

gopher formula. The next day they were given an unmeasured amount, but all and more than they would eat. The third day, by forced feeding, they were each made to consume 2100 such grains. No ill-effects resulted to either individual. The same grain proved fatal to gophers on the consumption of 15 grains. Thus each bird had in one day eaten enough active poison to kill 140 gophers without perceptibly harmful results.

The formula used was:—

Whole wheat -----	20 lbs.
Strychnine sulphate -----	½ oz.
Molasses -----	1 pt.

Though grouse thus seem practically immune to strychnine, we know that many other species of birds are quite susceptible to it. Seed-eating song birds, Mourning Doves, and even geese are readily poisoned by it, and the greatest care should be used in its distribution. Mr. David Lantz, of the U. S. Biological Survey, remarks that clear grain scattered in the vicinity of water does much to attract and keep birds away from poisoned areas.

It is not necessary, nor at this time, expedient, to use wheat for poisoning purposes. Other grains such as oats, are less attractive to many species of birds, but are quite as effective against gophers. In some of the work of the U.S. Biological Survey in developing control methods against rodents, it was found that where oats were used as a medium for poisoning no Mourning Doves were killed, but on accidental introduction of a small amount of wheat in the mixture, they were poisoned in numbers and dissection showed that they had picked out the wheat while rejecting the other grain.

The use of a cheaper and less valuable grain for this purpose is also to be recommended for other reasons in these days of food stringency. At all times, however, the poison should be used with discretion and care. Small lots of poisoned grain placed at strategic points, such as near or in the mouths of burrows, is quite if not more effective against gophers than is its use in more wide-spread and wasteful manner, and is more economical in material and valuable domestic and wild life.

P. A. TAVERNER.

Ottawa, Sept. 27, 1918.

DIVING HABIT OF THE SPOTTED SANDPIPER.—While on a canoeing trip down the beautiful Restigouche river, in September, Mr. M. B. Dunn and the writer were one morning greatly surprised at the unusual behaviour of a Spotted Sandpiper (*Actitis macularia* Linn.) Our canoe was gliding noiselessly down stream in smooth water about two feet deep and a little sandpiper was skimming over the

water ahead of us. It was as peaceful a scene as anyone could wish. Suddenly there was a splash and our little friend had submerged headfirst into the water. In hot pursuit was a hungry pigeon hawk (*Falco columbarius columbarius*) but the dive had saved our comparatively slow-flying little friend. When the sandpiper came up a few feet away from the scene of his hurried dive, the hawk made another swoop at him, but once again and without the least hesitation the little bird went headfirst into the water. Twice baulked by an animated breakfast the hawk gave up the chase, and the day was saved for our little friend.

On the Restigouche these active little hawks are very abundant and undoubtedly exact a heavy toll from the small birds. The Spotted Sandpiper remains abundant, however, and seems to owe its safety to the rather unusual habit of diving.

JOHN D. TOTHILL.

E. H. Forbush, State Ornithologist of the Commonwealth of Massachusetts, is developing a new field of usefulness for his office in the study of bird migration. He gathers current migrational reports from a large list of correspondents and observers throughout New England and adjoining parts of Canada, correlates them and issues mimeographed bulletins to those specially interested. By this means interested investigators have their attention called to passing phenomena while pertinent evidence is fresh in mind and often in time to make additional observations on them while they are still in progress. Bulletin IX, Sept. 16, indicates that there has been a decided decrease in the number of breeding warblers over a large area of New England the past season, certain swamps have been deserted by the Red-winged Blackbirds; Whip-poor-wills have almost disappeared from some localities; Tanagers decreased locally, and House Wrens considerably reduced in number. It would be interesting to see how far these conditions extend and if possible find some explanation for them.

This sample of team work organized and directed by the state is a good example to other public institutions and doubtless will produce important results.

P. A. TAVERNER.

NOTE ON THE BURROWING HABIT OF FROGS.—In June, 1908, while working in the western part of Kansas, I had the opportunity of observing some habits of the Leopard Frog. This particular section is in the semi-arid belt and often, for three or four



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