

article by R. G. Green and E. M. Wade, of the Minnesota State Board of Health, in 'Proceedings of the Society for Experimental Biology and Medicine,' April, 1928, which I have not seen. In speaking of the occurrence of tularemia in rabbits, they say that the decrease in the number of wild rabbits and of the Ruffed Grouse has occurred simultaneously in Minnesota during the past four years and that cases of tularemia in humans have appeared at the same time. Because of these facts and the discovery of tularemia in the blood of many rabbits, they think that the decrease in the Ruffed Grouse may be due to the same cause. They have demonstrated that the rabbit tick is an important carrier of tularemia and that the parasite is found also in game birds. They have shown that the Ruffed Grouse can be experimentally infected with the Bacterium Tularensis as regularly as the rabbit, and think that the parasite may carry the disease from rabbits to the birds. Although no cases of human tularemia have been reported as the result of cleaning grouse, they think it probable that the grouse may be a source of infection and feel that the indications justify a careful search for tularemia in grouse dying from disease.—J. J. MURRAY, *Lexington, Virginia.*

**On *Dendragapus obscurus obscurus*.**—The separation of the grouse of the genus *Dendragapus* into two groups has been considered for some time past. The principal feature that separates these two groups is the gular hooting sac, together with the volume of sound that is emitted from it.

In the males of the coastal group the skin of the hooting sacs is specialized and of a deep yellow color, the hooting is powerful and with great carrying power.

In the interior birds of the *richardsoni* type this skin is only slightly specialized and flesh-colored, deepening to purple when in display; the hooting is feeble and barely audible.

The crux of the question lies in the determining features of the type form *obscurus*.

A recent paper on this bird by Mr. M. P. Skinner in the 'Wilson Bulletin' for December, 1927, sheds no light on the subject except that the gular sacs are said to be "orange." If this was the case *obscurus* would become the type of the coastal group; that it is an error is proved by two fresh specimens of *obscurus* with color notes which I have recently received through the kind offices of Mr. J. Stokeley Ligon, of the State Game and Fish Department of New Mexico.

These birds were collected by Mr. Ligon on the mountains near Santa Fe (Sangre del Christo range). Taken on May 7, 1928, the male exhibits the maximum development of the hooting sacs. These are of the *richardsoni* type, purplish flesh color and only slightly carunculated, exactly as in a *richardsoni* male taken a few weeks later at Okanagau, British Columbia.

This negatives the different accounts in which *obscurus* is said to have

orange sacs, probably the deep yellow "combs" over the eyes have led the observers astray.

Mr. Ligon also informs me that the hooting is only audible to a distance of about forty yards. These birds from New Mexico are almost identical in color with birds from extreme northern British Columbia, the subspecies *flemingi*. Only the broad pale gray tail band separates them, this band in *flemingi* and *richardsoni* being dark gray only slightly paler than the rest of the tail and sometimes almost indistinguishable from it.

The New Mexican birds, however, have only eighteen rectrices against twenty in *richardsoni* and *flemingi*. But for this discrepancy there should be no question in according full specific rank to the two groups. Birds of the *richardsoni* (interior) type average twenty rectrices, of the *fuliginosus* (coastal) type eighteen.

The following is the number of rectrices in forty birds with complete tails in my own collection, all birds with moulting or incomplete tails being rejected.

Subspecies	Number of rectrices						Specimens
	16	17	18	19	20	22	
<i>richardsoni</i> . . . . .					15	1	16
<i>flemingi</i> . . . . .					2	1	3
<i>obscurus</i> . . . . .			2				2
<i>fuliginosus</i> . . . . .			4				4
<i>sitkensis</i> . . . . .	1		10	1			12
<i>sierrae</i> . . . . .			2				2
<i>howardi</i> . . . . .			1				1
							40

While the tails of the pair of *obscurus* from New Mexico agree with the average of birds of the *fuliginosus* type (*fuliginosus*, *sitkensis*, *sierrae* and *howardi*) in the number of rectrices and the presence of a light-colored tail band at the tip, the shape of the individual feathers and the extent and character of the tail band is more in accord with *richardsoni* and *flemingi*.

On the whole the arrangement already proposed by Swarth with *richardsoni* and *flemingi* as subspecies of *obscurus* and *sierrae*, *howardi* and *sitkensis* as subspecies of *fuliginosus* seems to represent the logical conclusion of the question.

*Dendragapus obscurus obscurus* (Say).

*Dendragapus obscurus richardsoni* (Douglas).

*Dendragapus obscurus flemingi* Taverner.

*Dendragapus fuliginosus fuliginosus* (Ridgway).

*Dendragapus fuliginosus sierrae* (Grinnell).

*Dendragapus fuliginosus sitkensis* (Swarth).

*Dendragapus fuliginosus howardi* (Dickey and van Rossem).

Much additional work is required before the ranges of the seven forms can be exactly defined. The separation of the bird inhabiting Vancouver Island may be warrantable, but first the question of dichromatism in the females, giving a gray and a rufous phase, must be settled.—ALLAN BROOKS, *Okanagan Landing, B. C.*

**Rare Michigan Records.** *Numenius hudsonicus*.—HUDSONIAN CURLEW.—A fine adult male, Hudsonian Curlew, was taken at Whitefish Point, Chippewa County, on September 24, 1928, by Miss Curren Hawkins, and sent to the Museum in the flesh. This species has never been common in Michigan, and authentic records are few. The last spring record was on May 30, 1925, when an adult bird was taken at Newberry, Luce County, and sent to the Museum. This species occurs as a rare migrant in Michigan.

*Pelecanus erythrorhynchos*. WHITE PELICAN.—An immature male was taken at Oscoda by fishermen on September 25, 1928. It was in a very poor flesh when sent to the Museum, where it was made into a study skin.

An adult bird was taken alive near Muskegon, Muskegon County, on September 22, 1928, and is now in the John Ball Park Zoo at Grand Rapids. Mr. R. L. McGrady was casting for muskellunge at Mona Lake, when this bird flew in front of and near him, and was caught "on the wing" by the hooks of his bait. While there are a number of state records for this species, it only occurs as a straggler in Michigan.

*Falco columbarius*. PIGEON HAWK.—On October 17, 1928, an adult female was taken near Muskegon (in that County) by Frank Antisdale, who sent it in the flesh to the Museum of Zoölogy. On September 16, the writer collected a fine male at "Point Lookout," Arenac County. This species seems to follow the Lake Shore beaches, usually during the fall migration of small birds in September and October. In a large series in our collection there is but one Spring record, that of April 30, 1918, in Berrien County, when the writer collected a beautiful adult male on top of a high Sand Dune. Since that date the species has not been seen by the writer until October 17, 1928, but it no doubt occurs rarely in the fall migration. The only record of its occurrence in any numbers was in 1915 on Charity Island, Saginaw Bay, when the writer saw a dozen from September 9 to October 11, and collected nine of them, five females and four males.—NORMAN A. WOOD, *Museum of Zoology, University of Michigan, Ann Arbor, Michigan.*

**Lewis' Woodpecker in Rhode Island.**—On November 16, Mr. Jeremiah Triggs, superintendent of Roger Williams Park, brought in to me an adult Lewis's Woodpecker (*Asyndesmus lewisi*) which he took away