indicative of reproductive effort was seen. The marsh was worked very intensively from 1934 to 1936 in connection with other studies, but few broods of any kind of ducklings were encountered and none at all of Wood Ducks. Floating mats of reeds and rushes and muskrat lodges were consistently used as sitting and preening places, however. Late summer was attended by an appreciable influx of the birds. It is the opinion of Mr. Bennett and myself that the numbers of Wood Ducks to be seen on Round Lake in early fall have been steadily increasing since our initial observations in 1932, although we have few actual data on relative populations.

In September, 1936, there was a heavy concentration of ducks on Round Lake, made up mostly of Blue-winged Teal (*Querquedula discors*), but Wood Ducks were almost as numerous as the second most abundant duck for this season, the Pintail (*Dafila acuta tzitzihoa*). At the height of this concentration, the author and his wife, paddling a canoe, could flush Wood Ducks at random from the reed patches (to which they were ordinarily somewhat restricted) at an estimated rate of about three birds per 2,500 square feet. About 39 acres of the marsh were covered by the reed patches, which should give us about 2,040 Wood Ducks, a figure we do not feel to be excessively wide of the truth.—PAUL L. ERRINGTON, *Iowa State College, Ames, Iowa.*

Canvas-back breeding in Iowa.—On June 15, 1934, at Mud Lake, Clay County, Iowa, the writer found a submerged duck nest that contained eight eggs. Upon examination three of the eggs proved to be those of the Redhead (*Nyroca americana*), four were those of the Canvas-back (*Nyroca valisineria*), and one egg was not identified. The nest had been submerged at the time the ducklings were beginning to come out of the shells. The ducklings were removed from the pipped shells to identify them properly. The writer found 47 Redhead nests from 1932 to 1936 in northwestern Iowa, but apparently this finding of the Canvas-back eggs is the first breeding record of the bird in the State. The Canvas-back ducklings and eggshells are now in the possession of the Zoology and Entomology Department, Iowa State College, Ames, Iowa.—LOGAN J. BENNETT, *U. S. Biological Survey, Ames, Iowa.*

Prairie Sharp-tailed Grouse budding on wild plum.—On February 15, 1937, I had the good fortune of observing six Sharp-tailed Grouse (*Pedioecetes phasianellus campestris*) budding on the native wild plum (*Prunus americana*). They were feeding rapidly as they walked easily about on the closely matted top of the plum thicket. Observations were made through a six-power binocular from a distance of seventy-five yards, so there is no question as to the birds' activity.

The plum growth was on the edge of a mixed native stand of bur oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica* var. *lanceolata*), American aspen (*Populus tremuloides*), cottonwood (*Populus deltoides*), balsam poplar (*Populus balsamifera*), red-osier dogwood (*Cornus stolonifera*), juneberry (*Amelanchier oblongifolia*), choke cherry (*Prunus virginiana*), elm (*Ulmus americana*), wolfberry (*Symphoricarpos occidentalis*), hazelnut (*Corylus americana*), blackhaw (*Viburnum lentago*), hawthorn (*Crataegus chrysocarpa*), and meadowsweet (*Spiraea salicifolia*). Within a very short flying distance, paper birch (*Betula papyrifera*), ironwood (*Ostrya virginiana*), speckled alder (*Alnus incana*), and high-bush cranberry (*Viburnum americanum*), occur in abundance. The timber growth is immediately adjacent to or bordering the South Branch of Park River.

The incident was new in my observation of the Sharp-tailed Grouse and did not recall to mind any known previous reference in literature to budding on wild plum. Upon returning from the field, I reviewed the literature in my meager library which

includes, 'Life Histories of North American Gallinaceous Birds' by Arthur Cleveland Bent; 'Game Management' and 'Game Survey of the North Central States,' Aldo Leopold; and 'Winter Food of the Sharp-tailed Grouse and Pinnated Grouse in Wisconsin' by Frank J. W. Schmidt. The only reference made to Sharp-tailed Grouse budding *Prunus* was in Schmidt's review of D. A. Dery's 'Preliminary Report on the migration in Quebec of the Northern Sharp-tailed Grouse' (Bull. Quebec Zool. Soc., no. 1, 1933) in which mention is made that cherry buds are among its winter foods.

Since so many of the apparently preferred winter foods (buds of ironwood, birch, aspen, willow, balsam and cottonwood as observed by Schmidt, Judd, Coues, Dery and Bent), were available to the birds in the immediate vicinity, the observation bears some significance. Acknowledgment directly to the writer or in 'The Auk' of similar substantiating observations on the above report will be appreciated.—ADRIAN C. FOX, *Park River, North Dakota.*

Incubation period of Virginia Rail.—In a cat-tail swamp in Wildwood Lake, Harrisburg, Pennsylvania, I found a nest of a Virginia Rail (*Rallus limicola limicola*) and was able to determine the incubation period of this species as twenty days. When first seen on the morning of May 12, 1937, the nest contained four eggs; the next morning five eggs were present. On May 25 there were eight eggs, the maximum laid, which means the last egg was laid May 16 and incubation was begun May 17. When seen on May 12 at about 9:30 a. m., three eggs were cold and one warm, indicating that the mother bird sat on the nest only long enough to lay an egg, and suggesting that no incubation would be started until all eggs were laid. This latter theory is supported by the equal development found in the downy embryos. It is, of course, advantageous for such birds to be hatched all the same day. The nest was not the flattened mat of reeds as often described in books, but resembled an enlarged Red-wing's nest, being lined with dead grass inside a cup of reeds, four inches in inside diameter and four inches deep. It was attached to old cat-tail stalks, six inches above the water. The eggs were elliptical, creamy white with many purplish and fuscous dots, most numerous about the larger end. Seven eggs all measured exactly the same, 34 by 25 millimeters, and one egg was 32 by 24 mm. The smaller egg was later found to be infertile, showing no incubation whatever. At one visit one egg was found outside the nest and was replaced, but it was not determined which egg this was. When visited May 24, the female bird was sitting on the nest and remained there about two minutes while I stood only three feet away looking at her. Then she moved off absolutely noiselessly. So as not to frighten her I stayed away from the nest until hatching time was supposed due. On May 31 and June 1 the eight eggs were seen and found warm. On June 3 the nest was again visited and one side found broken down and the clutch destroyed. Three whole cold eggs, a downy embryo with its legs eaten off, parts of another eaten bird and broken eggshells were found. The eggs had been broken and showed indented edges as though punctured by a round instrument, perhaps the mother's bill, although I had seen three blacksnakes in the same swamp. Since the eggs were cold, it is doubtful if the destruction occurred that morning. In the afternoon I again visited the nest and found more destruction. Four embryos were whole enough to show that their development was equal, that incubation began the same day for all. The eggs contained no nourishment whatever, the vitelline sac was entirely empty; neither was any stored nourishment found within the dissected body. The birds were ready to hatch. Mr. Frederick C. Lincoln after seeing an embryo declared it certainly would have hatched within two days, probably one. I believe they would