

portioning a part of the programme of Farmers' Institutes to subjects of interest to our better halves, and where no Women's Institutes exist such an argument has much force, but in view of the great success attending the Women's Institute here, with no effort at all at attracting membership, I feel they fill a great gap that lay open too long. If men require to meet together to discuss their farm operation and listen to lectures upon farm subjects, why should not women also require similar opportunities? Is it because they have nothing to learn? I think none will claim that. Their round of duties are equally important with that of their husbands. As the spring cannot rise above the fountain head, so the race cannot rise above its mother. The women of the land have in their hands the destinies of Canada. Whether the succeeding generation shall be weaker physically or stronger than the last in a wonderful measure depends upon the intelligence of the mother. Has she not much to learn? Are our young Canadians stronger and more robust than their fathers ever were? If not, why? That is a subject of more importance than corn and hogs, for, if the race grows weaker each succeeding generation, what has this nation not lost? A weakened vitality brings in its train countless evils. It means the subservience of this nation to all other civilized nations that have surpassed us in this particular. Let the women of this land rear a generation of men stronger vitally than the preceding and then let them see to their education in a better manner, mentally and morally, and keep up this improvement for a half-dozen generations, and this nation will outstrip every other nation that does not do likewise, for the battle is with the strong and the race with the swift, now even more than of yore. Does this question not afford scope for enquiry and discussion among our Canadian women? It includes scores of dependent subjects, sanitation, food and its values, cooking and allied subjects, youthful training, schools, environments, companions and their effects. Then aside altogether from this paramount question there is economical household management, a subject relative to the husband's subject of farm economics. Is there not room for improvement? Then aside altogether from these again, is decorative art, which in every home, however humble, has a daily more important place. Is there not room for improvement here? A visit to many homes will testify to the need, and yet another very important feature is the getting away from routine cares for a few hours once a month, and meeting others in discussion—a great good in itself. As a rule our farmer's wives tie themselves far too closely at home; very few indeed can be accused of "gadding about." Where one of the latter class can be found, a thousand of the former exists. I trust a strong Women's Institute will be formed in every township; nothing but good can come of it, and I see no reason whatever for combining them with the Farmers' Institute. Let them be run quite separate and distinct, and let the Government be generous in the matter of lecturers, but of course the women cannot depend upon the Government except occasionally for lectures. The Farmers' Institute only get them about once a year, but get three at once. If each Women's Institute had three or four lectures during the year, at different meetings, I think they would much prefer that.

Yours truly,

Winona, Ont.

E. D. SMITH.

Manures for Grain Crops.

To the Editor of FARMING:

Your correspondent, "Veritas," page 266 in FARMING, November 7th, asks for information re manures for grain crops. I prepared the accompanying article on the subject last week for the *Field*. It has not yet been published, but I venture to send you a copy.

PHOSPHATE INFLUENCE ON CEREAL CROPS.

There is a rather widespread impression that it is nitrogenous manures only which are beneficial and can be advantageously applied to cereal crops, particularly the wheat crop. And it is often asserted that cereal crops, especially

wheat, find for themselves a sufficient supply of mineral food naturally in the soil. Under existing conditions, such opinion is in many cases a great and grievous mistake, although under some circumstances, such, for instance, as the land being already amply stored with available phosphoric acid, the nitrogenous theory might work successfully, but unfortunately a very large proportion of the land under cultivation is not thus stored with the essential phosphate, and what is even more unfortunate is, that what moderate stock there is, is becoming smaller by degrees, though not beautifully less.

Possibly, certain appearances in connection with the world-famous Rothamstead experiments may have seemed to give some support to the nitrogen only, for wheat, theory; yet, if we consider the Rothamstead figures a little more closely, we may find that many other factors enter into the calculation, and that mineral manures are as essential to serial crops as is nitrogen. I was led to a more exact enquiry into this important subject, and it is an important one, through observing the differences in the quality of grain on the many farms I have had the honor of being allowed to inspect during the last fifteen years. I had previously heard a popular agricultural tenant-right valuer boasting of his acumen in disallowing a poor devil of a ruined farmer for two tons of spare "turnip manure," afterwards applied to the wheat. He, poor fellow, is dead, but neither from him nor from any one else have I yet been able to learn what constitutes the actual and proper difference between so-called "turnip manure," "cereal manure," or any other "special manure," although I have travelled hundreds, aye, thousands of miles to hear collegiate professors, government science and art examiners, and other such learned men discourse on the subject.

What I personally observed on the farms of many practical men was that where there had been a more than ordinarily free application of phosphate or phosphate and potash, the grain yield was more satisfactory both in quantity and quality. From this, and the disappointment I had so often experienced in my own crops, I was led to believe that many of the unprofitable crops being grown in the meantime might have proved remunerative had they received a dressing of mineral manure.

Having become most earnestly impressed with the conviction that Britain's most immediate necessity is to keep her own powder dry, or, in other words, to maintain the possibility of producing a home-made bread loaf at need. I do say that any means conducive to that end are worthy of general consideration; and the above is one of them.

Wheat has certainly been realizing only a low price compared with the prices of 30 and 40 years ago, but fertilizers are equally reduced in price, and by their judicious use, much may be done by an increased yield to compensate for the low price. It is futile for our statesmen to flatter showy audiences in luncheon speeches by saying the future of British farming is "specializing." We cannot all be fancy stud stock breeders, nor is it desirable that we should.

Whatever may be said to the contrary, general food-producing agriculture must and will be maintained in Britain, and wheat-growing will continue to find a place in the curriculum, because, as a very cautious and experienced Warwickshire farmer observed to me some time ago, we have no other crop that can occupy the place in the rotation with such general service to both farmer and the public.

In the elaborate Broadbalk Field experiments at Rothamstead, where the growing of wheat consecutively for 50 years has been demonstrated under a great variety of conditions, there are two plots, Nos. 3 and 5, the former being unmanured for all these years, the latter having been annually dressed with mixed mineral manures. There has been no very material difference in the yield of these two plots, although the mineral manure-dressed lot has maintained the lead, yet not sufficiently so to in itself justify the cost, were there not collateral circumstances. It has frequently been argued from the basis of these two plots that mineral manures had no influence on cereals, but that is not a correct deduction. The fact is that there was but lit-