

observed was not known, but from their casual attitude one suspects that they may not yet have had eggs or young, in spite of the late date.

The flight behavior observed in *B. albonotatus* occurred over the Gila Valley on 13 February 1960, just north of Redrock in Grant County. Three adults were involved, and when first seen they were circling about 200 yards to the north of me and perhaps 300 yards above the valley. My attention was attracted by several screams from the birds, but mainly they were silent. Initially, the three were soaring in large circles, with two birds somewhat higher than the third. Suddenly, one of the higher birds stooped at the lower one, which just at the moment of contact turned on its back and locked feet with the first. With wings over the back, the two then tumbled in somersault fashion for a distance of perhaps 100 yards, at which point they released and

flapped back up to nearly their original positions. From there they gradually circled northward and disappeared together, in the same direction as the other bird, which had disappeared earlier and without becoming involved in the tumbling interaction.

The significance of the above behavior is unclear, as tumbling flights of this kind have been observed in aggressive as well as in courtship situations (Brown and Amadon, op. cit.). February is unusually early for this species to appear in New Mexico, so that activity associated with breeding would also seem premature. On the other hand, courtship flight is known to occur in *B. jamaicensis* throughout the year, and possibly was also involved here. Regardless of its exact function, this appears to be the first report of this type of behavior in *B. albonotatus*.

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A COURTSHIP FLIGHT OF THE SWAINSON'S HAWK

RICHARD R. OLENDORFF

Field Associate
American Museum of Natural History
New York, New York 10024

Although the Swainson's Hawk (*Buteo swainsoni*) is a common breeding species on the prairies of the western United States, its courtship display has never, to my knowledge, been described. Swainson's Hawks are relatively tame and confiding and are not usually considered strong, aggressive fliers like some of its congeners. Nevertheless, their courtship display is vigorous and acrobatic.

On 24 April 1971, I observed a courtship flight of this species. Both birds of a pair soared separately for several minutes within a half-mile of a tree containing a nest. The paths of the birds roughly described quarter-mile circles at increasing altitudes to about 300 ft. The birds did not beat their wings for minutes at a time. Then one (I assume the male) soared to a position directly over the nest at that altitude, set its wings in a slightly bent attitude, and glided in a direct path away from the nest. It lost about 200 ft of altitude in about three-quarters of a mile and again began a leisurely circling soar as described above.

Once, when one of the birds, again presumably the male, was over the nest, it began a rapid, flapping

flight, followed by closure of its wings and a 20–30-ft dive. After the dive, the bird continued the vigorous, flapping flight in a circular path (perhaps 25 ft in diameter), climbed sharply a few feet, stalled, and dove again. This occurred twice in rapid succession and led to a 15-ft nearly vertical climb to another stall. During this climb, even the axis of the bird's body was nearly vertical. The climb was launched from horizontal flight in a tight circle, not as the follow-through of a dive.

This rather acrobatic maneuver and stall was followed by a long dive which described a parabolic path, at the bottom of which the bird lit very gently on the edge of the nest. Between the beginning of the rapid, flapping flight and arrival at the nest, 55 sec elapsed. Within another 20 sec, the female lit about 5 ft from the nest. The display did not lead to copulation. To the contrary, no posturing, vocalization, or other courtship behavior followed. The male flew off shortly. The female hopped to the nest before she too flew off. They began soaring again and escorted a third *Buteo* (species unknown) across their territory and out of sight without direct conflict with it. A similar flight (which did not end at the nest) was observed on 3 May 1972, and John W. Stoddart (pers. comm.) and I have observed parts of the sequence as described on several other occasions.

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INCREASED MORTALITY OF COOPER'S HAWKS ACCUSTOMED TO MAN

HELEN A. SNYDER AND NOEL F. R. SNYDER

Box 21
Palmer, Puerto Rico 00721

In the course of a 1969–72 study of the nesting biology of accipiters in the southwestern United States, we banded 235 nestling Cooper's Hawks (*Accipiter cooperii*), a total which does not include banded nestlings known to have died before independence. The banded nestlings have produced a pattern of recovery which strongly suggests that familiarity with man renders a hawk more likely to die from predation by man, especially shooting.

Of the 235 Cooper's Hawks, 33 from 12 nests

had frequent exposure to man either in the form of handling for weighing and measuring every 2 or 3 days (25 birds), in the form of intensive study from blinds (26 birds), or both (18 birds). The nests that did not have frequent exposure to man were generally visited only once or twice to check contents, and again on banding day. A few were visited on banding day only. Of the 33 birds with frequent exposure to man, 4 (all from different nests) were recovered as a result of predation by man within a year of banding (3 cases of shooting, 1 of a bird killed in a building). Two were recovered at 2 months of age, 50 km from the sites of banding; one aged 7 months, 1130 km away; and one aged 10 months, 1050 km away. Only one of the 202 birds from 70 nests with little exposure to man was recovered within a year of banding; it was found dead from unknown