

of *albinucha*. Although *gutturalis* and *albinucha* do not meet and intergrade, owing to geographical barriers in central Chiapas, it would seem they should be treated as conspecific, taking the older name *albinucha*.

I am grateful to I. C. J. Galbraith for providing information on specimens in the British Museum and to J. Berlioz and E. Stresemann for helpful details about the collections of Delattre and Verreaux.—RAYMOND A. PAYNTER, JR., *Museum of Comparative Zoology, Harvard University, Cambridge 38, Massachusetts.*

A nesting of the Purple Gallinule (*Porphyryla martinica*) in Ohio.—A detailed account of the nesting behavior of this species follows because, in reviewing the literature, we found an apparent scarcity of precise nesting data, except for articles by Gross and Van Tyne (*Auk*, 46: 431-466, 1929) on a nesting in the Canal Zone, and Meanley (*Auk*, 80: 545-547, 1963) on pre-nesting activity in Georgia. Also, this nesting appears to be the northernmost in North America.

In early May of 1962, one of us (Glines) saw what he believed to be a Purple Gallinule at Baumgartner's Pond in eastern Jackson Township, Franklin County, central Ohio (approximately 10 miles south of downtown Columbus). Under normal conditions this pond covers an estimated 13 acres. It is very shallow, and in mid-summer about 70 per cent of the pond contains a profuse growth of the yellow pond-lily (*Nuphar advena*). Its shallowest waters and shores are densely vegetated with buttonbushes (*Cephalanthus occidentalis*); widely scattered, small stands of broad-leaved cat-tails (*Typha latifolia*); pickerel weeds (*Pontederia cordata*); several species of sedges (Cyperaceae); and their associates.

On several days in May and early June, Glines had glimpses of one or two Purple Gallinules, but it was not until 15 June that he discovered a nest, assumed to belong to these birds. He did not examine the nest closely until 17 June, when it contained six eggs. On 18 June the nest contained seven eggs, the full complement. On 24 June he first saw a Purple Gallinule on the nest. By late afternoon of 4 July, two of the eggs had hatched and the two newly-hatched young were not quite dry. Glines informed Mr. C. Eugene Knoder, then of the Ohio Division of Wildlife, and the senior author (Trautman), who immediately went to the nest site with Glines. The nest was about 20 feet from the southeastern shore in a small stand of cat-tails growing in 15 to 20 inches of water. The clump of cat-tails was surrounded by a dense stand of yellow pond-lilies. The nest was firmly attached to five vigorous stalks of cat-tails; its foundation and much of the upper structure were composed of the green and brown blades from the five supporting and neighboring cat-tail stalks, most of the blades having been pulled down and intricately woven together. A small quantity of detached cat-tail leaves from other plants had been added. The completed nest was approximately nine inches in diameter and eight inches deep, and the cup-shaped depression containing the eggs was 2.5 inches deep. The rim was about 20 inches above the water's surface.

As noted elsewhere by Gross and Van Tyne (*Auk*, 46: 432-433, 1929), one of the striking features of the nest was its runway. The runway of the present nest was substantially constructed, almost entirely of cat-tail blades laid so as to form a flat surface two to four inches wide extending from the water's surface upward at about a 40° angle to the rim of the nest.

As we approached the nest an adult gallinule left it, followed by the two now-dry young which, after descending to the water via the runway, swam, dived, and ran rapidly across the emergent vegetation. One of the young was captured. Each of the

remaining five eggs was pipped, and occasional high notes could be heard from the young in some eggs.

Back on shore we continued to observe the nest. An adult returned via the runway and settled upon the eggs. Soon the remaining young returned to the nest by way of the runway. As noted then and repeatedly later with the other young, they scrambled up the runway using only their feet, or using both feet and wings. When the wings were employed they were partly folded in such a manner that the well-developed, curved claw on the pollex could be hooked most advantageously into the vegetation. By using both toes and wings the young were able to ascend a leaf at a very steep angle. During this and later visits to the nest, one or both adults remained within 50 feet, scolding and "clacking" vociferously and perching conspicuously on the upper portions of the pond-lily leaves.

The newly-hatched young that was captured is no. 12796 in the state collections at the Ohio State Museum. It is a male and weighed 10.1 g. The stomach contained the partly-digested remains of several aquatic insects and small spiders. Upon several later visits we observed adult gallinules approaching the young or nest with small insects and spiders in their bills. Gross and Van Tyne (*Auk*, 46: 439-440, 1929) describe the adults' method of feeding the young but this we did not witness. Once (7 July) Trautman observed an adult approach the nest holding in its bill what appeared to be a bullfrog (*Rana catesbeiana*) at least two inches long and fully as large as the young gallinules. It was assumed that this bird had captured the frog with the intent of eating it but, upon seeing Trautman approach its nest the bird approached also, still carrying the frog. The bird retained the frog throughout the period of observation, making no attempt to swallow it but repeatedly beating it against the vegetation, apparently attempting to kill it. After examining skins of adult Purple Gallinules we doubted whether the gape of this species was sufficiently large to permit the bird to swallow the frog whole.

The times that the eggs were found to have hatched were: 1 and 2, late afternoon of 4 July; 3, evening of 5 July; 4, evening of 6 July; 5, 0600 hours 7 July; 6, 0800 hours 8 July; 7, 1200 hours 8 July. At 1500 on 8 July we found one young outside of the nest and an adult and five young in the nest. All six young appeared to be vigorous, which surprised us because we had assumed that if the last two eggs did hatch (having been pipped since at least 4 July), the young would not be strong enough to survive.

Knowing that the seventh egg was laid on 18 June and assuming that previously an egg had been laid daily, then the first egg would have been laid on 12 June. If the eggs hatched in the sequence in which they were laid the extremes of the incubation period would be between 20.5 and 23 days. Gross and Van Tyne (*Auk*, 46: 433, 1929) suggest that the incubation period of the eggs under their observations was "about twenty-two days."

Several times in the daylight hours between 8 and 15 July we saw an adult brooding an undetermined number of young. Apparently day brooding ceased about mid-July, the young and adult occupying a nest only by night. By 15 July the nest was tilting at a 45° angle, caused by more rapid growth of the cat-tail stalks attached to one side than of those on the opposite side. This tilting made the nest seem unusable. About 1730 on 15 July, Glines discovered another completed nest and runway about 15 feet from the first; this nest the adult and young occupied later that evening and thereafter. We called this the "brood" nest to distinguish it from the first or "egg" nest. It was larger than the "egg" nest, being approximately 13 inches in diameter and 9 inches in depth; the depression was 3 inches deep and larger in diameter than

that of the "egg" nest. The rim was 30 inches above the water's surface. We observed an adult and/or young utilizing this nest, with decreasing frequency, until 29 July, when the young were three weeks old and about half grown.

While thoroughly investigating the pond on 1 August Glines discovered three additional, incomplete nests that we think were made by the gallinules. Two were in a small stand of cat-tails about 20 feet from shore and 100 feet from the "egg" and "brood" nests. One was about half completed and had the foundation of a runway, the other was only a foundation. The foundation of the third nest, in the near vicinity, was composed of bur-reeds (*Sparganium* sp.). None of these partially built nests was later completed.

Throughout July and early August, we occasionally saw adults and young along the shore or in shallow water, but as the young grew both they and the adults became increasingly difficult to hear or find. We think that as time progressed some mortality among the young occurred. The ponds contained many bullfrogs, some of great size. The largest appeared capable of swallowing a bird twice the size of the young gallinules. Actually, it seemed to us remarkable that any young could survive, while continuously wandering among so many potential predators.

On 15 August, Trautman, with Mr. E. Bruce McLean and Mr. Donald E. Veth, made a thorough search of the pond. They failed to see or hear any young; however, with field glasses Trautman twice watched an adult as it scurried through the vegetation, occasionally opening a wing fully as it changed course rapidly. Heretofore when an adult was observed to outstretch its wings the primaries were most conspicuous, but on this day no flight feathers were seen. Observing this, Trautman recalled studies by Mr. Edward F. Hutchins and himself of Common Gallinules (*Gallinula chloropus*) which were seen and collected in hunting seasons from 1956 through 1959. They found that, although all immature Common Gallinules could fly, several adults were flightless because all of their remiges had been dropped, apparently at about the same time. One flightless adult taken 4 September (OSM no. 11022) has no remex longer than 18 mm, and some are entirely sheathed. Another, taken 10 September (OSM no. 11789), has no remex longer than 75 mm, and the basal halves of most of the remiges are sheathed. Birds observed or taken after 15 October have fully-developed remiges, the longest being more than 125 mm; these birds could fly well. This, along with failure to see primaries on the Purple Gallinule(s) on 15 August, suggests that this species may also drop its remiges more or less simultaneously. We were unable to find reference in the literature to a flightless period in the Purple Gallinule.

Occasionally, individual Purple Gallinules have been observed far north of their normal nesting range, and wandering (or windblown?) birds have been noted in North America as far north as Newfoundland, Nova Scotia, New Brunswick, Quebec, and Ontario (A.O.U. Check-list, fifth edit., 1957; see pp. 159-160). The normal nesting range extends along the Atlantic coast north only to North Carolina, and in the Gulf states only to their northern portions. There are, however, scattered records in Tennessee as far north as Reelfoot Lake. The successful nesting in central Ohio therefore constitutes a northward extension of the known nesting range.

Previously, only single Purple Gallinules have been observed in Ohio at any given time. It is interesting that two individuals of opposite sexes found the favorable nesting habitat at Baumgartner's Pond and successfully reared young.—MILTON B. TRAUTMAN, *Department of Zoology of Ohio State University, at Ohio State Museum, Columbus 10, Ohio*, and SAMUEL J. GLINES, *607 South Fifth Street, Columbus 6, Ohio*.