Turkey Breeding

(Continued From Page 12)

fragmentary signs of life.

If parthenogenicity could be definitely tied to a virus and deliberately induced in certain females of high quality, the chances of viability would be increased and thus male progeny of extremely high quality might result. Ultimately, if antiviral agents are developed, the phenomenon might be greatly reduced in ordinary populations of turkeys.

The turkey breeder would thus have at his disposal a menas of reducing the genetic variability in a given population; the resulting homogeneity would make for less handling losses and, possibly, lower costs to the consumer.

About 115 million turkeys are produced for sale each year, at approximately $4.50 each: about half a billion dollars gross.

Dr. Olsen's previous work, prior to the joint experiments with Buss, involved attempts to produce a turkey-chicken hybrid. He found that when female turkys with a low incidence of parthenogenicity were fertilized with semen from male chickens no hybrids developed. It was only after using turkeys with a high observed incidence of parthenogenicity that hybrids were produced. This put Olsen on the trail of an agency that would raise the incidence of parthenogenicity: the virus.

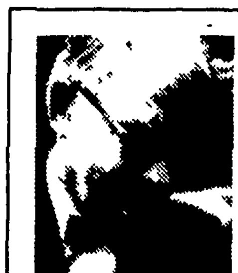
In their first cooperative experiment (1966), Buss and Olsen designed the following procedure:

Twenty-four pairs of birds (sisters) were separated between University Park and Beltsville (Md). Males were mated to one sister at University Park, then taken to Beltsville and mated to the other. Offspring of these matings, used in later stages of the experiment, were thus genetically as similar as they could be.

Unvaccinated males were then mated to progeny of the above unions (at University Park) and the same males, vaccinated, were mated to sisters in Beltsville. Daughters of both matings were observed: if there was a high incidence of parthenogenicity in the eggs of those daughters resulting from matings with a vaccinated bird (as was the case) than from matings of their sisters with unvaccinated males, it was assumed the virus had become involved with the sperm in such a way as to enhance parthenogenicity.

The establishment of the fact that parthenogenic eggs begin as haploids was accomplished in experiments involving cytological analysis on Beltsville Small White turkey eggs.

A paper describing these experiments has received wide distribution, with a large number of requests for reprints coming from Europe. ("A Cytological Study of Early Cell Populations in Developing Blastodiscs of the Turkey" by Darcey, Buss et al; Genetics, 69; 479-489; December 1971.)



Doctor in the Kitchen®

by Laurence M. Hursh, M.D.
Consultant, National Dairy Council

VITAMIN INTERRELATIONSHIPS — II

(Second of a four-part series of articles)

To know the importance of vitamins, you need to understand how individuals cells in our bodies work. Your body consists of more than a trillion cells They all work together to perform chemical functions that are essential

But assisting each cell with its specific tasks are numerous enzymes Enzymes are known chemically as biochemical catalysts. A catalyst helps induce chemical reactions and allows changes to occur under milder conditions It is estimated that in helping the cell to do its jobs, individual enzymes perform their specific tasks about 10,000 times a minute. Since it is also believed that each cell contains about 1,000 different enzymes, a cell obviously is a very busy place.

Can't Work Alone

But some enzymes cannot work alone They have to have the help of a co-worker So, the co-workers are known as coenzymes And here is where vitamins are important, for many coenzymes are, in fact, vitamins — or vitamins are needed for their production So, it is true when your chemistry book tells you that a primary function of vitamins is assisting enzymes in carrying out the many chemical happenings that are essential for life

How Were Vitamins Discovered?

Vitamins are the newest nutrient group in nutrition. Discovered as recently as 1913, the first known vitamin was, as you would suppose, vitamin A It had been known before then by scientists that something other than pure protein, fats, carbohydrates, or minerals was at work in foods — something that encouraged growth Working with laboratory animals, vitamin A was discovered and since then, the whole host of presently-known vitamins has been identified, each for its particular contributions to nutrition

Vitamin A, of course, is best known for its prevention of night blindness We don't know how it works, but a deficiency of this vitamin will result in an inability to see in dim light Vitamin A is obviously important in the whole visual process But it is also important in maintaining your skin and mucous membranes Without enough vitamin A, the moistness and pliability of your eyelids and eyes, for example, would dry up. Dry, rough, itching skin also can result

Eye Membranes

The membranes of the eye are especially susceptible to vitamin A deficiency In World War II, because of extreme shortages of vitamin A over a long time, Danish children developed an eye disease called xerophthalmia. They had been getting only skim milk Many lost their eyesight

When whole milk was restored to Danish children's diets, the disease was brought under control The factor was the vitamin A in milkfat and butter Other good sources of vitamin A include cream, cheddar-type cheese, ice cream, liver, egg yolk, dark green and deep yellow vegetables, deep yellow fruits

Storing Holiday Apples

If you received more fresh fruits than you can eat during the holidays, Extension consumer specialists at The Pennsylvania State University say you can store them If possible, place apples in perforated bags in the refrigerator or in a cool basement—but make sure the storage temperature is above freezing. You can store oranges and grapefruit in a cool room from 60 to 70 degrees. But if the citrus fruits are held too long, at too low temperatures, the skin can become pitted.