the 22nd taking the feather into a hole. On August 3, birds in still further reduced numbers were entering holes here and there along most of the length of the bank. By August 26, interest in the holes seemed to have disappeared, at least in mid-afternoon, although on this date there was a flock of about fifty Bank Swallows fluttering close to the bank, many of them settling on the top of the wall and some clinging to the concrete face.

The habit of this species of nesting in artificial holes in walls and banks has been noted in England infrequently from the time of Gilbert White (1774) onwards but appears to be unrecorded hitherto in North America.—P. A. D. HOLLOM, *Dorval, Montreal.*

Post-breeding pugnacity of the Pine Warbler.—On the Patuxent Research Refuge of the U. S. Fish and Wildlife Service, located near Bowie, Maryland, the Pine Warbler (*Dendroica pinus*) is a common summer resident. During the breeding season through May, June and July this species is restricted almost entirely to areas that have grown up to pitch pine (*Pinus rigida*) and scrub pine (*Pinus virginiana*). In late August and September, following the breeding season, these birds show a drastic change in habits and frequently occur in small flocks around the headquarters buildings. Here they generally may be found associating with Bluebirds (*Sialia sialis*) and Chipping Sparrows (*Spizella passerina*), feeding on the ground as well as in the bushes and trees of the orchards and landscaped areas. While watching these mixed flocks it was noticed that the Pine Warblers were extremely quarrelsome, frequently fighting among themselves, as well as giving chase to Bluebirds, Chipping Sparrows and, on one occasion, a Vesper Sparrow (*Pooecetes gramineus*). They were especially pugnacious toward the Bluebirds, for when one of these larger but slower-flying birds would leave its perch, it would often be assaulted by one and sometimes two Pine Warblers that darted after it, snapping their bills much in the manner of flycatchers chasing insects.—ROBERT E. STEWART, *Fish and Wildlife Service, Patuxent Research Refuge, Bowie, Maryland.*

Birds and smell.—Mr. P. A. Taverner's article on "The Sense of Smell in Birds" (Auk, 59: 462–463, July, 1942) evokes a responsive chord in me. I have a yellow-headed parrot as a pet, and this parrot frequently shares dinner with me; that is, he has a plate of his own alongside mine and enjoys the companionship and food allotted to him. He is particularly fond of steak and even more so of the long bones of chicken, which he will deftly open and from which he will extract the marrow. Most parrot owners are not aware of the carnivorous tendency of their pets. The amount of steak that he is capable of stoking away would do credit to a raptor of similar size.

The thing that has interested me more than the carnivorous habits of this bird has been his power of differentiating between various types of vegetables treated in a parallel manner, and which look similar after preparation. I have noticed that when these are placed before him he shows definite predilections. It is not the sight, apparently, that prompts him to give preference to this or that, but the olfactory sense. I have mixed these things partly and it has been very interesting to see with what precision he is capable of extracting the favored element. Although some of these things look very much alike, those that do not attract the bird cause him to stand aside a foot or more, but the moment that his favorite —particularly squash—comes to the table he shows a decided interest. I have therefore come to the conclusion that his power of selection is not visual as much as

it is olfactory. I might add that string beans, peas, and lettuce are also favorites of his, his main staff being sunflower seeds.

I have also been interested in the frequent use that he makes of bits of oak bark which he cuts from a slabside located in his cage. There is evidently something in that which fills a gap in his dietary complex.

A surprising thing about this parrot's feeding is the comparative infrequency of feeding. Passerine and gallinaceous birds are constantly in search of food, while this parrot feeds at rather distant intervals and in his dining-room performance enjoys a full gorge.—PAUL BARTSCH, *U. S. National Museum, Washington, D. C.*

The incubation period of the Great Horned Owl.—Bent (Life histories of North American birds of prey, Pt. 2, U. S. Nat. Mus. Bull. 170: 304, 1938) wrote of the Great Horned Owl (*Bubo v. virginianus*) that "the period of incubation has been estimated as from 26 to 30 days, but it does not seem to have been accurately determined; Professor Keyes (Condor, 13: 5–19, 1911) says that it is not less than 30 days, and probably more." This thought was reiterated by Baumgartner (Wilson Bull., 50: 274–285, 1938) after concluding his Ph.D. thesis research on the owl; he also cited correspondence with W. J. Breckenridge, who had "made some observations near Fridley, Minnesota, which indicate a period of at least twenty-nine days" (tom. cit.: 281).

In February, 1942, with advice and help of Dr. Paul L. Errington of Iowa State College, we undertook a study in the vicinity of Ames, Iowa. Among the known territories of the locally resident horned owls—doubtless *B. v. virginianus* (Swenk, Neb. Bird Rev., 5: 79–105, 1937)—one in particular seemed to promise a good opportunity to obtain data on the length of the incubation period. On Feb. 4, Dr. Errington, incidental to field work of a different nature, noticed that the owls were interested in a stick nest built the previous spring by a Red-tailed Hawk (*Buteo borealis*) in the crotch of a maple tree about forty feet above the ground; and, on the next occasion that the nest was observed, February 7, an owl could be seen sitting in it. The owl was not then disturbed, but, on the next day, it was flushed off the nest, and the single egg found there was marked.

The egg was suspected of having been laid on February 7, when the owl was first seen in the nest, but our main prospects of learning something definite concerning the incubation period depended, of course, upon whether another egg would be laid and hatched.

In view of the fact that incubation "normally begins with the laying of the first egg" (Baumgartner, tom. cit.: 281), the general procedure of our study was to examine the contents of the nest at daily intervals long enough to establish laying and hatching dates. Visits were planned for approximately the same hour each day (between 5:00 and 6:00 P. M., this being the only time that two of the authors could always be free to work together).

No change was observed on the visit of February 9, but on February 10 a second egg was found and marked. Thereafter, visiting was suspended to permit uninterrupted incubation and to reduce the chances of the eggs being abandoned or their embryos killed by chilling (see Baumgartner, tom. cit.: 281). It was felt that any advantages to be gained by marking possible additional eggs laid in the nest would be more than offset by greater risk to the clutch. Daily visits were resumed on March 4; on March 9, the first egg was found pipped, thirty days after the latest likely date of laying; and, on March 10, the owlet was hatched out but was still moist.