

Ring-billed Gulls feed on flying ants.—On one to three late afternoons almost every autumn in the last decade we have observed peculiar aerial "fly-catching" behavior in gulls at the Cedar Grove Ornithological Station, some 40 miles north of Milwaukee, Wisconsin, on the west shore of Lake Michigan. The gulls would circle, frequently changing direction and speed, and would snap at tiny insects with their beaks. The gulls occurred in wheeling flocks of 20 to 50 birds at a height of 45 to 150 feet over sparsely vegetated, sandy areas. A survey of 2 miles of lake front on one occasion yielded an estimate of 2,000 fly-catching gulls.

In 1958 we noted that this peculiar behavior of gulls coincided with the swarming or nuptial flights of a small brown ant. Since 1958 we have observed autumnal swarming of ants and fly-catching behavior of gulls on 9 occasions: 13 September 1958, 29 August 1959, 2 September 1960, 26 and 28 August and 22 September 1961, and 16, 17, and 18 September 1963.

Whenever we saw gulls catching insects in flight, we saw ants swarming. Every time we observed ants swarming we saw gulls catching insects in flight. Every presumed ant-catching gull identified as to species was a Ring-billed Gull (*Larus delawarensis*). Herring Gulls (*L. argentatus*) often flew past and once through a group of ant-catching Ring-billed Gulls. Common or Forster's Terns (*Sterna hirundo* or *forsteri*), nighthawks (*Chordeiles minor*), and Cedar Waxwings (*Bombycilla cedrorum*) were seen catching flying ants; each species did so on only a single occasion.

The gulls appeared to swallow the insects. No preening, anointing of plumage, or typical "anting" (cf. Whitaker, *Wilson Bull.*, 69: 195-262, 1957) were observed. Ring-billed Gulls commonly feed on "worms, grubs, grasshoppers, and other insects" (Bent, *U. S. Natl. Mus., Bull.* 113, 1921; see p. 137). We have seen the regurgitated remains of large beetles in Ring-billed Gull nesting colonies. J. A. Allen is quoted in Baird, Brewer, and Ridgway (*Mem. Mus. Comp. Zool., Harvard*, 13: 246-247, 1884) as having observed Ring-billed Gulls taking grasshoppers in flight.

The ants on which the gulls presumably were preying were identified as *Lasius alienus americanus* Emery, a common Holarctic species. These ants are exceedingly common in the area of the station with about one "hill" per 10 square yards of suitable open habitat. The ants are very small; winged females are about 5 to 6 mm long, and males are only 3 mm long. It is difficult to believe that the gulls would pursue these tiny insects if they were only another source of protein.

We thank Professor John C. Neess for identifying our ant collections.—HELMUT C. MUELLER, *Department of Zoology, University of Wisconsin, Madison, Wisconsin*, and DANIEL D. BERGER, *Cedar Grove Ornithological Station, Cedar Grove, Wisconsin*.

Testicular response to an increased photoperiod in the Brown-headed Cowbird.—In the course of studies of the testicular cycle of the Brown-headed Cowbird (*Molothrus ater*) at London, Ontario, Canada, in 1961-62 (A. L. A. Middleton, M. Sc. thesis, University of Western Ontario), we conducted two short experiments to determine if the cowbirds show a testicular response to photoperiodic stimulation.

Experimental birds were drawn from a large captive population necessary for the main study. These birds were kept in a section of the greenhouse at the University of Western Ontario under as near natural light conditions as possible and at a temperature thermostatically controlled within two degrees of 15° C.

In the first experiment, run from 27 September 1961 until 14 November 1961, 18 birds were kept in cages measuring 2½ × 1 × 1 feet. These were placed in a darkroom illuminated by two 40-watt daylight fluorescent lights yielding a maximum and mini-

TABLE 1
TESTICULAR WEIGHTS OF PHOTOSTIMULATED COWBIRDS

Sample date	Nature of sample	Number in sample	Mean testis weight (mg)	Weight of largest testis in sample (mg)
1961				
26 Sept.	control	7	0.7	0.9
17 Oct.	experimental	3	2.2	5.2
25 Oct.	experimental	3	1.0	1.5
1 Nov.	experimental	3	4.5	11.7
8 Nov.	experimental	3	10.5	29.5
16 Nov.	experimental	5	2.1	1.3
16 Nov.	control	3	0.4	0.4
1962				
5 Jan.	control	4	0.9	1.2
26 Jan.	laparotomy of experimentals	2	7.0 (est.)	11.0 ¹ (est.)
16 Feb.	experimental	3	23.1	30.4
16 Feb.	control	2	1.1	0.5

¹ Testes of similar dimension whose weights were known were the basis of this estimation.

imum intensity of 23 foot-candles and 9 foot-candles in each cage. A daily photoperiod of 15½ hours was provided. Weekly samples were taken from each cage, starting on 17 October 1961.

The second experiment, started on 5 January 1962 and ended on 16 February 1962, involved four birds. The cage used in this experiment was illuminated by two 15-watt daylight fluorescent lights yielding maximum and minimum intensities of 30 and 15 foot-candles. The cage dimensions and daily photoperiod were the same as in the first experiment. Two birds were laparotomized on 26 January and the surviving birds were killed on 16 February 1962.

Control birds taken from the greenhouse were killed at the start and finish of each experiment.

After fixation for 24 hours the larger testis of each sampled bird was weighed; then slides were made for histological examination.

After seven weeks' exposure to an increased photoperiod from September to November, 1961, only three of the experimental birds had developed enlarged testes (Table 1; 5.2, 11.7, 29.5 mg). The tubules of these testes were filled with actively dividing spermatocytes and a few spermatids.

By contrast, after six weeks' exposure to an increased photoperiod in January and February, 1962, all experimental birds had greatly enlarged testes. These were filled with actively dividing spermatocytes, many spermatids, and a few mature spermatozoa. The testes of the control birds were in the "resting phase."

Since the experimental conditions were approximately the same in each case, the results suggest a physiological difference between the two groups of birds.

We conclude that in the first experiment all but three of the birds were in the refractory state and thus did not respond to the increased photoperiod. By January, all the birds were out of this phase and thus responded to the increased photoperiod with testicular recrudescence.

Hence the Brown-headed Cowbird can be added to the list of species which will respond to photostimulation following the refractory period.—A. L. A. MIDDLETON,

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Some information from Barn Owl pellets.—This note represents excerpts from a longer manuscript left unpublished by the late Laurence M. Huey, and is presented in this form with Mrs. Huey's permission.

In May, 1937, Mr. Lewis W. Walker flushed a Barn Owl, *Tyto alba*, from a small cave on the northernmost of the Islas Los Coronados, Baja California, and gathered a number of pellets from the site. Among the contents of the pellets, as listed by Huey, were remains of the following kinds of animals: unidentified bats, 3 articulated wings; pocket gopher, *Thomomys bottae*, 2; San Diego pocket mouse, *Perognathus fallax*, 2; Black Petrel, *Loomelania melania*, 1; Leach's Petrel, *Oceanodroma leucorhoa*, 1; and Xantus' Murrelet, *Endomychura hypoleuca*, 1.

Neither the pocket mouse nor the gopher listed above occurs on the Islas Los Coronados. The only land mammal ever reported from any island in that group is the white-footed mouse, *Peromyscus maniculatus*, which was also well represented in the pellets. The islands have been visited by biologists more or less regularly for nearly a century, and it is unlikely that either of these forms would have been consistently overlooked. North Island of this group is more than nine miles from the coast of Baja California; the somewhat larger South Island is approximately seven miles from shore. Assuming some cruising inland in search of prey, forays to the mainland for food would involve flights of approximately ten miles each way.

In addition to bones, both contour and flight feathers of the petrels and murrelet were found in almost uninjured condition. Pelagic birds may represent an important part of the diet of Barn Owls living on islands. Bonnot (*Condor*, 30: 320, 1928) records the destruction of a large number of Leach's Petrels by Barn Owls on Castle Rock, off the coast of northern California. The remains of Craveri's Murrelets, *Endomychura craveri*, were found at a Barn Owl roost on San Francisco Island, Baja California (Banks, *Trans. San Diego Soc. Nat. Hist.*, 13: 56, 1963).

In February and again in July, 1960, Major Chapman Grant brought Mr. Huey series of Barn Owl pellets from near Escondido, San Diego County, California. One pellet from the February sample contained the skull of a long-tailed weasel, *Mustela frenata*. This is an unexpected prey item, although the recovery of weasel skulls from Barn Owl pellets has been reported by Phillips (*J. Mammalogy*, 28: 189-190, 1947) in Ohio.

One pellet from the July sample contained the remains of a little pocket mouse, *Perognathus longimembris*. This species is not known to occur in the vicinity of Escondido. In the western part of the county it has been reported only from a few coastal localities, and is apparently restricted to a narrow coastal habitat. Escondido is approximately 14 miles from the nearest part of the coast, and 18 miles from the nearest reported locality for mice of this species, Oceanside. Whether the skull in this pellet represents an unknown inland population or distant foraging by the owl cannot presently be determined.

Another pellet from the July lot contained the remains of a Killdeer, *Charadrius vociferus*. This pellet was heavily stained with egg yolk color, and the undigested soft shell of the egg was found when the pellet was dissected. Apparently both the yolk and shell were impervious to the action of the bird's digestive fluids.—RICHARD C. BANKS, *Natural History Museum, San Diego, California*.