primary molt, gonadal maturation, premigratory fattening, and migration, thus culminating in over-summering behavior. As the molting of juvenal primaries is not prerequisite to spring migration (at least not at the northern end of the winter range in Hawaii), lack of molt cannot be coupled with over-summering in a cause-effect relationship. Rather, both phenomena appear to be adaptations that enhance survival in the first winter. I suggest that over-summering behavior represents the ancestral condition for *fulva* throughout the Pacific, that it is presently the norm on ranges south of Hawaii, and that the variability encountered in Hawaii reflects a recent improvement in the food supply.

There are as yet no data to support my proposed scenarios of an easier life on the pampas as compared to the Pacific, and on improved habitats in Hawaii relative to other regions of the Pacific. The critical factor is the relative availability of resources on a per capita basis. Comparative studies of golden-plovers on their Pacific and South American wintering grounds offer a potentially fruitful opportunity to evaluate Connors' (1983) hypothesis that conditions on the winter range are fundamental to speciation, and to consider further the questions that I have raised here. Information is needed concerning densities of wintering birds, availability and dependability of food supplies, competition for food, foraging success, body weights, and time-activity budgets; with particular attention given to the biology of first-winter individuals.

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Wing molt by a nesting Pied-billed Grebe.—Although there are exceptions, molting and breeding of birds typically occur at separate times during the annual cycle. These events are thought to be energetically incompatible in most species (Payne, pp. 103–155 *in* Avian Biology, Vol. 2, D. S. Farner and J. R. King, eds., Academic Press, New York, New York, 1972). According to Palmer (Handbook of North American Birds, Vol. 1, Yale Univ. Press, New Haven, Connecticut, 1962), the postnuptial molt of Pied-billed Grebes (*Podilymbus podiceps*) occurs in autumn; however, there is much individual variation in the timing and duration of this molt. Flight feathers are all shed and replaced before any apparent loss of other feathers. Prior to this note, molting by nesting Pied-billed Grebes has not been reported.

After finding shed flight feathers on the surfaces of several active Pied-billed Grebe nests on Rush Lake, Winnebago Co., Wisconsin (43°56′N, 88°48′W), we suspected that at least some individuals of this species were molting while nesting. Our suspicions were confirmed on 7 July 1980. We placed an automatic nest-trap (Otto, N. Am. Bird Bander, 8:52–53, 1983) on an active Pied-billed Grebe nest on which we found several shed flight feathers. The nest contained a six-egg clutch that had been completed on approximately 25 June. This was a rather late-season nest for Pied-billed Grebes on Rush Lake (Otto, M.S. thesis, Univ. Wisconsin–Oshkosh, Oshkosh, Wisconsin, 1983). We captured an adult Pied-billed Grebe that was undergoing wing molt. All old primaries and secondaries had been shed, and there was nearly 1 cm new growth of the most distal primary of each wing. We found

no evidence of body molt. The weight of the bird (416 g) indicated that it was probably a female. (Weights of adult Pied-billed Grebes from Palmer [1962], and Norris and Johnston [Wilson Bull. 70:114–129, 1958] show females ≤435 g, males ≥435 g.) We released the grebe after banding it (U.S.F.W.S. aluminum band 645-30146). Twenty-seven other nesting Pied-billed Grebes that we examined on Rush Lake during 1979 and 1980 showed no signs of molting. These birds included 15 suspected females and 12 suspected males captured between 14 May and 18 July. Our trapping attempts were confined to the days after the completion of the clutch but prior to the start of hatching.

Because the flight feathers constitute a relatively small portion of the plumage, replacement of these feathers should require much less energy than would a complete molt. If molting of the flight feathers is energetically compatible with the nesting activities of Pied-billed Grebes, we suggest that the nesting season is an opportune time for these birds to replace their flight feathers; nesting Pied-billed Grebes rarely fly (pers. obs.), and they have rather small home ranges. Glover (Wilson Bull. 65:32–39, 1953) estimates the average home range of nesting Pied-billed Grebes to be less than 2 ha. Grebes could easily traverse such a small area by swimming. Therefore, flightlessness owing to wing molt should be of negligible consequence to nesting Pied-billed Grebes. More information will be needed to determine if molting of flight feathers by nesting Pied-billed Grebes reduces either the production of fledglings or the survival of molting adults. Five of the six eggs hatched in the nest on which we captured the molting grebe. We do not know the fates of the hatchlings or the molting adult.

Our observations indicate that wing molt does occur, albeit uncommonly, among nesting Pied-billed Grebes. Munro (Studies of Waterfowl in British Columbia: the Grebes, Occas. Paper Br. Col. Prov. Mus. No. 3, 1941) presents an additional report of molting by nesting grebes. He found both members of a nesting pair of Horned Grebes (*Podiceps auritus*) partly molted to the winter plumage on 10 August. This was the latest date for a Horned Grebe nest with eggs for Munro's study. We suggest that molting by nesting grebes is likely limited to late nesting individuals.

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Partition of water loss from the eggs of the Sooty Tern between the pre-pipping and pipped periods.—In a previous publication (Rahn et al., Physiol. Zool. 49:245–259, 1976), it was reported that the total water loss from the eggs of the Sooty Tern (*Sterna fuscata*) over the entire incubation period amounted to 15% of the mass of the freshly laid eggs. More recent work on the White Tern (*Gygis alba*) and the Gray-backed Tern (*Sterna lunata*) implies that the figure of 15% is an underestimate of the true water loss because the augmented water loss from pipped eggs was not measured in the earlier study (Pettit et al., Condor 84: 355–361, 1981; Whittow et al., Condor, in press, 1985). The purpose of the study reported here was to measure the water loss from pipped eggs of the Sooty Tern.

The site of the study was Green Island, Kure Atoll (28°25'N, 178°10'W) in the Northwestern Hawaiian Islands. The water loss from the eggs was determined by measuring the