EMBRYOLOGY

Speed Breeding for Fur

Use of artificial light during dark winter months speeds up the development of the embryos in martens and some other fur-bearing animals of the weasel family.

➤ THE LONG and uncertain period of gestation in certain fur-bearing animals of the weasel family may be materially shortened by the use of artificial light, experiments conducted at Swarthmore College by Prof. Robert K. Enders and Oliver P. Pearson have demonstrated. Fur farmers, now doing their utmost to increase the supply of furs for aviation and arctic-alpine uniforms, are keenly interested. The research was carried out in collaboration with the U.S. Fish and Wildlife Service.

The success of Professor Enders and Mr. Pearson in shortening the time of waiting for the young to be born is based on certain basic facts in embryology. In all mammals, the union of male and female sex cells after mating is followed by an initial period of rapid cell division, at the end of which the early embryo consists of a hollow sphere of cells, called the blastocyst.

At this point, the blastocyst attaches itself to the wall of the mother's uterus, from which it will draw nourishment until birth takes place. This process is known as implantation.

The two Swarthmore researchers discovered that in some fur-bearers of the weasel tribe, the embryo develops as far as the blastocyst stage, and then stops, often for many weeks, before implantation and further growth takes place. This is notably the case with the marten, which mates in July and August and normally does not give birth until April.

Professor Enders and Mr. Pearson produced shortening of three or four months in the pre-birth period by artificially lengthening the lighted hours in the female martens' quarters with electric lamps. The delay in implantation was eliminated, and the young were born late in December.

Somewhat similar results were obtained with mink. The period of gestation in this animal is very variable, lasting from 41 to 76 days. This variation is thought to be due also to a delayed implantation of the early embryo. By artificially increasing the length of day, the gestation period in the mink was shortened an average of about three days.

The Swarthmore zoologists suggest that the long pause in embryonic development in these animals under natural conditions results from the shortening of daylight hours in the autumn, and that implantation and completion of the prebirth process is stimulated by the lengthening of the daylight periods in spring.

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NUTRITION

Home-Made Soups Help Fill Out War Time Diets

➤ THE HOUSEWIFE who is thrifty about her ration points will take a tip from a new book on foods and learn or re-learn the art of making soup. The book, which contains much other valuable information is *An Introduction to Foods and Nutrition,* by Henry C. Sherman and Caroline Sherman Lanford (*Macmillan*). It is written as a simple text-book for those who wish to study the subject, but is easy to read and full of practical suggestions and directions that housewives will welcome.

Soup, it is pointed out, can be more than an appetizer for lunch or dinner. For one thing, it is an excellent way to use all sorts of left-overs which in wartime cannot be thrown away. The last bit of nourishment can be gotten from bones and vegetable parings by adding them to soup. The water in which vegetables are cooked will contribute flavor, vitamins and minerals. The latter are too precious to waste by throwing the cooking water down the drain.

There are not likely to be many meat scraps left these days, but if there are, they might go into the soup kettle if the family is tired of croquettes, hash and the like. Left-over fish can be made into a chowder that will be more than an appetizer and can serve as a main dish for lunch, or supper if the dinner is eaten in the middle of the day.

Cream soups are especially nourishing because of the milk they contain, and they are a good way of serving milk to those who do not like it as a beverage by itself. Cream of tomato and cream of mushroom soups are popular, but almost any other vegetable, including spinach, can be used for a cream soup. This is another good place for the water vegetables have been cooked in. A combination of several of these pot liquors gives variety of flavoring. A tiny bit of left-over gravy, too little to make a tasty soup when diluted with water, will add flavor and nourishment to a cream soup.

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The Quartermaster Corps is rebuilding about 500,000 pairs of Army *shoes* a month.

Bears, wolves, foxes and wolverines are causing considerable damage in Norway; their numbers are greatly increased because Norwegian farmers have been stripped of all firearms by the Nazis.