

Zoology (UMMZ 155,143). It was a male with small testes and a moderate amount of body fat. Slight molt was noted on the back and on the throat. The wing measured 71.2 mm., the exposed culmen 6.1 mm.

This appears to be the first specimen record for New Jersey and the only recent specimen for the New York City region—one was taken in the Bronx in 1888 by Dwight (Cruikshank, "Birds Around New York City," 1942:441).—FRANK B. GILL, *The University of Michigan Museum of Zoology, Ann Arbor, Michigan, 3 November 1960.*

**Three new birds for the Mississippi list.**—I can find no reference reporting the Black-necked Stilt (*Himantopus mexicanus*), Mottled Duck (*Anas fulvigula maculosa*), or Cattle Egret (*Bubulcus ibis*) as having been collected in Mississippi. Recent collection of these three species seems noteworthy.

**CATTLE EGRET.**—On 29 May 1960 I found two of these egrets in a cow pasture near the coast 4 miles east of Pascagoula (Jackson County). One was collected. During the summer, several others of this species were seen at various points along Mississippi's coast. Sterling G. Clawson, Mississippi Game and Fish Commission Biologist, took a young specimen at Claiborne (Hancock County) on 8 September 1960.

**MOTTLED DUCK.**—The fresh and brackish marshes of western Hancock County held a sizable population of these ducks during the summer of 1960. I saw the species there on numerous occasions and took a specimen near Claiborne on 9 September when 23 were seen.

**BLACK-NECKED STILT.**—I saw this species once during the fall of 1960. On 24 September I took a specimen from a group of seven found feeding on mud flats at Bayou Casotte in Jackson County, a few miles east of Pascagoula. The AOU Check-list (Fifth Edition, 1957) lists Mississippi among the states in which the Black-necked Stilt occurs casually in migration.

The specimens were deposited in the museum of the Mississippi Game and Fish Commission.—LOVETT E. WILLIAMS, JR., *CGC Gentian, General Delivery, Galveston, Texas, 28 November 1960.*

**Flock feeding behavior in migrant Bonaparte's Gulls.**—On 12 November 1960, we observed a flock of 75–100 Bonaparte's Gulls (*Larus philadelphia*), including only four immatures, feeding at a hot-water outlet of the Consumer's Power Company near Erie, Monroe County, Michigan. After we watched this flock for several minutes, we noted a definite feeding pattern.

The feeding area was about 100 yards long and 10 yards wide. The birds moved south into the wind along the long axis of the feeding area. When a bird reached the end of the area, it would veer lateral to, or up and over the feeding flock and return to the northern end of the area, whereupon it would resume feeding. The lateral routes were used more frequently than the overhead route. A returning bird could re-enter the feeding flock at any point, although the majority entered within the first 20 yards of the run.

Additional observations of the flock revealed that there were two smaller circular feeding routes within the large one. Upon reaching the center of the feeding area, a small percentage of the birds would return to the beginning, thus covering only half of the total feeding area. A similar half-route was established in the southern half of the feeding area.

The number of dives an individual made in one trip ranged from 2 to 17, the greatest number being made by those birds which covered the entire 100 yards. The birds dived into the water from 2 to 5 feet above the surface. An actively feeding individual would

dive consistently from the same height, enter the water at approximately a 60-degree angle and completely submerge. Upon surfacing (headed in the same direction), it would fly to a suitable height from which it would dive again. If a gull caught a fish, it left the flock, usually with two or three other gulls in pursuit. The flock was silent except when a fish was caught. The great individual variation in this general feeding pattern seemed to depend on the intensity of the individual's feeding behavior.

The next weekend, 19 November, Wolf made the following observations of Bonaparte's Gulls in the same area. The foraging flock of gulls fluctuated between 2 and 25 birds. No definite feeding pattern of the sort observed the previous week was noted. The birds were feeding close to the mouth of the hot-water outlet and fished mainly at the periphery of the strong current. The feeding area was almost circular with a diameter of about 20 yards. The birds flew rather irregularly about the area, occasionally veering to avoid a collision.

The birds did not dive directly into the water, but maneuvered to the surface from a height of 5 to 15 feet. No birds were seen to submerge completely. The only food which we noted being taken by the gulls was small fish. The gulls seemed to be catching more fish per unit of time than in the previous week.

A possible explanation for the differences in feeding behavior on the two days might be found in the fact that fish are discharged with the water at the outlet. The water is drawn up from the lake and used to cool generators in the power plant. Some of the discharged fish are brought close to the surface by the churning action of the water in the immediate vicinity of the outlet. Thus on 19 November the birds feeding on the edges of the turbulent water did not have to submerge to obtain a morsel. The small number of feeding individuals probably did not necessitate an organized feeding pattern. On 12 November, however, the gulls may have been feeding on a school of fish, which in turn were feeding on the morsels discharged at the outlet. Since the pieces of food would be sinking in the more slowly moving water, the gulls would have to submerge to catch the fish. The school of fish would be a rich, localized food source, which would be best exploited by a large flock of gulls if they fed in an organized manner. The efficiency of this organized flock was less than that of the birds observed on 19 November because submergence, which was less often used than picking morsels off the surface of the water, is less efficient. Diving and complete submergence has been noted for a number of species of gulls (Tinbergen, 1953. "The Herring Gull's World," p. 36).

Organized flock feeding behavior has been described only infrequently. Bartholomew (1942. *Condor*, 44:13) describes the organized fishing behavior of flocks of Double-crested Cormorants (*Phalacrocorax auritus*) on San Francisco Bay. Hailman (1960. *Raven*, 21:109) describes feeding by a flock of Ring-billed Gulls (*Larus delawarensis*) following a plow in Virginia. Inasmuch as the most recently plowed soil is the richest food source, the rotation of the flock facilitates a more efficient exploitation of the exposed grubs, larvae, etc. A similar "leap-frog" feeding behavior was described by Meyerriecks (1960. *Natural History*, 69 [7]:51-52) for the Cattle Egret (*Bubulcus ibis*).—LARRY L. WOLF and FRANK B. GILL, *University of Michigan Museum of Zoology, Ann Arbor, Michigan, 22 December 1960.*

**Range extensions of herons in the Northeastern United States.**—The rapid northward expansion of several species of Ardeidae has rendered obsolete the range descriptions in the AOU Check-list. Following is a list of these species and their northern breeding limits in New Jersey, New York, and New England, as of the summer of 1960.

**Little Blue Heron** (*Florida caerulea*).—*AOU Check-list Status*: "Breeds . . . on the Atlantic coast from Massachusetts (Marshfield, casually) to southern Florida."