

THE THIRD FARRER ORATION

SOME ASPECTS OF THE LIFE AND WORK OF FARRER

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During the 150th Anniversary celebrations we have been reminded forcibly of the immense debt we owe to our pioneers. Australian history has been brief, but it has been enriched by the lives of many great men. This morning it is my privilege to speak about one of Australia's great pioneers, William James Farrer. In doing so I have been asked to keep the youth of our land especially in mind.

The first of these annual Farrer Orations was given by our Prime Minister, Mr. Lyons, and some of you may remember his glowing tribute to Farrer, and his acknowledgment of Australia's debt to the great plant-breeder. Then a year ago, Dr. G.L. Sutton of Western Australia delivered the second oration. He had worked with Farrer and known him intimately, and gave us that interesting account of his life and work. In arranging this broadcast through the courtesy of the A.B.C., the Farrer Memorial Trustees invited me, as the first of the Farrer Research Scholars, to contribute the third oration. This is a high honour, but I should have been much happier if one of the members of the Trust who had been a personal friend of Mr. Farrer had given this address.

I did not know Farrer as Dr. Sutton did. At the time of his death in 1906, I was a student at the world-famous Hawkesbury Agricultural College, and so far as I am aware, only saw the great pioneer on one occasion. Nevertheless I have come under his spell. In my room at the University the one photograph on the wall is that of William James Farrer. He is always an inspiration to me.

Of course you all know that Farrer is one of the world's outstanding wheat-breeders. He was born in England just 93 years ago. Today is his birthday and that is why this particular date has been chosen for the annual oration. When he was 25 years of age he came to Australia for health reasons, and for a time lived at Duntroon. But don't forget that before he left England, he had received a very thorough education. First at the famous "Blue Coat" School, and later at Cambridge University, he had distinguished himself as a student, especially in mathematics. Some people are apt to forget how valuable this University education was to him afterwards in his life's work in Australia.

Some time after his arrival here in 1870 he became a land surveyor. This work brought him into contact with men engaged in agricultural and pastoral pursuits, and helped to give him that practical outlook which was so important in his treatment of their problems in later years. Theory and practice were happily wedded.

In 1886 Farrer resigned his post as surveyor and settled down on his property near Queanbeyan. Here he began his life's work as a wheat-breeder, but after 12 years he accepted the position of Wheat Experimentalist in the N.S.W. Department of Agriculture. He did this because it gave him a wider scope for his wheat work. He retained the post until his death 8 years later on the 17th April, 1906, when he was 61 years of age.

Now what was his pioneering work? You know that our early settlers brought with them all sorts of cultivated plants. Wheat from England was first sown on land where the Sydney Botanic Gardens are now situated. Gradually its cultivation spread, and when the western areas of N.S.W. were opened up, they were brought under wheat. So when Farrer commenced his work, 98 years after the arrival of the First Settlers, wheat was being widely cultivated.

Now the wheat varieties of those days were very different from those we see today. They had not been developed for our conditions. Whilst they might have been excellent wheats for some countries, they were not ideal for our climate. Farrer was early convinced that better yielding wheats could be developed for our conditions. He was only too familiar with that dreadful sight of a wheat crop, full of promise, being ruined within a few short days by rust, and he affirmed that he had the greatest faith in the world that this trouble could be overcome. And he was confident that wheats having good milling quality could be developed. There were, of course, other features necessary, but these three will serve to illustrate the position.

We should remember that in tackling the problem, Farrer did not have information and experience that are now commonplace to us. He had to pioneer the work. But let us also remember that he was an educated man and had a practical outlook on his problem.

The first thing he did was to live with his wheats. It is all very well to read what you can about your plant, but to really know it you have got to live with it. Farrer obtained wheats from many countries, and growing these at "Lambrigg" alongside the ordinary varieties, he compared them under Australian conditions. Of course it took years of work to get reliable information, because seasons vary greatly and such tests have to be made over many seasons. But made it possible to select wheats notable for particular features. Thus from India with its hot climate and short growing season, Farrer picked out wheat which matured rapidly and produced a relatively small amount of straw and flag. From Canada he obtained wheat which bore grain of the highest milling quality. But it was quite different from the Indian wheat in its straw and rate of maturing. Again, from other purple-strawed wheats he selected types which characteristically gave high yields of grain. And so on with drought-resistance and other desirable features.

This was the sort of material Farrer had to work on in his endeavour to improve our varieties. Apart from his selection work, I think his real genius lay in his hybridisation method of attacking the problem. He believed that by crossing two wheats, one having a high yield but slow in maturing, and the other a low yield but early in maturing, he could obtain a combination in the one plant of high yield and early maturing habit. Or, to take another example, if he crossed a high-yielding wheat which was susceptible to disease with a second type which was a poor yielder but nevertheless resistant to disease, he considered that he would be able to combine the desired high-yielding capacity with disease resistance in his new variety.

It was not easy going. His early efforts met with opposition and ridicule from influential sources. But he had the strength of his convictions and he persevered. In one of his letters written in 1895 to a United States worker to whom he was lending his plant breeding forceps, he mentions that even at that time he had crossed as many as 5000 wheat flowers. I wonder if my listeners realise what an immense amount of concentrated painstaking work this involved!

It is scarcely necessary for me to recall his outstanding successes in these deliberate efforts to build up wheats having a number of desired characteristics. His best known variety, produced in 1901, was named "Federation", and was a wonderful advance upon the wheats available up to that time. It had the reputation of consistently yielding a bushel per acre more than other varieties. In one State only in one season this meant an added value of £250,000. And apart from this wealth from increased yield, the improved quality of the grain of Farrer varieties was estimated to have added 3d. per bushel to its value. Surely this quiet unassuming man made a wonderful contribution to Australia's wealth. Don't you think we ought to honour his memory?

Nor should we overlook the great value of his work to other countries. Thus a million acres in U.S.A. are sown with Farrer wheats each year and in European countries they are also widely cultivated. And in these areas as well as in Australia, they have been the basis of further crosses made to produce more satisfactory wheats.

Great as the money value is of Farrer's devoted and painstaking work, we owe far more to him for pioneering this great field of service, and for the inspiration he has given us to carry the work forward. For we still have very serious problems facing us in our wheat industry. In some ways I think they are even bigger problems than Farrer himself had to confront. The world has moved on rapidly since his day. Competition is keener. World demands have changed in many respects. Farrer bridged a great gap with his wheats. To now go further forward and make striking improvements, is not easy.

But the need to do this is very real, and constitutes a challenge. I feel sure that it can be met. I have faith in our Australian youth. The great work already done by Dr. G.L. Sutton of Western Australia and Mr. J.T. Fridham of Cowra - men who were actually assistants to Mr. Farrer - and by members of the State Departments of Agriculture, and other institutions, confirms this belief. And I am convinced that others will hear the call and come forward. I repeat that the work is not easy. Whole-hearted devotion and

thorough training are prime essentials for success. I do not look for some sort of miraculous advance, but believe that steady painstaking effort by trained men is most likely to give the desired results.

And we must make use of "team work". These are days of specialization in almost all spheres of human activity. No one man can hope to be a specialist in all phases of wheat work. Farrer, as you know, worked in close co-operation with that great chemist, the late F.B. Guthrie, and it was this team work that made possible the striking quality improvements that were effected. Remember then, that there are many fields of endeavour in which you may make your contribution to this great work.

And may I remark that although generous financial assistance has been forthcoming from governmental and private sources to enable the work of the Farrer Memorial Trust to go ahead, I am afraid that we have not done all that we ought to do in this regard.

In conclusion let me say that Australia needs our help. Farrer used to say that his desire was that he might live and work in such a way, that when he died it might be said of him that his life had not been wasted. But long before our time comes to die, we can have a wonderful satisfaction and happiness if we will but spend ourselves in the service of others. And if we are honest and steadfast in these endeavours, we too shall not have lived in vain.

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