Education in Agriculture

by

L. E. MATTHAEI

Chief of the Agricultural Service, International Labour Office

In 1921 the Third Session of the International Labour Conference adopted a Recommendation urging the Governments to develop vocational agricultural education, drawing their attention to the justice of ensuring that it should be made available to agricultural wage earners on the same conditions as to other persons engaged in agriculture, and inviting them to send information at regular intervals to the International Labour Office on the measures taken to develop vocational agricultural education in their respective countries.

Subsequently to the adoption of this Recommendation, the Mixed Advisory Agricultural Committee — an official advisory body on agricultural questions responsible to the International Labour Office and the International Institute of Agriculture, Rome—agreed that the Office should carry out a study of the subject. The Office has therefore prepared a report, which will be submitted to the Mixed Committee for their consideration at their meeting to be held on 7 November, and will afterwards be published in the series "Studies and Reports".

The following article, in which the conclusions of the report are referred to, aims at giving a general outline of the broad principles involved and showing the features which are common to the different national systems of such education, and are therefore presumably either inevitable or specially advantageous.

VOCATIONAL agricultural education owes its origin to the great advances made in the nineteenth century in the operations connected with agriculture. It has only lately been systematised and controlled, as it is only of late years that these advances have become world-wide public property, and that the idea of furthering technical education by public means has been adopted. So rapid are now the technical advances in the agricultural industry that the organisation of technical education to keep up with them is still in a state of transition at many points ; but certain characteristic institutions have emerged. These institutions as established in the different countries show

a great resemblance to each other, though no national system taken in its entirety is exactly like any other, nor does each national system by any means always include every type of institution. The national systems differ perhaps more in the way they fit on to the general educational system of their countries than in any other respect. More especially do the presence or absence of continuation education (i.e. education continued after leaving the elementary school) among rural populations and the general educational standards of those populations affect the organisation of vocational training for agriculture. Another feature, of course, is the nature of the typical agricultural enterprise : the existence of many large-scale or many small-scale farming enterprises, as the case may be, will greatly affect the curriculum and character of the agricultural teaching in a particular country.

In general, the lower-grade agricultural school and the intermediate-grade agricultural school exist everywhere, their purpose being respectively to give a preliminary and a more complete training, the latter including a good deal of theory in general farming. The lower-grade school makes fewer demands on the purse, time, and intellectual effort of its students. The intermediate-grade school means usually a fairly prolonged technical education, but some countries do not distinguish strictly between these two types of training and have a number of institutions which between them offer anything from a six-month course to one of several years. On the other hand, the higher-grade agricultural institution is usually clearly distinguished as such, and generally ranks with institutions of university standing. Apart from all these are special institutions, to which reference is made below, and above all extension education, which is also described at greater length.

The great variety of institutions necessary to cater for the different needs of rural populations is striking, and makes agricultural technical education an expensive business, especially as it has to be backed up by a series of model farms and often most costly experiment stations. The number of teaching institutions is sometimes not sufficient on account of the expense of maintaining them. On the other hand, a good deal of effort is also needed to get candidates to present themselves, and not every course or institution can automatically count on attracting pupils. Indeed, the problem of the willingness of rural populations to be educated on technical lines is a special problem which

will call for further remark. Here the voluntary bodies connected with agriculture — farmers' associations, agricultural societies, etc. — play a big rôle, as they have expressed themselves pretty well without exception in favour of technical training, and often greatly assist Governments in spreading knowledge of courses, or, indeed, actually shoulder some of the work themselves, with or without financial assistance from the Government. In general, however, vocational agricultural education is both Government-controlled and publicly financed. An important system of private education exists in France, but this appears to be exceptional. Higher agricultural institutions have often benefited by private benefactions or have been originally founded by private gift, but even these are now practically all public, or semi-public, institutions.

The effort made to train the agricultural population in the pursuit of their occupation is therefore a public effort and should conform to the standards usually laid down for such public arrangements. Such education must be thoroughly inspected and controlled ; it must be directed to useful ends ; it must be non-sectarian and democratic, i.e. open to all ; it must be kept within the limits laid down by parliamentary appropriations. But its opportunities should be adequate and fairly spread so as to serve the different parts of the country equally. Some of these requirements are by no means easy to fulfil and some are a long way from being properly fulfilled ; but, on the whole, Governments have made great efforts to conform to these principles, and the state of vocational agricultural education may be said to be healthy, though more of it is very much to be desired.

II

What should vocational agricultural education teach ? One of the features of the carrying on of modern agriculture is the vastness of its technical background : practically every one of the natural sciences is drawn upon for knowledge. Obviously no farmer is going to master all these ; but should he skim them over ? The answer is no, that is not the purpose of vocational agricultural education ; though technical it is not scientific. It requires some courage from the purely pedagogical point of view to drive this point home ; at once there arises the bogey of unsound learning. However, it must be stated with determination that vocational agricultural education is concerned not with

the means of arriving at knowledge but with the means of applying it. It might almost be said that it has only one thing to teach, and that is a right relation between the farmer and the scientist.

It is here that skill in teaching comes in. The present task of vocational agricultural education requires something almost like a study of mass psychology. If the means of applying scientific knowledge to the cultivation of the earth are badly taught the result will be that the country boy will learn practices by rote, which, when he is a man of forty, will be completely out-of-date. What he needs is to be taught the capacity to adapt and discard, the capacity and will to send his son to an agricultural school when the time comes, and — crowning touch of all — the capacity to make him support with equanimity the determination of that son when he comes back from the agricultural school to reverse the old practices on the home farm. To teach such a mental attitude is not easy in any department of life ; it implies great lessons in combined modesty and self-reliance.

The methods used in vocational agricultural education must conduce to these aims ; they must be progressive and modern. It is beyond question essential that the authoritative position of knowledge should be made plain to the pupil, and this is difficult in a world which has tended for a long time past to despise the "laboratory" expert. But to arouse the pupils' own initiative is equally important. For this purpose a certain amount of friendliness on the part of the teacher is really indispensable. It is fortunate that most countries have managed to secure this friendly atmosphere in connection with their vocational agricultural education systems. Agricultural knowledge has long since burst the walls of the formal teaching institute ; it is being carried, one might almost say hawked, round the countryside in a rather informal way. There is not space in the present article to give a description, however brief, of the various formal teaching institutions in agriculture ; information will be found in the report alluded to above. But some description of so-called extension education in agriculture cannot be omitted.

Agricultural extension education links up noticeably with the democratic movement in education. It has the quality of popularising knowledge, and its intimate association with such institutions as the People's High Schools in Denmark and Norway is not fortuitous. But it has its own methods and some of these

are rather interesting. For instance, most Governments run a fairly expensive agricultural journal which, though it may cost a certain subscription per annum, is really a free gift to the farmer. More important still because more widespread is the mass of pamphlets and fly-sheets distributed at official cost. The magic lantern had begun to be used, but the cinema has come just in time to coincide with the spread of vocational agricultural education ; its use is very extensive, as is also the use of wireless ; and it may be remarked that the practice of Governments in communicating the latest produce prices to the agricultural public at frequent intervals is really rather a remarkable intervention by official authority into the farmer's life. Another method of teaching which is extraordinarily practical is the travelling demonstration train and the travelling demonstration wagon. Such trains and wagons fully fitted with modern equipment and modern exhibits are advertised beforehand and seem most successful in attracting interest. But the particular new departure which is apparently unique to agriculture is the system of imparting information on technical subjects to the individual producer through personal advice. This system is owed to North America, where it was first perfected in the United States and Canada. It has since been adopted in a very large number of countries and is of very great importance. The work of the agricultural adviser, director, organiser, agent, or representative — all these titles are used — may be very wide. He instructs and gives advice ; he also initiates lectures, discussions, tours, exhibits, demonstration plots, etc. He may be single-handed or he may be understudied by a large staff of assistants ; he may work in close connection with a formal teaching institute, or he may be more or less independent.

The success of the system has been enormous: the agricultural adviser stands in a special friendly relation to the farmer. All that stands in the way of further success is the question of how much money can legitimately be spent by Governments (or by such public or semi-public bodies as may replace them in this respect, e.g. by chambers of agriculture) on this form of education.

Before considering the reasons why such special forms of education should have been evolved for the industry of agriculture, attention may be called to a recent important departure which appears likely to spread to a great many countries and to be a very considerable contribution to the problem of occupa-

tional training in general; this is the so-called young farmers' club (boys' and girls' club) movement. A young farmers' club is a small local group of boys and girls in the top forms of elementary schools or a little older, who are directed, under an authorised leader, to carry out certain definite agricultural operations known as "projects". These operations are carried out on the children's own home farms, as a rule. Typical projects are the rearing of a calf, the keeping of half-a-dozen head of poultry and the disposal of their eggs, the planting, cultivation, and reaping of a special crop on a small piece of ground, etc. It has always been a feature of young farmers' clubs to make the children pay attention to the financial and business side of their project. They are taught to keep accounts and are responsible (with or without the help of their parents) for the actual financial operations of buying and selling. Any profit that is made is, as a rule, regarded as their pocket-money.

It will at once be seen that this system combines many advantages. It gives scope to individual ability, but, at the same time, it implies authorised direction and teaching ; it arouses the child's self-reliance without throwing him up against an important economic proposition, or frightening him at the outset with the vastness of what he has to do ; it arouses emulation between him and his fellows ; it lasts long enough to stimulate him without, at the same time, being too monotonous (because he is handling a thing that actually grows or changes) ; and it brings him into direct contact with practical life. At the same time, it has been found that indirectly the young farmers' clubs are very useful in securing the interest of the children's parents in improved agricultural practice. It is not the object of the club, but it is an added advantage, that sometimes vocational agricultural education may be started in a district through a young farmers' club where any direct appeal to the adult agricultural population would have been hopeless.

On the other hand, the more the idea of the young farmers' clubs spreads the larger will be the number of those required to direct them — and this is certainly a problem. It inevitably brings in the question of finance already alluded to as conditioning the spread of vocational agricultural education. However, where there is already a fairly numerous body of agricultural extension teachers it has not been found impossible to start a great many young farmers' clubs. Countries in which such clubs at present exist are : Canada, the United States of America, Great

Britain, Denmark, Finland, and Sweden. At a discussion held in 1927 by the International Scientific Council of Agriculture, attached to the International Institute of Agriculture, Rome, Professor Brizi, now Secretary-General of that Institute, drew attention to the young farmers' club movement, and stated that, in his opinion, this was one of the most fruitful ideas which could be adopted in any system of vocational agricultural education.

It is impossible in a summary way to do justice to the manifold forms that popularised agricultural education now takes. We must confine ourselves to seeking the fundamental causes which have given rise to these particular methods.

There are roughly three distinct causes why vocational agricultural education should have developed especially as extension education. The first is the expensiveness of carrying on agricultural research. The expenses of an experimental station and of laboratory work are so great that only a large social group can finance it, and, as a matter of fact, it is found that this social group is the largest social group known to us, namely, the whole nation. This does not imply, of course, that a certain amount of agricultural research is not carried on by such semi-autonomous bodies as universities, but, on the whole, agricultural research may be stated to be nation-backed. But if agricultural knowledge is sought at national expense, it is not going to be communicated only to a privileged few. Extension education, i.e. popularised democratic communication of knowledge, is a logical consequence.

In the second place, there is the number of those to whom the results of knowledge have to be distributed. The agricultural community is a vast community and agricultural production is split up into a vast number of producing units. The responsible chiefs of the smaller units are often poor and ignorant ; almost more marked is their mental isolation. Add to this the geographical difficulty of uniting members of a scattered rural population at any one spot at frequent intervals. All this means that knowledge has to be presented over and over again in a number of places in such a form as can be assimilated by such producers ; and extension education is the obvious means.

This task has to be combined somehow or other with the quite separate task of putting the latest results of scientific research in front of a much more restricted number of conductors of large-scale enterprises, who are well trained in their occupation and fully aware of all the advantages of keeping abreast of

discovery. This problem is extraordinarily baffling in the present state of that knowledge. Scientific discoveries useful to agriculture are being made every day with a rapidity which is truly astounding. An agricultural teacher must continually be taking in new knowledge as well as giving out. No doubt this lends a certain freshness to vocational agricultural education, but it also makes it very difficult. A formal teaching institution is always wrestling with problems of curricula. Extension teaching programmes are less tied down, the misery of examinations does not arise, and the system is a very convenient way of handing on the results of up-to-date research to persons able to use them. This is the third reason why extension education has been adopted in agriculture.

It is not very surprising, therefore, that all parties combine to attach great weight to the extension system. This must not be taken to imply that the formal teaching institution in agriculture is not of extreme importance: it is, of course, the skeleton of everything. Indeed, a certain accusation can be brought against extension teaching methods if they have the effect of satisfying the agricultural public to such an extent that they prevent them from making the effort to attend more formal courses of study. But, on the whole, the advantages of extension teaching, founded on an active publicly supported carrying on of research, are so great that they quite outweigh any disadvantages.

III

How many persons profit by vocational agricultural education ? It has already been stated that there are a great many who should do so, that the agricultural public is a very large one. The ideal would be to give at least every responsible head of an agricultural enterprise some training, for agriculture is a difficult occupation and it ought not to be approached without instruction. The facts are disappointing. Assuming the occupational life in agriculture to be thirty years, and taking as a basis the average number of students annually leaving all agricultural institutions where something like whole-time training is given, even though only for part of the year, the number of systematically trained agriculturists may be guessed at, and may be contrasted with the number of holdings in any particular country, so as to arrive at an estimate of the total number of farms with or without any trained person working on them. Such calcula-

tions are open to a number of objections, but they give some sort of idea of the extent to which agricultural education is effective. The results show that while in a very few countries (Belgium, Norway) one out of every three or four persons (farmers, managers) are receiving training, in another (Czechoslovakia) the proportion is one out of every six, in yet another (Switzerland) it is perhaps one out of every ten, and in others, especially the newer countries (Estonia, Latvia), we come down to one person out of every twelve, thirteen, or fourteen of those occupied as chiefs of enterprises on agricultural holdings, and even that is a proportion which does not yet exist but is only assumed as likely to exist in the future.

Thus, even making full allowance for the success of extension education, the effectiveness of which is not taken into account in the above estimation, it is clear that vocational agricultural education is at present far from reaching the majority of cultivators. In a whole district only one or two persons, perhaps none, of the cultivators may have ever seen the inside of an agricultural school or college. This is deplorable, especially when we realise that it is possible, at any rate in Europe, to correlate districts of really good farming with districts where vocational agricultural education has been tolerably effective.[1]

But when we view the difficulties of attendance at an agricultural school or college from the cultivator's point of view we realise how this state of affairs can exist in spite of the inducements offered to farmers to take advantage of instruction. The wealthier farmers can afford to send their sons to an agricultural institution, but the occupier of a smallholding not only is often unable to advance the cash for fees, but is actually unable to deprive his farm of the labour contributed by his son. The detachment of one adult person's labour from a group of two, three, four, or five persons working together, is a serious matter. This will continue to be so as long as agriculture is carried on through the agency of such small producing units as the farm worked by the labour of one family. At first sight the obvious thing would be to replace the son's labour temporarily by a hired worker. This is expensive in cash and the small farmer seldom has much cash ; and he is already presumed to be paying out fees for his son. Accommodation and boarding of the hired worker

[1] Dr. F. BAADE : *Entwicklungsmöglichkeiten der europäischen Landwirtschaft*, p. 38. Berlin, 1928.

are great difficulties and the smallholder is not accustomed to act as an employer. What, however, probably counts as much as anything is the idea that the farmer's boy can get what training he needs on the home farm. It is difficult to ignore this idea, which is by no means absurd. The boy does get some training from his father, but not enough and not sufficiently varied. Vocational agricultural education as systematised and controlled by public authorities is not a new invention; after all, it only replaces inferior forms of communicating knowledge from one person to another (one generation to another); it is competing all the time with those older opportunities of home instruction and it is necessary to persuade the farmer that its patent disadvantages (expense and absence from home) are balanced by corresponding advantages in the way of superior training.

To meet these difficulties, and to satisfy the wishes of the poorer classes of the agricultural community, the winter school has been established. The winter school is a name which covers any form of systematic instruction in agriculture given during the dead season. Fees are very low. This, together with the fact that pupils are released when the heavy work on the small farm begins, ensures a certain attendance; but it is noted that where the winter school course is arranged to cover two succeeding winters pupils often do not trouble to come for the second winter, and that where the teacher incautiously prolongs a course into the spring season he cannot get his pupils to attend the final lessons. This does not look as though the winter school were a very satisfactory form of instruction, and it is certain that to reserve the teaching of agriculture to the season when no agriculture is carried on, when crops cannot be shown *in situ,* is a difficult proposition. Teaching is bound to be dry and theoretical for pupils whose most urgent requirement is to have their interest and imagination stimulated. The institution of lower-grade schools which give teaching all the year round (the period of instruction is usually not less than one, and not more than two, years) is, from the educational point of view, much better, but from the small farmer's point of view much more difficult. Such schools are almost necessarily boarding schools (as, indeed, are a good many winter schools); expense is therefore involved, and although a good deal is done in the way of remission of fees (Norway has instituted practically free agricultural education and Czechoslovakia and Great Britain have an

extensive scholarship system ; some scholarships are also given in other countries), this is felt to be a difficulty.

Nor has any attempt been made so far to meet the other major difficulty of the small farmer and to assist him in replacing his son's labour on the family holding during that son's attendance at an agricultural school. Whether public moneys could be used for any form of loan for the smallholder which would meet the cost of the wages he pays out for a substitute and which could be repaid perhaps in five years' time, when with the return of the son from agricultural training the family labour effort is at its maximum efficiency and the family farm at its most prosperous, has never so far been considered by national authorities, but in itself this ought not to be inherently impossible.

Another way of turning the difficulty would be to institute an agricultural apprenticeship system. The advantage would be that by being trained on another than the home farm (or on several other farms in succession ; cf. the Danish system), the farmer's son would get a more varied training than he gets under his own father. Moreover, apprenticeship can be publicly inspected, stimulated, and controlled. At the same time by a system of exchange smallholders would be assured of the labour of a young man which would replace the labour of their own son. But although an old-established system is successful in Denmark, its success appears—curiously enough—to be limited to large-scale farming ; arrangements made for smallholders have not proved very acceptable. Czechoslovakia has arrangements which may prove useful. A system recently inaugurated in France has rather different objects in view.

On the whole, however, apprenticeship does not seem to offer a solution and the reason is clear. Governments are not going to expend the extensive funds necessary for control and inspection (and uncontrolled apprenticeship is unthinkable) in order to perpetuate the existing standard of farming among smallholders. All their efforts are being bent on an improved standard of farming among this class of the rural community, and this can only be obtained by attracting pupils to some form of public institution where teaching can be systematically fed from sources of advanced practice and knowledge, so that the whole standard of farming can really be raised.

More hope is to be placed in the special institution. The term "special institutions" is here adopted to cover all those

varied courses and schools which deal with special branches of agriculture. Such institutions, by confining their attention to a narrow field, are able to give more detailed and advanced instruction than can be given by the general agricultural teaching institute over a comparable period. They may take any form, from a single day's demonstration class in a small village to a national dairy, horticultural, or forestry college. In reference to smallholding needs, a useful development in certain European countries has been the special institution catering for small-scale production, smallholders' schools or peasants' courses, as they are called. These schools, where the teaching is carried on on special lines by a special staff, teach largely the "side lines" of agriculture, the keeping of poultry, bees, small stock, etc., which are financially profitable to the smallholder who often only grows the staple crops for his own consumption and not for sale. The specialising of agricultural teaching institutes for smallholding interests is rather a new policy, but it seems successful. It would appear that one reason why the small working farmer has not been eager to attend the general agricultural teaching institute has been because the curriculum there has not been adapted to his needs. If more could be done in this direction a great step would have been taken in raising the technical standards of small-scale farming. It is, in any case, rather inconvenient to have to teach side by side those who are destined to work with their hands on quite a small holding, those who will be directing as owner-occupiers farms of some importance, and those who will be paid managers on very large enterprises run with expensive technical equipment.

Even more difficult is the problem of the wage earner. Here we are up against an economic situation which positively seems to preclude the agricultural wage earner from improving his position by the acquisition of superior skill. The primary difficulties are the low scale of general agricultural wages and the long hours worked in agriculture in all countries. General earnings are so low that they make an interruption, or even a delaying, of the ordinary earning career a hopeless proposition : by this we mean that no agricultural labourer's family can afford to feed their boy between fifteen and eighteen years of age unless he can himself contribute to the family income ; any question of fees would come as an additional difficulty. Almost equally deterring is the fact that the organisation of agriculture has so far not worked out so as to tempt to such superior skill as, when

acquired, earns a superior reward. There is, of course, some difference of wages between ordinary and superior workers, between head ploughman and ploughman's boy, but there is a general absence of well-paid posts corresponding to those of foremen in a factory. This arises out of the multiplicity of producing enterprises in agriculture, a feature to which reference has already been made ; on small and even medium-sized farms there is only one directing post, and that is held by the farmer himself. The work of farming is so varied that the older and experienced man is given work different from his fellows rather than put into any relation of command over them. This is a real difficulty, and the number of better-paid posts suitable to wage-paid workers available in large-scale farming is not sufficient to redress the balance.

In these circumstances it is not surprising that but few children of wage-paid workers trouble or are able to attend agricultural classes. In the few cases in which information as to the occupations of pupils' parents has been supplied to the International Labour Office, that information has shown that few of the pupils in agricultural institutions were wage-paid agricultural workers or the children of such workers. In proportion more such pupils are found in the higher-grade than in the lower-grade schools ; these are the exceptional individuals who, in any case, would make their way in the world.

The very curricula of agricultural schools show that they are not destined for the agricultural wage-paid workers. A few countries have vocational courses specially intended for the training of foremen, bailiffs, etc., but these courses are tending to disappear. Practically no instruction is arranged for the general agricultural worker, with the occasional exception of courses in stock breeding and with such rare exceptions as special advanced courses in milking, such as have recently been arranged in Austria, partly at the instance of the Austrian trade union of agricultural workers. But the bulk of the practical work taught in connection with vocational agricultural courses teaches the theory and practice of farming, not the best manual methods of carrying out farming operations. The French organisation of apprenticeship for agricultural workers, and certain Rumanian schools for farm staff, appear to aim at the training of specialised agricultural staff rather than of general farm workers. It is only recently, under the influence of the scientific management movement in agriculture, that skill in agricultural manual

processes as such has been studied as a problem; it is the merit of scientific management experts to have pointed out both that agricultural manual performance varies and that it can be improved. This presupposes training on a large scale for manual workers. Such training at present simply does not exist; the staple operations of agriculture, the ploughing, hoeing, dung spreading, sowing, and reaping and gathering, are done by untrained workers working under untrained employers.

It would appear that there is here an enormous field in which vocational agricultural education might be useful. The immense amount of manual work, which in spite of mechanisation of farming is bound to be carried on, establishes a *prima facie* case for a move in this direction. The recognition of skill in ordinary farming operations is a first step towards insisting on a better reward, and that better reward would fundamentally be earned, and not only claimed, by a real increase in output.

Meanwhile there is much to be said for an extensive use of scholarship systems specially adapted to meet the needs of the agricultural and rural wage-paid worker. Such a system tends at least to break through the vicious circle of the poorly trained worker earning a poor wage. It is necessary that any system instituted should cover the whole cost of teaching and *also* the whole cost of maintenance of the person taught, and it is probably wise that it should secure its candidates before they are finally absorbed into the routine of farming; in other words, it is well, as far as possible, to take them straight from the elementary school, making, however, such arrangements for practical experience as appear necessary. A good many countries have attempted something in this direction. The most recent schemes are those established in Czechoslovakia and Great Britain. The Czechoslovak scheme is interesting in view of the scale on which it is carried on, but the final decision as to the giving of scholarships still depends on the local authorities; should all local authorities institute scholarships, 500 will be given each year. In Great Britain the system—which is separately administered for England and Wales and for Scotland—is characterised by the grading of scholarships. A selected number of scholars can continue from one grade of scholarship to another and can, if intellectually qualified, finally arrive at an agricultural department of a University. There is also an interesting experiment in the founding of Avoncroft College, which has been established by private moneys and which seeks to offer to

wage-paid agricultural workers opportunities of combining a considerable technical training with a wider social teaching, reminiscent of the Peoples' High Schools in Denmark. But taken all in all these experiments and efforts to provide scholarships and bursaries are all too few ; and unless a great deal of public money were to be spent in this way it is scarcely to be hoped that they would have much immediate effect in raising either the farming or the educational standards of the wage-paid agricultural worker. The absence of training for the wage-paid agricultural worker in the vocational agricultural systems of modern countries is to be regretted as a very real gap in these systems, to which attention needs to be drawn.

IV

The question has often been asked whether, instead of waiting until the child of the wage-paid agricultural worker is already placed in the agricultural industry, making his withdrawal from it for the purpose of training a difficult economic proposition, it would not be possible to offer him opportunities of learning something about agriculture before that moment arrives ? This can only mean while he is still at the elementary school. Cannot some idea of agriculture, however rudimentary, be given to the elementary school child in the country ?

Admittedly the age of children at the elementary school is so low that most countries deprecate any attempt at imparting technical knowledge to them at that time, but not without exception. A few countries are prepared to make the attempt. Belgium, Finland, France, Hungary, Latvia, and the two Canadian Provinces of Manitoba and Quebec are, or have been, for some time past engaged in giving agricultural instruction which is described as vocational to their elementary school children, and Rumania is proposing to do so. But other countries deprecate such an idea and confine their teaching to simple nature study which is deliberately described as non-vocational.

What, however, is most often considered with favour is the same idea in a slightly modified form, the principle of the so-called "rural bias" in country education. A rural bias may range from a perhaps rather haphazard process of directing the child's attention in the course of its lessons to country surroundings and of drawing as many illustrations as possible from country sights and sounds, to one of deliberate displacement of

lessons on general subjects to make room for lessons on agriculture designed to introduce the child to a rudimentary but practical knowledge of farming ; when such lessons are given we are back again at the idea of vocational training. A good many of the considerations set forth below gain or lose according to the extent of rural bias which it is sought to introduce.

The rural bias is at the present time a catchword which has been much bandied about. Those who use it have not always troubled to define exactly to what extent they think country education should be biased. In the writer's opinion the purely educational arguments for and against a moderate rural bias in country education need to be distinguished from arguments drawn from the social and economic field. The educationist is no doubt justified in assuming that present-day elementary education is not only deficient in itself, but is already biased in the direction of preparing too definitely for clerical and commercial, i.e. for urban, careers. There exists, in fact, an urban bias, and this urban bias is not fair to the country child. In any case, criticism may be directed against much elementary school education, whether urban or rural, on more fundamental grounds : it is too "literary", too little concrete, and fails to train the observational faculties or the imagination. This is particularly deplorable in the country, because there there is so much good material at hand on which the observational faculties and the imagination may be exercised. No doubt there are some arguments in answer, such as, for instance, that it is the only period during the lifetime of many thousands of persons when a book-reading knowledge can be imparted, and so on.

It is not the object of the present article to enter on such questions. Any reforms which may be attempted in making elementary education more practical and observational are likely to affect urban elementary education at least as profoundly as rural. We have here only to deal with the argument that a definitely rural complexion should be given to rural elementary schools with a view to preparing country children for rural, and above all for agricultural, occupations. This idea is often expressed in the words : the country school should keep country populations on the land.

It seems doubtful whether this can be done. The economic forces drawing population away from the land are far too great and far too much part of the inevitable and natural order of events to be countered in this way, and there are good grounds

for holding that there would be almost a misuse of educational effort in attempting to do so. The argument is as follows. Not all the children of a country population can remain in the countryside. Agriculture cannot absorb the surplus of such populations, who are bound to migrate to the towns. On the whole, it is healthier that they should so migrate at the outset of their careers and be properly trained while young for a non-countryside occupation, than that they should start in an agricultural occupation and then desert agriculture for town. This would mean that agriculture would continually be losing its best workers ; and, indeed, there is far too much of that process already, just because workers who are destined for urban life and desire to follow it are unable to find the opportunity of doing so at a sufficiently early age.

The fact that agriculture absorbs only a certain number of workers is beyond argument ; with gradual improvement in mechanical equipment it is likely to absorb fewer, and that rather soon. An interruption of this process is brought about when cultivation becomes more intensive. We cannot, however, reckon on much intensification of agriculture in the near future, owing to the amount of capital that is required for such a process and the general absence of capital in the industry. Any capital available is more likely to be put into mechanisation than anything else and so to hasten the cutting down of human labour requirements. It is therefore a chimera to suggest that most country children can necessarily enter an agricultural occupation. There is a great deal of difference in the situation in different countries, but the general truth remains. The countryside in modern countries is bound to give up a certain, sometimes quite a large, proportion of its young population to the towns ; and this is, in fact, a sign of economic progress, because it means that more persons are being released from processes of producing only food and raw materials to processes of producing other goods and services.

The rural bias, therefore, if it really aims at keeping population on the land, is pursuing what must frankly be called a sentimental end in defiance of a fundamental law of economics. This, of course, does not imply that it is not a commendable educational aim to teach any child to interest itself in its surroundings and to pay a rational attention to the occupations which are being carried on in its neighbourhood. But countryside education should never be so formulated that the town and

country child can be said to have been differently educated. This would not only be an injustice to the rural population and put them at a great disadvantage in seeking employment, but it would be fundamentally opposed to the idea of a united nation. Modern nations have now reached a stage of development which demands of individuals who find themselves in one occupation a high degree of understanding of the problems of those in other occupations. The whole industrial and political structure of modern States is built up on this assumption, and some of the principal difficulties in working it occur just because mutual understanding is sometimes lacking. It is a cardinal objection to a pronounced vocational bias in rural elementary schools that it would breed up divided populations and would refix the gulf between urban and rural life which it was one of the principal achievements of the nineteenth century to sweep way.

To sum up, it is no doubt human to think that life elsewhere is better than life as one knows it, and it is legitimate to point out, even to children, the advantages connected with agricultural or other rural employment, advantages which they might be apt to despise owing to the glamour of ill-conceived ideas of what the world is like elsewhere. But the advantages pointed out must be real advantages, such as cannot be disputed. The elementary school is not entitled to create an artificial desire for any particular employment. The urban school does not do that, does not profess even to train a boy to earn his first week's wages, the purpose of the elementary school being general, to fit boys and girls to take their place in human society.

The rural bias, if carried to a point which gives it a true vocational complexion, may certainly be attacked as an improper attempt to force certain groups of the population into certain occupations. It would perhaps be an exaggeration to say that it amounts to a subtle interference with the true freedom of contract, but it verges on this. It is for this reason that agricultural workers themselves have so strongly expressed their opinion in criticism of the idea of the rural bias. "We are utterly opposed", writes the *Land Worker*, the organ of the National Union of Agricultural Workers in England and Wales, "to directing education of village boys and girls consciously towards producing future workers on the land." [1]

[1] *The Land Worker*, June 1929. London.

The truth of the matter is that the idea of the rural bias has arisen partly as a sort of desperate remedy for a state of affairs which is on all hands acknowledged to be unsatisfactory. The farmer (whose own educational standards are perhaps not too high) is hard put to it sometimes to find any great degree of useful education in his farm labourers : native shrewdness is there and natural ability, but not an awakened intellectual capacity, and the reason is the deficient general education admittedly meted out to country populations — an education which often ends in the thirteenth or fourteenth year and is all too seldom backed by any proper system of continuation classes ; which, moreover, in addition to being a minimum as regards quantity, is often defective as regards quality, owing to the general low standard of the small country school. Poor quality education up to the age of thirteen or fourteen and intellectual starvation thereafter is one of the heaviest disabilities which modern poverty still imposes on society and especially on rural society. Here is the real difficulty — not in the absence of a special sort of country-side education. The remedy of a short cut, i.e. an early introduction to a knowledge of agriculture, does not promise much. What is far more needed is additional general education to supplement, and above all to continue to a later age, the present opportunities provided for the country child.

It is impossible to stress sufficiently the importance of raising general educational standards in the country as a preliminary to vocational instruction. Almost all agricultural vocational teaching institutions feel themselves compelled to give some general education alongside of their technical courses, and such institutions (except extension courses) insist on certain standards of general education, however simple, before admittance. But the vocational institution itself cannot undertake to spend much of its time and money on making good the defects of the national education arrangements, and it is not surprising that the most effective use of agricultural vocational opportunities has been made where independent means are taken to ensure better general standards before the country child is faced with technical instruction. In Denmark, which is always quoted as the classic example of awakened intelligence in the farming population, the People's High School movement, dating back to the sixties, was an idealistic movement for better general education only. It has definitely abstained from offering technical instruction, but it has been the foundation on which the acquisition of technical

agricultural knowledge has been so successfully built up. In the other Nordic countries of Europe technical instruction in agriculture is not given until after the age of eighteen, when a certain maturity of outlook can be taken for granted. Other countries (Austria, Czechoslovakia, Finland) lay great stress on some form of continuation classes in the critical period after the child has left the elementary school. Other countries again (Australia, Belgium) try to prolong the elementary school course for at least a portion of the rural population. England is about to raise the elementary school age itself to fifteen, and so on. The need is recognised ; the inherent difficulty is the great financial drain on national resources, but alike for advanced and primitive countries the principle holds good that acquisition of technical knowledge presupposes that general receptivity of mind which only general education can give[1]. This is particularly true of technical knowledge in agriculture, because the state of agriculture is such that actual facts taught are always quickly going out of date, so that unless the pupil has the sort of mind which can seek out new knowledge for itself he will, as time goes on, profit very little by a technical course which he may have attended in his youth.

V

It remains to ask what is the purpose of vocational agricultural education. We have already seen that the idea of keeping populations in the country is not to be pursued without due consideration of whether the members of such populations are there assured of proper occupation. We could perhaps reformulate the ideas which are often vaguely at the back of such phrases as "keep populations on the land", and agree that the aim of making those who do take up an agricultural occupation more capable of carrying it on and happier in doing so, is not unworthy of a

[1] The remarks in the preceding paragraphs have been written with a special view to countries where industrialisation is already advanced ; in other countries the problem of the rural bias in education presents itself in quite a different way. But the remarks on the importance of raising the standards of general education of country populations apply to all countries, in fact perhaps more to agricultural countries than to others. The 2 million acres covered by new varieties of wheat in India may be compared with the 20 million acres in Canada, the illiteracy of the Indian cultivator proving one of the principal obstacles to agricultural advance, as is expressly acknowledged by the *Report of the Royal Commission on Agriculture in India*, p. 146, citing A. and G. L. C. HOWARD : *Indian Agriculture* (Oxford University Press, 1927).

sustained educational effort. But, on the whole, it is better to abstain from trying to define these ultimate aims and to come down to more obvious facts. Governments would not be prepared to spend large sums on vocational agricultural education, nor would they be backed by agricultural associations and bodies of all kinds in doing so, if there were not some fairly well defined purpose to be gained by the carrying on of such education.

The purpose of vocational agricultural education differs according to the position in the community of those who urge that it shall be encouraged. The purpose of vocational agricultural education from the point of view of the associated consumers is, in the first instance, to contribute to the proper feeding and supplying of populations : it is desirable, indeed it is essential, that the earth (which is limited in extent) should produce its utmost. Some prominence has been given to this question by reason of speculations on the future growth of human populations [1]. It is not necessary to adopt a speculative point of view or to express alarm at the idea that human populations will outstrip possible future supplies; it is sufficient to stress the perfectly obvious fact that a large number of the workers of the world, not excluding the agricultural workers, are at present grossly underfed, not to mention that they are deficiently supplied with other necessaries which are made out of agricultural products, e.g. clothing, in order to realise the intrinsic importance which attaches to the actual volume of total world agricultural produce. Society is therefore more than justified in insisting that the largest possible gross production should be yielded up by the earth, and in urging and encouraging those in charge of agricultural operations to secure that largest production by all the means within their power. For that reason the spread of knowledge is much to be encouraged, and vocational agricultural education is therefore an integral part of modern agricultural organisation.

But this is not the reason why the agriculturist himself asks to be educated ; his object is not necessarily the largest gross production, but the largest economic reward. This is a different matter, a point which it is necessary to make absolutely clear. The old saying that a bad harvest can put money into the farmer's pocket while a bumper harvest will cost him the price

[1] Cf. EAST : *Mankind at the Cross Roads* (New York, 1923 ; 360 pp.) ; KNIBBS *The Shadow of the World's Future* (London, 1928 ; 131 pp.).

of the reaping is not to be denied. The object of the farmer is to produce not the largest amount physically possible from his land, but more than his competitors produce at the same cost, or, alternatively, at least as much as they produce at a less cost.

Roughly speaking, therefore, the object pursued differs according to whether we adopt the standpoint of the consumer or of the producer. True, at any given moment the same operation may fulfil both aims : indeed, the individual farmer usually gains by coaxing the maximum out of the land. It is seldom that he actually demands a scarcity value for his produce. Still, it must be remembered that the agriculturist's aim is more complicated than the crude supplying of mere demand, which is what the consumer wants.

If we adopt a broader standpoint we see that the community as such must take note of the desires both of the consumer and of the producer. It is right that as much as possible should be produced from the earth's surface, but it is absurd that it should be produced with loss to the producer. At the present time there is here a distinct crux, a creak in the social machinery, owing to the continual fall in agricultural prices. But the social instincts which lie behind Government action in encouraging greater and greater production are correct. The best policy for the farmer is to cheapen his produce and to sell more. If it is objected that he is thereby being forced permanently into the position of having to give more produce than formerly in order to pay for a specified amount of non-agricultural goods and service[1], the answer is that that is no hardship if he can produce this greater quantity with the same capital and effort. In that case, his position will not be worsened but will be the same as before. In fact, however, the aim is that he shall manage a larger and better production with less capital and effort so that his position may be improved. This is the object of vocational agricultural education.

No doubt a special difficulty arises because the absorbing

[1] An attempt to calculate the change in the purchasing power of a unit of farming produce before and after the war for a large number of countries was made by Mr. André Borel, on behalf of the International Commission of Agriculture and on the basis of answers to a special questionnaire circulated by the Commission, and presented to the XIVth International Congress of Agriculture, Bucarest, 1929, under the title : "La situation de l'agriculture en 1927 et 1928 comparée à celle d'avant la guerre et celle de 1925 et 1926" (Bucarest, Cultura Nationala ; 46 pp.).

power of the world's consumption does not always grow in exact conformity with increased production. When this is so there is "over-production" and low prices. In that case vocational agricultural education by teaching the farmer to produce too rapidly has perhaps served him ill. The principal remedy for the farming world would be to emphasise even more than has been done up to now the production of quality produce, i.e. good butter or dairy produce, meat, etc., for which there is an almost unlimited market. Educational vocational education on the right lines will teach him this more advanced production and would thus itself be capable of supplying the remedy for any so-called over-production which it may have created.

These problems of over-production (they are really problems of under-consumption) must be faced in agriculture; they are not mere bogeys, but actual present difficulties. The sugar situation is a good example. The increase in sugar production and in the sugar content of sugarcane has been so great that the world cannot absorb the present supplies of sugar at prices possible for the farmer [1]. The enormous advances of science are at the bottom of such increased production, and vocational agricultural education has made, and will still more make, its contribution to these difficulties by popularising the results of science. There can be only one remedy, and that is that vocational agricultural education should widen its scope and envisage agriculture as a business as well as a science, and teach the farmer and the agricultural labourer to do the same.

This appears now to be the principal immediate aim which vocational agricultural education should keep in mind. The business needs of agriculture are crying and should be kept in the forefront of vocational agricultural education. The simple aim of increasing the production of all crops indiscriminately will have to yield to something like a policy of organised production to meet consumption needs. The economic side of production will have to be as carefully investigated as the physical side has been. A beginning has been made. Chairs in agricultural economics have been founded; teaching in that subject is beginning to be a routine matter in the best agricultural schools. Extension lecturers are directing attention to costs of production and marketing. The smallholder is being taught

[1] LEAGUE OF NATIONS: *The World Sugar Situation.* Report by the Economic Committee of the League of Nations. C.303.M.104.1929.II. Geneva, 1929.

how to keep accounts. But there is much more to be done. There will be the same processes to be gone through as were gone through in establishing the imperative need for increased quantity and better quality production in farming. Research and investigation into agricultural marketing and consumption, costs and prices, will have to be carried on in central institutions ; results will have to be carried over to formal teaching institutes ; finally, they will have to be popularised by means of extension teaching. When vocational agricultural education has fundamentally widened its scope so as to make teaching about the business side of agriculture a matter as everyday as teaching about cultivation methods, it will be still more useful to the community than it has been hitherto, and that is saying much.