

BIOLOGY

Fatherless Poul Hatched

See Front Cover

➤ A TURKEY POULT, hatched from an unfertilized egg on March 10, has created a new chapter in poultry history at the U. S. Department of Agriculture's Agricultural Research Center, Beltsville, Md.

The baby turkey is the first of known parthenogenetic origin to hatch and live for more than a few hours.

Dr. Marlow W. Olsen and S. J. Marsden, poultry husbandmen, discovered parthenogenesis in turkey eggs four years ago.

Beltsville's newest example of parthenogenetic origin required 30 days to hatch, although the normal hatching period for Beltsville Small White turkeys is about 27 days.

The poul weighed 30 grams (28 grams equal one ounce) at hatching against 45 to 50 grams for a normal poul. When the picture on the cover of this week's SCIENCE NEWS LETTER was taken, the baby turkey weighed 48 grams, a much slower rate of gain than is expected of a normal poul.

This is in spite of the fact that Dr. Olsen is feeding his charge meals of crumbled hard-boiled egg yolk and cottage cheese, as the cover picture also shows, four to five times a day, plus special vitamins and minerals.

The most serious problems facing the turkey industry are fertility and hatchability of eggs. Discovery of parthenogenesis has given research workers a new and important tool with which to investigate these problems.

In continuing investigations of the phenomenon, Dr. Olsen in the last three years has placed more than 13,000 infertile eggs under incubation.

Although a large number of embryos have formed, only a few developed to final stages before dying in the shell, and only four have pipped their shells and hatched alive.

Of these, one bird hatched two years ago from among 5,000 infertile eggs lived for 18 hours. Three parthenogenetic birds have been hatched in experiments this year with some 3,000 infertile eggs. Of the three, one lived eight hours, the second only five hours. The third still was alive after 20 days. (See SNL, Oct. 10, 1953, p. 229, and Oct. 23, 1954, p. 261.)

The scientists hope to grow the poul to maturity so that it can be used as a breeder to test, against normal breeders, the incidence of the phenomenon and whether it is hereditary.

Parthenogenesis is a natural function in many lower forms of life such as bees and aphids. It has been induced in eggs of such animal organisms as star fish, sea urchins and frogs but, until Dr. Olsen's and Mr. Marsden's discovery, it had never been known to occur in higher animals.

Discovery came through incubation of turkey eggs to make certain that turkey hens to be used later in a fertility test were not then producing fertile eggs. The hens were to be mated with male birds in moult to determine the effects of moult on fertility and hatchability. Approximately 20% of these eggs showed development long after ordinary fertility could possibly have existed.

Dr. Olsen suspected parthenogenesis and began tests to prove his point. These incubation tests were conducted with eggs produced by unmated females held under lock and key, without possible physical contact with male birds.

Science News Letter, April 7, 1956

GENERAL SCIENCE

Aid Could Double Talented in College

➤ FOR \$200,000,000 in national scholarships, the most talented entering college could be doubled.

Three-quarters instead of the present half of the brightest or top quarter of high school graduates could be persuaded to enter college.

This would be a major step toward the continued national development and security of America, an American Council on Education study by Dr. Elmer D. West recommends. (See p. 220).

The many students who are very capable who do not attend college is a serious national problem, the study shows.

The amount of money available for scholarships now is variously estimated as from \$30,000,000 to \$55,000,000 annually.

Dr. West urged:

1. Identify the talented no matter where they are. Do not leave this to chance.
2. Inspire the talented to want the maximum intellectual development possible.
3. Implement the aspirations developed by providing scholarships.

Dr. West found that a higher percentage of high school graduates attend college from high income homes than from middle and lower economic levels. More boys than girls go on to college. Those whose parents are in professions are more likely to attend college.

Science News Letter, April 7, 1956

Questions

AERONAUTICS—What is the chief significance of a recent Russian jet engine textbook? p. 212.

ANIMAL PHYSIOLOGY—What is one way scientists have learned the probable effects of cosmic rays on the human body at high altitudes? p. 216.

BIOCHEMISTRY—Besides feeding, how can doctors stop the hunger contractions of the human stomach? p. 215.

MEDICINE—What antibiotic stops one form of leukemia in mice? p. 217.

PSYCHOLOGY—How can man's reaction under conditions of stress be tested? p. 214.

PHOTOGRAPHS: Cover and p. 213, Fremont Davis; p. 211, Cornell University; p. 215, Martin; p. 218, M. D. Bellomy; p. 224, Bakelite Company.

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