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and liver have the innate ability to respond to this type of forced hemopoiesis.

Samples.

Stomach content of Amblystoma larvae was taken from 20 specimens. Only the contents of one showed the following:

126 Pseudochironomus larvae

3 Procladius larvae

No tubifex larvae were found in the stomach, but were numerous in the mud on the bottom.

Changes in weights of organs and linear measurements from larvae to adult stages in Amblystoma tigrinum melanosticum.

Linear measurements consist of the following: total length; nose-anal length; difference between eyes; fore limb length; hind limb length; jaw length; jaw width; width of the pelvic girdle; width of the pectoral girdle; the width of the belly midway from an antero-posterior position.

The weights of all viscera will be compared and analyzed. Sixty adults were measured and fixed in 10% formalin. One hundred larvae were measured and fixed in 10% formalin. These were all held in the laboratory. However, on August 15, 3 weeks after the removal of the above, measurements on freshly removed 10 adult and 10 larvae specimens compared quite favorably with the laboratory specimens.

A total of 260 animals were carefully considered out of a total of 510 removed from the Moran Pond. This pond should be carefully considered for an all over ecological study. It could easily furnish rich and valuable data for the production of live weight (protein) of Amblystoma because of its circumscribed geographical position and readily measurable physical and biological parameters.

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The Breeding Behavior of the White Pelican  
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Between June 3 and August 22, 1962, I spent a total of 58 days in the southeast arm of Yellowstone Lake in observing the breeding behavior of the pelicans on the Molly Islands. The birds were watched from a canoe anchored near the colonies. In addition, I visited pelicans at their feeding and loafing areas away from the breeding grounds on 11 days. The following data give an indication of the information obtained.

Breeding behavior. The pelicans began to lay on about May 10 when the lake was still frozen and snow covered the ground. The first young hatched on June 8. The pelicans were divided into 8 distinct colonies on the two Molly Islands. Each colony tended to contain birds in the same stage of the

reproductive cycle, and a difference of 3 weeks existed between the most and least advanced colony.

Both adults incubate. Nest relief during incubation occurs once every two days, and during brooding once each day. The young are brooded constantly for about the first two weeks of their life; by the age of 3 weeks the unattended young begin to crowd together into groups or "pods." Small young are fed several times daily by both adults. Young in the pod receive only one large feeding per day, usually around noon. The parents are recognized visually by their young; conversely, parents also recognize and feed only their own young. The young begin to fly at the age of  $2\frac{1}{2}$  months.

Displays. Pelicans exhibit several conspicuous displays. For example, their mating display consists of a strutting walk, given by both male and female, in which the crest on the head, the horn on the bill, and the yellow on the chest are prominently shown. Birds greet each other with raised head and extended pouch, and they show their submissiveness by pointing the bill to the ground and averting their heads. The latter two gestures are combined during the nest relief ceremony.

Population dynamics. About 600 breeding adults were present during early June. Juveniles apparently do not return to the islands until they reach adulthood. Censuses of the colonies showed a steady decline in the number of eggs and young throughout the season:

June 5	500+	eggs
June 22	300+	eggs and young
July 4	180+	eggs and young
July 20	143	young
August 11	117	young
August 21	117	young

This drastic decline was due to two principal causes: 1) during June the water of the lake rose 3 feet, wiping out about 80 of the 290 nests present; and 2) California gulls break open any eggs and devour any small young left briefly uncovered by the adults.

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