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# A Farmer Looks At Agricultural Education

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**WHAT** does a farmer hope to find in Agricultural Education? He looks for a system designed to give his sons a good basic education and then thorough preparation for their life's work on the land. Since he knows that most of the farms in New Zealand are run on a one man or one family basis, he might expect that considerable attention would be given to the practical side of applying modern techniques for which, in the circumstances, 'know how' may be much more important than 'know why.' He might, also, expect that the Department of Agriculture and the great industry organisations would be watchful and vigilant to see that these needs were fully met. Without trespassing on the ground covered by the previous papers in this series, it might be profitable to consider how far the farmers' expectations are realised.

## PRIMARY EDUCATION.

It is not suggested that specialisation should commence in Primary Schools but, in the early formative years, much could be done to awaken the child's interest in Nature and make him aware of the fact that all the things he enjoys are provided, directly or indirectly, from plants or animals. A majority of pupils will be at schools in urban areas and they will lack the advantage of being brought up on farms in constant contact with animals and the cycle of seasons and reproduction. It is probably at this stage that any attempt to reverse the drift from country to town must commence and, in the social and nature studies in the present curricula, there could be ample scope for awakening child interest.

Boys and Girls Agricultural Clubs provide another most useful and effective means of emphasising the importance of the relationship between men and animals but these mostly function only in rural areas. For the 1,908 Primary Schools with a total roll (in 1950) of 254,266 pupils there are 20 Agricultural Instructors whose services are available to Headmasters in an advisory capacity on Nature study, club and agricultural matters. It is obvious that so few instructors can have very little practical effect when the vast areas and numbers are taken into account. In any case, what they have been able to do depends on the good will of headmasters and this is not always forthcoming. Cases are known where, even in prosperous farming districts, schools are without agricultural clubs, even though interest and help is available from local residents and organisations. The current National Estimates include an item of £500 towards the expenses of these clubs.

The existence of these instructors indicated some small recognition of the importance of agriculture and it is much to be regretted that this is now being withdrawn. It can be authoritatively stated that the appointments are being allowed to lapse as they become vacant and their place taken by nature study organisers using a new syllabus issued by the Department. In this, the Conference may be interested to hear, those great and useful animals the cow, sheep and pig are, it is true, mentioned but on equal terms with mice, pondskaters and budgerigars!

The impressions made upon the young child mind are more likely to be conditioned by the keenness and enthusiasm of his teachers than by their academic distinctions and, if Primary School teachers are urban in outlook and affiliation, they will fail completely to awaken interest in the rural way of life.

## SECONDARY EDUCATION.

The following table gives an interesting indication of the importance of agriculture in the 29 Technical Schools in New Zealand.

TABLE No. I.

COURSE	1946	1947	1948	1949	1950
Industrial	5,097	5,066	4,704	4,986	5,275
Commercial and general	5,050	5,385	5,300	5,345	6,190
Domestic	2,367	2,602	2,699	2,671	2,862
Agricultural	855	929	968	963	1,115
Fine Arts	452	411	411	320	124
TOTALS	13,821	14,393	14,082	14,285	15,566

It will be seen that, in 1950, of 15,566 pupils taking technical school courses only 1,115 took agriculture. Of the 8,517 leaving State secondary schools in the same year, 21.9% gave agriculture as their probable destination.

Figures, published by Hamilton in his Survey of the Dairy Industry, show that boys going to farming receive on the average less schooling than those going to other occupations and include a high proportion of those leaving without Primary School certificates. He also found that, in 91 District High Schools in rural areas there were no teachers with higher education in agriculture and, though this position may have improved in recent years, there is no doubt that agriculture is still the educational Cinderella at this most important stage of the future farmers' schooling. It had been hoped to make a comparison between the I.Q. ratings of children taking the agricultural course and those taking other subjects. Unfortunately, in the very limited time available for the preparation of this paper, it was not possible to obtain sufficient information to make a worthwhile comparison but the indications are that agriculture is regarded as a dull subject for dull boys. It follows that, if this is so, the dull boys will find themselves being taught by dull teachers, with inevitable results.

Having a personal interest in Agricultural Education, advice was recently sought from some eminent educationalists as to the way in which the secondary stage should be undertaken. With an eventual Degrass Course in mind, one reply which may be quoted, included the following:—"In no circumstances should any of the subjects, included under the heading of agriculture, be taken at this stage. They are merely padding to fill up the curriculum for boys who are too stupid to do anything else."

Since agriculture is such an intensely practical subject in which the young are unlikely to appreciate theory unless it is closely related to, and accompanied by practice, our farmer might well expect to find that schools having agricultural courses would have land and livestock to lend some reality to their studies. This is rarely the case, even such important farming districts as the Waikato being without any State schools so equipped.

## HIGHER EDUCATION.

Having found in Primary and Secondary Education very little comfort or encouragement, the farmer will now look at Higher Education to see if it makes any substantial contribution to Primary

Industry. Unfortunately, he might be excused if, after examining the available figures, he comes to the conclusion that agriculture is of no significance whatever in the New Zealand economy! The figures in the following tables disclose an astonishing state of affairs.

**TABLE NO. 2.**

Total Degrees conferred by University of N.Z.		Degrees in Ag.Sc.
1949	1289	46
1950	1217	54
1951	1214	37

The present position is much worse than that indicated above, entries for the current year being down to about one-third of the lowest figure in the table. It is appreciated that some of the other graduates qualifying each year may be indirectly contributing to primary industry but the difference cannot be large enough seriously to affect the figures. Inasmuch as primary industry may be said to earn the national living, then it might be commented that our Universities train 37 men to assist earning the living and, in the same year, train 1177 to help enjoy or spend it.

**TABLE NO. 3.**

**Expenditure on Scholarships and Bursaries. Estimates 1952-3.**

	£		£
Agricultural	3,350	Home Science	4,790
Architectural	2,240	Physical Education	6,850
Engineering	6,640	Public Service	750
Fine Arts	3,820	Science	3,485
National Scholarships, Bursaries, etc			114,700
<b>TOTAL EXPENDITURE</b> Scholarships and Bursaries in Higher Education			<b>£145,625</b>

In considering the position with regard to scholarships and bursaries it is interesting to note that Home Science, Fine Arts and Physical Education between them account for nearly five times as much as the amount spent on agriculture. It might, also, be noted that, in the same Estimates, the Department of Justice proposes to spend nearly three times as much on uniform and accoutrements for Prison Officers as does the Department of Education on Agricultural bursaries—a strange comment on their relative importance.

**THE AGRICULTURAL COLLEGES AND THEIR PRODUCT:**

Dr. W. M. Hamilton, in his Survey of the Dairy Industry, pointed out that less than 1% of boys entering agriculture had received full time instruction at an agricultural college and that "in such circumstances, the agricultural colleges, while providing a useful service, reach far too small a part of the farming community to fulfil effectively the functions for which they were established."

The farmer must now ask himself the question, "Do the courses provided by the Agricultural Colleges meet the needs of the industry in terms of quality?" It has been seen that in terms of quantity they do not. The Diploma Course is, presumably, intended to prepare students for practical farming and, if so, it would seem doubtful if the correct balance between practice and theory has been achieved. The courses start with a handicap in that there may be a wide difference in the educational and intellectual attainments of the students. This handicap is increased by age differences and the fact that, in the case of some students, there may be a considerable time

lag between the end of their formal schooling and the commencement of the course. It is a well known educational fact that, the wider the gaps in student ability, the less will be accomplished in any given course. Where the differences are large the inevitable result is that the bright boys are bored and all the rest puzzled. If this is the case, and seven Diploma men have said that it is so, the course achieves very little. It is suggested that very much more emphasis should be placed on practical know how which can be acquired by students, more or less irrespective of their educational standards, assuming that they have a sufficient degree of previous farming experience. It must be remembered that eventually most of the students will be working on one man farms with little, if any, hired help. In these circumstances, while it would be ideal to combine theoretical knowledge with practical ability, if both cannot be achieved then the latter is of far greater importance. For example, it is obviously more in the interests of good farming and high production that the young farmer can make good hay and build a decent, weatherproof stack than that he should have even accurate ideas on its probable food value in terms of starch equivalent, etc.

It is doubtful if sufficient emphasis is given to the importance of correct operation, care and maintenance of modern farm machinery and doubtful, too, if the equipment used on college farms always sets a sufficiently good example in this respect.

It is suggested that too much reliance is placed on the value of work on what are termed "approved farms". This applies equally to Degree and Diploma Students who are not likely to complain to the College, if, as a result, they are liable to lose the time already put in. One very learned member of this Society has confessed that, during one of his periods of an approved farm, he spent many weeks cutting scrub. As a result he is probably uncommonly efficient with a slasher but it can have had very little value as practical training for a degree. Such experiences are not uncommon and it follows that approved farms must be selected with care and some supervision given to the work students do on them.

It might be fair criticism to say that, as at present organised, the Diploma Courses tend to fail because the average student is not sufficiently well educated to acquire the theory presented and is too inexperienced as a farmer to appreciate the value of the practical work taught. The farmer will not presume to criticise the Degree courses beyond again emphasising the importance of ensuring that all students, instructors and research workers are soundly based in practical agriculture, in order that their efforts may be kept in proper relation to the intensely real and fundamental nature of the industry. This cannot be achieved if lecturers responsible for such intensely practical subjects as animal breeding and farm management do not themselves engage in these activities. The very small number of students offering themselves for courses may be a measure of the general lack of interest in agricultural education but it may, also, indicate a lack of confidence in the Colleges and their teaching.

## **CONCLUSION:**

It is not within the scope of this paper to propose an alternative system but even this brief and cursory glance at Agricultural Education discloses a most alarming and serious state of affairs which, if allowed to continue, cannot fail to have disastrous results. For many years there has, in effect, been selection against agriculture at all educational levels and nothing has been done to ensure that a suitable proportion of our best and brightest boys should follow this career.

To say that the wealth and prosperity of New Zealand, the standard of living of its people and their hope for the future, all

depends on our great primary industries is stating the obvious. It is very doubtful if the vital importance of this statement is fully appreciated. Professor K. B. Cumberland has recently drawn attention to the fact that rapidly increasing population will, in 20 years or so, be eating all the food we can produce, unless production can be kept ahead of the increase. Since our standard of living must largely depend on the income produced by exportable surpluses, it follows that, if the latter shrink while population increases, there must be soon a serious decline in prosperity which will rapidly become disastrous.

Final responsibility for the present state of affairs is shared by the nation as a whole, by a succession of governments over a period of many years and by the industry itself in that its leaders have not had sufficient vision to recognise the problem. Immediate responsibility must rest with the Departments of Agriculture and Education and those whose professional duty it is to advise the appropriate Ministers. It is submitted that a case has been made out for an immediate, independent and most urgent enquiry into every aspect of the problem which has been considered. That enquiry should be followed by resolute and energetic action which spares neither money nor effort. The farmers of the future are being educated to-day and the fate of New Zealand will rest in their hands.

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## Discussion

MR. L. J. WILD: I hope some discussion will take place on the content of the degree course. Most graduates go into teaching, extension or research. Agricultural research is now very specialised and a man might be better qualified to take an honours course in pure science. He would then be able to take up research in special aspects. He could go to an Agricultural college and perhaps get a Diploma. Training for extension and teaching would perhaps be more general and shorter. They should have two science subjects, Chemistry and Biology, but I doubt the wisdom of having Physics in an agricultural course. A year at teacher's College would still be necessary making a total of four years. Professor Peren has given good reasons for the retention of the Diploma course and the Loveday report favours the separation of diploma and degree courses in Great Britain.

MR. SMALLFIELD: Special instructors are to be preferred to general instructors. There is a great reluctance to take up extension work. Extension work is becoming more complicated and I am keen to get thoroughly trained people in science and practice of farming. Graduates do not feel qualified to undertake extension work. Because there are so few degree students, we have had to take on men with a diploma. These men like the work and are reasonably competent but they lack the basic scientific knowledge. Diploma student tends to have a better knowledge of the practical side because the practical work of the degree student is not properly integrated with the theory. In the extension service we have no agricultural graduates working on economic and farm management. Pure economics graduates are doing the work in the meantime.

DR. MITCHELL: The agricultural graduate has no honour in his own country. The colleges should try to stimulate interest in agriculture in secondary schools. They should encourage more employers to take on graduates. The colleges have failed to convince people that a course in agriculture is worthwhile. A lot could be said for reducing the amount given to students.

DR. HAMILTON: In the University there are about 100 professors each paid £1700 but in the State departments there are only three people on this salary. The Public Service Commission offers low starting salaries to agricultural people as compared with Law, Dentistry and Medicine. Only 10% of the people doing agricultural research in D.S.I.R. have a degree in agriculture.

MR. D. M. SMITH: I consider that it is impossible to do decent research unless a man has a thorough knowledge of agriculture.

MR. DICK: In operational research in wartime the best jobs were done by those knowing nothing about the job of warfare.