

man finds it convenient to use the food stored in the egg, so immense quantities of human food are secured from the seeds of plants. Wheat, corn, peas, beans and rice are a few of the more important seeds used as food by man.

To a farmer or a gardener seed means anything used to produce a crop. From this point of view the potato tubers put into the ground to produce a crop of potatoes are regarded as seed. In one sense all wheat is made up of the seeds of the wheat plant, but when we speak of seed wheat we mean it is to be sown for the production of a crop.

There are certain qualities which seed must have in order to produce a good crop. In the first place it must be vital, that is, the little plant in the seed must be alive and capable of starting to grow again when given the proper conditions of moisture and temperature. Although the little plant in the seed is able to withstand conditions that would kill the plant that bore it, yet certain conditions will kill it. Extreme heat or cold will injure damp seed more readily than it will seed that is dry. Heat injures seed more readily than cold. Seeds should therefore be stored in a cool, dry place. While some

kinds of seed remain vital for a long time, others will live only a year or two. Seeds eighty years old are said to have produced plants, but the stories of wheat taken from the hands of Egyptian mummies, producing plants are not authentic.

Besides being careful to see that grain to be used as seed will grow, it is necessary to examine it to see that it does not contain the seeds of bad weeds. Then, too, we should know its variety. The kinds of wheat grown in Kansas are not suitable for Canadian conditions and so it is with every crop. It is necessary to choose a variety suited to the conditions under which it is to be grown. There are many other points to be taken into consideration in choosing seeds to be used to produce a crop in addition to its vitality, purity and variety.

The seed is therefore to be regarded as a device of the plant for propagating its kind. In fulfilment of this function it is packed by the mother plant with food material for the use of the little seedling. Besides using seeds for the production of crops, man uses them on account of the food material which they contain as food for himself and for his animals.

## A LIST OF AMPHIBIANS AND REPTILES OF THE OTTAWA, ONTARIO, DISTRICT.

BY CLYDE L. PATCH.

As a primary reason for publishing this list I submit the following sentence from the check list of the North American amphibians and reptiles recently published by Drs. Stejneger and Barbour: "There still is opportunity for valuable field work to determine the precise distribution of many of our most common species."

Secondarily, I wish to aid in arousing an intelligent interest in these plentiful but, owing to their secretive and nocturnal habits, seldom seen animal forms whose economic value is commonly unappreciated.

The species listed were all observed within a radius of eighteen miles of Ottawa, Ontario, and individuals of each were collected.

*Necturus maculosus*—Mudpuppy.

*Notophthalmus v. viridescens*—Common Newt.  
(common).

*Ambystoma jeffersonianum*—Jefferson Salamander,  
(most common).

*Ambystoma maculatum*—Spotted Salamander.

*Plethodon cinereus*—Red-backed Salamander; Dusky Salamander.—2 color phases. (dusky phase only).

*Eurycea bilineata*—Two-lined Salamander.

*Bufo americanus*—American Toad.

*Pseudacris triseriata*—Swamp Tree-Frog.  
(common).

*Hyla crucifer*—Spring-Peeper.

*Hyla v. versicolor*—Tree Toad.

*Rana c. cantabrigensis*—Northern Wood-Frog.

*Rana catesbiana*—Bullfrog.

*Rana clamitans*—Green Frog.

*Rana palustris*—Pickerel-Frog. (2 localities only).

*Rana pipiens*—Leopard-Frog. (most common).

*Rana septentrionalis*—Mink-Frog. (rare).

*Storeria occipito-maculata*—Red-bellied Snake.

*Thamnophis s. sirtalis*—Garter Snake.

*Chelydra serpentina*—Snapping Turtle.

*Chrysemys m. marginata*—Western Painted Turtle.

NOTE.—Amphibians and reptiles from any part of Canada will be greatly appreciated if sent to the writer at the Victoria Museum, Ottawa, Ont., Can.