after her young one, let her see it, fondle it, and lick it all over. If, on the contrary, you want her to be tranquil, and after drinking her mash, to lie down to rest and recover herself, take the calf away at once, holding it by both fore and hind-legs, place it in a warm corner, cover it up with plenty of the softest straw (barley-straw for choice), and leave it alone. don't attempt to dry it by rubbing, as that always tends to gum the hair together—the moisture will soon evaporate. There is no hurry to feed the calf, but the cow should be milked *as soon as possible*, and then left quiet, the milk being kept at its original temperature until the calf has taken it: this is most important, as the slightest internal chill will often kill the tender creature.

If the calf has, as we advise, never been allowed to suck its mother, there will be no difficulty in teaching it to drink. Never mind whether the young one is standing or lying. disturb it as little as possible: take some of the beistyn—temperature not below 900 F.—in a small pail, and supporting the calf's lower jaw with the palm of the left hand, the arm round the neck, open the mouth with the thumb of the same hand. Fill, then, the hollow of the right hand with the beistyn, pour it into the mouth and let one or two fingers remain in the mouth for the calf to suck. Let it take as much as it pleases, and then, after wiping the jaws &c. clean, leave it to repose. After the first two or three feeds, that is, when the animal drinks freely, don't allow it to suck the fingers any more, or else it will refuse to drink without them, which you will find a bore.

A calf should never be fed fewer than three times a day -it will take from 3 pints to 3 quarts a meal or from 4½ quarts to 9 quarts a day, and the milk for the first fortnight at least, should be, we had almost said must be, fresh from the cow.

But you want to make butter as well as to rear calves. Well, if you must, there is only one way, and with care it does not succeed badly. Remember that you have got four things to study in preparing a substitute for the mother's milk: fat, muscle, and bone, and the digestibility of the whole must be as perfect as possible, and thoroughly balanced in the proportions.

The skim-milk, which will be the foundation of our food, is rich enough in phosphate of lime to supply all that is wanted for making bone. Many years ago,we proved this experimentally by giving a half-bred shorthorn calf as much skim-milk as he would take for the first 6 months of his life. A monstrous beast he grew, and at 18 months, we sent him to Smithfield market,where he ' ched,as we expected, sausage-meat price: the lowest in the market. He was all bone, and his hocks and knees were a sight to be seen!

But with the following mixture, we have succeeded in making calves, which at 13 weeks old fetched £ 5 ($25) a piece in the same market. 2 oz. of linseed-meal and 4 oz. of pease-meal, carefully mixed with "boiling" water into a thick pudding and stirred up in the usual quantity of skim-milk—this is enough for a calf for one day, and should be given at 96o F. Here we have bone-earth in the skim-milk; fat in the linseed; nitrogen in the pease; carbohydrates in all of them; and the slightly aperient power of the linseed will keep the digestion all right. A food, this, we think we are justified in saying, as near perfection as possible.

You will observe that we state a quantity—6 oz—but you should not give as much at starting. Bring the calf to it gradually, beginning with 2 oz. a day, and in ten days time it will take the whole without inconvenience. Beware of "ground" oats; the husks produce what, I believe, doctors call a "peristaltic" action of the bowels, and frequently cause death.

Mr Ville, a not always trustworthy authority I regret to say, gives the following three experiments in calf-feeding to show the preponderant action of albuminoid and fatty matter, for every 100 lbs of live-weight the three calves received.

	Casein.	Fatty matter.	Sugar of milk.	Increase
	lbs.	lbs.	lbs.	lbs.
1. Skim-milk	4.6	1.3	5.5	13
2 Skim-milk and whey	4.6	2.0	7.7	26½
3. Milk fresh from the cow	5.1	7.5	6.3	48½

The second calf received more carbohydrates than the first, and the third received an excess of fatty matter and albuminoids. All three drank the same quantity of milk: the deductions may be left to your judgment.

By the bye, dont try to give whole linseed, boiled, under any circumstances. From thoroughly well authenticated trials, it is certain that 800 grains out of every 1000 grains of linseed given uncracked, pass through the animal untouched by the digestive powers, and are absolutely wasted. Boiling it for 24 hours will do no good. Take a grain in your mouth; hold it there for a few seconds; and then try to crack it with your teeth. You will need no further experiment to convince you of the necessity of crushing all the linseed you use.

Calves fattening for veal may be tied up, and kept in a dark place. Those intended for rearing should be kept in the light, and have room enough for play. It is a question with us whether a muzzle should be used to prevent the little ones from sucking each other's ears, scrotum, &c. It is not a healthy habit—as bad almost as crib biting or wind-sucking in a horse—but I am such an advocate for liberty for young stock, that I cannot bear the idea of confining them even at the earliest stage; and a muzzle—as light a one as possible—seems the only preventive; and even that cannot be long employed, as at 5 weeks old the calf should begin to nibble at his future food, and we will now consider what this is to be.

Don't begin to wean before the thirteenth week from birth, and then do it as gradually as possible. By this time the calf will have become accustomed to eat—if you have the good sense to offer them to it—the finest clovery bits of hay; crushed linseed; pease meal, malt-cummins; some cut swedes (I don't recommend mangels till late in spring); carrots, anything in fact, and the more varied the food the better. It was a wise saying of the late Mr. McCombie: "Never let the animal lose his calf's flesh;" and we hope all our readers will remember it, and profit by it. It should be written in large letters over every farmer's chimney-piece. Don't be in a hurry to get your calves to grass; rather indulge them with a fortnight longer on the milk; and for the first month or so, let them come into the sheds from the pasture at night. We would not turn young ones out till the 10th of June, in this province, but the season and the locality must be your guide. And we should be unwilling to dock the linseed (¼ of a pound a day) at first. It is a wonderful, though simple, corrective, and saves more lives than we wot of. The best pasture for calves is the first year's grass, and a part of it should be divided into two, or preferably, into three enclosures for them, so that they may have it fresh and fresh throughout the season. It is *a lamentable thing* to mark the numberless instances in which the poor things are sent out to a bare burnt up pasture, to pick up a living as they can. How can anything be expected from such treatment but a wretched lot of pot-bellied, hard-skinned, raw-boned brutes, whose very look tells you that it would never pay to fatten them?

The treatment of calves suckled by their dams is simple enough. They may be kept in loose boxes, or tied up, and should be let suck at least three times a day, preferably, four times. The greatest care should be taken to milk the cow dry twice a day if she has more than will satisfy the young one. Neglect of this is the chief reason why so many Herefords, Anguses, and Galloways are such bad milkers. Running loose with their calves, the production of milk is gradually restricted to the amount required by the suckling, and as this is rendered *customary by family* descent, the habit becomes engrafted in the breed.

"A Yorkshireman" says: A good fair shorthorn cow, any number of which may be purchased at York market, will, within the twelve months, suckle from five to six calves, and the two year old heifers, two calves. The system is this: To put two calves to a cow at the same time, until about ten weeks old, when they are weaned at once, then two more for the same time, and then one, unless the cow is an extraordinary milker, when a sixth is added. The heifers calve at 24 months, old, when each suckles her own offspring, and then another, when the dams are fatted and killed at three years old, making from £20 to£22 each. In the winter the cow is tied up, and the two calves tied also, one on each side of her, and allowed to suck three times a day. The early calving of the heifers does not appear materially to reduce their size, those kept on as cows making when moderately fat, from £25 to £30.

THE USE OF BASIC SLAG.

Origin—Fine grinding—Soils for—Time of spreading.

Basic slag or Thomas's Phosphate Powder is a substance the use of which as *a fertiliser has developed to a* wonderful extent in the comparatively short period since its introduction into commerce. Primarily, as most people are aware, it is a residual bye-product obtained in the smelting of steel from pig iron, the phosphorus of the latter being extracted from it by lining the Bessemer converters with magnesia and lime. Under the extremely high temperature the phosphate is yielded as a tetrabasic compound, the phosphoric acid of which is much more readily accessible to plant life than in the case of the ordinary tribasic phosphate. The manurial value of the fertiliser is proportionate to the fineness to which it has been ground; so that a guarantee should be given not only of the total percentage of available phosphates, but also of the proportion of the whole that will pass through a standard sieve of 10,000 meshes to the square inch. These guarantees vary from about 12 to 43 per cent. of tribasic phosphate of lime and from 70 to 90 of fine meal, as the percentage of fineness of grinding is technically called. From these figures it will be seen that various makes of basic slag vary much in value, though the different grades are *unfortunately indistinguishable* from one another by their appearance. Agriculturists should therefore be on their guard when purchasing phosphate powder; and they are strongly advised to deal only with houses of the best repute, if it is not intended to submit samples of the manure to analysis, as instances have not been wanting in which ordinary iron slag, which is of course valueless from a manurial point of view, have been supplied under the name of the genuine article. Passing next to the consideration of the soils on which this fertiliser answers best, we find it is especially adopted for use on all lands deficient in lime. Under which category fall many granite, clay heavy and sour lands, a great number of those rich in organic matters, and most old pastures, even though actually overlying calcareous strata. Though an invaluable fertiliser for all *root and most forage crops, it is* more especially as a manure for pasture land that we wish to discuss basic slag here, the rather since the autumn is the most suitable time to apply it to the soil. The large proportion of lime and phosphates present have a wonderful effect on clovers and similar leguminous plants, stimulating their growth to a surprising degree; and it is in this fact that the value of the manure for pastures lies. We have seen old meadows, which were unremunerative previously, become covered after application with white and crimson clovers, excellent alike for hay or grazing purposes. Indeed, such capital effects are to be seen that we very tnongly advise farmers to try the plan of sowing a strip of the fertiliser up the middle of a field by way of test. Phosphate powder, like bones, is essentially a landlord's manure, since it continues to be*nefit the land for a number* or years, and is never washed away by heavy rains. Like all artificials which exert a continuous effect over a period of years, it is a little slow in showing the beneficial results of its action; and it is for this reason that we advocate its use during autumn and winter, so that sufficient times will have elapsed for its effects upon the crop to be seen by the summer following. About five or six cwts, should be drilled or broadcasted per acre. There is only one point requiring care in the actual application of the manure, and this is that it must not be allowed to come into contact with ammonia sales until the lime has been converted into carbonates by the action of the weather and influence of the soil, or loss of ammonia will inevitably follow. For practical purposes this resolves itself into the fact that though nitrate of soda may be safely used, *sulphate of ammonia* and other fertilisers containing ammonia salts must not be applied to land for about six months after basic slag has been used. After about a dozen years experience we have come to the conclusion that it is the cheapest and handiest form of phosphate known at present.