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 ¼ to ⅔ 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 6]: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 rictal bristles were uniformly very short and fully sheathed, as in the specimen figured by Sutton (Bull. Okla-

FIG. 1. Tail of a molting female Chuck-will's-widow showing essentially simultaneous replacement of the 10 rectrices.

homa Audubon Soc., 2:9, 1969). Sutton's specimen was the one studied by Rohwer that was replacing P9, and the latter concluded that the simultaneous loss of the rictal bristles, while disadvantageous to aerial foraging, might be adaptive in possible ground feeding during this period. While watching Chuck-will's-widows walking about and swallowing pebbles (Jenkinson and Mengel, Condor 72:236–237, 1970), I formed the impression that they could easily forage on the ground and that they may well do so.

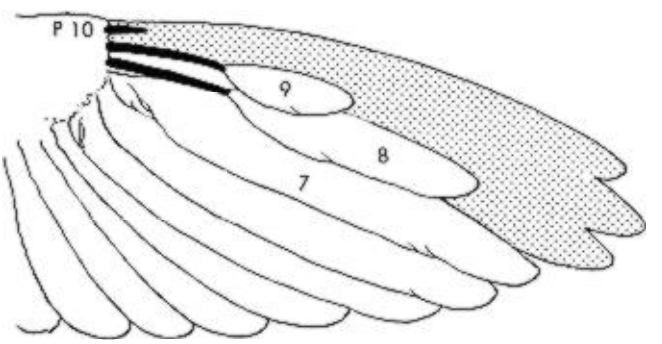

FIG. 2. Diagram of the outer wing of a molting female Chuck-will's-widow. Black = sheaths of growing feathers; stippling = area missing from the wingtip of the specimen. Scale approximately × ½.

The present Chuck-will's-widow was flushed 4 times before it was taken. In each case it flew 15 to 30 m before alighting, 3 times in the roadway and once on the tip of a broken snag where it perched erectly, owl-fashion. Its flight was direct but seemed relatively slow and labored. I have estimated that the primary surface of the wing (Fig. 2) lacked about ¼ of its normal surface, this at the critical tip, and the tail approximately 50%—surely enough to impair the maneuvers required in aerial feeding.

Finally, the bird was virtually emaciated, weighing 86.7 g. Other Chuck-will's-widows in the University of Kansas collection weighed 109, 109, 146, and 153 g (females, the last 2 with shelled eggs in their oviducts), and 97, 111, 119, 125, and 128 g (males, the first extremely lean). The bird's stomach was empty save for one scute from a large beetle. The weather for several days had been unseasonably cold with periodic heavy rainfall. The capacity for short-term torpidity—undemonstrated thus far in this caprimulgid—would be highly adaptive under these circumstances.

I thank Richard Lattis for the photograph and my co-worker Marion Jenkinson for helpful comments on the manuscript.—ROBERT M. MENGEL, *Dept. of Systematics and Ecology and Museum of Natural History, Univ. of Kansas, Lawrence 66045.* *Accepted 20 Mar. 1975.*

Throat obstruction as a mortality factor among Willow Ptarmigan chicks.—Mortality among ptarmigan (*Lagopus* spp.) chicks is often high during the first week after hatching (Jenkins et al., J. Anim. Ecol. 32:317–376, 1963; Watson, J. Anim. Ecol. 34:135–172, 1965) though the causes are poorly documented. The following account describes some cases of mortality affecting new born chicks from late clutches of Willow Ptarmigan (*Lagopus lagopus*).

On 23 July 1974 we found a 1–2-day-old dead chick on Karlsøy Island in Troms County, Norway on a territory known to contain a renest brood. This was an unusual discovery as dead chicks are not commonly found. The chick had hatched approximately one month later than the normal peak hatching period.

The chick appeared unharmed exteriorly. Necropsy disclosed that the crop contained 2 crowberries (*Empetrum* spp.) and a third crowberry had become wedged in the posterior opening of the crop and was pressing against the bronchial tubes. The lungs contained bloody foam and death was apparently due to strangulation. Six similar cases of mortality due to obstruction or strangulation from both ripe and unripe blueberries (*Vaccinium myrtillus*) occurred among approximately 50 late, newly hatched chicks raised in captivity during the same summer.

The diet of wild Willow Ptarmigan consists mainly of insects during the first week of life (Lid and Meidell, Nytt. Mag. Naturvidensk. 73:75–114, 1933; Christiansen and Kraft, Nor. Jeger og Fiskerforbunds Tidsskr. 4:1–10, 1953). Insect consumption then decreases rapidly while the relative amount of plant material increases. Flowers and the vegetative parts of blueberry plants are often included in the diet of young chicks. Berries are not (Christiansen and Kraft 1953), as most chicks normally hatch before *Vaccinium* (and *Empetrum*) berries are available. Chicks from renest broods, often hatch during the early part of the berry season at which time berries could be consumed and result in mortality as described here. Whether newly hatched chicks prefer berries to insects is not presently known.

We are grateful to Dr. Svein Myrberget for his review of the manuscript.—INGOLF HANSSEN AND HOWARD PARKER, *Univ. of Tromsø, Institute of Medical Biology, Division of Wildlife Biology, Box 977, 9001 Tromsø, Norway.* *Accepted 1 Mar. 1976. Page costs paid.*