

of the head were distinctly brownish, this color merging into purplish toward the nape. Iridescent head colors are notoriously difficult to determine in the field, but the viewing conditions were good. The brown head color has been described in several of the above mentioned reports. The facial spot was oval in shape, the superior margin extending above the level of the eye. The side was blacker than in the Common Goldeneye, but the "ladder" effect of the Barrow's was not well-developed, nor did we note the vertical black "shoulder" mark anterior to the bend of the wing. Snyder (1953) discusses other intermediate characters apparent only in specimens (e.g., pattern and shape of bill, frontal bone, nape feathers and nostrils) which support a hybrid origin for his specimen.

In most of western North America, Barrow's Goldeneye breeds south of the range of the Common Goldeneye, although the latter migrates through lakes where Barrow's Goldeneye breeds (Munro, Trans. R. Can. Inst. 22:259-318, 1939). Johnsgard (Handbook of Waterfowl Behavior, Cornell Univ. Press, Ithaca, N.Y., 1965) describes the close behavioral similarity of the species, and presumably there would be little obstacle to interbreeding, particularly if one species occurs as a straggler in the range of the other. This is probably the case at Lake Myvatn, Iceland where a few Common Goldeneye have been observed recently during breeding seasons and where hybrids have been found (Bengtson 1972, Fjeldsa 1973). The hybrids previously reported and our observation suggest the occurrence of hybridization somewhere in eastern North America. Observations of behavioral interactions of the species where they breed sympatrically would be of great interest. Johnsgard (1965) reports that wild hybrids have been found involving *B. clangula* and 5 other species, and Ball (Peabody Mus. Nat. Hist. Yale Univ. Bull. 3:1-26, 1934) mentions additional hybrids in captivity. A hybrid between *B. clangula* and *B. islandica* has been produced at least once in captivity with the Barrow's as the female parent (P. Johnsgard pers. comm.). Figure 1 compares a male Barrow's (left) with the male hybrid (right), the difference in the facial spot and pattern of wing and side are well illustrated. We thank Dr. P. Johnsgard for comments on the manuscript and for permitting us to use the photograph.—MICHAEL GOCHFELD, Dept. of Ornithology, American Museum of Natural History, New York, NY 10024 and GUY TUDOR, 380 Riverside Drive, New York, NY 10025. Accepted 8 May 1975.

Cleptoparasitism by gulls of migrating shorebirds.—Facultative cleptoparasitism or interspecific robbing of food (Nettleship, Ecol. Monogr. 42:239-268, 1972) has been reported in several gull species. Bent (U.S. Natl. Mus. Bull. 113, 1921), Ansingh et al. (Ardea 48:51-65, 1958), Rooth (Int. Comm. Bird Preservation, 7th Bull. :117-119, 1958), and Hatch (Auk 87:244-254, 1970) have reported that Laughing Gulls (*Larus atricilla*) take food from the Brown Pelican (*Pelecanus occidentalis*), Sandwich Terns (*Sterna sandvicensis*), Common Terns (*S. hirundo*), and Arctic Terns (*S. paradisaea*). Meinertzhagen (Pirates and Predators, Oliver and Boyd, Edinburgh, 1959) reported that Great Black-backed (*L. marinus*), Glaucous-winged (*L. canus*), and Black-headed gulls (*L. ridibundus*) take food from ducks, coots, grebes, and loons. Nettleship (op. cit.) has seen Great Black-backed Gulls rob Common Puffins (*Fratercula arctica*). Hopkins and Wiley (Auk 89:583-594, 1972) reported Common Terns taking food from Arctic Terns at a Common Ternery. We have observed gull cleptoparasitism on Dunlin (*Calidris alpina*) and Black-bellied Plovers (*Squatarola squatarola*) by 2 additional species of gulls; the Ring-billed Gull (*L. delawarensis*) and Bonaparte's Gull (*L. philadelphia*).

Interactions between gulls and Dunlin and Black-bellied Plovers were watched for approximately 20 min in late afternoon on 24 May 1974 at the Nayanguing Game Re-

TABLE 1
 INSTANCES OF SUCCESSFUL CLEPTOPARASITISM BY GULLS

Victim	Aggressor species	
	Bonaparte's Gull	Ring-billed Gull
Dunlin	ca 60	3
Black-bellied Plover	1	0
Bonaparte's Gull	0	1
Ring-billed Gull	0	1

serve, Saginaw Bay, Bay Co., Michigan. Approximately 200 Dunlin and 30 plovers were feeding on large earthworms in a plowed field recently flooded by rains. In the group as a whole, the birds caught 3 worms averaging 100 to 130 mm long each 20 sec, and this food-getting rate yielded approximately 180 worms during 20 min of observation. About 30 Bonaparte's and 10 Ring-billed gulls were scattered among the shorebirds. They stood quietly without attempting to probe for or capture food, but watched the Dunlin and plovers around them. A gull gave chase when a nearby Dunlin caught a worm. The Dunlin sometimes dropped the worm as the gull approached, but usually flew with the worm until the gull forced the smaller bird to drop its food by swooping close to it. When the Dunlin dropped the worm, the gull landed and ate the catch. Chases seldom were farther than 60 m; if longer the gull circled back to the Dunlin group and the Dunlin which had escaped landed and ate its worm. Occasionally 2 gulls gave chase at once, but 18 out of 21 chases were one to one. One chase occurred about every 20 sec of observation and most chases were successful for the gull. Thus the Dunlin lost nearly a third of their catch (Table 1). Aggression between gulls and between gulls and smaller shorebirds was qualitatively similar. Bonaparte's were never observed to chase the larger Ring-billed gulls, although the opposite was seen (Table 1). Dunlin did not avoid nor mob gulls. Similar numbers of Dunlin feeding nearby in standing water were apparently eating smaller food and were not disturbed by gulls.

Intraspecific cleptoparasitism occurred in Ring-billed Gulls (Table 1) and Dunlin. In the latter case birds either lunged directly at conspecifics with worms or performed a Wing-up display before taking the worm. Instances of intraspecific aggression were not counted but were much less common than interspecific interactions. Goss-Custard (*In Crook, Social Behaviour in Birds and Mammals, Academic Press, New York, 1970*) reported another case of intraspecific aggression over food in the Dunlin as well as isolated cases in other wading birds.

Resistance of Dunlin to gulls was limited to flying away, and this rarely prevented the gull from getting the worm. This is noteworthy in view of the high risk of loss of each Dunlin's food to gulls. Three non-exclusive hypotheses might account for the failure of the Dunlin to avoid feeding near gulls or otherwise prevent robbery.

(1) Dunlin normally feed on smaller items of food (Holmes, *Ecology* 47:32-45, 1966) and have had little past selective pressure to avoid cleptoparasitism by the larger species.

(2) The geographic ranges of the sandpiper and these 2 species of gulls do not ordinarily overlap and the small bird has had little chance to evolve a defense against their behavior.

(3) Large worms were so easy for Dunlin to find and capture that it was not worth-

while to expend much energy fighting or fleeing gulls or to sacrifice feeding in optimal sites to avoid gulls. This presumes that a Dunlin robbed by a gull has ample opportunity to find another worm if it stays in habitat where worms (and gulls) are abundant, and that the risk of mobbing or energetic cost of evasive action would be considerably greater than the cost of losing the item of food.

These hypotheses cannot be rigorously distinguished without further data and analysis, and insufficient evidence exists for speculation on (1). Wintering ranges of Ring-billed and Bonaparte's gulls and Dunlins overlap broadly and the Dunlin normally migrates through the ranges of several gull species known to rob other birds of food, so (2) is unlikely to be important. Bird et al. (Wilson Bull. 85:480-482, 1973) noted that American Robins (*Turdus migratorius*) are passive when Starlings (*Sturnus vulgaris*) regularly steal worms from them. Explanation (3) may be sufficient; it may simply not be worthwhile to respond to gulls by mobbing response or a more complex evasive behavior to avoid losing an easily replaced food which is available for only a short time—the water in the field, the worms on the surface, and the birds were all gone two days later.—ROBERT B. PAYNE AND HENRY F. HOWE, *Museum of Zoology, Univ. of Michigan, Ann Arbor 48104. Accepted 5 Mar. 1975.*

Rapid tail molt and temporarily impaired flight in the Chuck-will's-widow.—The annual molt of the Chuck-will's-widow (*Caprimulgus carolinensis*) has been studied in detail by Rohwer (Auk, 88:485-519, 1971). He found that specimens replacing rectrices are very rare in collections (only 8 of more than 500 specimens examined) and concluded that tail molt must be highly compressed in time. The primaries are molted from innermost to outermost (P1-P10). No specimens were replacing P8 but Rohwer thought that most Chuck-will's-widows must rapidly replace the rectrices while that primary is being renewed, because only one bird replacing P7 showed any tail molt and the only bird replacing P9 had all of the rectrices about $\frac{1}{4}$ to $\frac{2}{3}$ grown (Rohwer, op. cit.:495). In any case, tail molt seems rarely to begin during the replacement of P7 and is usually complete by the time P10 is full grown.

Rohwer inferred that at least some Chuck-will's-widows have trouble flying during the late stages of molt when they would not only be missing much or all of their tails but also a surface of each wing equivalent to about 2 of the longest primaries and approximately 4 secondaries. He suggested that, although the birds probably could fly, their ability to catch aerial prey might be rather severely impaired.

Recently I collected a Chuck-will's-widow which was replacing P8 and which tends to confirm these inferences. The bird (Univ. Kansas Mus. of Nat. Hist. No. 68716) was taken at about 17:30 on 4 September 1974, in Douglas Co., Kansas, on a gravel road traversing a disturbed oak-hickory hillside regularly frequented by the species in summer. This bird was an adult female (ovary 5×3 mm). The innermost primary being renewed was P8 (35 mm sheathed, total length 105 mm); P9 was smaller (32, 65 mm); and P10 had just been dropped (13 mm, all sheathed). The rectrices ranged from 60 to 80 mm in length and their sheaths varied from 28 to 37 mm (Fig. 1). Ridgway (U.S. Natl. Mus. Bull. 50 [part 61]:508, 1914) gives the average tail length of 16 females as 136 mm. The rectrices had clearly been molted simultaneously or nearly so. Secondaries 4, 6, 7, and 10-12 of the bird's left wing, and 1, 5, 7, and 9-12 (numbering from outermost inward) of the right wing were less than full length and were variously sheathed. The bird was in heavy molt of all body tracts and its rectal bristles were uniformly very short and fully sheathed, as in the specimen figured by Sutton (Bull. Okla-