Mr. Convey, in ploughing sod, "prefers turning it over flat to turning it over edgewise." I don't . the harrows don't catch hold of it. All furrows, in ordinary ploughing, chould be laid at an angle of 45°.

Mr. Everett says, very wisely, "the foliage of the clover plint is the most valuable part, and we must save that if we wish to get all the feeding value in the hay." To which I add : mow early; mow very early; very early indeed. Turn the win-rows over, cock, and let it cure in the cock. As for moving the half-made hay, or shaking out the cocks, that is the safest way to lose the leaf. On my side of England, i.e., S. E., we never used hay caps, and our hay, as it supplied the London market, the most difficult of all markets, could not have been very bad. But, then, we have very little rain there, barring in an exceptional year like 1891, in which even in Kent and Surrey a good deal of hay was spoilt. In ordinary years we have about 24 inches, including snow reduced to water. The rainfall here is, on an average, 271, exclusive of snow, as above, which is reckoned to be about 8 inches more. (1)

If, as Mr. Everett says, 400 caps are enough for 15 acres of clover, and a cap takes only one square yard of stuff at 6 cents to make, 1 don't see why they should not be generally used.

Heating in the stack, unless caused by the hay being carried with rain or dew on it, does not cause hay to be dusty. All our finest London clover hay, that sells for \$5 a load more than the best meadow hay, heats and ferments in the stack. The buyers would not look at loose hay of any sort.

Mr. Everett, like me. would never plough clover in, but pass it through the stock first. He thinks ' there is no danger of land becoming *clover-sick*, and advises sowing liberully." If he had seen thousands of acres of clover sick land as I have, he would change his opinion. But don't take my word for it : ask Lawes and Gilbert or any practical English farmer.

Mr. McKerrow, like me again, "believes in packing the soil after sowing wheat. The best piece of spring wheat I ever saw grown, was where a flock of sheep had tramped all over a fi.ld." Fancy a doubt existing about it in the year 1891!

Supt. Morrison says "we have better ploughs made in the United-States than any English plough." May be so, but I never saw any ploughs better for the man, and lighter draught for the horses, than those made by Howard, of Bedford, and Ransome and Sims, of Ipswich. With these ploughs, the furrow must be perfectly turned at the desired depth and width, unless the ploughman alters the wheels &c. on purpose. Any boy who can drive a pair of horses can plough with them as well as the oldest and most skilful ploughman, and they are, from their construction, much lighter in draught than any swing plough, as was fully proved in 1847 (see Journal of the R A. S. of England for that year), at the "Example farm" of Lord Ducie, under the superintendence of the well known J. C. Morton, his lordship's steward, afterwards for many years editor of the Agricultural Gazette.

Mr. Beach is evidently a thorough restrictionist, for he holds that "the soil of this nation should be the conclusive property of its citizens, and that no one who is not a citizen should ever under any circumstances be allowed the ownership of a single acre." Just so, as if we were to say: England for the Engli h, Scotland for the Scotch; and the Scilly islands for the silvy people.

Mr. Gordrich reckons the cost of each of his 20 cows,

(1) This is worthy of notice, as people here really believe that it a/ways rain in England. A. R. J. F.

average yield 320 lbs. of butter a year, to be as follows :

My butter netted me twenty-four cents for the year 1890. I estimate the food for a cow costs about \$30.00. I figured about \$20.00 for the labor laid out on each cow and the making of the butter. That is \$50.00 per cow. That gives me a profit of \$39.00 besides the manura.

QUESTION-Give us your figures on feed ?

MR. GOODRICH—Forty pounds of e. ilage a day for twohundred and fifty days make five tons for the year. That is worth \$1.00 a ton, that is \$5.00; a tcn of clover hay worth \$5.00 and one acre of pasture to run on—I will call that \$5.00, though I think it is too much. Then one ton of bran at fifteen dollars.

MR. EVERETT-Does the quality of the food and water affect the quality of the butter?

MR. GOODRICH-It certainly does.

QUESTION—Isn't well water good enough without warming? MR. GOODRICH—If I could have water at fifty degrees I would not be at the tro ible of warming it, but where it is pumped by a wind-mill into a tank, and cold, it is different.

And, I am happy to see that he agrees with me—see p. 53 of this number, in regard to the effect of food on the richness of milk in butter fat...

MR. MCKERKOW-Do you think the milk would be just as rich on poor feed as on good feed?

Mn. GOODRICH-I don't know. I can tell you some thirg ' l do know. I know that feed will mike a difference in the composition of milk, and I don't care how many solentific Germans or Americans say to the contrary. I know I turned my cows out on grass one spring, but gradually stopped feeding grain. When they were having both grass and grain, 15 cowhad given four hundred pounds of milk a diy, making 18 pounds of butter. In two weeks after I commenced stopping off the grain, on the good grass, mind you, the quantity of milk had ot shrunk at all, but the amount of butter had gone down to 15 pounds a day. I fed the grain again, and after a while brought it back to 18 pounds. I simply watered my milk by withholding the grain.

MR. BURKMAN-Is there any benefit in feeding grain when you send your milk to a cheese factory?

MR GOODRICH-They ought to test the milk and pay for what they get.

A. R. J. F.

How are Nitrogen and Phosphoric Acid to be Obtained in the Cheapest Way ?

The following is a translation (for which we are indebted to Messrs. H. and E. Albert) of a lecture on the above sub ject recently delivered by Professor Paul Wagner, Ph. D., Director of the Agricultural Research Station, Darmstadt.-

The question about which I wish to converse with you to day is one of the most important of the whole study of ferm hisation. It is also one of the most opportune, in smuch aa series of experiments made during ree at years, coupled with the simultaneous enrichment of the manure market by a new phosphate, occurring in great quantities, has now caused the question, "How are nitrogen and phosphoric acid to be obtained in the cheapest manner?" to become one of the highest importance.

You all know that plants cultivated on farms must take up through their roots at least from 100 to 200 or 300 kills of nitrogen, and not less than from 50 to 100 or 150 kills of phosphoric acid per hectare, equal to S9 to 178 or 207 lb of nitrogen, and 45 to 90 or 135 lb. of phosphorie acid per