

nitrogen from the air, and this seems all that is required. Phosphatic manures, on the other hand, give marvellous results on limed land. Many of our South lands would not grow clovers at all until they were limed. As one farmer put it to me, "I never sowed clovers before I limed, because they would not grow; now I never sow them, because they seem to be naturally in the land and come up of their own accord."

The first expenditure in our South lands should be for draining; nothing else is any good until that is attended to. The next expenditure after draining should be for lime, and after lime phosphatic manures can be supplied; but the longer the land can be left in grass after the land has been limed the better, for it is the growth of grass brought about by the lime and humus-content that seems to be the chief cause of the fertility of the land that is limed. I knew a farmer who when sowing a paddock out in grass put 2 tons of lime per acre on half the paddock and an equal money value of phosphatic manure on the other half. There was no comparison between the two sides; the limed half completely beat the manured half. A few years ago I saw a paddock ploughed up and sown in an oat crop without any manure. The paddock had been down in grass for ten years when the crop was sown. Half the paddock had been limed with 2 tons per acre when the grass was sown ten years previously, and the other half had received no lime. The oat crop on the half that had been limed was more than twice as heavy as that on the unlimed portion. The dividing line could be seen straight across the paddock, and there was a difference of quite 15 in. in the height of the two portions of the oats.

Last year I saw a paddock sown in swede turnips. It was ploughed out of land that had been sown in grass for seven years. When sown down with grass half had been limed with about 30 cwt. of lime per acre; the other half had had no lime. The turnip-drills were sown across both limed and unlimed portions, so that each drill was half on the land that had been limed and half on the land that had not been limed. The turnips on the limed portion had to be thinned quite three weeks before the turnips on the unlimed portion. The crop on the limed portion was a splendid one, and a very indifferent one on the unlimed portion.

TOP-DRESSING PASTURES.

Lime can be used very effectively in top-dressing grass-lands after they have been sown down, and if in addition to the lime a top-dressing of phosphatic manure is supplied the result is simply