female neck banded: 93). The pair chased ZD for several hours and at 22:00 the three birds left the area. At 24:00 ZD was back at the nest site with an unbanded male. On 11 June ZD and the unbanded male copulated twice. Also on this date ZD laid her fifth egg and began incubation. The female 93 was not seen again until 12 June; as she was alone, possibly the male that joined ZD the evening of 10 June was the same male that had been associated with 93 earlier that day.

Sherwood (Canada Geese of the Seney Wildlife Refuge, unpublished rept., Wildl. Mgmt. Studies, nos. 1 and 2, Seney National Wildlife Refuge, Michigan, 1965) reports one case of pair formation within a few hours. Both birds had arrived on the breeding grounds unpaired, having lost their mates sometime through the winter. Klopman (Living Bird, 1962, see p. 128) states that pair formation in Canada Geese usually spreads over several months, but "that the process may be accelerated when pairs lose their mates early in the hunting season." Kossack (Amer. Midl. Naturalist, 43: 627, 1950) working with a captive flock of Canada Geese found 18 days to be the shorest period for new pair formation after an established pair separated. The incident we describe shows that pair formation can be greatly accelerated and may take place after egg laying has started.

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Spread-wing postures in Pelecaniformes and Ciconiiformes.—In commenting on the spread-wing postures in several groups of birds, Clark (1969) summarizes three hypotheses on the functional significances of spread-wing behavior: wing-drying, balancing, and thermoregulation. Heath (1962) suggested the latter theory for the spread-wing in the Turkey Vulture (*Cathartes aura*). Independently from Heath I suggested the same hypotheses in 1962, based on observations of cormorants.

From the Congo I have evidence that completely dry Long-tailed Cormorants (*Phalacrocorax africanus*) spread their wings for considerable periods (Curry-Lindahl, 1960). Early one morning before sunrise at Lake Tanganyika I watched a small number of Long-tailed Cormorants roosting together. When it became lighter the birds flew down from the trees and perched on some rocks near the shore. As soon as they had alighted the birds spread out their wings and rested in this position for more than 35 minutes. There had been no rain during the night; it had been very warm, but not especially humid. Apparently, the behavior of the cormorants on this particular occasion had nothing to do with the drying of wings.

Two years later, when checking the Swedish translation of Austin's "Birds of the world" (1961), I wrote Austin about his passage on the cormorants' habit of "spreading their wings to dry" asking him whether we could insert the thermoregulation theory. With his agreement the Swedish edition (Austin, 1962) mentions the possibility that thermoregulation may be an explanation of the spread-wing posture in cormorants.

As regards Ciconiiformes, Clark refers to Lippens' (1938) observations in the Congo (Lake Edward) of spread-wing posture in the Wood-ibis (*Ibis ibis*). I have several similar observations not only of *I. ibis* but also of the Marabou (*Leptoptilos crumeniferus*) from the shores of Lake Edward, where both species are common. Also in this case the behavior does not seem to have anything to do with the drying of wings. The Marabou, for example, may assume this posture far from the nearest water and independent of previous wetting.

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Experimental hypothermia in a Lesser Nighthawk.—During a study of the responses of Poor-wills (*Phalaenoptilus nuttallii*) to low temperatures (Austin and Bradley, 1969), similar observations were obtained for a Lesser Nighthawk (*Chordeiles acutipennis*). As this research is not being continued and little is known of the latter's responses to low temperatures, these preliminary observations are reported now. Previous studies on the Lesser Nighthawk were conducted by Marshall (1955). Lasiewski and Dawson (1964) reported the responses of the related Common Nighthawk (*C. minor*) to low temperatures. Austin and Bradley (1969) cite other related studies.

A male Lesser Nighthawk mist-netted at Corn Creek, Desert National Wildlife Range, Clark County, Nevada, on 4 May 1968 was brought into the laboratory for study. The bird weighed 58 g and had no visible subcutaneous fat at capture. Experimentation was initiated the following day and continued for 5 days. The bird was fed a mixture of ground beef liver, heart, and kidney on which it maintained its weight until food was withheld for 36 hours before hypothermia was induced by placing the bird in a refrigerator. Between the first and second periods of hypothermia 20 hours elapsed, and between the second and third 1.5 hours. The bird was allowed to arouse fully after the first and third periods of torpor, and it remained in apparent good health throughout the experimental period. For a more detailed description of methods used see Austin and Bradley (1969).

All temperatures are in degree Centigrade (T_a = ambient temperature, T_b = cloacal body temperature).

Marshall (1955) reported two captive Lesser Nighthawks with large fat deposits becoming hypothermic ($T_a = 18.7°$, $T_b = 18.6$ and $19.2°$). Lasiewski and Dawson (1964) reported hypothermia in the Common Nighthawk after a loss of 28 to 34 per cent of initial weight. In other caprimulgids (European Nightjar, *Caprimulgus europaeus*, and Spotted Nightjar, *Eurostopodus guttatus*) weight loss also appears to be necessary for hypothermia (Peiponen, 1965, 1966; Dawson and Fisher, 1969). Poor-wills appear to vary in their ability to enter torpor; some exhibit weight loss, others do not (Jaeger, 1949; Marshall, 1955; Bartholomew et al., 1957; Austin and Bradley, 1969).

After a loss of 22 per cent of its initial weight (58 g), the Lesser Nighthawk I studied was induced into hypothermia three times. The T_b during hypothermia fell as low as 12.8° without apparent ill effect. Euthermic T_b at room temperature (ca. 25°) was maintained between 39.5° and 40.5°. Arousal resulted from increased T_a and handling. No spontaneous arousal was observed.