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DIFFERENT HEAD-SCRATCHING ATTEMPTS IN A ONE-LEGGED GULL AND PARROT

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Independently, we have observed rather different head-scratching attempts in one-legged individuals of two different species. J. P. H. watched a winter "club" of Ring-billed Gulls (*Larus delawarensis*) on 20 March 1960 in a large field in Norfolk, Virginia. One gull was missing its right leg, yet engaged in behavior that appeared strikingly similar to head-scratching. While preening, the bird lowered its head and turned it to the right side, in the exact posture used by gulls scratching with the right foot. It resumed a normal standing posture with head forward and then repeated the head-scratching posture. After returning to normal posture, the gull repeated a third

PERCH-SITE PREFERENCES OF FOUR DIURNAL RAPTORS IN NORTHEASTERN COLORADO

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Reports on the perch-site preferences of larger diurnal raptors are rare and generally involve only one species or several closely related species. Errington and Breckenridge (1938) stated that, in the north-

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APPENDIX I. Numbers of gulls identified off the southern California coast, 18 January-10 April 1967.

Species	No. between the Channel Islands and the mainland	No. between the Channel Islands and the pelagic survey area
<i>Larus glaucescens</i>	17	21
<i>L. occidentalis</i>	129	25
<i>L. argentatus</i>	56	65
<i>L. californicus</i>	230	12
<i>L. delawarensis</i>	17	0
<i>L. heermanni</i>	19	0
<i>L. philadelphia</i>	165	0
<i>Rissa tridactyla</i>	227	1333 ^a
unidentified	2533 ^b	213

^a Most were seen in one day, see species account.

^b Most were probably Western, Herring and California gulls.

time the head-down posture, which appeared identical with that shown by other nearby birds that actually were head-scratching.

In contrast, a caged White-fronted Parrot (*Amazona albifrons*) was able to scratch the right side of its head despite a missing left leg. In March 1973, R. B. W. was attracted to a captive individual that was whistling from the doorway of its owner's house in Chetumal, Quintana Roo, Mexico. Pausing in its performance, the parrot hooked its upper mandible through one of the bars of the top of its bell-shaped wire cage and lifted itself from the perch. While hanging vertically, the bird arched its back, brought up its right foot, and scratched the right side of its head. Parrots are perhaps better adapted for such behavior than other birds since they often use their beaks for climbing in the wild.

In sum, the gull appeared to persist in unsuccessful head-scratching attempts with a missing leg, whereas the parrot showed an ingenious solution to scratching one side of its head despite a missing limb. These attempts to solve the unique problems presented by missing limbs reinforce the suggestion that head-scratching is functionally important behavior.

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central United States, buteos prefer dead trees, telephone poles, and fenceposts as perch sites. Most of the eagles observed during a winter aerial census in southeastern Colorado were perched on the ground or on fenceposts (Anderson et al. 1970). Perch-site preferences of sympatric species in an area have rarely been compared. Winter censusing of larger diurnal raptors provided an opportunity to determine perch-site preferences of sympatric species on the shortgrass prairie in northeastern Colorado.

MATERIALS AND METHODS

Thirteen semi-monthly censuses of larger diurnal raptors using hawk winter censusing methods (Craighead and Craighead 1956) were conducted between October 1969 and March 1970 on a 145-km² study area in Weld County, Colorado. This area is on the shortgrass prairie approximately 56 km NE of Fort Collins, Colorado.

TABLE 1. Summary of larger diurnal raptors observed during 13 semi-monthly censuses on a 145-km² area in northeastern Colorado between October 1969 and March 1970.

Species	No. observed	
	Total	Perched ^a
Golden Eagle	78	40
Rough-legged Hawk	32	16
Marsh Hawk	24	1
Ferruginous Hawk	10	3
Prairie Falcon	9	2
Red-tailed Hawk	3	1
	156	63

^a Excludes raptors perched on the ground.

A 72-km route, permitting complete coverage of the study area in transects 3.2 km wide, was driven with a vehicle at approximately 16 km/hr (10 mph). Two observers, one on each side of the vehicle, were used to spot raptors. Large raptors could be observed at distances of up to 1.6 km because there were few obstructions to visibility on this gently rolling prairie. With the vehicle stopped, birds were identified and observed with binoculars and a spotting scope.

A general description of the perch site was recorded for each perched raptor observed during this study. Data on the availability of perch sites on the area were also obtained. The direction of flight for each flushed raptor was also recorded in an attempt to avoid duplicate tallies of individuals flying into adjacent, not yet censused, portions of the study area. All censuses were conducted during morning hours of days with conditions of good visibility and low wind velocity.

The sighting frequency of raptors observed using each perch site was calculated as the ratio of the number of individuals of a species using one type of perch to the total number of perched individuals of that species. Perch availability was calculated as the ratio of the number of one type of perch to the total number of all available perches. For comparative purposes, perch-preference index values were calculated as the ratio of sighting frequency to perch availability. Index values much greater than 1 indicate preference of a perch site; those values approximately equal to 1 indicate no selection had occurred and values substantially less than 1 suggest avoidance of the perch site.

RESULTS

During the census period, we saw six species of diurnal raptors on the study area, of which the Golden Eagle (*Aquila chrysaetos*) was the most numerous (table 1). The Rough-legged Hawk (*Buteo lagopus*) and the Marsh Hawk (*Circus cyaneus*) were the most common hawks wintering on the area. Ferruginous Hawks (*Buteo regalis*), Prairie Falcons (*Falco mexicanus*), and Red-tailed Hawks (*Buteo jamaicensis*) were seen only occasionally. More than half of all raptors were flying when first observed, therefore the numbers of birds seen on perches were substantially smaller than the total (table 1). Because sample sizes for perched Marsh Hawks and Red-tailed Hawks were inadequate, these two species were excluded from this discussion of perch-site preference.

Although several raptors were seen perched on the

TABLE 2. Availability of perch sites on a 145-km² area in northeastern Colorado from October 1969 to March 1970.

Perch site	Perch availability	
	No.	Percent of total
Fenceposts	16,500 ^a	98.90
REA Poles	93	0.55
Trees	34 ^b	0.20
Windmills	32	0.20
Buildings	15 ^c	0.10
Haystacks	8	0.05
	16,682	100.00

^a An estimated 80 km of fences with fenceposts at intervals of 5 m = 16,500 fenceposts.

^b Estimated number of trees over 6 m tall.

^c Estimated number of buildings.

ground, this site was excluded from this discussion because it is almost infinitely available as a perch site and raptors are relatively difficult to spot on the ground. Availability of the other six types of perch sites used by raptors is shown in table 2. Use of the land for ranching in the area accounted for the high availability of fenceposts. The tallest structures on the study area—REA poles, trees, and windmills—were much less numerous than fenceposts. Buildings and haystacks were relatively scarce on the study area.

Golden Eagles used a wide variety of perches, but strongly preferred haystacks and trees (table 3). Although nine Golden Eagles were seen perched on fenceposts, the high availability of these perch sites resulted in a low preference index value, suggesting that Golden Eagles avoid fenceposts as perch sites. Rough-legged Hawks apparently preferred REA poles and trees but also avoided the highly available fenceposts as perch sites. Fenceposts were used in proportion to their availability as perch sites for three Ferruginous Hawks observed during this study. Prairie Falcons were observed perched on an REA pole and a fencepost, but differences in the availability of these two perch sites accounted for a substantial difference in preference index values (table 3).

DISCUSSION

During this study, the only large diurnal raptor observed to perch on haystacks, windmills, and buildings was the Golden Eagle. Rabbits were abundant in and near the relatively rare haystacks during the winter months, which may explain the preference of the Golden Eagles for these sites. Studies by Arnold (1954) and McGahan (1968) showed that rabbits are major food items of Golden Eagles. Haystacks may be attractive to wintering Golden Eagles as food sources. The lack of use by hawks of haystacks, windmills, and buildings is imperfectly understood, but probably does not include interspecific competition since each of these perch sites was frequently vacant.

Buteos often select relatively high, conspicuous perches from which they scan a hunting area (Craighead and Craighead 1956). This may help explain the preference of Rough-legged Hawks for REA poles and trees as perch sites. It does not, however, account for the use of fenceposts rather than REA poles by Ferruginous Hawks.

The use of REA poles by diurnal raptors has led to the death of these birds through electrocution

TABLE 3. Perch-site use and preference for larger diurnal raptors on a 145-km² area in northeastern Colorado from October 1969 to March 1970.

Species	Perch-site preference ^a											
	Haystack		Tree		REA pole		Fencepost		Windmill		Building	
	No. seen	Index value	No. seen	Index value	No. seen	Index value	No. seen	Index value	No. seen	Index value	No. seen	Index value
Golden Eagle	9	469	10	123	7	31	9	0.2	4	52	1	2.8
Rough-legged Hawk	0	—	2	62.5	9	101	5	0.3	0	—	0	—
Ferruginous Hawk	0	—	0	—	0	—	3	1.0	0	—	0	—
Prairie Falcon	0	—	0	—	1	87	1	0.5	0	—	0	—

^a Preference index values were calculated as the ratio of sighting frequency to perch availability.

(Benton and Dickinson 1966, Olendorff 1972). Our data on perch-site preferences of diurnal raptors may be useful to those seeking solutions to this problem.

SUMMARY

Six kinds of perch sites above the ground were used by larger diurnal raptors wintering on the shortgrass prairie in northeastern Colorado. Golden Eagles, the most abundant raptors observed, perched on a wide variety of sites, but apparently prefer haystacks and trees. Haystacks may attract eagles because of the abundance of rabbits nearby. None of the other raptors observed during this study was perched on haystacks.

Although fenceposts were numerous, Rough-legged Hawks preferred REA poles and trees as perch sites. Ferruginous Hawks perched on fenceposts in proportion to the availability of these sites.

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THE CHESTNUT-COLLARED SWIFT IN THE LOWLANDS OF SINALOA, MÉXICO

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On 12 June 1963 I collected an adult female Chestnut-collared Swift (*Cypseloides nylax griseifrons*) 6 kilometers NE El Fuerte, Sinaloa, México. The wing length was 121 mm (tip worn and the feathers warped from fluid preservative); specimen was not fat; tail and gonads destroyed by shot. The bird was taken from an overhead, circling flock of several hundred swifts. Although probably Chestnut-collared Swifts, the flock could not be identified positively because of light conditions and height.

This is the first record for Sinaloa and is the northwesternmost point of distribution for the species. Peterson and Chalif (A field guide to Mexican birds, pp. 92-93, Houghton Mifflin Co., Boston, 1973), Edwards (A field guide to the birds of Mexico, p. 98, Sweet Briar, Virginia, 1972), and Friedmann et al. (Mexican check-list, 1950:159-160) list the distribution in México as Durango, Nayarit, Zacatecas, Jalisco,

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Oaxaca, México, Puebla, Veracruz, and Chiapas. In México the Chestnut-collared Swift is known as a highland and mountain species occurring chiefly at elevations from 5000 to 8000 ft. (Edwards, 1972). My specimen was collected along the Rio del Fuerte at an elevation of 150 m, and apparently is the first record from the Mexican lowlands. The immediate area along the Rio del Fuerte is a flat floodplain dominated by shrubs, grasses, weeds, and an occasional grove of trees. Trees line the river bank. The floodplain is surrounded by rolling hills dominated by a mixture of deciduous trees, thorn-shrubs, grasses and cacti. At the time, it was the dry season and the woody plants in the hills were mostly devoid of their leaves, but flying insects and birds were abundant.

The specimen was collected while I participated in the University of Kansas Vertebrate Zoology field course, summer 1963, under the supervision of Dr. Richard F. Johnston. The specimen (DAE 107, KU 41996) was preserved in fluid and is at the Museum of Natural History, Univ. of Kansas, Lawrence. I extend my thanks to Dr. Johnston for granting permission to publish this record, and to Dr. Charles T. Collins for examining the swift and providing data on the subspecies, sex, age, and wing length.

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