Food Value of Cottage Cheese

bit of highly-flavored meal of a little bit of stock food. I am not an advocate of stock food, but I believe if you are trying to force your cow, and you get some stock food that she likes, you can ment Station reports a digestion experiment with persuade her to eat a little more of the food and working men to determine the nutritive value so improve your chance of getting a lot of milk. Stock food has very little or no value in itself, but I think it serves as a condiment, just the same as when you get soup that does not taste very well ration consisted approximately of 1.1 pounds by adding some sauce to it, you can make it cottage cheese, (or about 6 ounces per meal) go down better and that is the reason I think stock foods may sometimes be of value.

Now, as to digestibility,-the foods which are 28 per cent. of the total fat of the ration. palatable and which are succulent are also the foods usually most easily digested, and most was prepared as follows easly taken up by the organs and made into blood and from blood into milk. Of all the foods you can give to the dairy cow, roots are the most warm room. The milk was then heated to a easily digested and most palatable; there- temperature of about 100° F., and hot water fore you have in roots a combination of digestibility and palatability, just the very thing we gallon of milk. The addition of the hot water want. For the man who is feeding dairy cows resulted in more complete coagulation of the there is no doubt that the addition of roots to the milk. After stirring for one or two minutes, the ration is invaluable. Some foods are difficult coagulated mass was allowed to settle and then to digest, as for instance, wheat straw and some of the other coarser straws and poor hay. It takes a large part of these to furnish power to hot water is used, a tough curd results; if the the digestive organs to carry on the operations. milk is not sour enough, it fails to curdle properly. You must, therefore, get a ration of a high percentage of digestibility.

the food. It should be of very high milk pro- cottage cheese prepared in this way was found ducing value, must contain elements that go to to be very palatable and contained a large amount produce milk and the chief element for that of nutrients in the form of proteids and fat. purpose is protein. Clover hay contains a large amount of protein; mangels, sugar beets or average 95 per cent. of the protein and fat and turnips or sugar mangels and oats are also quite 97 per cent. of the carbohydrates which this high in protein and are accordingly very valuable ration supplied were digested, and that 90 per for dairy cows

The meals which are most suitable are, first, bran. It is valuable on account of its high consisted of bread and milk alone, it has been digestibility and richness in protein. It possesses the three points I have mentioned; it is digestible, it keeps the digestive organs in good shape, and it cent. of the carbohydrates are digested. Since is rich in protein.

Next comes oil meal. Oil meal is undoubtedly one of the best foods any man can give his dairy cows and is usually the cheapest food on the digestibility as milk and can therefore be ranked market. It is rich in protein and also easily with the very digestible foods. One hundred digestible. J. H. GRISDALE,

Central Experimental Farm.

Short Courses in Dairying at M.A.C.

On January 3rd a short course in farm dairying opens at the Manitoba Agricultural College. Professor J. W. Mitchell and the staff of the dairy department will offer instruction in buttermaking, care of milk on the farm, milk testing and farm dairying generally. On February 15th the regular short course for buttermakers and cheesemakers begins. It extends until the close of the winter term in March. Creamery and cheese-factory operators in the West should arrange to take advantage of what this course offers.

We cannot bring too much scientific knowledge to bear on the work of cheese and buttermaking. That business has passed the stage where acquaintance with the regular routine work of making cheese and butter only is required. The cheese or buttermaker who is to be

A recent bulletin of the Minnesota Experiof cottage cheese. Other foods were used to form a palatable ration with the following result : During the three days of the test the daily 1.16 pounds bread, 4.12 pounds milk, and 0.06 pounds sugar, the cottage cheese supplying over 40 per cent. of the total protein and about

The cottage cheese used in these experiments

Separator skim milk was allowed to sour in a 175° F. added at the rate of about one pint per the whey was drained off and the curd collected by straining through cheese cloth. If too much When of medium acidity and favorable temperature, a soft, fine-grained curd is secured. The After digestibility comes the composition of curd was salted and mixed with cream. The

The experimental data showed that on an cent. of the energy was available to the body. In similar experiments in which the ration found that 91 to 95 per cent. of the protein, 93 to 97 per cent. of the fat, and 97 to 98 per these values are practically the same as those obtained with the experimental ration, it follows that cottage cheese has about the same pounds of milk will make from 15 to 16 pounds or more of moist cottage cheese. At 2 cents per quart for skimmilk and 35 cents per quart quart for cream, cottage cheese would cost about 11 cents per pound, and compares very favorably in nutritive value with meats at the same price per pound. Where skim milk can be procured at a low cost, cottage cheese is one of the most economical foods that can be used. The addi-

fluences both its nutritive value and its palata- which is very much different to the system in bility without increasing the cost above that of use to-day of closing the machine on the nineaverage meats. Upon the farm, where milk is teenth day and keeping it closed until the eggs produced, cottage cheese is one of the cheapest are hatched. The entrance to these ovens were foods that can be used.

POULTRY

the question of feeding is very much simplified; secret of incubation was handed down from successful in his work has to keep pace with the they will there pick up a large proportion of their generation to generation and was kept under strides science is making in the field of dairy practice and research. These short winter so be careful when you put them in winter States government sent a man to China to secure, courses, held at a season when work in the fac-tories is not heavy offers the best of each offerse in put in the provided of the provide tories is not heavy, offers the best of opportunity. And again putting a hundred in a house only eggs. He stayed there for three and a half years, for factory operators to keep in touch with large enough for fifty will have serious results. J. J. BYRNE.



Founded 1866



OSTRICH FARMING IN SOUTH AFRICA. The upper cut shows a male and a female ostrich and the lower cut a flock feeding in a lucerne camp.

tion of cream to cottage cheese favorably in- these ovens and chickens hatched every day, protected by vestibules thus avoiding sudden change in temperature. The eggs were packed in chaff or other material of that nature and placed on tiers one above the other. As to the questions of moisture, ventilation and relative humidity these we know nothing whatever about, but we have no doubt that they were solved to the satis-Where the fowls have the liberty of the fields faction of those operating the incubators. Their but failed to secure the secret which goes to show how zealously these secrets are guarded. The next we hear of artificial incubation is in 1540 when Francis I. of France became interested in the subject. In 1777, Dr. Bonnemain invented an incubator and supplied chickens to when it came from the cow. when it came from the cow. Inst about this time Cyphers in Dunate in their business in the agricultural districts. Their the thermostat that is to-day in use in their the thermostat that is to-day in use in the agricultural districts. Just about this time Cyphers in Buffalo invented business in the agricultural districts. Their incubators, and by the use of which we have a system of incubation was a combination of the

1504

the latest practices of their business. They should be taken advantage of.

Milkmen Fined

his appointment over a year ago. Several un- contact, radiation and diffusion. They had no sanitary dairies have been closed and special thermometer by which to regulate temperature. pains have been taken to detect low-grade but the attendants stripped and going into these of breeds as we will find that they have a decided

Incubation and Breeds

It is an old saving that there is nothing new under the sun, and as this applies to almost all Winnipeg authorities continue to use vigorous of the inventions of the present day so it applies the Paris markets until 1814. In the present day so it applies Vallee invented a self-acting valve which opened value invented a self-acting valve which opened in the self-acting valve which opened is the self-acting valve which opened val means of showing milk vendors that pure milk to artificial incubation. Artificial incubation was value invented a self-acting value when the supplied to any practiced from two to three thousand when the temperature became too high, thus inof satisfactory grade must be supplied to cus- practised from two to three thousand years ago when the temperature became too mean temperature became temperature became too mean temperature became temperature Last week six vendors were fined by the Egyptians and the Chinese, who incu-ring from $85\,00$ to $850\,00$ for deliver- bated chickens in overs about $60' \times 100'$ in size. day incubator. In 1877 a practical incubator sums ranging from 85.00 to 850.00 for deliver- bated chickens in ovens about 60' x 100' in size, day incubator. In 1877 a practical integration multiply multiply that contained too low percentage of fat holding as many as 150 thousand ergs. Even, was introduced in England by T. Christy and ing milk that contained too low percentage of fat, holding as many as 150 thousand eggs. Even artificial incubation became at once a success. Amole proof was submitted to show that the to-day in these castern countries some one hun-

Dairy Inspector L. A. Gibson has a hard task system of incubation was a combination of the meubators, and by the use of which are entered by hard been done since three systems now in operation; the systeme of very perfect system of regulating temperature. before him, but much good has been done since three systems now in operation; the systems of

BREEDS

Let us consider for a few minutes the history product from all sources. The gluinate result overs tested the heat. So sensitive were they influence on incubation to-day. In the earliest to heat that they had no difficulty in testing days of incubation. I am speaking now of the prose by trought in the exps by touch. Eggs were being put into Egyptian and Chinese, the eggs were brought in