

lieve, and that all the lighter horses originated from the desert, hence a common origin. Proof of this position is found in the fact that the heavier breeds can be interbred with great advantage if judgment is used in the mating. The best and most prepotent sires England or Scotland have ever produced were what were considered a cross between Shires and Clyde.

The same happy results have followed, combining the lighter horses. The breeder is looking more after conformation than after so called breeds, studying the classes and the demands of the market. This leads us to the last part of our subject—will there be a demand for what we raise? The answer is, if we raise what the world demands, namely, large, active, stylish, energetic draft horses, the coach and carriage, with size, style, action, beauty and grace, and the lithe, beautiful and sure-footed saddler. There are several sub-classes, such as army, fire and police, express and light delivery, buggy and drivers. These are the misfits of the above classes with less finish, but are nevertheless high-class utility horses. In other words, raise what the world wants and the world will be your market. Many European and South American countries have agents here looking for horses. Will this country strive to meet this demand?

## Feeding for Egg Production.

The West Virginia Experiment Station publishes in Bulletin No. 60 the results of two years' work in feeding hens for egg production. The results are summarized as follows:

The principal topics discussed are: 1. The effect of nitrogenous and carbonaceous rations when fed to laying hens. 2. Floored vs. unfloored houses for poultry. 3. The effect of the age of fowls upon egg production.

In regard to the first, an experiment was planned in order to study the effect of these two classes of food upon the health of the fowls, the cost of the ration, the egg yield, the fertility and vitality of the eggs, and the strength, vigor and size of the resulting chickens. Three breeds were selected—White Leghorns, Light Brahmas and Rhode Island Reds. Each breed was divided into two similar lots, which were placed under exactly identical conditions except the food supplied to them. Both lots of fowls were fed each morning a ration of ground feed, mixed either with boiled potatoes or steamed clover hay. The grain mixture for the nitrogenous lot consisted of brown middlings, oil meal, ground oats and corn meal, in varying proportions. The carbonaceous lot received corn meal chiefly. At noon the nitrogenous fowls received a ration of ground fresh meat and bone, which was fed daily at the rate of from five to eight pounds per 100 fowls. At night both lots of fowls were fed all the whole grain they would eat clean, consisting of corn, oats and wheat screenings, the corn predominating for the carbonaceous lot.

Tables are given for each of seven 30 day periods, showing the amount and kind of food consumed by the different pens, also the weights of the fowls in the different pens at the beginning and the end of the experiment. The weights were very nearly the same at the beginning, but a surprising thing is that, while the nitrogenous fowls gained in weight 354 pounds, the carbonaceous lot gained only 34 pounds. The former gained in weight more than 10 times as much as the latter. The nitrogenous lot also laid nearly twice as many eggs as the corn-fed lot. It cost about 10 per cent. more to feed the former than the latter. To sum it up, the nitrogenous fowls gave more than four times as much net profit as the others.

In regard to the effect of the different rations upon the hatching of the eggs, the per cent. of infertile eggs was more than twice as great from the carbonaceous fowls, while the fertile eggs did not hatch so well as those from the nitrogenous lot. It was observed, too, that the nitrogenous eggs hatched from six to twelve hours quicker than the carbonaceous eggs under the same conditions. The chicks were also stronger and more vigorous. The eggs from the car-

bonaceous fowls were found to be smaller than those from the other lot, after the experiment had progressed for some time. Both lots remained healthy and vigorous. The same experiment was duplicated the following year, using White Leghorn pullets and hens, with practically the same results.

Comparative tests of fowls kept in floored and unfloored pens, showed the best results from the latter. This is surprising in view of the fact that the ground was a damp clay. The only explanation is that the unfloored were warmer than the floored houses. It is recommended, however, that if floors be not used, the houses be filled in and made dry underfoot.

In the tests to show the effect of age upon egg production, White and Brown Leghorn hens three and four years old were used to compare with pullets of the same breeds. The pullets did not quite equal the hens in egg production, but they gained 143 pounds in weight, while the old hens gained 84 pounds.

The results obtained as to the value of old hens and pullets for egg production are the directly opposite of those obtained at the Utah station, a summary of which was given in FARMING for October 10th last. At the Virginia station the pullets did not quite equal the old hens in egg production while the tests at the Utah station showed the profit from young hens or pullets to be fully five times greater than from old hens. We are inclined to the view that the latter results are more nearly correct.

## The Salenius Radiator Butter-Maker

Tested at the Quebec Dairy School

This new contrivance for butter-making, devised by a Swede named Salenius, has recently been submitted to a public test at the dairy school of St. Hyacinthe, Que. Judging from the favorable reports published, this machine is well worthy of consideration, and a brief insight into its work will, no doubt, be of some interest to the readers of FARMING.



A model English creamery, showing Salenius Radiator at work.

This apparatus acts as a combined separator and churn, the butter being made directly from the milk. The milk is pasteurized, then cooled to the ordinary skimming temperature before being sent into the machine. The butter comes out on one side as a mass of very fine and soft grains, still mixed with a certain quantity of milk. This milk is removed from the butter by an agitator and replaced by skim-milk which has been slightly acidified by means of a starter. After the butter has been immersed