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The Development of the Ovary and Oviduct of the Gold Fish

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THE BUFFALO IN IOWA

L. H. PAMMEL

The purpose of this study is to prove that the buffalo once occurred in Iowa because there are many Iowans who deny the presence of this noble animal in the state. Much data was collected.

1. There are records that the buffalo occurred as late as 1857 on the shores of Clear Lake, also in Kossuth and Cherokee counties. The last native buffalo disappeared from Iowa in the early sixties.

2. There are numerous buffalo wallows near Albia and in northwestern Iowa.

3. There are many fine buffalo trails in western Iowa, especially on the loess bluffs and fine trails in the vicinity of Cherokee.

4. Nearly complete buffalo skeletons have been found by Professor Guthrie and the writer in the Pettinger bog near Ames. Professor H. Osborn and Dr. Beal discovered buffalo skeletons near Ames; and many other skulls have been found in bogs near Postville, by Williams; in Waterloo, by Hartman, and fine skeletons near Cherokee, by Dr. A. O. Thomas; and a fine bed in Harrison and Monona counties by Dr. Shimek. There are many other buffalo beds in Iowa.

This positive evidence should settle the matter of the presence of buffalo in this State.

THE DEVELOPMENT OF THE OVARY AND OVIDUCT OF THE GOLD FISH

FRANK A. STROMSTEN

Sex differentiation in the gold fish begins in embryos of about 14 to 16 mm. in length. In the female the germ cells increase rapidly in size and have a tendency to become arranged in rows. A distinct central nucleolus is not present, but round nucleolar bodies are arranged peripherally against the nuclear membrane. These bodies seem to give off buds which pass through the nuclear membrane into the cytoplasm. During the early stages the cytoplasm becomes basophilic. In very young oocytes this is limited to a

narrow zone immediately surrounding the nucleus. It then spreads peripherally until the entire cytoplasm stains deeply with basic stains. When yolk formation begins the cytoplasm changes back to the acidophilic condition again.

During the earlier stages of sex differentiation the ventral border of the lamella-shaped gonad becomes attached to the lateral body wall, forming a parovarial sac. This union begins near the anterior end of the gonad and proceeds caudally the entire length of the ovigerous portion. The postgonal ridge extends posteriorly for some distance, gradually diminishing in size until it can no longer be distinguished. Later, it widens and also unites with the body wall to form a tube in the same manner as the parovarial sac with which it is continuous. Caudally the oviducts of both sides converge toward the midline and become wedged in between the common mesonephric duct and the lower intestine. For some time the oviducts end blindly anterior to the anus, but eventually connect with the exterior probably through the so-called peritoneal pores.

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NOTES ON VERTEBRATES OF IOWA PRAIRIES

GEORGE O. HENDRICKSON

During the past five years while the author was engaged primarily in a survey of insects his attention has been drawn occasionally to the vertebrate inhabitants of prairies of Iowa. One of the most frequently visited tracts is four acres of upland two miles north of Ames. There in the spring of 1926 three blue racers, *Coluber constrictor flaviventris* (Say), a bull snake, *Pituophis sayi* (Schlegel), and several red-barred garter snakes, *Thamnophis sirtalis parietalis* (Say), were observed. March 21, 1926, a nest of the prairie horned lark, *Otocoris alpestris praticola* Henshaw, was found, but a week later the eggs had disappeared. Several burrows of skunks, *Mephitis mesomelas avia* Bangs, and of woodchucks, *Marmota monax monax* (Linn.), occur on the hillsides. Many striped ground squirrels, *Citellus tridecemlineatus tridecemlineatus* (Mitchell), and a few gray ground squirrels, *C. franklini* (Sabine), range over this small tract. Fresh mounds of the pocket gopher, *Geomys bursarius bursarius* (Shaw), appeared as early as March 20 in 1926. A jackrabbit, *Lepus townsendi*