

Incidence of deformed bills in California Gulls (*Larus californicus*).—Observations of bill deformities in birds are fairly common, but information on the incidence of occurrence has been reported by only a few persons. During the past 12 years we have handled 6,147 juvenile and 306 subadult and adult California Gulls in Wyoming. Only four of these individuals had deformed bills, and in each case the type of malformation was crossed mandibles. All four were captured at a colony 8 miles northwest of Laramie.

Two juveniles of 661 banded during 1967 had severe lateral deflections of the upper mandible. In one bird the mandible was deflected to the left and in the other bird to the right. The bills superficially looked like the Herring Gull chick with a deformed bill photographed by Threlfall (Auk, 85: 506, 1968). Both birds were otherwise in good condition and were banded and released.

During June 1968 we took 25 chicks from the colony and raised them in the laboratory. One of these taken at 4 days of age had a slightly crossed bill. Lateral displacement at the tip did not exceed 2 mm. The chick was below average in weight when removed from the colony and had to be coaxed to eat during the first few days of captivity. By 8 days of age it had attained the mean weight for caged birds of equal age. Gradually the bill became less crossed, and by 10 days of age it articulated normally.

The fourth deformed bird was taken 25 May 1969 among 30 adult gulls captured with a cannon trap. The displacement at the tip of the mandibles was 6.8 mm. The bird, a female, weighed 526 g, which is only 31 g lighter than the average female adult captured from this colony.

Threlfall (op. cit.) reported one bill deformity in over 1,500 Herring Gulls. Pomeroy (Brit. Birds, 55: 49, 1962), on the basis of limited information, suggests that the incidence of bill deformities in wild birds was well under 0.50 per cent. The occurrence of the crossed bills in Threlfall's data is 0.067 per cent; in ours 0.062 per cent. While they may arise with greater frequency, crossed mandibles above the frequency given probably are only temporary or are removed at a very early age by natural selection. —JEAN SMITH and KENNETH L. DIEM, *Department of Zoology and Physiology, University of Wyoming, Laramie, Wyoming 82070. Present address of first author: Department of Biology, Carroll College, Helena, Montana 59601.* Accepted 13 Aug. 1970.

Food habits of Black-crowned Night Herons in southern Alberta.—A study of Black-crowned Night Herons (*Nycticorax nycticorax*) nesting colonially in marshes near Cassils and Tilley, Alberta, in 1964 and 1965 (Wolford and Boag, 1970) involved an investigation of their food habits. Food items were collected from the regurgitations of nestlings in June and early July, and from the gullets and stomachs of older herons collected in late July and August of both years. Table 1 shows the qualitative and quantitative aspects of the diet.

Black-crowned Night Herons are known to eat a wide variety of animals and to take advantage of temporary abundances of certain prey, such as voles (Allen and Mangels, 1940) and salamanders (Wetmore, 1920), while in most places their diet consists mainly of fish (Bent, 1926; Palmer, 1962). Thus the diversity of food items recorded is not unusual. In examining these data, the bias in favor of items with indigestible parts must be kept in mind, for it probably masks the importance of fishes and amphibians that lack such indigestible material.

Among the invertebrates eaten, beetles were the most apparent and included mainly small adult carabids plus adult and larval dytiscids. Other groups were represented

TABLE 1
FOOD ITEMS TAKEN BY BLACK-CROWNED NIGHT HERONS NESTING IN MARSHES OF
SOUTHERN ALBERTA, 1964 AND 1965

| Prey groups | Per cent frequency of occurrence | |
|---------------|---|---|
| | Nestling regurgitations (96) ¹ | Stomachs of older birds ² (17) |
| Fishes | 30 | 29 |
| Amphibians | 9 | 0 |
| Birds (young) | 55 | 6 |
| Mammals | 15 | 12 |
| Coleopterans | 55 | 59 |
| Hemipterans | 13 | 41 |
| Orthopterans | 3 | 12 |
| Odonates | 4 | 12 |
| Amphipods | 2 | 18 |
| Hirudineans | 5 | 0 |
| Vegetation | 11 | 12 |

¹ Sample size.

² Includes fledged juvenals and older birds.

as follows: hemipterans by water boatmen and backswimmers, orthopterans by grasshoppers, odonates by nymphs of damselflies and dragonflies.

The fishes were primarily fathead minnows (*Pimephales promelas*) and brook sticklebacks (*Culaea inconstans*), plus a few lake chubs (*Couesius plumbeus*) and a sucker (*Catostomus* sp.). The heron colonies were located in prairie marshes too shallow for fish to survive over winter, but interconnected by irrigation canals from the Bow River whence fish enter the system as soon as the canals open in mid-May each year. Consequently fish were available in large numbers to the herons by early June, and were consistently important in all of the food samples after this date.

As the herons arrive in the colonies approximately one month before these fish are available in the marshes and ditches, they must seek alternate prey, perhaps mammals and amphibians. Voles (*Microtus pennsylvanicus*) were the only mammals found in our food samples. Amphibians taken included *Rana pipiens*, *Ambystoma tigrinum*, *Bufo woodhousei*, and *Pseudacris triseriata*; all were adults. The latter species was the most common amphibian in the area and may be more important as heron food than the others.

The large marshes where the night herons nested were also occupied by several hundred nesting Franklin's Gulls (*Larus pipixcan*) and many blackbirds (*Xanthocephalus xanthocephalus* and *Agelaius phoeniceus*). In both marshes studied, the colonies of herons and gulls were only a few hundred yards apart, and the herons took advantage of this situation by feeding large numbers of gull chicks to their own nestlings. They also took young blackbirds, but to a much lesser extent. The gulls and blackbirds nested later than the night herons, and this lag was sufficient to produce young gulls and blackbirds at the time when the young herons were old enough to swallow these larger prey items. Other birds found in the regurgitations were one young Coot (*Fulica americana*) and one night heron nestling. Recently several workers have found young egrets, ibises, ducks, and terns among this species' prey (Peters and Burleigh, 1951; Winterbottom, 1957; Beckett, 1964; Kale, 1965; Collins, 1970).

In summary, we believe that the night herons fed primarily upon fishes when they were available but were quick to take advantage of concentrations of other potential prey, especially young birds in midsummer and perhaps mammals and amphibians in spring. We wish to thank C. G. Paterson and W. G. Evans for identification of fish and beetles. Financial support from the National Research Council of Canada is gratefully acknowledged.

LITERATURE CITED

- ALLEN, R. P., AND F. P. MANGELS. 1940. Studies of the nesting behavior of the Black-crowned Night Heron. Proc. Linnaean Soc. New York, 50-51: 1-28.
- BECKETT, T. A. 1964. Black-crowned Night Heron feeding behavior. Chat, 28: 93-94.
- BENT, A. C. 1926. Life histories of North American marsh birds. U. S. Natl. Mus., Bull. 135.
- COLLINS, C. T. 1970. The Black-crowned Night Heron as a predator of tern chicks. Auk, 87: 584-585.
- KALE, H. W., II. 1965. Nesting predation by herons in a Georgia heronry. Oriole, 30: 69-70.
- PALMER, R. S. 1962. Black-crowned Night Heron. Pp. 472-484 in Handbook of North American birds, vol. 1 (R. S. Palmer, Ed.). New Haven, Connecticut, Yale Univ. Press.
- PETERS, H. S., AND T. D. BURLEIGH. 1951. The birds of Newfoundland. Dept. Nat. Resources, Prov. of Newfoundland.
- WETMORE, A. 1920. Observations on the habits of birds at Lake Burford, New Mexico. Auk, 37: 221-247; 393-412.
- WINTERBOTTOM, J. M. 1957. Some African herons. African Wildl., 2: 100-105.
- WOLFORD, J. W., AND D. A. BOAG. 1970. Distribution and biology of Black-crowned Night Herons in Alberta. Canadian Field-Naturalist, in press.

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A specimen of the Little Gull from northern Mississippi.—On 15 March 1970 I saw a single Little Gull (*Larus minutus*) in adult winter plumage at the dam area of Sardis Lake in Panola County, Mississippi. It was in the company of about 25-30 Bonaparte's Gulls (*L. philadelphia*), either resting in a group on a sandy beach or flying over the outlet channel of the reservoir and over the basin below the dam known as Lower Lake. On 16 March the Little Gull was seen also by Mrs. Sandra Davis and by Dr. Y. J. McGaha, with whose help I was able to collect it. The specimen proved to be a male weighing 124.7 g, with slight fat, showing no enlargement of the gonads, and measuring 272 mm in total length and 216 mm in wing (chord) length. It is now in the Vaiden Collection of the University of Mississippi Department of Biology.

The Little Gull apparently has not been reported previously from either Mississippi or from any other site in the Mississippi River drainage system. The nearest occurrence I know of was at Pensacola, Florida where Burt L. Monroe, Jr. took a specimen on 26 December 1958 (Audubon Field Notes, 13: 302, 1959). This species has seldom been found on the continent outside of the Great Lakes and northern Atlantic coast regions. The Mississippi specimen appears to be only the third confirmed U. S. record from other than the immediate vicinity of the Atlantic Ocean, Gulf of Mexico, or Great Lakes. The first was a specimen from Dallas County, Texas in April 1965 (Pulich, Auk, 83: 482, 1966), and the second was a well-photographed bird found in