perceptibly affected by so trifling a quantity. It had just the same effect as *Chambertin* or *Clos Vougeot* has upon a brain not accustomed to those Burgundy wines. So much for the ciders we are personally acquainted with; we do not speak of the Herefordshire, the Normandy, or the German ciders, for we never tasted them.

Planting.—The apple-trees in an orchard should be set so wide apart and so pruned that the air and sunshine can obtain free admittance into all parts of them in order to thoroughly ripen the wood. Before leaving the nursery they will of course have been grafted with scions of the best sorts, according to the soil. The stems should be dressed with a mixture of cow dung, lime, coal-oil, and Paris-green, while the washing of the head with the mixtures already described in the Journal, will destroy lichens and insect pest, and encourage a healthy growth of wood. Cleanse the trees from all *loose* bark and moss, which afford shelter to vermin, but do not injure the sound bark. Let pigs and poultry frequent the orchard, taking care to ring the former and see that the rings if displaced be replaced.

In *gathering the fruit*, do not let clumsy lads in hob-nailed boots climb into the tops of the trees, breaking off the young shoots and damaging the bark, but use what we used to call "harvesting blankets." These are made of stout bed-ticking, and are placed round each tree by means of a slit extending from centre to edge, and then bound with strings: stakes or each corner supporting the blanket. Every branch of the tree should be then shaken and the fruit being caught in the blanket will be free from bruises.

When the apples are all down, they should be kept for some time to *mellow* before crushing. Generally, they are laid in small heaps on the ground, but a far better plan is to lay them on hurdles made of any flexible wood, what our French friends call *des harts*, Anglicè withes; a little straw laid on the hurdles will do no harm if the rain is kept off by some protection. If the apples are left on the ground, insects, filth of all sorts, affect them. The advantage of the hurdles is that they allow of a free circulation of air through the pile of fruit.

In a previous article on this subject, we explained the necessity of leaving the apples intended for cider-making in heaps to mellow: i. e., to ensure the conversion of the greatest possible amount of the starch, &c., into sugar. The test by which this conversion is ascertained is a very practical one, and may verily and indeed be termed "the rule of thumb": push the thumb into the fruit, and when it will go in easily the apples are ready for grinding.

The best mills for grinding apples are made in Germany; but very useful ones can be found in the States; some made by Messrs. Boechert & Co. do their work very well indeed.

In preparing for the pressing operation, some use straw to keep the *cheese* together, apples and straw in alternate layers; but the most careful makers we have met with use horse-hair bags. The modern press is made in the form of a cylinder, with a weight that presses the juice through the cloth. The cloths, unless carefully cleaned after every operation, retain part of the pomace, which necessarily decays and infects the cider, whether owing to that frightful scourge the *bacteria* or not we cannot say. This horrible invention of scientific research must be kept out at any cost, hence the absolute necessity of perfect cleanliness in all things connected with cider-making.

Speaking of making the finest quality of cider, Mr. Harper, a large producer, said, in a lecture delivered before the Glo'stershire County Council, last month, that:

"Then came the points which he thought all wanted to be dealt with. The first was as to what kind of cider they wanted to make? If they wanted to make good cider they would put it into a cask until it became dry and clear, when it would become much purer and better than by the old method. It was much better in the cask and fermented much quicker. Cleanliness was the greatest essential with all cider makers. Anything good, pure, and fit for human food could not be produced unless kept scrupulously clean. There was a general impression that cider was made where cleanliness was not observed, and he urged upon them the necessity of absolute cleanliness if they wanted to produce good cider. As to filtering the juice, the German filter press was used all over the world, and it greatly refined the cider passing through it. The filter took out the thick residual matter which often prevented the finest cider being made, while it also got rid of the germs which produced the bad ferments. The great point in filtering was to do it quickly and with the least possible exposure to air. The filtering presses which he mentioned were made of cotton wool fibre, and were used for refining purposes, which gave out a clear juice. He used one of these presses at his own manufactory at Ebley with the best possible results, but he was afraid that its price would keep a good many farmers from adopting it. He might say, however, that in many places a good many farmers purchased these presses and let them out to others. These filters were a great boon to English makers of cider, for they took out all the germs of fermentation. The cider came out clear and bright. The liquor may be pumped from the cask in which it is stored through the filter into other casks without in any way whatever allowing it to come in contact with the air It was impossible for the cider to take up any lactic-acid germs, or other ferments floating about in the atmosphere where the filter is used, while the cider is not flattened or deteriorated in any way. The cider also commands the best prices in the English market. Slow filtering and exposure to the air were the main causes of dark cider, the controlling of the fermentation giving the maker the power of having either sweet or dry cider, the sweet cider having more sugar and less alcohol than the dry. A large percentage of cider drinkers required to have cider sweet, and if they could produce such cider, the more ready would be the sale. The sweeter the cider the better would be the demand. and better prices would be realised, because it suited the taste of the general public, for there was cider and cider. He would not recommend sulphurising casks, and although that operation had been in use for many years it had now been discarded. Cider made by the use of the filter could be made with less than 2½ per cent. of alcohol. Filtering took the place of sulphurising, the latter method being a very objectionable one as it gave a nauseous taste. He also pointed out the mode of racking cider, and concluded by saying that something must be done to improve the quality of cider, if cider making was to regain its hold upon the public. If they wanted to supply it in their own immediate districts they would have to improve it so as to meet the outside requirements, and if they did not do that some one else would. It would be to their advantage to make those goods which would command the best prices. Cider with a low alcoholic strength is one of the best drinks that could be taken into the system, and there was a very ready sale for cider of this description, If farmers would only make cider of this kind he (Mr. Harper) believed there was a great future before them. It would increase in value in the district, and it would improve the moral tone."

(*To be continued.*)

A British vineyard. — Strange to say, the Marquis of Bute, who has a large extent of land in Glamorganshire, S. Wales, has planted an extensive vineyard at Castle Coch, (1) near Cardiff. Last year a thousand dozens of wine were made there, and, we hear (though we do not at all believe it) the estimated value of the whole was $15,000!!!

The Dairy-schcool. — The St-Hyacinthe dairy-school will open on the 15th November for the regular course of instruction. All members of the Dairymen's Association of the province have a right to free entrance. There will be nine series of regular courses, specially for makers or people who have already had some experience in manufacturing. In each regular course the teaching will include practical work on the making of both butter and cheese and practical work in milk testing. There will be twelve lectures a day of an hour each and each lecture will be followed by a discussion of an hour on the subject of the lecture and of the practical work of the day. The number of pupils for each course is strictly limited to 30, and the fourth series is especially reserved to practical makers of not less than three years' experience.

From and after the 22nd of April there will be inaugurated one or more series of preparatory courses, intended for young men who intend to become apprentices next season in butter- and cheese-factories. These young men, after having worked in a factory during the summer, may come back the following winter to complete their course at the school. Makers unable to attend a regular course will on demand be admitted to an open shorter course which will take place on and after the 22nd of April, until the opening of the factory season.

Very bad poetry but very good sense, is the following, extracted from the columns of one of our contemporaries:

ROOT, HOG, OR DIE.

RHYME AND REASON

The hard road the hog had to travel in the past, and his soft snap in the future:—

Heretofore it has been the cry
That the hog must root or die,
And he was forced to whet his tusks
On hardest, driest kind of husks.

He was worse treated than a dog,
And vilest man was called a hog;
But now prolific breeding sow
Ranks as high as the best milk cow.

Light land is the best for clover,
And when, with plough, 'tis turned over,
Its coarse roots make the best manure,
And good crop of grain doth insure.

A clover-field sown for swine,
If the farmer will pay fine,
But to get best recompense,
He must have a movable fence.

So o'er whole field they cannot roam,
But can eat in their allotted home;
And when first spot is eaten bare,
They should be removed elsewhere.

Until they have eaten over
The whole field of green clover;
Then they begin on the second crop,
Where first they did crunch their chop

And thus to them doth joys sweeten,
Till the whole field is re-eaten;
But their troughs must be filled each day,
With chopped grain, salt, slops and whey.

Change of feed promotes their health,
And doth increase their owner's wealth;
And the next year hog-trodden field,
A fine crop of grain will yield.

JAMES McINTYRE.

Ingersoll, Sept. 24.

(1) We know Cattle Coch well. The meaning of Coch in English is *red*; wherefore, when the the Welsh peasantry wished to distinguish between the editor and his numerous brothers, they always spoke of him as the *Pen coch*, i. e., the Red-head. Ed.

Feeding fat into milk.—The following extract from *Hoard's Dairyman*, seems to us to settle the oft disputed question: can food alter the percentage of butter-fat in milk? We have never in any manner traversed the position that "a cow has a capacity beyond which she cannot go." What we have always held as an incontrovertible fact is; that poor food makes poor milk, and rich food makes rich milk; in other words, that if a cow is fed on wheat-straw, mangels and brewers' grains, she will give milk *poor* in butter-fat, but that the same cow, fed on good meadow-hay, crushed flax-seed, and peaso-meal, will give milk *rich* in butter-fat.

We are glad to see that so practical an authority as Mr. Hoard takes the side of the innumerable body of British farmers who hold that "Fat *can* be fed into milk."

THE MAXIMUM LIMIT IN A COW.

In the report of the Pennsylvania Guernsey Breeder's meeting, which appears in another column, we read that Mr. J. C. Higgins read a report from the Iowa Experiment Station of a test of feeding for fat in the milk which, the report says, "*Showed conclusively that feed does affect the fat in dairy cows*, as opposed to the theory that a cow has a capacity beyond which she cannot go."

We do not understand that the Iowa report traversed in any way the theory of a born limitation of capacity in cows. If we understand the doctrine of that theory, it makes no claim that feed does not affect the fat deposition in milk. What it claims is that every cows is born with a certain *maximum* limit of proportion of fat in the milk, *beyond which* no amount of feeding will take her. But that does not say that she may not be handled and fed so as to keep her milk down to the *minimum* proportion, or per centage of fat, nearly all the time. Suppose the the theory to be true. A cow is born say with a maximum limit of 6 o/o of fat. At times she may give milk which has only 4½ o/o of fat. Some man gets hold of her, treats her kindly, *houses and feeds her well*—in other words, does all he can by feed and treatment to stimulate her to her full limit of fat percentage in production. Under the stimulus of such treatment she mounts up to 6 o/o of fat. But does she exceed it? We believe not. *We are inclined to think that feed may affect the fat per cent of milk*, but always subject to the born, or normal, limitations of the cow herself. We also believe that but few cows are so fed and handled as to be kept up to their maximum limit of proportion in fat content. Therefore, it follows, that it is to every man's