PROCEEDINGS
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OF
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COST accounting, as it is understood in England, is a system of book-keeping for a whole farm involving the analysis of the receipts and expenses for the different crops and departments of the farm, as the result of which, the profits or losses in each department and over the whole farm may be ascertained.

As a weapon for the organised study of the economics of farm management, the system of cost accounting is one of comparatively recent origin in this country. Its birth coincided with the establishment of the Agricultural Economics Research Institute of Oxford, with C. S. Orwin as Director in 1913.

Of course, there had been earlier attempts to introduce its use to farmers as a system of farm book-keeping. The system was proposed in the sixth decade of the 19th century. Writing on farm accounts in 1858, Professor John Coleman of the Royal Agricultural College, Cirencester, said, "Much has certainly been written about farm accounts from time to time, but to very little purpose, the plans being either too diffuse for men actively engaged all day in the fields, or too intricate for ordinary minds to comprehend." He had evidently in mind in making this statement the advocacy of a system of cost accounts, for later he states "every day's experience more thoroughly convinces me that a complete system of double entry cannot be applied successfully to farm accounts. . . . By double entry I mean an exact account—Dr. and Cr.—against every field or other item. Now to do this we must, in the first place, analyse the labour journal, that is, separate every shilling laid out and charge it to the various accounts for the benefit of which it was done." And later he referred to a horse-account as it would be kept by Lord Meath's system of accounts. "These accounts," he wrote, "were made public in a lecture before the Royal Agricultural Society of Ireland by Mr. Hamilton, some three years ago. The account is for farm horses . . . . on the Dr. side are columns for oats, barley, beans . . . . , and other food produce of the farm, food from the store-room or purchased food and every other expense, whilst the Cr. side is
made up of the quantity of work done by horses in the different fields throughout the year.” After enumerating some of the difficulties of such a system he says “it is impossible that men of ordinary abilities, and with much on their hands, could keep such accounts, and even when done the probability is that the valuations would be inaccurate, and we should have a fictitious profit appearing in some accounts and an unnatural loss on others. Well indeed may practical men despair of keeping accounts when such unpractical systems are brought before their notice.”

Despite these and other criticisms Coleman saw some merit attaching to the ascertaining of cost of production for he stated, “I would keep the accounts as simple as possible . . . . but at the same time have such a labour journal that it would be perfectly easy, if thought desirable at any time, to ascertain the cost of any particular crop or experiment that might be going on.”

Coleman also advocated the use of a granary book for recording the disposal of foods by which “at the end of the year it is a simple matter to ascertain the proportion and value of the different kinds of food consumed, and charge the stock accounts accordingly.” Values were to be made at a reasonable rate.

Until the end of the 19th century no published record appears to exist of an entire set of farm accounts worked on a fully departmentalised basis. In the annual reports of the Royal Agricultural Society of England during the period there are fairly numerous examples of what were described as the “costs” of individual enterprises. Most of these, however, were merely estimates of costs and did not arise as the result of exact accounting methods. Notwithstanding this, the subject of departmentalised accounts does not appear to have been entirely lost sight of. In 1891 Dr. Fream writing on the subject of “Technical Education in Agriculture” regarded book-keeping as the key to the farmers’ position and stated “a farmer who can properly apportion to the various sections of his business the shares of receipts and expenditure which belong to them, has gone a long way towards solving the difficulties of his profession. . . . . A valuable result of a sound system of book-keeping is that it suggests to a farmer the discontinuance of that part of his business which is carried on at a loss and the directing of his energies more especially to that which is proved to be profitable.”

*Fn. R. A. S. E. Journal, 1891.*
How widespread was the use of a system of cost accounting among farmers at the time when Orwin again brought the question into prominence in 1913 is not known, but he himself had been using the method at Wye for some years and he records the fact that several people, as for example, the Hon. Edward Strutt in Essex, and Sir Daniel Hall in Sussex, were already engaged in costing on the farm.³

At the time, the system of book-keeping which was generally taught in agricultural colleges was one which showed labour, rent, feeding stuffs, manures, and so forth, as losses, whilst corn sold, and the difference between cost and the selling price of livestock appeared as clear profits. The fallacy of such a process of book-keeping was, of course, obvious, and owing to its limitations Orwin was led to the necessity of making an endeavour to get a picture of the real financial aspects of the various departments of the farm. So he started cost accounting at Wye where he initiated a system of cost accounting on farms ranging in size from 1,000 acres down to 42 acres.

It is clear that he had in mind the use of the system purely as an aid to scientific farm management. In 1914 he wrote “not only is information on this point (determination of cost of production) absolutely necessary in the study of the economics of farming, but those responsible for the initiation and conduct of experimental work are beginning to look to book-keeping to assist them in the interpretation of results,” and again, “knowledge of cost must be the foundation of any productive enterprise.”⁴

Agriculture had reached a stage in its organization in which it approached more nearly that obtaining in industrial concerns. Costing systems had been long applied in industry and even though the problem of the determination of cost in farming was difficult and complex, more so probably than in other industries, it was important that it should be examined thoroughly.

The analytical method advocated by Orwin was first laid down in detail in his book, “The Determination of Farming Costs,” and later amplified in a second edition.⁵ As this is the method which, with some modification, is mainly in use in the country

³ The Work of the Agricultural Economics Research Institute, 1925.
today, I will briefly outline the main conceptions and methods suggested.

The system was to be used for a whole farm, departmentalised according to needs, and a double entry system was to be used for the book-keeping. In addition to the books and records which are ordinarily necessary for a system of book-keeping, other records were to be kept for the purpose of getting an analysis of receipts and expenditure into their respective departments of the farm. All of you will doubtless be familiar with such records. Time sheets were to be kept for the application of manual, horse and other labour. In order to apportion the use of feeding stuffs, and to determine the amount of manurial residues from foods, and where they were to be debited, a statement of stock and of feeding stuffs consumed was also necessary.

It was recommended also that the ledger accounts in respect of crops should be kept on a field basis as by this means "the work of tracing values inherited or transmitted from crop to crop would be facilitated" and charges in respect of labour and manures could be made to the fields before knowledge of the crop to be sown on it could be ascertained.

These were the raw materials from which the costs of crops and livestock and ultimately the profit and loss on the various departments of the farm would be ascertained.

Orwin recognised that the mere collection of these data and their apportionment did not directly lead to the results required. Farming in a country like this is a highly complex business. Except for hill sheep farming and some forms of milk selling and grass feeding of cattle which are highly specialised, mixed farming is a general feature of our farming. In this type of farming many products are sold. Some of them are produced as joint-products, others give rise to by-products which are the raw materials of other saleable products of the farm, some crops are definitely grown as food for stock, others for direct sale—which, however, may or may not be sold according to market conditions—and some partly for sale and partly for use again on the farm. Then there are costs for labour, manures and so on which are incurred but not absorbed in the year in which the expenditure is made. It was the difficulty of disintegrating some of these items which convinced Coleman of the impractical nature of departmentalised accounts. To get over many of the difficulties in such
studies of costs as had been made during the 19th century "farm values," "market values," "consuming values," and so forth, were used in valuing intermediate products. But Orwin considered, and he had support for his opinion, that such practices lead to erroneous results. Orwin believed that the common principle to be applied to the credit or debit of all intermediate products involving inter-departmental transfers was the concept of "cost of production" by which the financial result of farm production enterprises could be determined. In farm valuations and in debiting intermediate products the cost of production was to be used. He says, "Under no circumstance must the market price be allowed to exert any influence, or serious misconceptions may result. The worth of any article to the farmer is the price it has cost him to produce it, and the time to introduce the market value is at the moment when it is sold. If market values are introduced at intermediate stages in the process of production the whole basis of comparison is lost, and thus the farmer is deprived of the only reliable means by which to estimate the success of his policy, and by which to determine his future actions." And further, "the farmer who contends that he is justified in 'selling' his roots or hay to his stock is selling them, in point of fact to himself and seeing there is only one party to the transaction there can be no market and consequently no market price. In the majority of cases each of these things is grown because the farmer has need of them in the production of the stock or articles of food towards which his management is directed." 8

Cost therefore was the principle adopted. He was, however, immediately confronted with a number of difficulties in ascertaining this cost in so far as each department was concerned. At first sight many payments might be considered direct, as for example, seed wheat. But in the growing of wheat, straw is produced. What, therefore was the proportion of the seed cost to be given to wheat and what to straw? Many other joint products, such as mutton and wool, hay and grazing, and so on, gave rise to similar problems. Further, many costs were presumed to be unexhausted in the year of their being incurred. What was the cost to succeeding crops of manures applied, which might benefit these succeeding crops? According to accepted opinion in farming circles cultivations performed on root crops were partly done

for the benefit of succeeding crops in their rotation. How much of the cost therefore should be allocated to the following crops, and in what proportions?

It is impossible here to deal with all the methods which were suggested to cope with these problems. One or two examples may however be given. The cost of producing grain and straw might be apportioned to each on the basis of market values or of food values, the resulting figures being the cost of production. A calculation of costs based on these two showed wide divergencies and it was stated that they "suggest an urgent need for further consideration." 7

In regard to the manurial residues of foods fed to stock the work of Lawes and Gilbert at Rothamsted and later of Voelcker and Hall had suggested a method by which the cost of these residues could be obtained. Similar work by Voelcker and Hall on the duration of the action of farmyard manure and of purchased fertilisers on crops was also the suggested basis for the apportionment of cost between crops in a rotation. Thus manure might have a theoretical value based on the metabolism of one or two animals while that theoretical value would be distributed on equally arbitrary lines. Orwin himself was aware of all the difficulties. "The facts that the conditions of making and storing farmyard manure, and that the influence of atmosphere and soil conditions upon the effect and duration of it and of artificial manures may produce wide differences in their action is inevitable, but no better method has been devised." 8

Introducing even more difficulties in the matter of allocation was the question of on-cost and establishment charges. No exact apportionment is opined to be possible in industrial concerns. Agriculture provided no exception. Nevertheless it was decided to apportion on-costs in relation to labour used in each department and establishment charges over productive departments only.

Before the publication of the second volume of Farming Costs new problems had arisen. Hitherto no question of what was and what was not to be included in cost of production had been discussed. Most of the items which had been dealt with previously were those which might normally be found in the receipts and payments of the farm and therefore common to all of them.

7 Fn. In the 1921 issue straw and wool were taken as having no cost.
The first of these new items which called for consideration was rent. The common system of land tenure in England and Wales was, and is still, that of landlord and tenant, the latter paying a rent for the use of the land and buildings, usually on a yearly tenancy. The economic concept of rent therefore raised the question whether the rent paid by tenants should enter into cost of production. Orwin held that rent as paid by farmers covered more than marginal differences due to fertility, and so forth. Economic rent he considered did not "bulk large in the rents of farming in the country as a whole" but that what the farmer paid largely represented a return on the cost of capital improvements. Orwin came to the conclusion that it entered into costs and suggested its apportionment over the land on an acreage basis and by allowances for hill land and other inferior land which might be let with a holding. A division between buildings and land was considered an impossible task.

It is rather curious to note that where the land was owned by the occupier, the interest on the money expended on purchase was not to be a charge against cost nor was an interest charge for the farmer's working capital to be included in the cost of production. Interest was held to be a division of profits, and therefore to be reviewed only when considering the magnitude of these profits. It was erroneous also to charge for the farmer's own management as a cost, this again being considered to be a division of profit.

The economic theory that the real cost of production is the sum of the efforts and abstinences necessary to make goods into a state for consumption did not enter into the discussion. The difficulty of course was that in respect of many of these items no money was passing, and therefore hypothetical values had to be assigned to them. The difficulty of getting a valid basis for their apportionment to departments of the farm was also great.

The work done at Oxford and the system advocated by Orwin attracted a considerable amount of attention, which was further stimulated by the fact that during the war prices of corn were fixed, and there was need for information for making decisions as to maximum and guaranteed prices. This led to the setting up in 1918 of an Agricultural Costings Committee which was charged with the task of securing a wider body of evidence on costs than had hitherto been secured. The supervision of the costings was placed under central control of a director in London. The
work of this committee came to an end in 1921 and it was too short lived to do any work of importance on the question of costs. On the question of principles, however, it decided one or two fresh ones. "Cost of production" was defined to include a charge for the unpaid labour of the farmer and his family at rates at which equivalent labour could be obtained in the district and also a charge for paid management; but no charge was to be made for the managerial services rendered by the farmer or for interest on the capital employed. In order, however, that results might be comparable between farm and farm, allowances for unpaid management and for interest on the capital legitimately employed were to be noted separately in the cost statements.  

The next development in cost accounting took place during the years 1922 to 1926. In view of the condition of agriculture during the post-war years the value of systematic study of the economics of farming was gaining recognition. In this, cost-accounting studies were expected to play an important part. Accordingly, as part of the research and advisory services of the scheme of agricultural education in England and Wales, agricultural economics officers were attached to various university and college centers, who were entrusted to advise farmers in the economic questions affecting farming and to collect data and study it with the view of making advice more sound and effective. The activities of the advisory economists have been devoted in many cases to the extension of costings work.  

In order to secure uniformity of method a committee of the advisory economists and representatives of the Agricultural Economics Research Institute, Oxford, and of the Ministry of Agriculture and Fisheries was set up to decide the principles and methods by which this uniformity might be obtained. While uniformity was by no means a new phase in cost accounting—it has been used by Orwin since 1913—it became an essential feature, if farm results were to be compared with one another. A farmer who keeps cost accounts for his own edification need not concern himself particularly about other peoples' systems so long as his own tells him what he wants to know but immediately he wants to compare his results with another, if that is a desirable and advantageous thing for him to do, then he is forced to conform to a common standard. So the committee prepared a body of rules

*Fn. A. C. C. report.
to which all cost accounting work should conform. It is not necessary here to give a complete list of these rules.\textsuperscript{10} Suffice it to say that they are in many respects similar to those previously suggested by Orwin. Specific all-in costs of production were intended to be secured. Arbitrary divisions of costs were inevitable but the spirit, which I think may be said to have actuated the committee’s decisions, was to get as near to the real cost as possible. The methods were probably the best which could be devised in the circumstances. Rent was to be allocated on an acreage basis; certain overheads which had relation to the land itself, as for example, road repairs and fencing, were to be distributed like rent, and other overheads were to be distributed on the basis of manual labour in each department. Cost of production was to be used for home-grown foods used on the farm. The cost of straw was taken to be one-seventh of the total cost of production (except marketing) in the case of wheat, barley and oats. Certain rules were made for the distribution of the cost of manures and of cleaning costs, as between crops and years. When land was laid down to grass for a short term, the original cost was to be spread equally over the term. If for any reason the ley did not last the full period any unallocated cost was to be written off. On the other hand, if it was retained over the period originally contemplated no charge was to be made for the extended years. And so on, in similarly arbitrary lines, for other points which might give rise to dispute. The list of rules is by no means complete. There are many matters which yet call for a decision to be made.

The rule in regard to interest on capital and management is interesting. It is as follows:

"Interest on Capital and Management Charges should not be brought into the accounts (except where cash is actually paid). They should be borne in mind in considering whether the profit is sufficient reward for the capital, management, and labour. In comparing two farms or two systems of farming, the result in each case must be interpreted in the light of capital sunk and labour given without wages. The value of unpaid labour (apart from management) should be estimated and records kept of such charges; such charges must always be kept separate in the accounts. Where cash is paid for interest or Management (exclusive of

\textsuperscript{10}Fn. For complete list see Appendix to "Cost Accounting Applied to Agriculture." J. S. King, Oxford University Press.
bailiff's wages), the charges should not be divided between the accounts for the different farm products but should appear in the profit and loss account. In the memorandum accompanying the accounts, references should be made to the extent of the non-chargeable items."

It must not be thought that these rules were unanimous decisions of the committee. On the contrary, to take some examples, the division between grain and straw was challenged on many occasions on the ground of great differences in the value of this commodity not only as between different crops but also as between various parts of the country. Similarly, the division of rent over the land on an acreage basis has been disputed on the ground that it takes no account of the use of buildings and permanent equipment, which, as we have seen, was considered to form an important item of the rental value of holdings. When any new equipment was erected for special purposes, such as extension to cowsheds, the extra rent charged in respect of this improvement would be spread over the land, with the result perhaps that it was possible that cows, for which it was intended, would not be charged with the whole of this cost, and in any case it would be nearly impossible to say whether they were or were not. The principle of including rent as a cost was criticised in committee because it represented differential advantages, and also that it merely represented part of a surplus out of which it could be paid. The principle of exclusion of interest on capital in departmental costs was also disputed, "The cost of producing the capital engaged in the production of any article is an element in the cost of producing that article."

None of these criticisms, however, challenged the validity of the aim of the cost accounting method in obtaining all-in costs of production for individual crops and departments of the farm. Early, however, in the life of the committee, Dr. King, in a memorandum submitted on the treatment of rent, hinted that he did not altogether accept the analytical method as a means of getting at the real facts involved in a study of farming efficiency:

"The problems suggested by an attempt to make a valid apportionment of rent illustrate the difficulties inherent in attempting cost accounting on the basis of individual crops and products, involving as it does, a number of approximations and estimates. An alternative method of approach to the problem, which aims at
the elucidation of the economic efficiency of the farming system as a whole, may offer fewer difficulties in execution and in interpretation of the results."

He has since embodied his views on the whole question of cost accounting in his book, "Cost Accounting Applied to Agriculture as an Aid to Productive Farming." In that work he stresses this consideration as being important:

1. "A comparative study of farming costs must be preceded by an analysis of the farming system, in order that the economist may see the problems through the eyes of the farmer and state his results in a way which has a definite relationship to the practice and problems of the industry. . . .

2. "Cost accounts should be directed to the computation and comparison of the costs of carrying out the functions necessarily involved in maintaining the land in a condition suitable for production and in producing saleable products."

The analytical system, of course, recognised the interdependence of many farm enterprises and of one department on another, and of joint products. But Dr. King held that it would be difficult to justify a claim that errors introduced by the approximations involved in segregating the values of each interdependent product were negligible, and he came to the conclusion that the interdependence of the several branches of the farm is so great that it is impossible in most cases to determine satisfactorily either the cost of production of specific products, or the profit or loss on any one branch of the farm. "Profits or losses in individual departments do not arise independently of each other," and, "it may therefore be said that in general the individual farm product has no final cost that is determinable independently of the costs of other produce."

He objects entirely to the unit cost idea with its arbitrary apportionments and adjustments, the result of which is only to confuse the farmer and to lead to much undoing of calculations if the farmer is to make any use of them. The chief value of cost accounting to the farmer is considered mainly to be a means of checking waste, of estimating the effect of changes within the system of farming and of comparing his achievements with his estimate. The method which Dr. King substitutes therefore in-

"Oxford University Press, 1927.
"Cost Accounting. J. S. King, op. cit."
volves the entire abandonment of the unit cost principle. In view of the interdependence of various farming enterprises he does not think that the individual products are really the "natural division" upon which the classification of expenses rests, and that it might therefore be a more fruitful method of approach to the problem of farm management to inquire what part any crop or product plays in the farming system, that is, what is its contribution towards maintaining the physical balance without which the farm could not continue to function. To take a simple example: the growing of turnips and swedes in an eastern county on an arable farm and the keeping of bullocks or sheep to eat them off might be considered as a separate function in maintaining the fertility and cleanliness of the arable land for the production of saleable crops.

The method adopted therefore begins with an analysis of the structure of the business, that is, the use of land, the amount and distribution of capital, and the employment and distribution of labour, and other power.

The financial analysis is much simplified. No attempt is made to assess the secondary benefits (such as manurial residues of foods or residual value of cleaning cultivations) which may be derived by one department from expenditure laid out on another. This is probably considered unnecessary if the accounts are kept so as to trace clearly the functions of each part of the system of farming practiced. The greatest change made however is that no attempt is made to divide expenses of a general nature between the different enterprises of the farm.

The financial data are therefore analysed along two lines, (1) prime costs, and (2) overhead expenses. Prime costs are those which are incurred specifically in the interest of the various enterprises and are therefore easily apportioned. They include manual labour, horse labour, tractor work, feeding stuffs, artificial manures, seeds, and various minor expenses. They are costs which are variable from year to year according to the extent of the several enterprises in operation.

Overhead expenses are those costs which are incurred in the interest of the farm as a whole, and although subject to some small variations, remain unaffected by relatively small changes in the farming policy. These are divided into general and sectional overheads. General overheads include (a) bailiff and foreman's
wages, the use of car, office expenses, hedging, ditching, and sundry work, (b) bank charges and interest on overdrafts, (c) rents, rates and taxes, mortgage interest, and costs of upkeep of buildings, and (d) equipment costs which are used in common by all sections of the farm. Sectional overheads are expenses which "whilst peculiar to a section of the farm, are not apportionable on any satisfactory basis between the activities which occur within that section." They include (a) the part of the farmer's time devoted to supervision, (b) drainage costs affecting one section of the farm activities, and (c) certain charges for the repair and depreciation of implements used specifically for some enterprise, as for example, dairy utensils. It was therefore suggested that implements should be classified within the main divisions into which the farm activities fall, in order that the charges for upkeep and depreciation may be allotted sectionally.

This is a somewhat, and necessarily, abbreviated summary of the King method. I have quoted abundantly from his work, but I may conclude with another quotation which I think expresses clearly the intention behind the system which he advocates:

"The determination of costs in farming must be carried on in the same spirit as that in which the farmer conducts his business. He has to paint his picture on the landscape with a broad brush, taking the risks of the season and looking at the result as an artist looks at his canvas, so as to take in the total effect. His paints are his men, horses and equipment, and he must arrange them in combination to economize in the use of each, having regard to the circumstances prevailing at the time. The cost accountant must follow suit and look at the farmer's intentions broadly. He must avoid the danger of missing the real problem by giving undue importance to detail. It would appear to be better to look behind the crops and the stock to the part they play in the farm economy, and deal with their costs accordingly, making such allowances or reservations as the practical man would do when making his decisions on farm policy."

Dr. King's method of cost accounting is in use at the Midland

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38 Mr. King thinks that the apportionment of the items listed under (a) would merely introduce uncertainty into comparisons which are otherwise more definite. Bank charges and interest on over-drafts are considered to be the costs of financing the business. Rents, rates and taxes, and so forth are considered to be costs which arise from the conditions of tenure which ought to be kept separate, and for comparative purposes, not allowed to disturb costs relating to the use of the land.
Agricultural College and Reading University. It is only quite recently, however, that the latter department has issued the first published examples of the method, so that I have had little opportunity to study the practical application of the two systems in any great detail. In the preliminary analysis of structure of the farm business the two methods have common ground. In the cost of various crops and departments of the farm there is comparability in the direct cost of manual labour, purchased feeding stuffs and other purchased material. From this point the two systems, as I have tried to show, part company. The division of costs into prime costs, which are allocated departmentally, and overhead expenses, which are not distributed but are to be met out of the differences between prime costs and returns, by the King system, has considerable merits and appears to be an effective method of studying farm management questions. The method also simplifies office work, a point of some importance in cost accounting.

On the other hand, the analytical method, in which the crop and department costs are inclusive of rent, rates and overheads, even though some of the figures may have been obtained by methods which may be violating scientific or economic principles, has provided cost information in a form in which farming opinion has been accustomed and therefore perhaps it is more readily appreciated and understood.

From recent literature on the subject of cost accounting in the United States there would appear to be a considerable controversy not only as to the methods in use but also as to the objectives in cost account studies. The agricultural economists in this country would welcome the views of our visitors not only on their methods in cost accounting work in the United States but also of the validity of the criticisms which have been made in regard to them.

There is one aspect of the subject on which I might touch in conclusion. In this country we may have been inclined to place too much emphasis on the value of cost accounting in farm management research. At Oxford we are now inclined to give this aspect of our work a relatively minor part, for two reasons, the
first being that the expense of farm management investigation by the cost accounting method is high, and with a limited amount of funds, this necessarily means that only a small number of farms can be studied. The second point arises out of the first. Farm management research will only begin to yield valuable results when a systematic study is made of a large number of farms over a wide area. Cost accounting data are not representative of farming and on this ground it is now considered that the funds available for research might be more usefully applied in other directions.

DISCUSSION OF MR. BRIDGES' PAPER

Dr. King—I thank Mr. Bridges for his generous assessment of my small contribution to this subject. The view I have expressed is that the function cost accounts can perform for the individual farmer is to aid him in the management of his farm rather than to enable him to compare the total costs and sale prices of his separate products. They can help the farmer to avoid waste and to compare the expenses involved in alternatives which may be open to him under the circumstances in which he is placed. For the economist these results may seem unimportant. The use of cost accounts for the purpose of trying to compare individual product costs and selling prices is, in most cases, impracticable. Cost accounts may, however, help us to arrive at marginal costs.

The research worker can carry his analysis of costs further with advantage. If the division between prime costs and overhead charges is adopted, the total of prime costs does not provide anything comparable with the selling value of a product, and the surplus of sales over prime costs is no measure of profit. But in comparing farms similarly situated, it does become relevant to compare prime costs and surpluses, and also the overhead charges,—though it is irrelevant to make these comparisons on dissimilar farms operating under different conditions,—for the purpose of comparing the efficiency of the farmers. The economist may however, get information which helps him to advise farmers if he is familiar with their circumstances and environment. Dr. Warren referred to the place of cost accounting in research, as providing the means for comparing an exceptional farm with a more normal one. It would seem that cost accounts should come in at the end of the scheme of enquiry and not at the beginning. In our Scottish work we are measuring the general status of groups of farmers by means of financial accounts. We then propose to apply cost accounts for showing why some individual farms are doing better than others similarly situated.

Dr. Taylor—Some years ago I kept detailed costs at a farm on which I was living. It is a subject in which I feel many people have wandered long in the woods. It seems now that we are approaching some practical procedures. Dr. King's methods, so far as it relates to the relative cost of doing things, is only one side of the subject. The question of what
we shall produce, is not settled in our country. Oats, barley, and spring wheat all occupy the same place in the field system, preceding and following the same crops. Which of these crops shall we grow? Is it necessary in order to answer this question to go to the trouble of keeping complete cost accounts? We can list the elements of cost and find how many of them are common costs, cancel the common costs, then determine and compare the differences in cost. The same method Dr. King applies to the cost of production activities can be applied to the choice of crops. Cost accounts should, in my opinion, be used, not as a basis of statistics, but as a means of helping the farmer to visualize his own problem. We always want such figures as will answer questions. Any figures which do not help answer questions are an encumbrance. We need to know the relative profits of the alternative crops and the relative costs of producing these crops.