

SOME CONSIDERATIONS RELATING TO THE STATISTICS OF IRISH PRODUCTION AND TRADE.

BY W. G. S. ADAMS, M.A.

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BEFORE proceeding to the considerations directly connected with the statistics of Irish Trade and Production, I should like to draw attention to a general question which bears on the matter under discussion. The growing importance of social and economic policy, the sense that all private business has a public side to it, and the need that public interests should be adequately safeguarded, present conditions which have favoured the development of State functions of inquiry and control. But these functions have been growing so gradually as to be hardly observed by men engrossed in affairs. It is only when a great step forward is made, such as the Census of Production Act, 1906 (6 Ed. VII., c. 49), that there is in the public mind a general heave of consciousness of the fact that the State has developed new eyes and ears and hands, and the ordinary suspicious mortal asks himself how it will affect taxation.

However, the fact is there that, with the great increase of industrial and social legislation, the inquisitorial faculty of the State has become very much more highly developed, and one nation cannot afford to be behind another in its knowledge and scrutiny of social and economic conditions. Now this development is healthy because it is, on the whole, business-like. It is the public stock-taking of how we stand as producers and traders and consumers, and it is most necessary that not simply individuals but the public itself, or the legislators and administrators, who are, or ought to be, the guardians of the public interests, should have authentic records of the state of the production and trade of the country. It is healthy, too, because it is not the inquisitorial system of a superior force seeking to squeeze out of the people all the wealth it can, but the action of the public will, seeking to determine the existing state of affairs with a view to increasing the total wealth of the nation, to improving the conditions of its production, and to bringing about, as far as possible, an equitable distribution of that wealth. In all these matters affecting the production and distribution of wealth in the broadest sense of that term ignorance is the greater danger. For we have to fear radical theories on the one hand and passiveness or inertness on the other,

far more than the searching examination of the facts of the production and distribution of wealth and of the forces which contribute thereto, even though this examination should shake the base of many of our beliefs and of much of our existing social and economic system. To-day, with the awakening consciousness of political power in the masses and with the organisation of this power, the great danger is ignorance, and as a result, legislation on economic and social matters directed to reach conclusions without proper examination of the premises of fact. Hence, from a general point of view, we must approve the activity of the investigating and stock-taking faculty of the State. The first justification, therefore for this development of the State functions of inquiry is based on grounds of public policy.

But there is a second reason and justification, viz., the healthy development of private enterprise. I know of hardly any field of modern economic investigation so interesting and in some respects so complex and difficult as that of inquiry into the proper relation of public to private enterprise. Slowly and empirically there are being evolved the relations of State action towards private enterprise, but undoubtedly we suffer at the present time from the lack of scientific and higher conscious thinking on this most vital subject. Now while we cannot enter here on the discussion of the wide problem of State aid in relation to industry, it is well to emphasise the fact that one of the most direct and best services which the State can render to industry is that of collecting and publishing information with regard to the state of trade and production. This work of systematic inquiry can only be properly carried through by the State. The authority to require returns, the machinery necessary to collecting them, and the expense involved in compiling and publishing the results—all thrust this work on the State; and the complexity and competition of modern conditions only increase the necessity of such governmental organisation. Thus, to put the matter more concretely, it is evident that one of the greatest advantages to industrial development which Government can afford consists in collecting reliable and properly differentiated information as to imports and exports, what class they are of, their origin and destination, and the changes in supplies. Such information is of great value to the producer, for it enables him to see the extent of the market, and to judge where there is an opening for trade. But it is not enough to have statistics of imports and exports, valuable as they are. It has been recognised by modern Governments that in order to take stock of their economic conditions it is necessary to establish a periodic survey of industry and production. There are many ways in which such information is of public value, but I should like to refer to one aspect which recently has been receiving much attention. It is felt that if Government is to protect the community against monopolistic blackmail and against excessive fluctuation in supplies, one of

the most necessary steps to this end is to secure, as far as possible, complete and reliable statistics of production, and to deal not only with the actual output and disposal, but with the prospects of future production. Government, if properly organised, has unequalled opportunities of ascertaining the true state of affairs, and such powers should be developed and exercised on behalf of the community, and the several Governments should co-operate for the mutual interests of their communities. To a large extent the strength of the modern monopolist or engrosser is at present his more complete information as to the state of supplies, or, at least, his power to keep others in the dark as to the state of these supplies. Hence if Governments unite in a system of collecting and clearing information in a reliable and expeditious manner they will help to check the fluctuation and speculation which at present form so heavy a tax on the producer and consumer alike. A great advance in statistical organisation towards this end is now being attempted by the International Institute of Agriculture at Rome, an Institute which is statistical in its basis, and which has this year commenced its work with considerable prospects of success in organising international statistics of agricultural production. There are great difficulties to be overcome, but the progress already made has been nothing short of remarkable, though patient thought and organisation will be required before the practical objects in view are realised. This international recognition is a striking example of the attention which should be given to statistical inquiry with regard to production and trade, and of the importance of this matter to each nation.

Turning then to the question of the statistics of Irish trade and production, we may consider first of all certain matters connected with the records of Ireland's external trade. The position of these statistics, stated briefly, is as follows:—There are at present available the records of Imports and Exports at Irish Ports for the four years 1904, 1905, 1906, and 1907. The fifth Report, dealing with the year 1908, will, it is expected, be ready for publication in July or August of this year. The returns are thus being brought steadily nearer to date, the first Report having been issued in November, 1906. These statistics are, however, still in many respects imperfect, but considerable improvements have been made in the later issues, and the latest Report, viz., that for the year 1907, furnished returns which may be taken to represent close on 100 per cent. of the Irish trade. In the case also of ports whose trade was not recorded in the first Reports an estimate for these years has been made and included, so as to furnish, as far as possible, a record, which may be regarded as comparable for the series of years from 1904 onwards. Again in a number of cases returns have now been secured furnishing information of a more definite and specific character than was at first available, while considerable improvement has also been

made in obtaining more complete records and greater uniformity in respect of weights and measures. Similarly, many special inquiries have been carried out with regard to the estimated values of different commodities, and generous assistance has been given the Department in this work alike by importers and exporters. Thanks also to the increased attention which has been paid on the part of the Consuls at foreign ports to distinguishing Irish from British trade a certain amount of additional information can now be gleaned as to Ireland's trade with countries other than Great Britain. But this class of information is still extremely meagre, and it is plain from the Consular Reports that no zeal on the part of the Consuls can distinguish Irish from British goods when the declaration forms indicate simply the United Kingdom as the source of origin. It is clear that nothing short of an entry in the exporter's declaration to the Customs stating that the article is of Irish origin and manufacture, and similarly in the case of imports a statement distinguishing Ireland as a country of destination from Great Britain—two changes in the form which do not seem technically serious—nothing short of this will secure a comprehensive and reliable record of the extent of Ireland's trade with countries outside Great Britain. It is very desirable that this information should be obtained, and it would be much more satisfactory to have a record checked and furnished by our Customs system than to depend on the several foreign governments being able and willing to distinguish Irish from British exports, and similarly to distinguish their exports intended for Ireland from these destined for Great Britain.

As will be seen, then, from this brief statement, there has been considerable progress made towards the completeness and greater reliability of the statistics of Irish trade. But there are still serious defects, and there is no reason to hope for much further improvement in our existing information until there are statutory powers given to a public department, such as the Department of Agriculture and Technical Instruction, enabling them to secure the necessary particulars of information with regard to imports and exports.

The main defects are as follows :—

First, and most important, the absence of declared values.

At present the available returns indicate only the class and weight or measure of goods exported ; the value has to be estimated officially. Now a system of declared values, *i.e.* of declarations made by the trader as to the value of his goods, is better than the best system of official values. It has been stated to me, more than once, by some of the traders with whom I have been investigating questions arising out of the import and export returns, that declared values would not be reliable and that there is no need for a change in the present system. But this argument has little force in it, for, granting even that a percentage

of traders do not give reliable estimates of values, it is certain that the returns furnished by a large number would be reliable, and, combined with the system of inquiry which is adopted in fixing official values, a much more reliable estimated value would be reached than is at present possible. Therefore, in the first instance, declared values, rather than official values, are one main point of reform. Second, descriptions and classifications of goods require to be improved. At present many descriptions of goods are too general in character to be of any great practical value as a guide to trade, while, owing to the indefiniteness of the description, the value which is attached to them is open to question. For, where things are not specifically declared, it is difficult to check their values, and where not only the declaration of the class of goods is general, but the value is not declared, any official estimate of value, despite inquiries, can, in most cases, only be of a very rough and speculative character. Fortunately, the extent of this indefiniteness has been, to some extent diminished, but there is still approximately 25 per cent. of the trade where the descriptions of goods are highly unsatisfactory and where the values attached may be considerably in error. Better differentiation of articles, in accordance with accepted trade classifications, is, therefore, a second reform of great importance. The third difficulty, which is connected with the measures and weights of articles, is now much less serious than it was in the first years. In the case of the returns from most ports the weights are now declared in standard measures, but the fact that, in most cases, the weights are gross and not nett adds a further complication in the calculating of values. Estimates have to be made as to the weight of packing and tare, and here again the problem would not be so serious if there was a system of declared values to fall back on. There is also the difficulty that in the case of many articles, weight is a very unsatisfactory measure and quantity should be recorded rather in such terms as dozens or yards. Finally, a serious defect in the returns is the absence of declarations as to the country of origin of goods imported into Ireland and the country of destination of goods shipped from Ireland. This point only affects the trade with countries outside of Great Britain, and, while we have received the most generous assistance in their power from the Customs Authorities in giving us information with regard to direct imports to and from Ireland, it will be a great step forward when Irish imports and exports to and from countries, other than Great Britain, but passing *via* British ports, are recorded by the Customs separately from goods of British manufacture.

With regard to the carrying out of these reforms only one thing need be said here. The present voluntary system is inadequate, and cannot be made adequate, and while it has

furnished information of admittedly great value it is necessary that powers should be secured which would require exporters to Ireland or from Ireland to declare the nature, value, weight, and destination of their goods. You must go back to the exporter, for neither the railway companies, nor the shipping companies, nor the harbour authorities, are at present able to give the necessary information. Such a change will necessarily involve some additional inconvenience, but this need not be great, and the object in view is of the highest importance from a national standpoint.

This leads me therefore to the question of the use and value of these returns. The first object of such trade returns is to measure, as a whole, the trade of the country, to determine how large that trade is, what is the relative importance of the several parts of the trade, with what countries the trade is carried on, what fluctuations the trade is subject to, and how far there is a movement of increase or decrease in the total of the trade. These are the general questions to which an answer is expected from such trade returns. The second use, and in some ways this is more important than the first, is the commercial value of the information with regard to particular items of trade. Import and export returns, when complete and accurate, furnish highly valuable data as to the extent and character of the trade in different classes of articles. For example, it is very important that the question of the Irish linen trade, which is mainly an export trade, should be known, not simply as a total for the whole trade—as is the case at present—but in respect also of the main divisions of that trade, so that it may be possible to measure both the changes in the output of the total trade from year to year and from decade to decade, and also in the several separate branches of that trade, such as the coarse and fine goods, piece and made-up goods, plain and embroidered goods. Similarly with regard to imports, it is very important to learn, for example, the quantities and values of the different main classes of woollen goods which are coming into Ireland. I do not know any single measure of Government which would be calculated to be more directly beneficial to the industrial development of the country than accurate and detailed information on such matters. There are at present a great many articles, many of them of much importance, about which, as things are, we can get no reliable information. Take one or two common instances. There is, for example, the case of leather and kid gloves. We know that these gloves are at present made at one or two centres in Ireland, but the output is very small and the import correspondingly large. How many tens of thousands of pounds sterling that import runs to it is quite impossible to estimate from present information. The big trading firms cannot do it. The import statistics throw no light on it, for gloves are lost in a general heading with “haberdashery,” and so we are unable to state a most important

fact about this industry, viz., what is the annual demand of the Irish market? Yet this is an industry which, like other leather industries, seems capable of development in Ireland, and if we could give such information it would be a stimulus to existing Irish manufacturers to extend their home output, or if they were unable to do so, to induce others to come forward into this line of business. What is true of gloves is true of a hundred other articles, some of more, some of less importance. Now to get at the quantity and value of these imported articles is a question of the greatest interest both to the country as a whole, because it is information which the country should have, and to the individual man who is looking at the possibilities of different market centres for purposes of production.

It is, therefore, most necessary that the information should be specific. General information, such as "Haberdashery," is of little use, and is open to great inaccuracy. What we require to know is the quantity of gloves, of hats and caps, of handkerchiefs, of ready-made suits, of stockings, and of the many other items which are at present lumped together under such general headings as "hosiery" and "haberdashery." And here let me emphasise one point which deserves special attention. The difficulty of ascertaining the nature and value of goods is much greater in the case of imports into Ireland than in the case of exports, for compared with the imports the exports are few and simple. Exports of agricultural produce, such as live stock, bacon, butter, eggs, potatoes, and of commodities, such as spirits, porter, ships, are much easier to record and to estimate, partly because the articles are more homogeneous in character and partly also because in such articles as ships or porter the manufacture is concentrated in organisation, and information is therefore more easily obtained. Even in the case of the linen industry, though there is a large range of goods widely different in quality and value returned under the general heading of "Linen Goods," it is possible, owing to the fact that the manufacture is so highly developed at a limited number of centres, to obtain a great deal of information as to the classes of goods which are going out and the allowance which should be made in attempting to estimate the average value of consignments. No doubt even here there is room for considerable error, but, nevertheless, it is much less difficult to estimate value in these cases than when dealing with the very heterogeneous consignments of imports which come in under general terms such as "Machinery," "Hardware," or "Haberdashery." Now, this raises a further point, which deserves attention. It is, I hold, much more important for Ireland to have exact and detailed records of her imports than of her exports, because they show the extent to which the country depends on outside sources for its supplies, and afford data of the greatest value to manufacturers, who may see possibilities of successfully developing centres of manufactures to supply

home markets. But it is precisely in our records of imports, especially of manufactured articles, that the present returns are most defective.

Having got, however, our figures, certain important questions arise with regard to their interpretation. So far as the present records are concerned, one of the outstanding features is the balance of imports and exports. In all four Reports imports appear to exceed exports. In the returns as revised and made as complete as possible the balance of imports over exports for the year 1904 amounted to three millions; in 1905 to slightly under three millions; in 1906 the balance in favour of imports was less than half a million; and in 1907 rather exceeded one million. These figures point to a very close approximation in the value of imports and exports, but it should be pointed out that with the uncertain nature of the existing statistics it would be quite unwise to assume that the correspondence is anything like so close as would appear from these figures. But even when the balance has been determined great caution will be necessary in attempting to explain the cause of the favourable or unfavourable balance. For while there has been considerable difficulty in determining so far the visible imports, the task of even estimating approximately the invisible elements in the total balance-sheet is a very much harder undertaking. Let me explain how the case presents itself. The doctrine that imports are paid for by exports is, as students of the theory of international trade know—open to misunderstanding. For it is not always kept in mind that the statement that exports pay for imports, or that imports and exports must equalise, is only true when all kinds of imports and exports, visible and invisible, are taken into account—the past, the present, and the future, also being called in to adjust the balance. We have thus not simply to deal with the exports from and imports to Ireland of merchandise, viz., goods such as food stuffs, raw materials, and manufactured articles, including specie and bullion, but we must take into account the earnings of Irish shipping, the tourist and passenger traffic to and from Ireland, the annual interest on Irish capital invested abroad, the annual remittances of Irish capital abroad for investment, the remittances of rent from Ireland, the remittances of money from Irishmen abroad to friends in Ireland—all these and many other factors must be accounted for in attempting a complete balance-sheet. But it is not possible to determine from existing materials anything in the shape of a complete estimate of visible and invisible imports and exports which would be worthy of credence. For, let us take some of the factors. First, you have the earnings of Irish capital invested outside Ireland. You cannot ascertain from any Government returns what are the earnings received in Ireland from investments outside Ireland. Even if all such income did come under the review of the Commissioners of Inland Revenue in the Income

Tax declarations, still, owing to the principle of taxation at the source, the returns are not made up in such a way as to show how much income is received by residents in Ireland from investments outside of Ireland, and I doubt if even a special analysis of the existing Income Tax returns could furnish this information. Failing Government statistics, I have asked bankers who have exceptional opportunities of judging such operations if they could hazard a figure, but the answer I have got is that it would be very difficult to form any really trustworthy estimate. Much less are stockbrokers able to do so. Yet this annual interest on investments is a very important item in the account, for it is, I should say, certain, on the imperfect evidence which exists, that several millions sterling are received annually from this source. Take a second case, that of the imports and exports in the form of travellers and tourists, who annually, for business or amusement, come to Ireland, or who, *vice versa*, being residents in Ireland, leave Ireland for some period during the year. Who is going to try and estimate what this means? I cite these cases simply because there is an idea current even in some of our leading financial papers, which have discussed the Irish Import and Export Statistics, that as the visible imports and exports have been determined, the Department should set to work on the larger questions of the balance sheet. Now, with all possible desire to see done what can be done, I say that, in the world as it is to-day, many of the items cannot be determined, and that it would be an unprofitable expenditure of time and money to try and circumvent them. But while this is so as regards the complete tale, it brings us face to face with the realities which we have to deal with, and though we cannot get all the facts, we should, as far as possible, make the best attempt to get at the items which are possible of being determined.

Before leaving, however, this question of the balance of trade, there is another aspect of the question which deserves attention, viz., the influence of the invisible on the visible trade. Is the visible trade largely swollen by the invisible? Thus, for example, the view has been expressed that as a result of land purchase operations (advances from the British Government on the one hand and remittances of annuities from Irish farmers on the other), payments are made in produce, and the import and export returns thereby immensely swollen. Now if this is true of land purchase transfers, there is no reason why it should not also be true of many other transactions which affect the credit and debit side of Ireland's accounts, and which would, therefore, largely swell the apparent trade of Ireland. But is not this an erroneous reading of the theory of international trade? For the invisible imports are first of all paid for by the invisible exports, and the settlement of the various credits and debits is carried through by the clearing system of modern banking, and is a matter largely of the transfer and setting off against one

another of entries in the bank accounts of the two countries. Thus with land purchase transactions it is surely the case that these financial transactions are very largely a matter of changing accounts and investments. The Treasury money, for example, which is paid over for Irish land purchase finds its way into the hands of land-owners who use it to pay off mortgages, many of which are held outside Ireland, or else to re-invest it in Government securities, or in commercial undertakings largely outside Ireland. Similarly, there are all the manifold invisible imports and exports which are set off one against the other and cleared by means of the mechanism of modern banking. Even when one comes down to examine the transit of specie this has been greatly reduced in modern times, and the amount which passes between Great Britain and Ireland is, on the whole, very small, and is due chiefly to the state of the bank-note circulation and the legislative requirements connected therewith, or, for example, to an increased demand for small specie payments, such as has been seen recently in connection with Old Age Pensions, or to some large special import as that of the Bank of Ireland when strengthening its gold reserves. The extraordinary development then of clearing and exchange work in banks, the facilities for investments, and the easy transfer of all kinds of invisible wealth, are the forces which bring about the equilibrium of indebtedness rather than the movements of specie or the movements of goods. Therefore I think we should not speak of the trade being swollen by land purchase operations. At the same time land purchase operations are certain to influence the producing and consuming power of the country, and should, on the whole, increase the same, and thereby probably affect imports and exports. But such increase of trade is normal and not a temporary inflation.

Now, when we leave this point and proceed to ask how far the imports and exports, and their growth or decline, measure prosperity, it is plain, as has been stated repeatedly in the Reports on the Imports and Exports of Ireland, that in themselves imports and exports are not a satisfactory measure of wealth. A country may grow rich with a very small external trade. It is possible for a country to remain comparatively poor with a large and even increasing external trade. The truth is, that it is necessary to look at a great deal more than the totals of trade. We require the figures of production as well as of trade; we require also inquiries and results as to comparative profits; we further require to know the character of the exchange. And, in passing, I wish to emphasise this last point, which in the industrial development of any country deserves close consideration, viz., that the character of the imports and exports is as important as their quantity. It is not one and the same thing what a country produces. It is of the highest importance that the industries of a country should be such as require skill in labour, afford good

wages, and, as far as possible, regularity of employment. Now, the value of the import and export returns consists to no small extent in the analysis of the trade of the country and in showing how different industries are progressing and declining, what things are being more and more imported, and what things exported. In the case, say, of agricultural produce, the import and export figures on the whole indicate, in a fairly satisfactory way, the change in production. If the industry is desirable, and it is admitted that most of our agricultural industries are desirable—and if we see the home market supplied, and the quantity and quality for export increased, it is a mark of progress. But, as stated, statistics of imports and exports must be considered in the light of statistics of production, and while, so far as Irish agriculture is concerned, there have been for sixty years the annual statistics of the acreage and produce of crops and number of live stock, there has been no record of the output of the manufacturing industries of the country until the establishment of the present Census of Production. These statistics of production will, therefore, be of great interest, as the output of Ireland will be shown separately and so will be available for comparison with the Import and Export Statistics.

In the case of agriculture, however, it is clear that many of the estimates of production can only be of a very approximate character. For in agriculture you have to deal not only with a very large number of small producers but you have also the fact that these producers consume to a considerable extent their own produce, and that they do not keep an accurate account of their total production, or even in many cases of their sales. Hence, in a community of small farmers who do not keep careful records of production, it is not possible by simple inquiry and addition of the several returns to arrive at a figure of total production as in the case of the Census of Manufactures. Thus, to take the estimate of the total production of butter. At present the total estimate can only be formed on the basis of inquiry as to the average yield of milk per cow, the consumption of milk by humans and animals, the quantity used for manufacturing purposes other than that for butter, and the quantity of butter which will, it is estimated, be obtained from the remaining supply of milk. There is also collateral evidence which is of use as a check; for example, the quantity of milk obtained by the creameries, and their output of butter, the estimates for different districts as to relative output of creamery and farmers' butter and the direct evidence of the trade statistics as to imports and exports; so that from these and other sources of information as to the consumption of butter a general approximate estimate of the output can be formed. Now, such estimates have at least the value of giving, on the whole, an approximate idea of what the production of a line of trade amounts to, and while they cannot be scientifically accurate are useful from a practical point of view. They indicate, on the one hand, the extent and importance of the trade, and they further bring home, in a very concrete way,

the defects of the trade, and the possibilities of improvement. They thus mark another step in advance.

And this again brings us face to face with other developments connected with such inquiries as to production, which are of very great practical importance to this country at the present time. It is not in any circumstances an easy matter to estimate the average milk yield for a country. But from inquiries made in every county in Ireland and much exact evidence obtained as to the extent of the variation in yields, it is probable that the average milk yield per cow in Ireland is from 400 to 420 gallons. There are cows in Ireland, and a considerable number of them which exceed a yield of 1,000 gallons a year, and there are some which exceed 1,200 and 1,300 gallons. But the 1,000 gallon milkers are the exception, and a very large number of the cows in Ireland fall short of 400 gallons. Yet there is no reason why the average should not be greatly raised, as it has been in Denmark, by weeding out the poor milkers, and by breeding only from the best. In this work the statistical milk record is essential, and one of the most important developments in increasing production in Ireland is the practice of keeping milk records,—and not only for quantity of milk, but also for quality and butter fat. There is no reason why, with such procedure, the general average yield of milk should not be raised by 100 gallons, which, converted into butter, would mean something like an additional annual value of three million pounds sterling. The same truth applies to eggs. Inquiry made as to egg yields in Ireland go to show that the average is from 80 to 100 eggs per hen. But, as those who have studied the egg record returns published by the Department can see, there is no reason why with care the average should not be raised to 130 or higher. Individual pens of birds in Ireland show as high an average as 200 eggs per hen, while a considerable number of flocks showed an average exceeding 150. But if the average were raised even to 130; it would mean an addition to the annual value of $1\frac{1}{2}$ millions sterling. Here again as in the case of developing milking strain, it is necessary to have records kept, so that birds may be weeded out, and every farmer, who is going to build up his herd of dairy cattle or his flock of poultry, so as to get maximum returns, must keep individual records until at least he gets strain established. And what can be done in butter and eggs can be done also in other directions, by the developing of the practice of careful observation, of measuring and weighing, and of raising all from the best, whether it be in stock or in crop produce. For the same laws of productive capacity apply to strains in the vegetable, as well as in the animal kingdom, and we can only really determine the inherent possibilities of different strains by carefully kept comparative records.

Thus, the question of keeping records is of very far-reaching importance. It is the scientific method. The truth of Mendelism, for example, which is working like a leaven in so much of our

undigested data, and the extent of its application, can only be determined by carefully kept records of all kinds. And the country which keeps itself alive to the importance of such movements and the possibility of their practical application is the country which will have the advantages in cost of production. For to a large extent, the additional value created by carefully directed selection consists, to the men who take early advantage of it, almost wholly of profit. It costs little more to feed and tend a cow that gives 1,000 than that which gives 400 gallons, or to keep the hen which gives 160 rather than that which gives only 80 eggs, while once the strain has been established not only the annual profit has to be considered, but also the rise in the capital value of the stock.

And this brings me to another very important and closely related field for statistical investigation. It is not enough to determine the capital value of the various classes of our stock, the annual output and value of each class, and to compare the relative importance of one class with another. We must seek also to determine the full cost of production in each, the prices realised for each class, and the margin of profit. Clearly, this also is a complex piece of inquiry, but it is one in which there are great possibilities of valuable study, and though final results may be long of attainment, the inquiry and investigation will certainly bring to light a great deal that it is important to know. This sphere of inquiry promises to be one of the most practical and fruitful which lies before the statistician.

Before closing, I wish to draw attention briefly to one other line of investigation which is connected with the statistics of production and trade. The statistics of consumption, if they do not depend on are greatly aided by the statistics of production and trade; and now that the statistics of Irish imports and exports are available (and as regards food stuffs these statistics may be regarded as very fairly complete and reliable), and now that fuller information is becoming known as to the production, not simply of crops and stock, but of the produce of stock, *e.g.*, milk, butter, eggs, and beef, the materials are to hand for a better study of the dietary of the people. Such a study cannot indeed be made except by careful inquiry as to dietary of various classes, but the several facts which the statistics of production and trade afford are of great assistance in directing attention to outstanding features. There are indeed some very interesting problems here for investigation, and they throw light incidentally on questions of production. Thus, if we take the case of wheat and flour, whereas the average net import per head into Great Britain in 1907 was 252 lbs. of wheat and 19.5 lbs. of flour, the average net import in Ireland was 182 lbs. of wheat and 13.1 lbs. of flour. The quantity of home-grown wheat in Great Britain amounts to 83.4 lbs. per head, and in Ireland to 18.2 lbs. per head. From these figures two things come out plainly: first, that Ireland is a very heavy wheat-consuming country, and, second, that despite the advance of Irish mills the country does not yet do its own

share of milling. The position as regards wheat consumption is a point of real interest, for, especially in view of the large consumption of potatoes, it might well have been that the consumption of wheat and wheat flour was lower in Ireland than in Great Britain, whereas the opposite seems to be the case. Again, in the question of potato diet, while it is a matter of common knowledge that the Irishman gets through a good many more potatoes than the Englishman or Scotchman, yet the question calls for some close scrutiny. There is, to begin with, the remarkable fact that Ireland has an acreage of potatoes rather greater than the total acreage in Great Britain, though the estimated yield in Ireland in 1908 was 3,199,678 tons as compared with 3,919,798 tons in Great Britain. Now, the human population of Great Britain in June, 1908, was estimated at 40,175,367, and of Ireland 4,363,351, and the pig population of Great Britain in June, 1908, was 2,823,482, and of Ireland 1,217,840. We do not know the number of poultry in Great Britain, but we may fairly assume that it is considerably greater than that of Ireland. Also the acreage of potatoes to be seeded is not very much less in Great Britain than it is in Ireland. There is thus a most remarkable difference in the production of potatoes in the two countries, which we might have expected the Irish export figures to considerably modify. But the total import of potatoes into Great Britain in 1907 amounted to close on 513,000 tons, of which only 100,000 tons came from Ireland. Now, however one may divide up these figures, they show what a remarkable position the potato still holds as a food and feeding stuff in Ireland.

So again in the case of tea, not only interesting as an article of consumption, but as an article of duty, the figures now available of Irish imports indicate, for example, that in 1907 the consumption of tea per head of population in Great Britain was 6.19lbs., and in Ireland was nearly 6lbs., and if one allows for parcel and post packages sent to Ireland, the slight difference would probably vanish. The above are examples of a side of the import and export figures, which are well worthy of study and consideration. For it is only now that the materials necessary to this study are available, and not only for Ireland, but also for Great Britain. And the determination of Irish imports and exports enables, in turn, the imports and exports of Great Britain now to be determined for the first time since the separate records were abolished.

These are only some of the many considerations to which the present position of Irish statistics of trade and production gives rise. They are submitted as observations on the present position of the work, and the scope for inquiry which lies ahead and has to be thought about. A long step forward has undoubtedly been made in many directions in Ireland in recent years, and the practical value of the work attained has been recognised, but there is a great deal yet to be accomplished before the position reached can be regarded as satisfactory or the full significance of such statistical work is realised.