar to the earlier nest. The white-downy nestlings had olive-yellow irises and yellow ceres and legs. Based on experience with similarly-sized raptors, I judged the nestlings to be approximately 2–3 weeks of age, as the mantle and flight feathers were just starting to emerge. The nestling on the ground was partially devoured. The nest measured 43 cm in length by 35 cm in width and was 7 cm deep. This nest and the first were 3.5 km apart, as determined through a Trimble Global Position System detector.

A third nest found on 20 April 1993 was 15 m west of a main road through Tikal National Park that continues to Uaxuctun, an archaeological ruin north of the park. The nest tree was a 28 m high palo de danto (*Vatairea lundellii*) 54.5 cm DBH located in a transitional forest. The nest was 26 m above ground. I checked the nest daily until the birds began incubating on 5 May 1993. The nest was poorly constructed; with the aid of binoculars, one egg could be seen through the gaps in the nest material. In late May a severe thunderstorm passed through the park and destroyed the nest. Measurements of the nest were not taken due to its damaged condition. The average dimensions of nest twigs ($N = 10$) were 38 cm by 0.5 cm. The nest was supported by five branches 25 cm, 5 cm, 4 cm, 2.5 cm, and 1.5 cm in diameter, respectively.

Aerial displays.—The dry season begins in February at Tikal National Park, and during this time Gray-headed Kites can often be seen giving unique courtship or territorial displays above the forest canopy. These distinctive displays consist of rapid shortened wing beats, in which the wings are held above the horizontal plane after a soar or glide, a behavior I have termed the “butterfly display”. A displaying kite broadcasts a ringing, hollow-sounding call. The call consists of a repeated note sounding like “caw,” beginning slowly and accelerating rapidly, and lasting approximately three seconds. Another vocalization frequently heard is a two-note call that begins at a low frequency and shifts up the scale to a higher frequency second note.

Feeding observations.—Haverschmidt (1962) and Brown and Amadon (1989) reported that this species feeds on many different orders of insects and has a fondness for wasp larvae, but I did not observe any foraging on wasp nests during radio-tracking of a single kite. Gray-headed Kites have been observed feeding on cicadas flushed by marmosets (Ferrari 1990), but this foraging association was not observed at Tikal National Park between kites and primates. I observed one kite flying into a large mahogany tree and grasping at some type of prey, possibly a large cicada or a lizard that was resting on the outer portion of the tree, similar to the observation made by Haverschmidt (1962). Observations of the radio-tagged bird showed that hunting occurs in and below the canopy. This bird was observed flying from perch to perch in and below the canopy and scanning its surroundings

from the canopy down to the ground by moving its head slowly around. After several minutes, the kite typically flew to another perch and began searching again. Two weeks after radio attachment, the bird cut the surgical tubing and cable, enabling it to remove the transmitter. No prey captures were observed during the radio-tracking sessions.

Discussion.—The nesting observations reported here are the first for the Gray-headed Kite (*Leptodon cayanensis*) in Central America. My observations suggest that this species is not as rare at Tikal National Park as suggested by Beavers (1992). The nesting of Gray-headed Kites began in late April and early May, shortly before onset of the rainy season. Barlow et al. (1969) state that two female kites were collected in breeding condition in mid-April in British Honduras (Belize), and one contained an egg in the oviduct. All three attempts observed in this study involved nests that were structurally weak and positioned near the apex of canopy-level or emergent trees. This nest placement, typical of other kite species, may frequently lead to failures during intense storms and renders the nests vulnerable to other aerial predators (see also Snyder 1975). Although these three nesting attempts failed, I have seen several immature-plumaged Gray-headed Kites, including one that was following an adult from perch to perch in the park.

Clutches of two and three eggs were reported for two nests purportedly of this species by del Hoyo et al. (1994), but I found two nests containing one egg each and another containing two nestlings. Incubation exchanges were observed on three separate occasions, indicating that both adults participated in incubation. During my 13 h 15 min of observations at the first nest, the two adults were on the nest, incubating or resting, 44% and 56% of the time, respectively. This suggests that sexes probably incubate equally. No prey deliveries were observed at the nests during the incubation period, and I suspect that at this stage each non-incubating adult forages and feeds away from the nest. Haverschmidt (1962) reports he found in the stomachs of Gray-headed Kites only isopterans, hymenopterans, coleopterans, orthopterans, and larvae of lepidopterans, but later in the same paper he states that he found remnants of a frog and a bird's egg. The strong reptilian odor of the two trapped kites was characteristic of birds that frequently prey on snakes and lizards. The foot structure, with short, thick toes and heavy-scaled tarsi would appear to be good adaptations for taking reptilian prey. There is a strong correlation between this foot structure and reptilian prey as reported by (Bierregaard 1978).

Acknowledgments.—These observations were collected as part of the Maya Project, a multi-year research effort being conducted by The Peregrine Fund, Inc. in cooperation with the Instituto Nacional de Antropología y Historia (IDAEH), Centro de Estudios Conservacionistas (CECON), Guatemala, and Consejo Nacional de Areas Protegidas (CONAP), Guatemala. I would like to thank CONAP in 1991 for issuing permits 00221 and 019/90/JCV/iivh. I thank Sr. Rogel Chí Ochaeta, Acting Administrator, and the staff of Tikal National Park, Guatemala. I offer a special thanks to William Burnham, J. Peter Jenny, Lloyd Kiff, and David F. Whitacre, of The Peregrine Fund, and Steve Sherrod, Rob O. Bierregaard, Charles R. Blem, and two anonymous reviewers for their assistance, support, and suggestions.

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Received 6 March 1996, accepted 20 Aug. 1996.

Wilson Bull., 109(1), 1997, pp. 177–182

Production of erythristic eggs by the Black-headed Gull in Poland.—Egg erythristism is rare and most records in gulls, terns, skuas, and lapwings involve only single cases (Bates et al. 1976, Hays and Parkes 1993). Only three cases have been documented in the Black-headed Gull (*Larus ridibundus*) (Jourdain and Borrer 1914 after Bates et al. 1976). In our study, erythristism occurred rarely but more often than reported for other species of gulls and terns (Bates et al. 1976, Sutherland 1980, Hays and Parkes 1993).

The objectives of this research were to quantify erythristism in colonies of the Black-headed Gulls and to compare the egg-laying phenology, nesting location, clutch size, and hatching success of females laying typical and erythristic eggs.

Study area and methods.—Study colonies were on islands in the Vistula (Wisła) River between Dęblin and Koźienice, Poland. In 1986, three colonies were studied and were near Pawłowice village (51°36'N, 21°40'E), near Kuźmy v. (51°38'N, 21°33'E) and near Kobylnica v. (51°40'N, 21°35'E) (Table 1). In the years 1987–1988, only the two latter colonies were studied, and in 1989–1990 only the Kobylnica colony was monitored. The river islands, in contrast to stagnant water, are not the typical breeding sites of Black-headed Gulls. This habitat has been occupied for a short time (Bukaciński and Bukacińska 1993). Monitored islands were overgrown by grass and/or willow and poplar shrubs with bare sandy sections.