

BREEDING BY FIRST-YEAR CAPTIVE-REARED PIED-BILLED GREBES

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Abstract.—Age of first breeding by Pied-billed Grebes (*Podilymbus podiceps*) has not been previously documented. Pied-billed Grebes were captive-reared from eggs collected in the wild in Guatemala during 1986 and 1987. One pair bred at 13 months.

REPRODUCCIÓN DURANTE EL PRIMER AÑO DE INDIVIDUOS DE *PODILYMBUS PODICEPS* CRIADOS EN CAUTIVERIO

Sinopsis.—La edad a la cual individuos de *Podilymbus podiceps* se reproducen por primera vez no ha sido documentada. Se informa a una pareja que se reprodujo a la edad de 13 meses. Las aves fueron el producto de huevos coleccionados en el estado silvestre en Guatemala entre 1986 y 1987 y que fueron incubados artificialmente.

Age of first breeding by Pied-billed Grebes (*Podilymbus podiceps*) is unreported (Palmer 1962). The opportunity to document age at first breeding arose during a study to develop artificial incubation, captive-rearing, and maintenance techniques with this species.

I collected Pied-billed Grebe eggs from nests at three lakes in Guatemala during 1986 and 1987. The eggs were hatched in a Humidaire Model 20 incubator and the chicks ($n = 4$) reared by methods described by Ratti (1977) and MacVean (1988), at Club Auto Safari Chapin animal park in Guatemala.

Calls associated with courtship and breeding (Deusing 1939, Kilham 1954, McAllister and Storer 1963, Miller 1942) were first heard from two of the captive-reared grebes when they were approximately 11 months old. These two grebes were hatched from eggs collected from the same nest. Although cuckoldry or intraspecific nest parasitism could have occurred, I assume that the two grebes were siblings. These two grebes had been reared and maintained together in a concrete pool (5 m × 2 m × 1 m). Sex was determined by weight (Palmer 1962) and bill size (Zusi and Storer 1969). Male territorial calls (a low throaty “cow-cow-cow”) and pair greeting duets (a rapid nasal chatter resembling a series of “na-na-na”) (LaBastille 1974) were frequently heard. Aggression was also observed in both birds. On several occasions, the male was seen chasing and attacking the female by pecking at her head. Aggressive courtship pursuits have been described (Kilham 1954, Palmer 1962). The female was also observed behaving aggressively toward the male. When the male swam close to the female, she turned her head toward him and, without any audible or apparent vocalization, vibrated her bill.

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At 13 mo of age, the two grebes were released on an artificially constructed pond (approximately 1 ha) on the Club Auto Safari Chapin. Cattails (*Typha domingensis*) and bullrush (*Scirpus californicus*) provided cover for resting and nesting. A stream that flowed through the pond provided a supply of fish.

Approximately 2.5 wk after being released on the pond, a grebe nest containing three eggs was found in a stand of cattails, approximately 3 m from shore. The three eggs had been partially destroyed by an unknown predator. Although the grebes were never observed building the nest or incubating, they were frequently seen entering and emerging from the cattail stand where the eggs were laid. The pond was visited twice daily after the grebes' release and no other grebes or waterfowl were observed. Furthermore, prior to the grebes' release, the pond was thoroughly searched for signs of other breeding birds and none were found.

Two eggs that could be measured were 31.5 mm × 25.6 mm and 34.8 mm × 25.3 mm. Both eggs were smaller than other Pied-billed Grebe eggs ($n = 20$) collected for this study in Guatemala (\bar{x} length = 42.9 ± 1.9 SD and \bar{x} breadth = 30.1 ± 0.8 SD). Young birds of many species have been reported to lay smaller eggs than older birds of the same species. Small eggs may also reflect inadequate nutrition (Romanoff and Romanoff 1949). Because the eggs were destroyed, it was impossible to determine their fertility; however, these observations indicate that first-year Pied-billed Grebes are capable of breeding.

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