DAIRY AND CREAMERY.

ABSURDITY OF THE LAW DEFINING A LEGAL CHEESE.

The Law Should Define What the Cheese Itself Must Contain in Order to Fill the Legal Requirement, Not the Constituonts of the Milk That Makes It.

The absurdity of some of our dairy laws can be seen by the practical eye when directed to the one that says a legal cheese is one made of milk that has 3 per cent. of fat in it. The presumption of the law is that if a cheese is made of such milk the resulting cheese will have in it 30 per cent. fat, on the theory that the process of cheese making eliminates nine-tenths of the weight of the milk taken to make it. While so much is true of such milk, it by no means follows that more than that does not go to the whey vat, and that the excess over 90 per cent. that goes out in pure fat is lost through want of skill in the making. The buyer of a cheese wants to get the quality he pays for in his cheese, and is not so very much concerned about what is in the milk if he does not get the best and most valuable part of it in the cheese.

The law should define a legal d'standard" cheese to be one that has so much per cent. of fat in it; the same as it dees the legal standard for milk that is sold as whole milk. It is the amount of pure gold that is in our "standard" dol-lar that makes it legal and current, not the per cent, of gold the quartz bore when it was mined.

We used to hear there was a time when the English buyers of large shipments of cheese to that country did not write acceptance of the consignment till after samples of the same had been "tried out" and found to contain the requisite amount of fat to fulfill the contract. All buyers of cheese should have that recourse back on the seller, just the same as he has now for short weights or bad se surreptitiously boxed and shipped. In short, all should have what they pay for. We all agree on that point when we are buyers.—Hoard's Dairyman.

A Ration of Cottonseed Meal.

Henry Morse, of Delaware county, N. Y., who has become wealthy by dairy-ing, says that he has fed cottonseed meal to his cows for eight years, the first four in connection with other grains and after that pure, except while cows were dry and on coarse fodder they were given wheat bran and such grain as was produced on the farm. As soon as the cows came in full milk they were given hay twice a day and three quarts of cottonseed meal in the morning and two quarts at night. The morning ration of meal was mixed with six quarts of sweet skimmed milk.

When at pasture they received two quarts of the meal a day. Following this practice he was able to keep 25 per cent. more cows and make 20 per cent. more butter per cow than by any other grain method. The manure from the cows fed so heavily on cotton seed meal was very rich and gave about double the crops of hay that other manures gave. The pastures also show it, and the increased value of the manure nearly pays for the cotton seed meal.—New England

Frozen Fodder.

The usual complaint that butter is very hard w "come" this cold weather dairy readers would experiment in this tacks both fruit and leaves. matter and determine for certain whether it is frozen fodder that makes butter made by feeding the cows for a week on the butter came any sooner.

A town where the farmers have no creamery and don't want one is a good sown to avoid when one wants a farm for a home, says The Massachusetts

The Ohio Creek cheese factory in Gunnison county, Col., made this year, up to were fattened from what was left over after the butter and cheese were made.

This is a No. 1 record.

Unfortunately there is where winter apples and most pears otherwise succeed best. Again our spring climate after the butter and cheese were made. This is a No. 1 record.

Numbers of creameries have been obliged to shut down for want of milk other destructive fungi. in Kansas and Nebraska. The shortage will realize higher prices for their but-

Wherever not less than 200 cows are elese together in a neighborhood, there a cheese factory or creamery may be

When cows have chapped or sore teats in cold weather rub a little vaseline carefully upon them after the milking is

done, not before. The makers of dairy butter should keep sight of the fact that good butter cannot be steadily produced without the

If you want milk for butter making, test it for fat globules. If you want it for cheese making, test it also for caseine.

Let there be the fullest, freest exhibi-tion of all the milk and cream testing apparatus at the Columbus fair in 1893. Let the experimenting be kept in progress constantly, that all the dairymen, mers and creamerymen may know that whether they are honest or dishon-est their conduct will be fully known. The department of agriculture itself would do well to take charge of the experiments, so important are our cream-

The cheese factory at East Otto made not long since the largest cheese ever produced in the United States. It weighed 4,000 pounds after it was cured, and was five feet in diameter.

FUSICLADIUM DENTRITICUM.

The Worst Enemy of the Apple and Pear. How to Control It.

Apple growers, especially near the coast, and in damp climates everywhere, know that certain varieties of apples and pears are often entirely ruined by black scabs" forming on the surfaces of the fruit, not only spoiling its appearance but dwarfing it as well. Where fruit is

badly attacked it cracks open.

Some varieties have been nearly all ruined by scab for several years past. The most notable examples are the white winter Pearmain apple and the winter Nellis pear. Whoever has these two fruits in bearing should know what apple scab is. It is also very injurious to many other apples. The best apple of all -the Yellow Newtown pippin-is often seriously injured, also the red June, Baldwin and Early Harvest. Some va rieties are not injured in the fruit but the leaves are badly affected. A few are injured in neither to any noticeable

Many varieties of pears are no longer planted, this disease constantly ruining them. The winter Nellis, which in former years was planted largely and profitably, is no longer of any value. Also the white Doyenne and many others. The Bartlett is fast going down the same

This is a progressive disease, constantly spreading and increasing in virulence. There seems to be no let up to it when once it enters a region. The fruits susceptible to it are attacked and destroyed in turn until, if Prof. Bailey of Cornell university, N. Y., be right, it may sweep the entire apple and pear crops out of a vast region for one season at least. He attributes the almost complete failure of the apple and pear crops of New York state last season to an abnormal development and great virulence of scab. If it is very abundant and the season is right for its development, it attacks the buds before the flowers open and kills the fruit at once.

Experiments during the past three or four years, both here and in the East, have demonstrated that this most injurious disease can be controlled. If it can be prevented from doing material injury to the most susceptible fruits in Eastern regions where crops had failed for years on its account, we certainly ought to be able to control it, even on fruits worst damaged by it. It is very difficult to control it where summer rains and heavy dews prevail.

The disease is a parasite fungus, or a minute flowerless plant that roots in and feeds among the tissues of living plants. Such fungi are usually confined as hosts to one or a few species of plants. This particular one is supposed to be confined in its food habits to the species of the sub genus Pyrus, to which the apple, pear and several other species belong. It propagates from very minute pollenlike bodies which serve the fungi the same as seeds do flowering plants. These pass the winter in myriads on the tree, fallen leaves and fruits and are carried to the young fruits by winds, or, when in the air are carried to the fruit by rain. Here they germinate and send their threadlike rootlets through the skin of the fruit or leaf, into the cells below. There the true fungus grows and robs the cells of their contents and the elaborated plant food which in the fruit

stops the growth and multiplication of cells so far as it penetrates, making a depression in the fruit. Eventually the fruiting heads of the fungus burst through the skin of the fruit and throws millions of spores into the air found that the value varied from 52 to has been made during the season fre-quently. The reason of it is now be-to contaminate other fruits and leaves. mently. The reason of it is now be-eved to be the feeding of frozen fodder Cryptogamists are not fully agreed that to milk cows. We wish our farm and it is one and the same fungus that at-The best evidence, however, is that they are identical. But this is unimportant, as the Wherever in this state a cheese factory ical. But this is unimportant, as the bard to come in winter. Some claim same remedy destroys both the fruit and that dried fodder, frozen or unfrozen, is the leaf scabe. After the spores are found that the herds in that vicinity all the cause. The experiment might be thrown off the fungus dies—though its give thin milk, and will produce but a spores may lodge on the same fruit and other food than fodder, then seeing if further involve it-and the growth in The reason of this is evident. The pathe fruit below the scab gradually turns the black fruiting head out, forming the well known black scab. If the fruit is largely involved the growth below ruptures the hard, dry, dead matter and it quantity of milk without regard to its cracks open transversely, often rupturing healthy cells on either side. In such always accompanied by a poor quality cases we have scab and craking of the of milk the result is that the general cases we have scab and craking of the fruit. The spores can only germinate on the surface of the leaf or fruit, except in presence of moisture. Hence in the 1st of December, 40,000 pounds of dry summers none but the spring crop cheese, besides 125 pounds of butter a is very troublesome, except quite near Furthermore, a number of hogs the ocean where fogs and dews prevail.

The spores of this and many other of milk is due to shortage in cow feed fungi cannot germinate in the presence owing to drouth. But the other places of the salts and sulphates of copper and many of the combinations of suiphur whose bases are poisonous to the young germs as they develop. Spraying the trees just asithe buds begin to swell, with a strong solution of sulphate of copper is effective. Take one pound of sulphate dissolved in two gallons of water and add eight gallons of water; larger quantities in same proportion. Spray the tree thoroughly so that it will drip and wet the fallen leaves on the ground. This will well nigh destroy the scab. When spraying to kill the apple worm directly after the blossoms fall if we mix London purple in the Bordeaux mixture instead of water we have the best fungicide to kill and prevent the apple scab. The Bordeaux mixture is made as follows: Dissolve 12 pounds of sulphate of comper (blue vitriol) in 150 gallons of copper (blue vitriol) in 150 gallens of water; slake 20 pounds of best quick lime in 10 gallons of water; when this is cool pour it slowly into the other solu-tion stirring constantly. Let it stand a day or two, stirring occasionally; then add one pound of London purple, not somebody's mixture of bug poisons. It should be wet up gradually and stirred and kneaded and strained through a fine sieve. It is then ready for use. Two or three sprayings are generally suffic-ient. There are a number of other remedies for the scab which have

proved efficacious.

favors the development of this and some

BUTTER AND CHEESE

WHY SOME PEOPLE HAVE TROUBLE MAKING CHEESE.

Wait Until the Cream Is Ripened Befor Adding to It the Rennet of Commerce When the Milk Is Sour Enough to Add Repnet-"Phenol-Phthalein."

After seeing some of the best makers in America and England make cheese, I understood why my wife and I had trouble with our cheese making on the farm in New Zealand seven years ago. We added the rennet when the milk was too sweet. Even now I hear complaints from old fashioned cheese makers, who to some standard rennet extract or rennet tablets, that they can't make as good a cheese, the whole trouble being that their milk is not ripe enough, and that when they used their home made rennet, soaked in sour whey, they introduced an acid with it which is not in the pure commercial rennet.

But the decision of when the milk is ripe enough for the addition of rennet is one of the finest points in cheese making, and good makers have been using the rennet test, but though it is a great improvement on no test it seems hardly to fill the bill altogether. About a year ago I received private information about new test, and inquiries whether I would introduce it in the west. I agreed to do it, provided I found it of practical value, but have not heard anything about it since then. Advices from England lead me to believe that this new test is nothing but soda pellets of a certain strength, whereby the acidity was ascertained.

There are many ways of determining this. Simply by adding a few drops of "phenof-phthalein" to the milk (diluted) and then using a solution of soda (or pellets) of a certain strength to neutralize the acid. When this is done it is shown by the liquid turning pink, and the acidity is then expressed by how many cubic centimeters it took to neutralize the mixture. Perhaps this may be used also for a guide when to draw the whey, though I doubt it will prove better than the hot iron test. But meanwhile I hope our experimental stations will take this matter up, not in their laboratories or their college "dairies" only, but in the creameries and cheese factories.

A practical adoption of this test for the factories should also be devised, and when found adopted as a standard. When we adopt the daily "paying by the test" system, and get those girl bookkeepers to do the testing, even this acid test may be taken up by them, and the careless maker be compelled to wait for the cream or milk to be ready, and not to churn or add the rennet whenever he is ready; while the good makers will be only too happy to have an extra assistance in determining the right moment and thus getting a more uniform result. J. H. Mourad in Creamery Journal.

How Milk Ought to Be Paid For. If the farmers of Vermont would heed and practice the advice given them in Bulletin 21, Vermont station, there would soon be a rush for the money to be made on some of those abandoned farms. The Vermont dairymen have been giving away too much butter fatthat's what ails them. A creamery in Franklin paid 60 cents per 100 pounds for all milk. A chemist analyzed sam-74 cents per 100 pounds! Read what Professor Cooke, of Vermont, says:

"A careful study of the herds of this state will show the evil effects of the has been run for many years it will be small number of pounds of butter a year. trons have been paid entirely by the weight of their milk, and so all their efforts in breeding have been directed to getting cows that would give the largest quality, and as a large flow is almost character of the milk of the neighborhood is lowered."

And here again: "Where the milk is paid for according to weight a premium is put on watering or skimming it. Human nature is not proof against this in this paper. temptation, and as a result we have found samples of milk that had been tampered with in every one of the more than twenty creameries that we have

All true—every word of it. When are you going to stop it? This bulletin shows you how.-American Agriculturist.

Fewer Cows and More Milk.

Dairymen should push the point of improvement by lessening the number of cows and increasing the yield per capita. Only those men become dis-

The Prize Butter. At the last Illinois dairy fair the butter prize was taken by butter made from grade stock that ran in the stalk field every day last winter, were fed clover hay and ear corn, with the milk set in open pans. This scored 94 points against 90 points for the competing product of thoroughbred cows, silage, patent creamer, etc. In butter making it is sometimes more in the dairyman than in the stock or improved methods. Cleanliness and common sense are two of the improvements of the stock of the sense are two of the improvements. We will pay the above reward for any case of Liver Complaint, Dyspepsia, Sick Headache, Indigestion, Constipation Continues when the directions are strictly complied with. They are purely vegetable, and never fail to give satisfactions. Sugar Coated. Large boxes containing 30 Pills, 25 cents. Beware of counterfeits and imitations. The genuine manufactured only by THE JOHN C. WFST COMPANY, CHIGAGO, ILLINOIS. and common sense are two of the important factors.—Dakots Farmer.

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