

# AGRICULTURAL EDUCATION.

## Value of Sound Training.

### Farming as a Profession.

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Probably one of the most striking testimonies as to the efficacy of agricultural education is provided by the avidity with which the present day farmer—especially those of the younger generation—seek and assimilate reliable information on the technical phases of their calling. This is particularly noticeable in South Australia where, no doubt, the Agricultural Bureau system has been a potent factor in producing an atmosphere favourable to agricultural progress.

The desire for technical training has not, in Australia, resulted in large enrolments at our Agricultural College for reasons which are partly economic, and also, in part, because there is no prolonged period in our season when field operations are suspended, as for example during the European winter. When the average farmer's son completes his primary schooling, he is so useful on the farm that he cannot generally be spared, in the present economic conditions of agriculture, for more than a few weeks at a time.

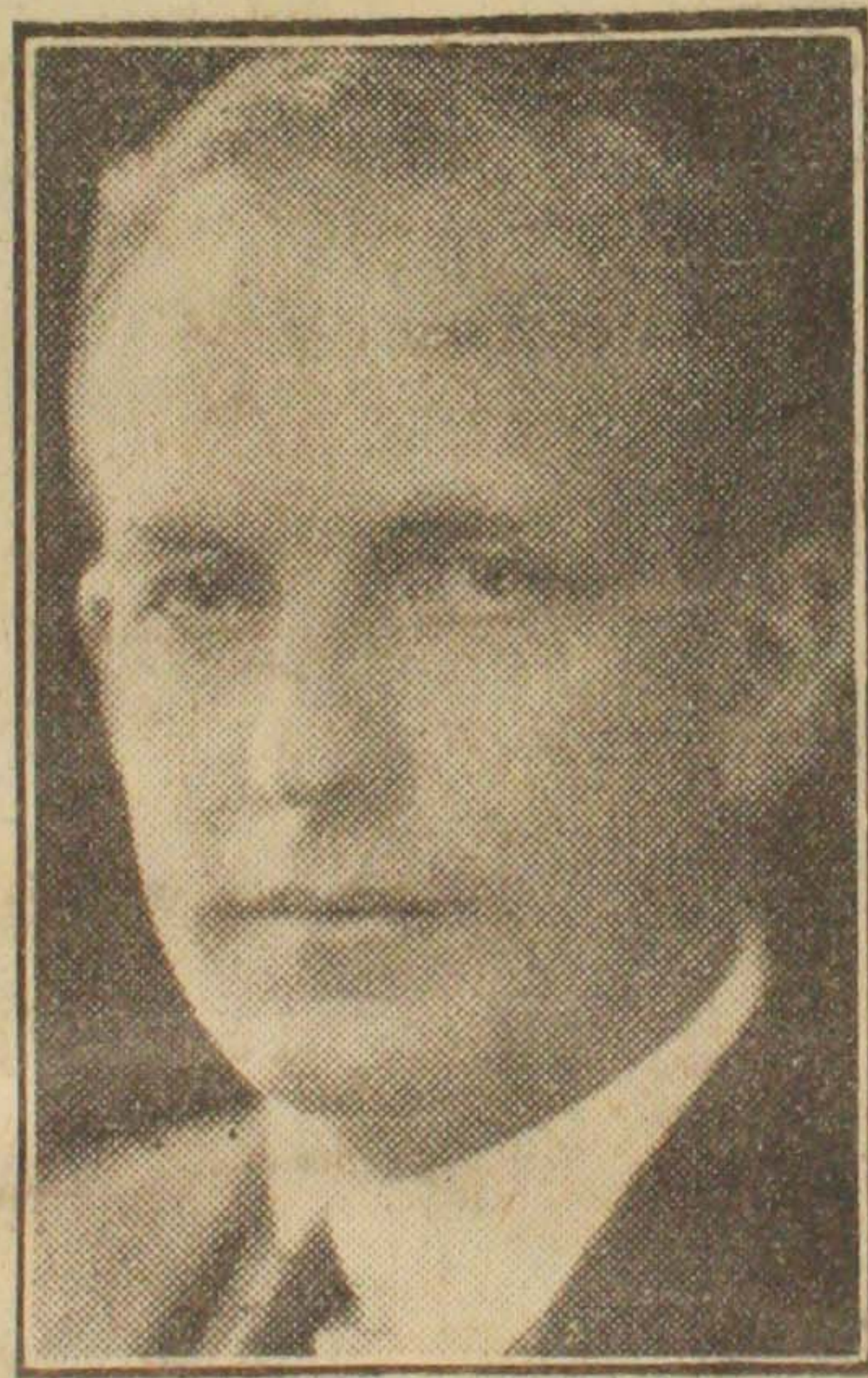
That the work of the colleges is appreciated, however, is shown by the readiness with which farmers avail themselves of the assistance which these institutions are able to offer. Also when courses of a few weeks' duration are provided, farmers are eager to enrol, and this form of education has become part of the routine of each of the principal colleges in Australia. It is impossible, of course within say a fortnight, to do more than touch upon the main principles underlying the theory and practice of farming. Such a course, however, suffices to convince the young farmer of the power of systematized knowledge, and usually serves to stimulate him to further enquiry, discussion and reading; and these, after all, are the principal means by which the present generation of farmers at least, have obtained, and will continue to obtain, the technical knowledge necessary for their success upon the land.

#### Main Function of Colleges.

Agricultural education in the more specialized sense of the term, as meaning an intensive course of theoretical and practical training extending over a period of two or three years, is the main function of the agricultural colleges. Of this type of institution there is now at least one in each of the mainland States, and all are organized on more or less similar lines. For reasons referred to above the students do not come principally from rural homes. As a matter of fact, from 75 to 90 per cent. of entrants are city lads with no previous knowledge of farming. The Australian system of dividing the students' time equally between theoretical instruction and practical work is, therefore, well suited to our special requirements. The efficacy of this system is further, proved by the large number of men, both specialists and practical agriculturists, who obtained their first agricul-

tural experience in one or other of the colleges, and who have now achieved conspicuous success.

The time is now far past when it was necessary to adduce arguments in support of the utility of special training for perpetual farmers. It is nevertheless essential that the teacher of agriculture, if he is to maintain his efficiency, should continually search his matter for points of the most direct contact between the theoretical and the practical. This necessitates keeping in close



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touch with actual farm practice in one way or another, and in this regard the Australian type of agricultural college enjoys a special advantage in that the college farm is, except in the purely experimental departments, conducted on sound practical lines.

#### Utility of Practical Experience.

The direct utility of the experience gained on the practical side requires no stressing, and it is this type of work that appeals generally to all students. To take one of the most popular phases of the work as an example, at shearing time the student sees and takes part in all the

operations connected with the classing and "get-up" of a mixed clip. The practical demonstration is complete, and drives home all the points of the theoretical instruction previously imparted.

There are many other details of practical work in which the college farm offers better opportunities for experience than can be found on any single private farm; for instance, in the construction, adjustment, testing, and repair of seeding and harvesting machinery of different types, and the workshop operations, and of the handling of tools incidental to this work. There is a greater variety of cultivating implements in use at one time or another, and such operations as chaffcutting, ensilage making, and threshing form part of the regular routine and experience of the college students. In recent years, with the increasing importance of power farming, special instruction in the construction, handling, and overhauling of various types of tractors has been introduced as part of the curriculum in most of the colleges.

These examples are typical of scores of details in which the utility of special instruction is obvious. The relationship between theoretical instruction and its application is more subtle in the cases of such subjects as chemistry, botany, bacteriology, and the like. The importance of these subjects, however, to the farmer who aims at an intelligent understanding of his work ranks higher than that of any practical teaching, and in the ultimate analysis these subjects form the basis of true agricultural training. Agriculture rests so completely upon this group of physical and biological sciences that every phase of the work when properly understood is seen to be governed by the principles of one or other of them. These subjects may appear at first sight less fascinating than those associated with actual farm operations, and it is of their importance that young students and the untrained are sometimes inclined to be sceptical. Their importance, however, can be emphasised by innumerable examples.

A knowledge of the life histories of fungus disease and injurious insects leads at once to a proper understanding of the various remedial measures used in normal farm and orchard practice. A knowledge of the botany of crop plants gives not only an appreciation of the importance and possibilities of plant breeding and seed selection, but also points the way to the proper application of the many and varied processes which may be employed in this connection with different crops. A dozen wheat varieties may be raised and kept pure within the space of a few

square yards. No variety of maize, on the other hand, can be guaranteed to be pure if another variety has been grown within a mile. The most elementary knowledge of the botany of these two plants not only supplies the reason, but also indicates the precautions necessary to breeding pure maize varieties.

An elementary knowledge of chemistry in assisting him to effect savings in his manure bills, may in a few years be worth to a farmer a sum representing the entire cost of a course of training. The problem of the evolution of a manure even when given the guaranteed analysis is utterly insoluble to the untrained man whereas, with the aid of a few chemical facts and formulae, it becomes a matter of mere simple arithmetic. Those who use lime also may easily lose considerable sums of money by making a wrong choice between quick lime, slaked lime, and ground limestone. Here again an understanding of the chemical relationships between these three forms is the surest safe guard.

#### Important Factors.

In the feeding of stock an understanding of the necessity of balancing the ration and of the means by which this may be done is not only essential to best results but is often the means of effecting a direct saving in the cost of feed. The physiological importance of the less conspicuous factors in stock foods, such as saltlicks and vitamins, is being realized more and more each year and this phase of the subject will repay the closest study not only by the student but by every man engaged in the handling of stock.

Underlying all rural occupations, of course, are the economic factors and the economic soundness of any process, method, or line of work, can only be judged by the examination of properly tabulated records and data. Hence the importance of bookkeeping in the mental equipment of every farmer. The system of accounting need not be elaborate, but a proper conception of the elements of costing, and of the importance of recording transactions, is essential. Because such items as interest on capital outlay, depreciation, and the owner's labour, do not involve the actual passing of cash or cheque, these items are repeatedly overlooked, and in consequence an entirely wrong estimate formed of the financial trend of many a farm enterprise. In this connection the case of motor transport for such a commodity as wheat or wood may be cited. There can be little doubt that convenience is often mistaken for economy, in the absence of a knowledge of the elements of costing, and much unnecessary expense has been incurred.

The question of the best preliminary education for those intending to take a specialized course in agriculture is one which warrants close attention. It is often contended that farm experience in early life or elementary agriculture, associated with primary education, is an obvious advantage. This contention, however, is not borne out by experience, whereas the lack of a sound general education almost invariably proves a handicap in farming as in any other profession or occupation. The lads who enter their agricultural course of training with sound physique and a good grounding (to the leaving or at least the intermediate standard) in such subjects as English, mathematics, physics, chemistry, and geology are invariably those who make the most rapid progress in the practical as well as the theoretical departments of their college work. It is quite logical, too, to contend that if farming is to be regarded as a profession, in which a well trained man may exercise his intellectual faculties to the full, then his education should be as broad based and thorough up to the matriculation stage, as that required for entry into any of the other professions.

#### DIPLOMA OF COMMERCE.

PERTH, Monday.

A meeting of Perth business men decided to-day to support the establishment of a diploma of commerce at the university. Mr. R. Long, president of the Federal Institute of Accountants, said that body would give £600, and he would give £100 towards the endowment. A committee was appointed to raise an endowment of £4,000.