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THE RELATIONS OF AGRICULTURE TO INDUSTRY AND THE COMMUNITY

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IN extending a most hearty welcome to all the members of the Conference on their meeting in Scotland, it is not inappropriate to introduce the subject on which I have been asked to speak, by quoting two well-known lines of the national poet, Robert Burns, namely

O wad some Pow'r the giftie gie us
 To see oursel's as others see us!

These lines seemed quite extraordinarily apt when I read in the brilliant book of Professor Stapledon, which glows in every page with an intense love of the soil, the following passage—'the immoral and hand-to-mouth economics of these days the nation can no longer afford and must no longer tolerate,' and elsewhere such economics are described as 'the quintessence of immorality and short-sightedness carried to the point almost of madness' (*The Land*, 1936, p. 58). If, in however humble a manner, I may be considered to some extent as a representative of ordinary economics, this is seeing oneself as others do without any redeeming feature, and one's teaching, perhaps, as 'the quintessence of immorality' which is carried 'almost to the point of madness'. I say 'perhaps' for there is some doubt whether these vigorous epithets are intended to apply to general economic analysis—a subject so self-contained and arid, that it is difficult to imagine how it would rouse any one to enthusiasm, much less to somewhat lurid indignation—or to the great mass of practical devices, comprising both state policy and the trend of action of all those who have to deal with the land. From the general tenor of the book, it is the latter which is intended in the main; although, in so far as the current results of economic theory either condition, or seem to condition, the action generally called economic, analysis and theory likewise are liable to fall under the castigation of this Juvenal of the countryside.

What seems to be fundamental is the relation between the subject variously named Political Economy, Economics, or Economic Theory on the one side and Agricultural Economics on the other. The first step is simple in so far as economic analysis may be either

'pure' or scientific in the strict meaning of the term or, on the other hand, it may be 'applied', in the sense that general principles of economic analysis are developed and exemplified in some particular field. For instance, Edgeworth constructed a theory of what he called 'pure Public Finance', but since much of actual finance, such as expenditure, taxation, public debts, &c., is concerned with practical questions, any useful inquiry and exposition must necessarily consist of practical applications of general economic analysis. To a considerable extent the same is true of 'Agricultural Economics'. Here also the application of General Economics does not carry us very far. In other words the development of economic principles in relation to agriculture would not provide material of any size in proportion to its importance. Though it may be contended that this result is the fault—or at least the misfortune—of Economics proper, the fact remains. A great part of the content of Agricultural Economics consists of inquiries and generalizations relating to what may be described as the business side of the industry. In precisely the same way I can conceive Shipping Economics, the Economics of the Steel Industry, the Economics of the Coal Industry,¹ and so on. This distinction will be found to be of some importance later, for the first aspect—that is the establishing of general economic principles—considers economic effort (including agriculture) as a whole; the second tends to concentrate attention upon agriculture or even upon some of its minor subdivisions. I have no intention to claim a superiority for the former, but merely to draw attention to an essential difference, and one which in some connexions is of moment.

Another relationship is becoming of increasing importance. This is the growing connexion between Agriculture and State Economy. Not only so, but this relationship widens until in several countries there is a planned Economy of the State which is intended to embrace and co-ordinate all the activities—cultural, political, and economic—into one unit which will be, as far as possible, consistent. Such an aim—and every nation is affected by it to a greater or less extent—imposes an immense responsibility and at the same time, to some extent, a limitation on the agricultural economist. On the one side he has to advance the claims of agriculture to what he considers to be its due place in the National Economy of his country, and he has also to consider its world position. On the other side it has to be borne in mind that agriculture, while of undoubted importance, is only one side of the economic activity of a country. Therefore the agricultural economist, in maintaining the importance of his own

¹ A work under this title was published by the late Professor Dron.

industry, is in danger of placing himself in opposition, or apparent opposition, to other types of economic life, and the representatives of industry, commerce, and finance are likely to retaliate—with the result that economic activity (agricultural, industrial, and commercial) speaks with divided voices, and in consequence it is in danger of being less heard and attended to when national policies are discussed.

Some agricultural economists have a short and easy way of meeting this difficulty. They say, in effect (as for instance in *The Revival of Agriculture in Great Britain*), that the increase of agricultural production will create a new demand for manufactures and for commercial services. In this argument there is implied that the production of the nation is almost altogether a closed economy. If that is to be so, the real standard of living of a given group of countries which adopted this policy would be reduced. In fact, however, the conception of a closed economy for any highly developed country is an illusion. Each wants to continue foreign trade, emphasizing exports and preferring imports of raw materials for its industries. The tragedy of the situation is that the less developed countries (which, according to this policy, are to receive manufactures and export raw materials) are far from acquiescing in such a policy. While manufacturing countries are endeavouring to produce their own food at a higher cost than that at which they could import it, the less developed nations are feverishly creating new industries which they are determined to maintain, though in this case the costs of their products likewise are generally higher than those of the imported commodities which are to be displaced.

In the cool light of reason it is clear that at the root of modern economic policy lies the uncertainty of international political relations. If the policy of nations is to be determined by preparation for the danger of some future siege, then their activity, as a whole, can be no more than a choice of evils—and that not of the least of these. This truth presents a very subtle temptation to the agricultural economist. If the short transient period of agricultural prosperity during and immediately after the Great War be excepted, this industry has been in a state of depression for nearly sixty years. Now seems the heaven-sent opportunity for its recovery which, at first sight, seems worth pressing to the utmost. To a certain extent this is a well-founded claim; the danger lies in pressing it too far. The immediate position may be illustrated from the case of Great Britain. Professor Pigou and Mr. Colin Clark have made a recent calculation (*Economic Position of Great Britain—London and Cambridge*

Economic Service, June 1936) based on a comparison of the relative exchange values of British exports and imports. The special relevance of this calculation arises from the fact that the exports are mainly manufactures and the imports mainly food and raw materials. Therefore the changing prices of exports, in terms of imports, will give a fair indication of the ratio of exchange between manufactures and imports of food and raw materials. Further, as long as British imports were unaffected by tariffs or quotas, such ratios measured with reasonable accuracy the terms of exchange between manufactures supplied to the home market, and the domestic production of food and raw materials also supplied to the same market. It will be convenient not to go back beyond 1913 as a base, though using that year as a starting-point by no means implies that the basis of exchange as between manufactures and food together with raw materials was then in equilibrium. Subject to this limitation, taking the ratio of exchange in 1913 as 100 it had reached 120 by 1924, which means that in 1924 the same typical sample of British exports—chiefly manufactures—purchased 20 per cent. more imports of food and raw material. In other words, speaking generally, the exchange had turned in favour of manufacture and against agriculture by 20 per cent. The ratio was almost exactly the same in 1929. After that, until 1933, it resumed its movement in favour of manufactures, through causes with which all agricultural economists will be familiar. Between 1929 and 1933 the ratio of exchange favoured manufactures by 24 per cent. In other words the advantage gained by manufactures in twelve years was followed by another of rather more in five years. Since then there has been a reaction. The ratio which had favoured manufactures by as much as 44 per cent. from 1913 to 1933 fell back to under 38 per cent. last year, and in the present year the reaction has not only been continued but has become very greatly accentuated. Before discussing some of the inferences which may be drawn, it is worth remarking that through the appearance of import duties and quotas the British agriculturalist has not suffered the full incidence of this ratio in the most recent years, but it has fallen in its entirety on those who export food and raw materials to the British market.

The general result presents one of those paradoxes which are so common in the age of transition in which we live. Over a period of twenty years—1913 to 1933—it would have been a reasonable anticipation that, through natural conditions, the ratio of exchange as between agriculture and manufactures would turn in favour of the former, not the latter. Still more paradoxical is the fact that the

obvious explanation of a slower rate of new inventions and other improvements in manufacture is far from applying, for these have been developed with great rapidity.

The considerations which have been sketched in rough outline afford a prima-facie case for a very considerable reduction in the premium which manufactures enjoy with respect to agricultural products. At the same time we should be exceedingly careful not to press for this reduction with undue rigidity. When full allowance is made for the effect of variations in weather (which after all tend to equalize themselves over a complete cycle) agricultural production suffers from an unnecessarily high degree of inelasticity. Compare, for instance, the visible supply of wheat in recent years with the variations in output of the United States Steel Trust, though the latter is not a good example, since, owing to higher overhead and fixed charges, these monster firms cannot make their production so completely elastic as those of smaller size, which are less overgrown.

The existing inelasticity of agricultural production, as contrasted with most manufacturing industries, merits some consideration. If we consider such production in the widest sense, as including all products of vegetable growth, there is a difference between those which are consumed as food and others used as raw materials for industry. The maladjustment of supply to demand is appreciably more marked in the former than in the latter—the reason being that the outlets for consumption of such manufactured goods is greater than those for food. To some extent recent studies in nutrition may do something towards redressing the balance. Thus the Interim Report of the Astor Committee of the League of Nations on *The Problems of Nutrition* stresses the need for an increased production and consumption of the 'protective foods', such as fruit, vegetables, eggs, and dairy produce. Assuming such increased consumption took place, it would not solve, but might rather intensify the existing maladjustment, if the production of such commodities were super-added to that already existing, instead of being accomplished by the diversion of productive forces from some of the staple forms of agriculture to increasing the output of these so-called protective foods. In a well-organized internal market, the former may be accomplished. In a world market it is unlikely without long delay involving great loss and misery in certain countries. In a world market where goods move with moderate freedom, over-production, which is the result of a temporary maladjustment of supply to demand, is not the bugbear which it appears to the popular imagination. A temporary reduction in prices discovers new outlets for the

commodity, the demand for it increases and, later, prices rise. Agricultural production—consisting so largely of food—appears to falsify this general tendency, at least as regards cereals. It may be suggested as a possibility that agricultural economists might be able to discover new uses for the products of the soil and, by finding new demands, bring consumption into line with production.

This aspect of the case depends on a free, or comparatively free, transit of goods from country to country. Theoretically opposed to this is the closed national economy. Though many writers deal with this as a concrete fact, it is in fact a pure abstraction. Countries which tend towards it in their national policy, at the same time endeavour to foster exports and, in so far as they succeed in exporting, they must, over a period of years, import. The general tendency since the crisis has been for most countries to occupy an intermediate position in which the national production has been regulated and directed according to the ends of State policy to a considerably greater degree than it has been before. The industrialized countries have, with almost one accord, been devoting increased attention to the encouragement of agriculture.

From the world standpoint this introduces a problem of surpassing interest. The standard authorities on the trade cycle agree in finding the motive power for the recovery from the acute depression which follows a severe crisis in bountiful harvests or other causes which provide cheap food. Reduced cost of living with the consequence of low costs of production of manufactures enable savings to be increased. The investment of these creates a new demand for capital goods, which, in turn, results in more employment and gradually the depression begins to pass and trade becomes more active. As employment improves the demand for food and raw materials increases and the prices of foodstuffs recover. In recent experience there was a hitch or a long time-lag in the working out of this sequence. As every agriculturalist knows, the prices of most agricultural commodities have been abnormally low. Capital began to be accumulated, but it did not find its way completely into productive investment, and the recovery which should have followed was delayed. Thus the world crisis—and still more the agricultural crisis—was prolonged. To some extent, as affecting the countries which constitute the world's granaries, this may have been an instance of bad planning. The Wheat Pools of Canada and the United States, as well as somewhat similar measures in other grain-exporting countries, resulted in an accumulation of stocks, precariously held, which it was feared might at any time overwhelm the grain market. In such

circumstances prices were necessarily depressed. As far as present information extends, the anticipated cereal shortage of the current crop-year is likely to dispose of the menace of these overhanging stocks, with the result of an advance in the prices affected.

Turning to industry, the delay in recovery was marked by cheapness of money, unemployment of capital, and the general complaint of the limited field for new investment. All this points to conditions of continuing uncertainty. As far as material or natural conditions were concerned, the stage was set for trade recovery considerably before it appeared. It was the psychological requirement of confidence which was absent. Political uncertainty was one factor, making for caution and a general holding back from new enterprise; while, perhaps not unconnected with this, the concentration on domestic industry resulted in a continuance of acute depression in external trade. These conditions reacted upon agriculture in various ways. The prevalent concentration on domestic production has afforded a stimulus to the agriculture of each country affected by it; but, on the other hand, the same attitude has been prejudicial to those other countries whose chief exports were agricultural products. Thus, from the agricultural point of view, a national gain may involve an international loss. The present contracted state of international trade is likely to involve an ultimate loss to world agriculture. Popular imagination places manufacture and agriculture in opposition to each other, whereas they are in reality complementary. The major demand for agricultural products comes from industry, not only directly but also indirectly, while, similarly, when the demand for manufactures is analysed much of it depends on the prosperity of the agricultural community. This applies in large measure even to the provision of important capital works, as for instance the building of railways and steamers for the opening up of grain-growing districts in the last third of the nineteenth century and the construction of barrages for purposes of irrigation in the twentieth. A contracted world trade diminishes the effective demand of the industrial population, and agriculture suffers. By a strange paradox it may suffer even more than industry owing to the greater rigidity of its conditions of supply, as at present organized. Opposition between industry and agriculture leads to one certain result, namely that both suffer from it. Underlying the infinite causes of surface disagreements there is a fundamental unity of interest. This is liable to be overlooked in the dust of the small conflicts which are constantly arising between them. Above all things, it is necessary that both industry and agriculture should try to understand the special

circumstances and the special difficulties of the other. As already indicated, the unfavourable terms of exchange of manufactured goods against agricultural commodities, from the point of view of the farmer, are beginning to be modified. Once the process has started, if no great political upheaval takes place, it may be anticipated that it will continue. In fact, owing to the greater power of manufacture to adjust itself to a diminished demand, during recent years many manufacturing industries, owing to reduced output, have in fact been working under conditions of diminishing, instead of increasing return. Their plant was adapted to a given output. With a much smaller output the overhead costs and standing charges had to be borne by such lesser output with the result that, for the time, production was carried on at an increasing and not a diminishing cost. Improved trade has begun to rectify this position, but the final solution will depend on a very considerable improvement in the volume of international trade. Through reduced manufacturing costs, the effects of competition will quickly transfer the benefits of that reduction to consumers.

On the other side, the chief interest of industry in agriculture (apart from providing a market for its products, which has already been mentioned) is in the relative prices of food and such raw materials as are of a vegetable nature. As regards food, in particular, it is to a considerable extent an element in the fixing of rates of wages. This presents a problem of outstanding importance to the agricultural economist. He has to discover—and that as quickly as possible—how to improve the processes of agricultural production, so that the costs of a given quantity of any product may be lowered. It is needless to mention the difficulties. They are many, but this problem must be advanced towards solution. After all, industry has been concentrating on it for about a century and a half; in agriculture it has been little more than begun. The way of approach over a moderately long period is likely to differ from that in most growing manufacturing industries. It will be less in the expanding of total production (for in the long run the tendency towards diminishing returns, though capable of temporary suspension, is likely to operate) than in a more efficient use of the conditions of production. In particular, the resources of science in aiding agricultural efficiency are only beginning to exert their influence. Increased economy, once agricultural prices have reached their new basis, will extend demand for the various products of the land. At some date in the future there will be the problem of an optimum production, for, with an increasing demand, there will be the problem of whether it can be satisfied

without the consequent increased production being obtained only at an increasing cost, which, in turn, would limit the economies secured by greater efficiency.

This seems to be looking unduly far ahead. It may appear fanciful to talk of efficiency reducing future prices when so much of the agricultural community is at present in distress, and perhaps, even more, to envisage an increased demand when there have been endless complaints of glutted markets of almost all the primary products.

It may be suggested that agricultural economists have not escaped wholly from the danger of being shut up in the 'short period'. The low prices of agricultural products, as compared with those of manufactures, have arisen from the causes which have been explained. Essentially, this cannot be other than a temporary phenomenon, and the situation will right itself. What I am now endeavouring to consider is the line of advance when that stage, so long hoped for, will have been reached. As it seems to me, there are two tasks, each of surpassing interest, awaiting the agricultural economist. There is that already mentioned, which is to some extent speculative, as to whether products of the soil can be made raw materials for industry to a much larger extent than at present, especially whether products, now used as food, can become such raw materials. The other problem is one which thoughtful people admit is urgent, namely the improvement of agricultural production and distribution in order to secure greater efficiency and both normal profits and a lower price to the ultimate consumer. Industry has been concentrating on this problem for more than a century and a half. In agriculture its consideration has been little more than begun. Agriculture must solve it in its own way and under its own special conditions. While this adds to the difficulty, it is quite essential. If this immense problem is faced from a wide and comprehensive standpoint, it offers, as I see the position, the only opportunity of co-operation and mutual support between industry and agriculture, instead of a conflict in which the ultimate chances of agriculture being successful are very far from promising.

DISCUSSION

R. R. ENFIELD, *Ministry of Agriculture, London.*

I am sure you will agree with me in expressing to Professor Scott our gratitude for his most interesting and stimulating paper. He has dealt with a very large subject, and I wish, in opening the discussion, to touch upon only one or two of the very many issues

raised, hoping that other branches of the subject will be discussed by subsequent speakers.

The relationship of agriculture and industry, to my mind, has not only changed both nationally and internationally during the last six years, but I suggest has changed for good. It is where Professor Scott regards some of these results as temporary that I feel most disposed to differ from him.

Professor Scott emphasized, as one aspect of the change, the movement in the terms of exchange in international trade, favourable to industrial countries and unfavourable to agricultural countries. Other aspects are the reduced volume of trade, the changed distribution of world agricultural output, the widening difference in the cost of production between importing countries and exporting countries, and differences in the character of the policies pursued in those countries respectively.

A few years ago I think we all would have been inclined to regard many of these changes as transient symptoms of depression, likely to disappear when the depression was over. I want to suggest that this is not likely to occur. Partly owing to the intensity of the depression, partly to its protracted character, these changes are assuming a more permanent character and in many respects confront us with a new world.

It is worth while to pick out the salient points in the agricultural history of the last decade and to examine how this has come about. There are three important periods to consider, 1925-9, 1929-32, the period of very severe depression, and 1932-6 which has been a period of recovery. The first of these, from an agricultural point of view, was characterized by certain important features. Firstly, there were some definite signs of over-production in the world, using that term as it is ordinarily used. Production of sugar, coffee, wheat, and some other commodities was expanded in excess of the average agricultural output. Secondly, there was a considerable growth in agrarian protection in Europe. The year 1925 was a low point, at which a number of countries had imposed no duties on some products now very highly protected, and at which the general level of protection all round was low. Thirdly, during that period there was a substantial growth in international lending, a point which in my view has had a tremendous effect on the subsequent course of the depression in agricultural countries. The issue of foreign securities in the United States, United Kingdom, the Netherlands, and Switzerland, the main centres of international lending, between 1924 and 1928 amounted to no less than 9,000 million dollars, of which the

agricultural countries alone borrowed approximately 6,000 million dollars. As far back as 1926, Canada, New Zealand, India, Argentina, and South Africa had an excess of external payments over receipts, and had to balance their external accounts with fresh borrowing. This created and was bound to create a potentially unstable situation in which debtor countries could be confronted with very serious difficulties in the event of a heavy fall in the prices of their exports.

The second period, 1929 to 1932, was characterized, firstly, by a catastrophic fall in prices, secondly, by a sharp rise in agrarian protection in Europe, and, thirdly, by a fall in industrial output, a growth of unemployment, and a reduction of urban wages in most industrial countries. The fall in consumers' buying power resulting from the decline of industrial output was, I suggest, the main cause of the fall in agricultural prices. World industrial production declined no less than 37 per cent. between 1929 and 1932, but world agricultural production, according to the League of Nations index number, remained practically stationary. In addition to this, there was an almost complete cessation of overseas lending.

Taking the agricultural countries at this time, the fall in demand for foodstuffs from importing countries, coupled with the severe and growing protection, was bound seriously to affect them and to shift on to their shoulders a large part of the burden of the world agricultural depression. Such an event, combined with a reduction or cessation in lending, confronted these countries with a tremendously difficult problem in balancing their external trading accounts. They did so, as is generally known, by efforts to increase exports through export subsidies and other measures of direct assistance, by measures to diminish imports through the application of import duties, and lastly by depreciation of currencies. In 1934 the Australian, New Zealand, and Argentine currencies were all depreciated, even in relation to sterling, by over 20 per cent. But in addition to this, agricultural exporting countries were forced to adopt what might be described as measures of internal deflation. Prominent amongst those were the measures for refinancing agricultural indebtedness. There also occurred—I will not describe them as measures but as consequences of the depression—a substantial lowering of wages in almost all exporting agricultural countries and a fall in land values. Now I suggest that the effect of these events was a material reduction in the costs of production in those countries and, coupled with exchange depreciation, it resulted in a lowering of the prices at which agricultural products could be sold abroad.

Unfortunately the rival policies, of protection in importing countries and various forms of relief in exporting countries, reacted on one another, and there can be no doubt that the depression was prolonged for the world as a whole by measures intended to alleviate it in individual countries. But the important point for the purpose of our discussion to-day is that these measures profoundly affected the relationship of agriculture and industry. In so far as protection in importing countries and subsidies, debt reduction, and other forms of relief in exporting countries, imposed a burden on the general community for the benefit of agriculture, it was a burden which eventually had to be borne by non-agricultural producers, that is to say, mainly by industry. The refinancing of mortgages and other debts in overseas countries is a conspicuous example. Agriculture borrowed the savings of people who were willing to lend them. Those savings very largely were derived from the savings of industry. In so far as the debts owed by agriculture to its creditors were diminished by refinancing, to that extent agriculture benefited at the expense of industry.

Thus this period went a long way towards creating the conditions we are confronted with to-day. On the one hand, the more rapid fall in agricultural prices caused a movement in the terms of exchange between industry and agriculture in favour of industry, as Professor Scott has pointed out. On the other hand, State action, in so far as it affected the relation between agriculture and industry, caused an adjustment favourable to agriculture. The other notable feature of this period was the expansion of agriculture in protected countries to which Professor Scott also alluded, and the heavy decline in international trade, particularly in foodstuffs.

The last period, 1932-6, has been a period of economic recovery. The recovery, however, has been primarily a domestic recovery. The great expansion of industrial output has not been accompanied by a corresponding increase in international trade. To quote the League of Nations indices, world industrial output, excluding Russia, rose from 69 in 1932 to 92.4 in 1935. On the other hand, trade in manufactures showed only a slight rise—from 56 to 64—between 1932 and 1934, while trade in foodstuffs actually fell. The leaders of industrial recovery were the United Kingdom, Japan, the Scandinavian countries, and the United States. The recovery is reflected to some extent in the recovery of agriculture, but from the point of view of trade the increased demand from industrial countries, arising from the increased industrial output, was largely deprived of its effect by the continuation of high protection in certain countries.

It did not lead to a relaxation of high protective tariffs, indeed the shifting of agricultural production to the protected countries has continued. In 1935 world¹ agricultural production had increased by about 6 per cent. over the average of 1925 to 1929. Continental Europe,¹ the great protected area, however, increased its production by 15 per cent., and I should imagine more recent figures would show an even greater expansion. On the other hand, the efforts of agricultural countries to maintain their balance of payments by increasing industrial protection have raised their share of the world's industrial output. This share, which was only 11 per cent. in 1928, has now risen to no less than 24 per cent.

Now I suggest that neither the new agriculture created behind the agrarian protection of Europe, nor the new industries created behind industrial protection outside it, are likely to be abandoned. Vested interests have grown up on either side and policies are almost certainly likely to be directed more towards the maintenance of this production which has cost so much to bring about, than towards its abandonment. Here we have another change in the relation between agriculture and industry both nationally and internationally, and the world is for good or ill paying more for its food and for its industrial products than it need. This distortion of world production is mainly the outcome of action taken, in the first instance, to assist farmers in the face of severe crisis. But policies initiated largely as emergency measures, if continued over so long a period as has now occurred, inevitably tend to be absorbed in the permanent régime of countries, and it becomes increasingly difficult to retrace the steps so painfully trodden.

One thing might have brought about a recovery towards conditions existing before 1929, and might have led to the removal or modification of the vast superstructure of government control. That would have been a world-wide rise in prices. I think this was undoubtedly the expectation of most business men and economists in 1932, and many measures were regarded then merely as temporary, designed to bridge the gap until the recovery of prices took place. This expectation has now been considerably modified, though there are some who take the view that a world-wide rise in prices is still in store. In the absence of a general rise in prices, however, I suggest that there has been a tendency to establish a new system of world agriculture which, so far as importing countries are concerned, depends for its very existence on the continuation of protection. Withdrawal of this protection would mean depression and crisis in

¹ Excluding Russia.

every importing country of the world. Exporting countries for their part have been faced with the necessity for adjusting themselves to a new situation far less favourable to their agriculture than they were accustomed to before the depression, and the drastic steps which they have taken to liquidate the depression have, in their collective effect, enabled those countries to maintain or even to expand production on a much lower level of costs than formerly. The widening of the gap in the level of costs of production between protected countries and exporting countries respectively seems to me one of the significant results of the events of the last four or five years.

The situation thus approaches deadlock. While high agrarian protection in Europe is the chief obstacle to recovery of trade in agricultural products, the low costs at which agricultural exporting countries are now able to operate is the chief obstacle to a reduction of those protective barriers. So far-reaching has been the intervention of State policies in agriculture that, in my view, we can no longer rely as we could formerly on the interplay of economic forces to correct or maintain the balance between production and consumption. Formerly, when protective barriers were low and export subsidies non-existent or at any rate very infrequent, the volume of agricultural production was determined by competition arising out of differences in costs of production in various parts of the world. To-day it is to a very important extent dependent on the willingness of Governments to support production irrespective of costs. It is perhaps not unreasonable to say that in the conditions of to-day a rise in prices tends to evoke an increased agricultural production; a fall in prices tends to evoke increased government assistance. It is this conflict of economic, social, and political forces which makes the world's agricultural problem so extraordinarily intractable.

Now I would suggest that we must beware of regarding this situation as something transient, something to be recovered from. Whatever may be desirable as the outcome of the present conditions, it is at least possible that this highly artificial situation, in which State action plays so important a part, will persist. It is more likely, in my opinion, that it will do so, than that we shall see a return to conditions in which equilibrium was maintained by what we used to call the ordinary interplay of economic forces. It is at least possible therefore that the situation may remain one in which the terms of exchange between agriculture and industry have moved perhaps permanently against agriculture, but in which State action, as between industry and agriculture throughout the greater part of the civilized world, has favoured agriculture at the expense of industry. That is

quite a *conceivable* world; quite a *conceivable* system which may govern agricultural production, for the time being at any rate. Do not let us assume, because we are unfamiliar with it or because we do not like it, that it cannot exist, or that there is something about it intrinsically unstable. It exists already. In these terms there is, broadly speaking, equilibrium to-day. It is the new world in which we find ourselves, and I suggest it is the foundation on which we shall have to build in the future.

The transcendent problem that faces us to-day, particularly as regards world agriculture, is the problem of how we are to effect the transition from a situation so complicated, so largely the product of an unprecedented depression and so widely governed by emergency remedies, to one in which the world can again enjoy the benefit of a freer and more fruitful commercial intercourse between nations. If this is to be achieved it will certainly raise problems of economic statesmanship of great magnitude and complexity. Their solution cannot in any event be easy. It will require not only a precise knowledge of the facts, but, if we are to make any substantial progress towards this objective, it will require, no less, a great deal of wisdom and a great deal of patience.

A. B. LEWIS, *University of Nanking, China.*

Having had the privilege of living in China for three years I should like to state that one should not mention the world depression as though it were a unified force which covered all of the important countries of the world and affected them all at the same time and in an equal degree.

In China the currency in 1931 was based upon silver and had been based upon silver for many years. By that I mean that the paper currency was redeemable in a fixed amount of silver. For more than two decades the value of silver had gradually been declining and consequently the general level of prices in China had gradually been rising. In 1931 this trend was reversed and the value of silver, as expressed in terms of other commodities, began to rise in all parts of the world. With this rise in the value of silver, commodity prices in China consequently declined.

The fall in prices, which began in 1931 in China, was confined to China and to Hong Kong, the two countries which were on the silver standard, but the rise in the value of silver in terms of other commodities was world-wide. Therefore it is perfectly clear that the fall in prices in China was a consequence of China being on the silver standard and of Chinese money being redeemable in terms of silver.

With the fall in commodity prices in China an agricultural depression appeared, just as an agricultural depression appeared in the rest of the world when prices began to decline in 1929. This depression in Chinese agriculture had become very severe by 1933, and continued in 1934; and as a consequence of this fact Chinese agriculturists, farmers, and others advocated the prevention of the imports of agricultural commodities into China. Ordinarily we hear of attempts by nations whose wages are high to keep out the products of countries whose wage level is low. In China we had the spectacle of the Chinese farmer trying his best to keep out, as we might say, the products of the cheap American labour. The depression in China resulted in such a degree of industrial distress that by 1934 the currency system, in which lay the cause of the depression, was wellnigh broken down. Beginning on October 15, measures were begun which were carried on through a whole year and which finally resulted in the cheapening of the currency. Judging by price relationships, agricultural conditions in China will probably be better in the next few years than they have been in recent years.

This use of China as an immense guinea-pig upon which we can observe the effects of changes in currency value, which are different from changes in currency value taking place in other parts of the world in time and in intensity, seems to me to provide us with opportunities to see where the fundamental cause of the situation lies. We can see that the protection which each country has tried to give to its own industries is only a result of the fundamental difficulty which lies in the change in the value of the currency. The difference in the currency is the only fundamental difference that I have been able to discover between the Chinese economic system and that in other countries. The fact that differences between the Chinese and other depressions have corresponded to differences in time and in intensity of changes in the value of the currency seems to me significant.

D. A. E. HARKNESS, *Ministry of Agriculture, Northern Ireland.*

It gives me very particular pleasure to have the privilege of speaking on Professor Scott's paper. The pleasure which members of this Conference must have had in listening to Professor Scott's scholarly address was very considerably greater for a number of old Glasgow men who are present and who were Professor Scott's old students. Professor Scott's paper is one which those who studied under him would have expected from him. It opened up many avenues of thought which Professor Scott did not pursue himself,

but which were left open for other speakers at the Conference to attempt to develop. That must be my excuse for the line on which I wish to say a few words, because I want to speak more from the point of view of agriculture and the community than upon agriculture and industry, and to speak of the problem more from the administrative than from the purely economic point of view. And in passing, I may mention that although Professor Scott himself has not developed this aspect of his subject to the same extent as he has developed the question of the relationship between agriculture and industry, there is no one better qualified to do so than he, especially in view of the experience which he has had as a member of the Committee of Investigation charged with the investigation of complaints against the operation of agricultural marketing schemes in this country.

We in this country, and I think that representatives of all overseas countries will agree that they are in the same position, have not been content to leave agricultural revival to depend upon the effect of cheap food production in providing the motive power for trade recovery and the consequent revival of agriculture through an improvement in trade conditions—the normal operation of the trade cycle which Professor Scott described in one part of his paper. We have all deliberately set out to secure a reduction in that premium of manufactures over agricultural products which at present prevails—a course of action for which Professor Scott indicated there appears to be a *prima facie* case. But Professor Scott went on to emphasize the care which must be exercised in securing a modification of the supply position between industrial and agricultural products. It is just here that the administrative problem in its most acute form arises. In most countries the steps which have been taken to secure readjustment have been as a result of direct State action, and thus it has been necessary for the State to step in with the object not alone of assisting the agricultural community but also of securing that this assistance does not go beyond limits which are compatible with the interests of the community and of consumers in particular. In this country one of the main measures of direct State assistance has been in the form of tariffs where there is the protection of the Import Duties Advisory Committee which exists to consider specific applications put forward not only on behalf of the agricultural community but also on behalf of industry generally. All tariff assistance given to agriculture must pass the scrutiny and criticism of that body. In the Wheat Act, and to a similar extent in the Sugar Act, where direct assistance has been given to industry by financial grants, there has

been a specific limitation imposed so that that assistance will not result in an excess of production beyond the level which it is desired to achieve. Again, in the policy of quantitative regulation which has claimed a very prominent part in revival of agriculture in this country, the question of the degree of quantitative control is a matter which is the constant concern of a statutory body created under the Act of 1933, the Market Supply Committee, while the Board of Trade, the department responsible for the issue of orders regulating the quantities of produce to be imported from abroad, is directly charged by the Act of 1933 to have regard to the interests of consumers.

There is perhaps one field of Government action which has been purely departmental and which has not come constantly under the supervision of Parliament, and that has been the action of the agricultural departments in securing voluntary limitation of imports from abroad. These voluntary arrangements have not been effected under the Agricultural Marketing Act, but rather have been effected with the threat of action under that Act if they are not accepted voluntarily by foreign countries. Consequently, in the opinion of some people, these voluntary arrangements have been adopted rather than the issue of a statutory order with the object of allowing greater latitude in negotiations than is possible when they are brought specifically within the scope of an order under the Act of 1933. But in all these spheres where assistance has been given to the agricultural industry, Parliament has been careful to keep control, and that control has not been in any way remote.

The position, however, is considerably different when we come to the marketing schemes under the Act of 1931. That Act in this country was an enabling measure, and all that it was possible for Parliament to do was to provide that complaints in regard to the operation of these schemes should be made the subject of reference to a Committee of Investigation, or the subject of investigation by a Consumers' Committee where the interests of consumers were specifically concerned. But in the operation of the marketing schemes what has in effect arisen has been the creation of bodies which have sales monopolies so far as agricultural produce in the United Kingdom is concerned. I had to refer recently to Marshall's *Principles*, and that is the reason for the appearance of this tome in my hand—and on the part of one who for more than twelve years has been away from pure economics I hope that that reference may be regarded as evidence of the fact that good habits sometimes stick as well as bad. I found in Marshall's discussion of the theory of monopolies this statement:

'The monopolist would lose all his monopoly revenue if he produced for sale an amount so great that its supply price was equal to its demand price: the amount which gives the maximum monopoly revenue is always considerably less than that. It may therefore appear as though the amount produced under a monopoly is always less and its price to the consumer always higher than if there were no monopoly. But this is not the case. For when the production is all in the hands of one person or company, the total expenses involved are generally less than would have to be incurred if the same aggregate production were distributed among a multitude of comparatively small rival producers. They would have to struggle with one another for the attention of consumers, and would necessarily spend in the aggregate a great deal more on advertising in all its various forms than a single firm would; and they would be less able to avail themselves of the many various economies which result from production on a large scale. In particular they could not afford to spend as much on improving methods of production and the machinery used in it, as a single large firm which knew that it was certain itself to reap the whole benefit of any advance it made.'

That was Marshall's discussion of the position probably thirty or forty years ago, and in our creation of these marketing organizations for agricultural produce it seems that we have created organizations which have a monopoly of sales but which have not a monopoly of production, and that consequently, unless there are adequate safeguards, marketing schemes may inevitably lead to the result that prices may be fixed at a level higher than the price which is necessary to equate supply and demand, but that the corresponding economies which in industry are secured by the monopolistic entrepreneur will not be secured in the case of agriculture because production will still continue to be in isolated units. The tendency indeed will rather be that the marketing board will fix its price at a level which is higher than the normal supply-demand ratio would justify, not simply in order to secure the maximum monopoly revenue as in the case of a monopoly operating in industry, but so as to secure that the less efficient producer in agriculture will continue to operate and continue to be able to sell his produce at a profit. And it is there, as Professor Scott has indicated, that probably the main problem which is confronting us with regard to the operation of marketing schemes and other methods of assisting the agricultural industry is to be found.

We have created the conditions of monopolistic sale, but in order to justify those conditions it is going to be essential that the industry should be able to show by the reorganization which is the justification for marketing schemes that costs of production have been

lowered and that agriculture is offering to the consumer a service which is performed at the lowest possible cost. But it is not sufficient to demand of agriculture that its unit costs of production should be lowered. It is also necessary to secure that agricultural produce is transferred to the distributor at as low a price as possible and that the distributor on his part will ensure that there is no excessive charge laid upon the consumer and equally upon the agriculturalist in the transfer of agricultural produce from the producer to the consumer. Only if agriculturalists have the assurance that this complementary stage of reorganization is going to take place, can we legitimately demand that agriculturalists sacrifice any of the advantages which they have at present gained in order to secure that the price to the consumer is reduced.

DR. W. R. SCOTT. *In reply to the preceding discussion.*

I wish first of all to thank the Conference for the very kind way they have received what must have seemed to be rather nebulous ideas. I thought perhaps the best thing I could do would be to suggest rather than to be dogmatic. Arising out of what has been said, I think the difference between Mr. Enfield and myself, in so far as there is a difference, is that he was regarding the position as to what had actually happened and then deduced from that the tendency of the near future. On the other hand, I was trying to find out in what direction, as far as lies within our power, we ought to endeavour to direct our efforts—a rather different thing. I don't think I should quite agree with his analysis, because it seems to me that if one follows it out, on his assumption, say, for a period of ten or fifteen years, some of the results are likely to be rather extraordinary and disquieting. For one thing the protective character of the crisis as a determining policy means simply, as it seems to me, a crystallization of panic conditions—in itself undesirable—and further of the hard things said of agriculture, for example, that it is to be the poor relation of an industrial world, for whom nobody has a welcome and who always wants more—while now a further name has been applied, namely, that of being a permanent pensioner on industry. Well, that I think conforms with the concluding words of what I said. It is not likely to be a happy state either for industry or agriculture, and further, if the conditions which he envisaged are the true picture, the vested interests are not going to stay where they are. This, in turn, is going to increase and increase, and that will produce very disquieting conditions which one can easily imagine.

I fancy that in this lies the basis of what Dr. Lewis said with regard

to currency in China, namely, that there is one rule that if the world is in a state of fear about its international relations, in other words, if peace cannot be counted upon, then we have a situation which is deteriorating and we get back into the old Mercantilist difficulty where it is a question of fighting for markets, not fighting by ordinary commercial competition, but by actual warlike methods. That is an alternative which I do not think is necessary and which I think is most distressing to contemplate.

I am glad that the question of the Marketing Acts in England and Scotland was touched on by a very favourite pupil, Mr. Harkness, because in so much as I have to deal with these in a quasi-judicial position I have felt myself precluded from mentioning them. Mr. Harkness has done it extraordinarily adequately.

Finally, I wish to introduce one point, and as it is in the nature of exploding a slight bomb on the Conference I must explode it somewhat delicately, for the sake of the nerves of one of our members, who, I believe, has just travelled by plane from Madrid. We all learnt in our youth that economics was a science. I am beginning to think in these very strange days in which we live that it is much more of an art in so far as there is not time for exact scientific procedure. But we do want the person scientifically trained, and then if he has the 'touch', the inspiration, he may see more than he can prove at the moment, but he can confirm it afterwards by verification from the manner in which things are moving. Of course, the danger of it, just as in art proper, in cubism, and any other sort of artistic 'ism', is that any one thinks he can draw just as good a picture as the person who has spent his life at it. So in economics the plain man believes that without any training he can solve all economic difficulties. Nevertheless, the new technique—however we may express it, 'touch', inspiration, divination—in economic affairs is going to be very important. It may be that the economic investigator may have to assume something of the mantle and, we hope, the inspiration of the prophet.

CARL E. LADD,¹ *Cornell University, New York State.*

Through the centuries, governments have recognized the necessity for maintaining the productivity of land and the activity and main welfare of rural people and rural institutions. There are three reasons for this. The agricultural regions produce food and fibre to feed and clothe all the people; they produce a surplus of young

¹ The special title of Dr. Ladd's address was 'What should a Government do for Agriculture?'

folks to maintain and increase the population of cities; and rural people themselves constitute a considerable percentage of the total population of any nation.

In periods of prosperity, governments in their agricultural policies are chiefly concerned with stimulating production. Labour, in its eternal struggle to better its standard of living and the welfare of city workers, is concerned with the cost of food. Through research and teaching, governments can increase food production and cheapen the cost. But in periods of general business depression, governments become acutely aware of the farm situation and pass many laws, some wise and many unwise. In such times farm distress always assumes great proportions and becomes a major part of the national problem.

The reason for this is clear. Business depressions always accompany a rapidly falling price level. Since farmers have a slower business turnover than any other major business, then on a falling market they must suffer greater losses between the time of making an investment in seed, labour, and fertilizer and the time of selling their product. Moreover, the farmer has many overhead costs, such as taxes and interest on investment, which remain frozen at high levels in spite of the rapidly falling prices of his products. As farming becomes more modern, more industrialized, and more efficient, it is inevitable that it shall suffer more from business depressions.

Obviously, the most important problem is to determine the causes of business depressions and take the necessary steps to lessen their severity or prevent them altogether. This is not only of tremendous importance to agriculture and city business, but it is probably the only protection against successive overturns of established governments, redistribution of capital by violence, and consequent loss of property, personal liberty, and happiness in the future. Only the strongest governments will be able to survive the next major depression without great change in form.

Apparently, society has not yet enough intelligence to solve this problem, so in the discussion to-day it is assumed that the world in the future, as in the past, will suffer periods of severe business depressions about four to six times in a century and that between these periods the price level and business activity will fluctuate from year to year in a relatively small degree.

Continuously, whether we are in a period of prosperity or depression, the government should do certain things for agriculture. Certain regulatory enactments must be made in the interests of farmers and consumers to protect the quality of products. Protection against diseases and destructive insects must be provided by a government

in the public interest. This group of services we think of in general as protective and regulatory activities. Governments should and do provide agricultural education on several levels; through boys' and girls' club activities on the elementary level; through agricultural schools on the secondary level; through agricultural colleges; and in the field of adult education through agricultural advisers and extension teaching activities. These are largely in accord with government policies in general education but are supported more completely than general education in most countries in recognition of the basic nature of agriculture and its importance to the nation's welfare.

Research work in agriculture cannot be largely supported by the industry because of the small size of the separate independent units. Moreover, it is probable that 80 or 90 per cent. of the benefits of research are immediately passed on to the consumer. For these reasons governments support agricultural research.

Recognizing the value of co-operative action among farmers in lessening the cost of distribution and purchasing activities, governments give encouragement and protection to agricultural co-operation.

All of these government aids seem justified. More than that, probably no other expenditures of government have been so effective in producing new wealth, promoting higher standards of living, and improving the health, culture, and happiness of people who remain on the farm and people who leave the farm to replenish the cities.

Now for the past half-dozen years governments all over the world have been attempting to relieve the agricultural depression by many new and unusual laws. These have included regulation of amounts of production, fixing prices to consumers, and fixing prices to producers. Each of these acts has been characterized by highly centralized governmental control which placed the destinies of millions of producers in the hands of a small group of men. It may well be asked, does any nation have the master minds capable of planning the production limits of individual farmers or capable of fixing prices in such a way as to promote the welfare of farmer and consumer? We have stumbled headlong into a highly complex, modern, economic society, and are attempting to regulate forces that we do not understand before rising to our feet and supporting ourselves on a foundation of economic knowledge.

It seems to the speaker that the one thing proved by these attempts at production and price control in America, England, and other countries during the past five years is the utter futility and failure of the entire plan. For generations the business world has carried on with

prices and production controlled by a free play of economic forces. Occasionally, certain groups limit this free play of economic forces by securing unfair advantages of one sort or another. The correction for this is not to build up a balancing unfair advantage for another group but rather to remove the first unfair advantage.

It must, of course, be recognized that in time of great distress many emergency activities will be undertaken. As we begin to emerge from the period of distress, we should be very charitable in criticizing these emergency activities unless they have clearly hindered recovery. The real danger lies in the attempts of emergency activities to perpetuate themselves as permanent institutions and so clutter up our economic system with clumsy and unwise centralized control and uneconomic processes.

On the constructive side, a government might well initiate and support certain activities looking, not towards the control and regimentation of individual initiative, but towards the development of long-time governmental policies affecting agriculture.

1. Every nation needs a land policy. This policy should include three general steps: First, the land should be classified into two groups, those lands that should remain permanently under private management for farming purposes and those lands that should be removed from active farm operations. Second, a national policy should be formulated for the development of the areas to be farmed. This should include schools, roads, electricity, hospitals, health, and sanitation. Such a policy must take into account the fact that in many nations more than half of the people born on farms will ultimately live in the cities. Third, a policy should be formulated for the best use in the public interest of the lands classified as unsuited for farming. Some areas should be reforested, some areas should be grazed under a carefully controlled plan to prevent loss of usefulness. Because of mistakes of the past in many cases a policy must now actually include plans for restoration of ground cover, soil fertility, and water-holding capacity.

2. A nation should have a monetary policy. England, Sweden, and America seem to have demonstrated in varying degrees that changes in the gold content of their money can prevent too wide fluctuations in the general price level. This is a highly controversial topic at the present time, affected largely by whims, fancies, fetishes, and emotions of all sorts. A modern world ought to be able to study the facts in the situation, evaluate the scientific evidence available, and formulate a policy. Any plan that may prevent major business depressions is highly important to agriculture and to the nations.

3. A nation should greatly expand its agricultural research programme. Agricultural research is very young. In most countries the effectiveness of the work has only been demonstrated during the past quarter century. Money expended in this field brings greater returns to all society than any other government expenditure, unless it be that for teaching. One of the greatest needs is for much greater support and co-ordination of effort in all the branches of agricultural economics in all countries. Biological science must be balanced by economic and sociological science before the world receives the full amount of good out of any one of the three.

4. A nation should stimulate and aid agricultural co-operatives. The greatest danger in this field comes from a government-stimulated mushroom growth of co-operatives so poorly founded that they are doomed to die and reflect on the whole co-operative movement. Co-operation is a business and it is an emotional phenomenon. If either is entirely lacking, the effort does not attain full success. To-day in many nations there has developed a large fund of practical knowledge and scientific fact on the problems of co-operative business management, membership relations, and public relations which must be drawn upon fully if new activities are to be successful. Co-operation ordinarily suffers more from its over-zealous promoters than from its enemies.

In conclusion, as economists we should know our historical backgrounds. We should evaluate conditions in terms of their fundamental economic causes. We should see the present not as an isolated case but as one in a sequence of economic happenings. We should anticipate depressions and prepare for them. We should not be swept away from our economic moorings by unwise emergency measures. When emergency measures are adopted, they ought to be based on factual reasoning and recognized frankly as temporary, to be changed or abandoned as the emergency passes. We need to recognize frankly the great inadequacy of our economic research and the great lack of co-ordination between countries and build to correct this. We need in many countries to work towards a better national land policy, a modern monetary policy, an agricultural research programme, and sound progress in co-operative action.

BARON BELA MALCOMÉS, *Ministry of Agriculture, Budapest, Hungary.*

With your permission I shall endeavour to contribute towards an elucidation of the main ideas set forth in the paper read by the esteemed President of the Royal Economic Society.

Before I enter into a discussion of the subject, I should like to

make a general observation, namely, that, when one speaks of the relation of agriculture to industry, it would be a great error to regard the problem as one which, in all its aspects, is common to all countries. Agriculture itself is growing more and more industrial in character. Here in Great Britain agriculture is even called 'industry'. It follows that the relation of agriculture to industry in a country depends on the extent to which it has become industrialized. This, in turn, determines in what measure the relation of agriculture to the community may be considered the same as industry's relation to it, and in what measure—from the standpoint of agriculture—different. Before going further I must stress the point that, compared with other branches of production, agriculture has aspects affecting public interests to which priority must be given and which, even in a characteristically industrial country, must not be neglected, indeed must receive the greatest attention.

The Physiocrats of the eighteenth century, when mankind was at a more primitive stage than now, held that nature played the most important role in social economy. At the time agriculture was in its infancy. Chemistry and machinery had not yet been applied to it; the superiority of the human mind which has learned to harness the forces of nature was yet to come, and in conjunction with the physical energy used in agriculture natural forces were the greatest factors in agrarian production. At that time the merchant and craftsman were justified in saying: 'It's easy for the farmer. He sows and reaps, and nature does the rest. But the merchant and the craftsman must work and worry; nature has no gifts for them.'

Mental progress—discoveries, inventions and their application—and a more rational organization of labour have reduced the role played by the forces of nature as factors in production, and have transformed agriculture into something more like industry.

It cannot be denied that every commodity produced by man contains elements of matter, that is to say, natural elements, and elements of labour and mind. In agricultural products the percentage of the elements of matter is perhaps greater than in industrial products. Modern production, however, is characterized by a tendency to let mental work play the major role in every branch of production, as also in agriculture, and to force matter into taking a minor one. This creates a new basis of values. The development is accompanied—if only because of altered needs—by a profound change in supply and demand, in the distribution of income, and in the movements of the population. The latest developments in the evolution of international prices must also be viewed chiefly from this side. With

improvement in the production of raw materials, their prices have fallen so greatly that, coupled with higher wages, they have radically changed the proportions of the factors determining the prices of manufactured goods. This has led to an entire change in the relations of the factors of production to one another and in their individual importance.

Man's ability to extend his dominion over nature is almost boundless. That of course needs a word of explanation:

With the increase of the population the sum total of its needs grows correspondingly. Seeing, however, that the basic material of every necessity comes from the earth, the fertility of the soil is an important determining factor in industrial development, and as the fertility of the soil cannot be increased *ad infinitum*—i.e. it cannot be increased beyond certain limits without increasing the cost of production—it is indisputable that the soil is the relative and absolute regulator of industrial production.

Every area has a maximal capacity of production which determines how many people it can support. The soil of more densely populated areas must be more intensively and therefore more expensively cultivated, and so is unable to compete with areas more sparsely populated where intensity of cultivation is less.

But I have to point out that it is just the densely populated areas which are under the pressure of an increased demand for necessities, and are thus obliged to develop their industries, although the raw materials needed have to be produced at a higher cost. This disadvantage is noticeable in the exports from Europe to overseas countries. Europe is obliged not only to procure cheaper raw materials and foodstuffs from the overseas countries, but also to pay its industrial workers badly, in order to be able to compete with other continents. That is a menace to European agriculture, because it lowers the purchasing power of its consumers.

Human resourcefulness has two difficulties to contend with, the population and the soil, and in older areas where a dense population with its manifold needs lives on a more impoverished soil, industrial production and economic life in general require closer organization in order to fulfil their vocation. But besides organization and rationalization there is also a greater need of discoveries and inventions, for they alone are able to meet satisfactorily the difficulties mentioned, caused by over-population and an exhausted soil. Industry which strives to provide people with cheaper goods in greater abundance cannot do so without their aid. Discovery, by finding out forces of nature easily exploitable, furthers this aim;

inventions do so by giving us new means and methods of production. Discovery and invention have had to counteract the effects of the decreased fertility of the soil and of over-population. Modern industrial development would never have been possible without them.

Coupled with inventions, the organization of production and distribution has made it possible to supply increased demands at cheaper prices. The fifteenth century, with its geographical discoveries which opened up new natural resources, and the nineteenth and twentieth centuries, with their inventions, chiefly of a technical nature, and their new chemical processes, achieved a cheaper and more abundant production able to satisfy the demands of a growing population.

The discovery of new geographical areas acquired significance in political economy, not only because new tracts of arable land were added to the old, but also because they enriched international trade with hitherto unknown products, and on the one hand created new demands, and on the other made new inventions possible. By supplying new kinds of produce they created a demand for them. The old kinds lost in popularity and the demand for them, as well as the cost of their production, decreased. This explains why, in spite of an exceedingly great increase in the population, the prices of supplies kept on falling. The discovery of areas to be exploited by economic production has now long ceased, but a better exploitation of the areas acquired, new inventions, and the use of new processes continue steadily in our day. It was on this economic development that industrial capitalism thrived, the profits and competitive ability of which depended on the standard of life of its employees, that is to say, on the wages paid. It is therefore to be understood that every effort was made to ensure that the industrial workman should be able to buy the necessities of life, mostly of an agricultural origin, cheaply. To this end organized workmen joined forces with industrial capitalism, and the result of their joint agitation was the one-sided and false interpretation of the 'interests of the consumer' which were taken to mean the interests of the industrial worker or, in a wider sense, the interests of all the non-agricultural sections of the population. This interpretation is misleading, for the consumer is also a producer, and vice versa. The one-sided interests of the consumer should not be allowed to take priority, but efforts should be made to bring the interests of both into harmony.

So long as demand was greater than supply it was easier to understand the one-sided discrimination in favour of the interests of the consumer, but now when production has over-stepped the limits of

normal consumption, and the producer does not receive the protection calculated to insure the costs of production plus a fair profit, the time has of necessity arrived when the abuse of the title 'consumers' interests' must be stopped. It begins to be more widely recognized that the agricultural producer is also a consumer, the consumer of manufactured articles. In the very interests of industry, therefore, adequate prices must be insured to the agriculturist.

The increased capacity of production in our day on the one hand and the highly-developed system of trade aided by transportation on the other, the unequal distribution of income, the decreased purchasing power of consumption, and chiefly the one-sided protection of the consumers' interests, have brought a complete change in the free play of supply and demand which formerly kept the balance between production and consumption by means of a more or less steady process of adjustment. After the war this change led to the necessity of limiting the freedom of trade. Your own former Prime Minister, Mr. Ramsay MacDonald, explained the rightness of this tendency at the London Economic World Conference in 1933 as follows: 'No community can allow itself to be the victim of measures which, by doing away with the profits of the producer or by disturbing the costs of production, insure anti-economic advantages to the consumer.'

It was only recently through the experiences of the world economic crisis that people became generally aware that agriculture is one of the most important factors of economy, not only as a producer, but also as a consumer; that, alongside of a fair adjustment, consumption and production must be made to balance and brought into reciprocal action with the social interests. That this cannot be achieved if individualistic economic liberalism is rigidly adhered to is obvious.

These are the reasons which have led modern political economy to afford special protection to the basis of all economic life, agriculture. This protection is international, and though to-day it has not got beyond the stage of elementary measures it may shortly be expected to achieve results by a uniform regulation of the international trade in agricultural produce.

Agricultural production in itself may be an unprofitable occupation, but if linked up with the manufacture of its own raw products and their sale, the profits on the latter two will balance losses.

Industry compared with agriculture is in most cases simply a further stage of development, and the increasingly close connexion between the two finds expression more and more to-day in the fact that agriculture is beginning to take the marketing of

its own raw products and their manufacture into its own hands. Big estates have been doing this for some time, but the peasant farmers, who represent by far the greater part of agriculture, must first club together in co-operative societies before they can follow their example.

Njemetski in his essay 'Die Industrielisierung der Landwirtschaft' says: 'It is obvious that our times tend to make industry agricultural in character by eliminating the undesirable go-between, commerce, which makes the greatest profits with a minimum of labour, and by bringing agriculture into immediate touch with industry and handicrafts. When agriculture takes the industrial manufacture of its own products more largely into its own hands, a section of industry will cease to exist as an independent industrial power and will become a dependency of agriculture. A trend in this direction is manifest in present developments.'

The profitableness of agriculture depends as much on the intensity of farming and the use of technical inventions as on a development of co-operative societies perfect though they might be. The linking up of fully developed co-operative societies with the general central organizations of the agricultural co-operative societies increases their competitive ability and slowly transforms them into a concern resembling industry.

In Europe economy is still mainly agricultural in type. According to Reithinger, the scope of life in Europe, both from statistical and geographical points of view, is still mainly agricultural. Europe has a comparatively small industrial nucleus, a wide circle of handicraft industries, and almost purely agricultural peripheries. Not including Russia, it has an agrarian population of 140 millions, or 40 per cent. of its total population of 350 million souls. Another 40 per cent., or 140 millions, are engaged in handicrafts, commerce, trade, and administration, and only 70 millions, or 20 per cent., in industrial occupations. Four-fifths of that industrial stratum live compactly, partly in central and western Europe, while one-fifth is scattered in the frontier areas.

What the effect of increasing industrialization is likely to be on commerce in the old industrial states of Europe may be guessed from the fact that one-fifth of their industrial output finds markets in the agrarian and raw material countries, while only one-seventh is traded between the industrial countries themselves. But agrarian countries are now developing their industries, and the exportation of everyday finished articles will find itself in increasingly great difficulties. For this reason it would be an important task to raise the

purchasing power of the agrarian countries and make use of that added capacity to stimulate the consumption of those finished articles.

Economic life is developing along lines called 'the agriculturization of industry'. This means that, to further rationalization, industry seeks closer links with agriculture, and is organizing more and more on agricultural lines. By means of decentralization it approaches more easily the sources of raw materials, provides cheaper and more hygienic conditions for its workmen, and is able to supply the demands of the zone adjacent to a plant at lower prices and more directly. Parallel with this agricultural decentralization of industry runs the industrialization of agriculture.

To-day the majority of industries are, in fact, merely more highly developed forms of agriculture. Agriculture itself strives, when possible, to send its produce to market in a manufactured condition and be its own merchant, which means that its activity is also industrial and commercial. This development of agriculture is in keeping with the political and social interests of the State, for it prevents the spread of proletarianism, makes production cheaper, promotes the hygienic and material welfare of the population, and creates a better distribution of income which is not only a social interest, but also important to the State from a political and primarily from a financial point of view.

An interesting light is thrown on the relation of agriculture to industry by the points of view of land policy. It is well known that the growth of industry depends on the density of the population, and that the latter is affected by the average size of the landed estates. In Europe, on an average, there are 68 people to every square kilometre, in America 5·8, and in Australia 1·1; but in Europe itself the figures vary from 23 to 297 people per square kilometre. This circumstance alone does much to indicate that the right way is to achieve estates of different average sizes according to the density of the population in the different countries. The opinion is that some better prices for agricultural produce are to be obtained by creating peasant farms out of the big agricultural estates. It is said that the former provide industry with better opportunities of making money, and thus make an increase in the consumption of agricultural produce possible. As an argument against this, it must be said that the peasant farmer buys quite different kinds of industrial articles and does not count as a consumer to an important section of industry whose customers are the owners of large estates. Peasant farmers count as the consumers of industrial articles only in countries where they have been organized as suppliers of the markets and are an active

factor in trade, so that with more capital and a greater purchasing power, as well as higher cultural aspirations, they have become permanent mass-consumers of industrial articles.

The policy of exploitation pursued formerly in the colonies made the development of European industry particularly easy, which, in turn, was responsible for a great increase of the population. The colonies provided possibilities of disposing of surplus industrial products and the surplus of the population. Now we have an enormous surplus population in Europe and nowhere for it to go, and the colonies no longer represent markets with unlimited powers of absorbing European industrial articles. The problem of the requirements of food and raw material for the swollen population and industry of Europe remains, and its solution is a great cause of anxiety and worry.

The further growth of Europe's population and industries cannot be checked by artificial means; indeed it is quite certain that even in the present most adverse circumstances the rising tendency will continue, perhaps not so rapidly as hitherto. In the first place the European countries of an agrarian type will develop their industries in the near future.

On the wave of recovery following the first slump in prices after the war the prices of non-agricultural commodities rose much higher than those of agricultural produce. In the year 1929 capital invested in non-agricultural enterprises brought two and a half times as much income as that invested in agriculture. Urban industries prospered, agriculture fell back, but it grew evident that, when industry bought agricultural produce under cost price, it was doing itself an injury.

The industrialization of agriculture and the growth of industry affects social improvement and therewith the interests of the community. Evolution in the world economy cannot be checked, for its foundation is man himself and his economic needs. The human race is on the increase, the increase is rapid, and therefore economic needs are steadily growing too.

The distribution of the population is constantly changing, with production developing along horizontal and vertical lines to meet the growing demands. The change in the lines of consumption has been particularly great since the Great War and manifests itself in different ways according to the level of civilization and the occupations involved. With the growth of civilization the percentage of food consumption sinks and the amount of money spent on cultural needs, clothes, soap, books, theatres, wireless, &c., is more. The migration

of the rural population to the cities with an accompanying change of occupations also contributes largely to a change in the lines of consumption. This affects the power of the markets to absorb primary articles, for when the new demands have been satisfied the means left to satisfy the old will be less.

Regarding the special position of agriculture, Adam Smith himself recognized, and more than once pointed out in his works, that too much attention had been devoted to the development of cities and too little to the villages. To-day, after the lapse of so many years, the situation is substantially the same. The antagonism between city and village is still one of the chief economic problems. It would seem as though industrial centralization were developing towards decentralization, not only in its international aspects, but also within the framework of the different countries. Day by day the desire to reconcile civilization with a more natural way of living finds expression in the phenomena of individual and social life.

The quality of agriculture as a prop of national existence and the conserver of energy and morals and the cosmopolitan nature of industry and commerce as a factor in the progress of civilization being equally important to nations and mankind as a whole, the aim of national economy must be to harmonize the different branches of production and preserve equilibrium between them. Another aim is to see that while progress in economic development and the spread of civilization are assured, economic production is organized so that a comparatively large part of the forces of production are tied down in agriculture. In the long run, the end would be that enterprises closely connected with agriculture would, thanks to their mixed type, partly agricultural, partly industrial, themselves guarantee the development and equilibrium of the different branches of production.

Even before the Great War it was a generally known fact that agriculture was being neglected in favour of industry. Although the level of agriculture had risen, it was not in the position required to insure a proper equilibrium between the two branches of production. Industrial production had very largely increased at the expense of agriculture which supplied primary necessities. Besides the industrial production on a grand scale which supplied the demands of civilized man, there was a considerable production going on of trashy goods of no cultural or artistic value. It is evident that industries which satisfy needs created artificially and a consumption led into unnatural paths cannot be kept up in our day. A system of production at variance with the real needs of civilization, natural requirements, social points of view, and public hygiene cannot survive,

nor can a system prosper which is totally unproductive as far as civilization and the great aims of the human race are concerned. Economy must be imbued with the spirit of national thrift. An optimum in national economy can only be achieved by placing the whole system of economy under a single directive guidance. The commodities required to supply the need of a popular standard of life must be produced by the most thrifty use of the energies and means at our disposal.

When on nearing conclusion I say that the relation of agriculture to industry is growing closer and closer, and that both as regards production and marketing their interests are becoming more inter-dependent, I must not fail to emphasize the point that agriculture to-day is in a particularly critical condition owing to the great changes and oscillations in production and consumption. For this reason it must be accorded very effective support as the basis of all economic production. But let us never lose sight of the principle that a solution of the economic problems must be sought in the creation of equilibrium between the branches of production. Such an equilibrium would serve public interests in the widest sense. Agriculture is of special importance to the community as the source of popular energy and from the points of view of the preservation and regeneration of the race, the moral education of the folk, and, last but not least, national defence. When, therefore, a measure of priority is given to agrarian policy it is certainly justified, if not from economic, at any rate from political standpoints.

In conclusion let me venture to give a little practical advice. Capital invested in agriculture circulates more slowly and therefore bears a lower interest. By linking agriculture to technical industries the profits of the capital sunk in the former will surely be larger. But transactions of that sort require a knowledge of finance and commerce, as well as experience. We seek for these qualities in most farmers in vain. Their attempts to industrialize agriculture very often land them in debt. In spite of the imperative demands of modern times for industrialization, I cannot be too emphatic in advising farmers to use the greatest caution and thrift.

Let us develop and modernize agriculture by all means, but we must remember that it cannot be made entirely independent of nature and the soil. It cannot, therefore, obey the laws governing industry in everything. And let us not forget that because its dependent position makes its profits smaller and because its very conservatism serves the interests of the community, it is entitled to expect the State to discriminate in its favour.

JOSEF KNESPL, *Agricultural Institute of Farm Management, Prague, Czechoslovakia.*

The relation of agriculture and industry as the two main components of production is one of the most important features which characterize the economic structure of a country. The relationship of agriculture to the whole community shows how great an importance is attached to agriculture in a country. It also shows to what extent a country is endowed with those advantages which are characterized by agricultural production.

As a rule, in individual countries the relations between agriculture and industry developed organically over periods of several decades, often over whole centuries, according to the natural conditions and the volume of home agricultural production on the one hand and the possibilities of imports from abroad on the other hand. The development in Czechoslovakia took quite a different course. Until the end of the World War, conditions in Czechoslovakia as part of Austria-Hungary developed organically. After the sudden dissolution of Austria-Hungary, Czechoslovakia obtained, according to Dr. Brdlik,¹ only one-fifth (20.7 per cent.) of the territory of the former empire, but a full quarter of the population (26.4 per cent.) and two-thirds of all industries. In the old Austrian State, the farming population formed the majority with 55 per cent. of the population, but in Czechoslovakia it dropped to a minority of only 40 per cent. The farmers in Czechoslovakia, therefore, were faced with the duty of providing food for twice as many people as had been the case in the former Austro-Hungarian State. In Czechoslovakia the industries are to a far greater degree dependent upon export of their produce and import of their raw materials than formerly in Austria-Hungary.

An outward sign of the relationship between agriculture and industry is the numerical ratio of persons working in these branches of production. In Czechoslovakia, the ratio of agricultural population to industrial population was in 1910, 3.0 to 2.2; in 1921, 2.4 to 2.2; but in 1930 was 1.7 to 2.5. We can therefore draw the conclusion that the agricultural section of the population is steadily declining in Czechoslovakia, whilst the industrial population is increasing. Thus, Czechoslovakia is an agrarian-industrial State.

The most characteristic economic key to the relation of agriculture to industry in Czechoslovakia is the price index for agriculture, which

¹ Dr. Vlad. Brdlik, *The Agrarian Crisis and the Agricultural Import Tariffs*. Prague, 1926.

is compiled for the province of Bohemia by the Agricultural Institute of Accounting and Farm Management of CSR in Prague (Table I). In these indices the prices of all agricultural products and agricultural requisites are weighted in accordance with the actual sales

TABLE I. *Index of currency, index of prices in agriculture, discrepancy and purchasing power, compared with pre-war level.*

Year	Currency index 1913 = 100	Price indices Prices 1913/14 = 100		Discrepancy between the prices of agric. requisites and agric. pro- ducts	Purchasing power compared with pre-war level	
		Agric. prices	Agric. requisites		of agric. produce for buying requisites in per cent.	of requisites for buying agric. produce in per cent.
1921	1,636	1,274	1,184	-90	108	93
1922	897	997	1,036	+99	91	110
1923	686	809	906	+97	89	112
1924	685	884	875	-9	101	99
1925	683	889	897	+8	99	101
1926	684	781	903	+122	86	116
1927	684	853	934	+81	91	109
1928	684	815	949	+134	86	116
1929	684	766	944	+178	81	123
1930	684	658	903	+245	73	137
1931	684	589	857	+268	69	146
1932	684	510	829	+319	62	163
1933	684	496	785	+289	63	158
1934	803	511	762	+251	67	149
1935	821	580	779	+198	75	134
1936	821	601	778	+177	77	129

and purchases¹ and expressed in relation to a pre-war standard. The farming expenses of agriculture are mainly composed of products of industry and trade.

According to these indices, from 1927 to 1933 the prices of agricultural products dropped from 8.5 to 5 times pre-war level, i.e. by 42 per cent., whereas in the same period the prices of agricultural requisites dropped from 9.3 to 7.9, i.e. only by 16 per cent. The currency index was in this period 684. The greatest discrepancy between the prices of requisites and of agricultural products existed in the year 1932, when the farmer obtained scarcely three-fifths of the amount of agricultural requisites that he had received before the war; in the year 1932 farmers bought their requisites at 63 per cent.

¹ The detailed composition of the index is shown in *Reports of the Agricultural Institute of Accounting and Farm Management of CSR, Year V, No. 4.*

higher prices than they obtained for their products (compared with pre-war period).

In face of this pronounced and prolonged discrepancy it is easily understood how the debts of the farmers grew to an alarming extent.

Naturally, the economic policy of the State considerably influences the relation of agriculture both to industry and to the whole community, either by means of direct support of one or another branch of production, or by encouraging consumption, by facilitating exports or control of imports, as well as by various measures designed to influence prices.

It can very well be said that, up to the world crisis of the last period, the main instrument of State price policy was *tariff policy*, which thus came to be an important regulative factor in the relations between agriculture and industry. This also holds good for Czechoslovakia. In Czechoslovakia, from the very outset, the relations of agriculture to industry suffered because, after the World War at a period of general scarcity and high prices, a considerable amount of agricultural imports free of tariff duties had become necessary; in contrast, the tariff duties of industrial products were raised to 20 and 30 times pre-war level. At a later date (1926), with an increasing agricultural output, the influence of world competition made itself fully felt on the Czechoslovakian market and led to the collapse of prices of agricultural products; tariff protection for agricultural produce could only gradually be raised and never reached the level of industrial tariffs.

In the year 1930, when the index of Czechoslovakian currency was 684 compared with pre-war level (now 821), the more important agricultural products enjoyed tariff protection equalling 3 to 12 times pre-war level, but the tariffs of industrial commodities were 10 to 28 times pre-war standard.

The previously mentioned discrepancy of prices, however, was caused not only by difference in tariff protection for agricultural and industrial goods, but also by the social reforms such as shortened hours of work and increasing wages up till 1929, heavy contributions for sickness insurance, and particularly since 1926 high subscriptions for old age and invalid pensions, which on the one side increased the costs of industrial production and on the other hand burdened the wage bill, so that compensation was achieved through cheaper agricultural products, i.e. cheaper raw materials for the industries and cheaper food for the workers. Thus we find the anomaly that the social advantages of the industrial workers are, by means of cheapened food, mainly borne by agriculture and not by the industries.

New measures of economic policy designed to check the collapse of prices for agricultural products (import quotas, export premiums, syndicates, organizations for the purchase of produce, particularly grain) could be introduced only with the greatest difficulties and mostly only with great delay in Czechoslovakia because of the desire to protect as far as possible the working classes, the industries, trades, and the great army of public employees from the effects of the spreading crisis, in view of the political atmosphere prevailing. Prices for agricultural produce only gradually recovered; the index rose from 500 in 1933 to 600 in 1936, a recovery of 20 per cent. The comparatively small drop in prices for agricultural requisites was a result of the rigid collective rates (wages and cartels in the industries).

Another fact also proves the more favourable conditions and better business conditions of industry as compared with agriculture, namely, that the high industrial wages attracted many comparatively poorly paid agricultural workers. In the year 1925 wages were for agricultural workers 7.53 times pre-war level, for industrial workers 9.07; in the year 1930, for agricultural workers 7.76, for industrial workers 10.16; in the year 1935, for agricultural workers 6.55, for industrial workers 9.86.

The actual sales of industrial goods to agriculture decreased far more than is indicated by the decline of the purchasing power of agricultural products for industrial commodities, for the growing interest charges for agricultural debts, the unchanged expenditure for taxes and social insurance of the workers, and the cost of insurances permitted of no new investments, and only the most urgent works of upkeep could be carried out.

The agrarian crisis which originated in other countries and which began in 1928 and reached its climax in the years 1932 and 1933 (Table I) was therefore the precursor and the main cause of the industrial crisis which, after the boom of the year 1929, commenced in 1930 and reached its peak in 1933.

In Czechoslovakia, as elsewhere, a prosperous state of affairs in agriculture, therefore, is the most reliable basis of good permanent markets, independent of foreign disturbances. Thanks to the land reform, Czechoslovakian agriculture represents a wide market for industrial goods, for 95½ per cent. of all holdings are operated by independent, completely free owners of small and medium-sized farms under 20 ha. in size. These farms claim 68.5 per cent. of all farm land, whereas the group of farms over 100 ha. in size only number 0.6 per cent. of all farms and operate 13.9 per cent. of the

land. As Dr. Vlad. Brdlik¹ has proved for Czechoslovakia, the small farmers, with their high capital investments in buildings and machinery per ha. of farm land, with the greatest number of persons working per unit of land (mainly members of the family), are better buyers of industrial commodities than the great estates with comparatively poor workers.

In the same way as the industries must have a keen interest in a flourishing agriculture and in unimpaired purchasing power of the rural population for industrial goods, so must agriculture also be keenly interested, in view of the marketing of its produce at favourable prices, in a fully employed industry and in an elastic price policy (which was not the case), and must realize the unfavourable effects of industrial unemployment.

The attitude of agriculture towards industry can, therefore, not be hostile, as both branches of production offer to each other the possibilities of economic prosperity, quite apart from the fact that agriculture is the source of a healthy industrial population in good times and the basis of a more favourable standard of living, also for the industrial population, in times of stress. But it is unwarrantable that one branch of production should live solely at the expense of the other. Optimal collaboration can only be attained by mutually adjusted prices and full employment. This offers the greatest advantages to both sides. Even then, times of prosperity will alternate with leaner times, but the problem is to check the swing of the pendulum.

The present crisis, accompanied by a systematic policy of self-sufficiency in most countries, by barter trade between many States, and by restricted food imports owing to high harvests in the importing countries in recent years, has clearly demonstrated the instability of any economic policy that is solely based on the export markets. In Czechoslovakia, the former very substantial imports of wheat and maize have almost completely disappeared because of higher home production due to greater yields and increased acreage, whilst Czechoslovakia has lost its foreign markets for malting barley and, partly, for sugar. The Czechoslovakian industries dependent upon exports have thereby lost a part of their compensations. This was the more so, because fat consumption which depended on free imports (without compensations) shifted to the import of tropical vegetable fats used for margarine. Imports of raw materials have been doubled since 1927.

Also in the present difficult period of restricted foreign trade,

¹ Dr. Vlad. Brdlik, 'The Economic and Sociological Basis of Land Reform in Czechoslovakia', in the periodical *Zemedelsky Archiv*, Prague, 1919-32.

alleviation can be found, particularly, as Dr. Brdlik has proved, in the fat question.¹ The unfavourable situation of Czechoslovakian agriculture is not a result of over-production which is non-existent.

Even with the high yields of recent years (e.g. 1933), Czechoslovakian agriculture is not entirely self-sufficient; if we calculate the acreage necessary for the production of the imports and exports of Czechoslovakia as far as they can be grown there (excepting cotton and wool), 12 per cent. of land is lacking for supplying home requirements. The greatest part of the acreage would have to be devoted to supply the imported fats and raw material for this end. By restriction of imports, partly to be replaced by home production, the marketing problem of Czechoslovakian agriculture could not only easily be solved, but there would remain a considerable surplus as barter for the import of lard and non-tropical fat raw materials. However, the future of the industries must not rely solely on agricultural barter for industrial exports. In price policy and in imports, the system of equal rights, of mutual advantages, and mutual compromise, must be sought.

The right relation of agriculture to the industries forms the base of prosperity of both groups, and the prosperity of both is the surest guarantee of the welfare of all citizens of the State, for the national income of a country like Czechoslovakia can only be derived from production.

Turning now to the relations of agriculture to the whole community, it is the duty of agriculture to supply the community with sufficient food supplies at reasonable prices, and it is the duty of the community to support home agriculture as the source of its food supplies, to grant the necessary protection against unsound foreign competition, and to allow of prices in accordance with home conditions of production.

Concerning the prices of agricultural products in the economic life of Czechoslovakia, there can be no doubt that they are still very low and not sufficient compared with the prices of agricultural requisites. This is proved by the price indices in Table I and by the indices of the State Office of Statistics concerning the cost of living of workers' families in towns. Whilst on the average of the year 1935 farmers only received 5.80 times pre-war prices for their produce, the expenses of a workers' family were: for food 7.79, for rent 6.89, for clothes and shoes 6.80, for various other necessities 7.89 times pre-war level.

¹ *Vide* the periodical *Zemedelska jednota*, 15 Apr. 1934, article by Professor Dr. Vlad. Brdlik.

The low prices for agricultural products are caused by the poor prices for live-stock produce, for which in 1935 the index was 5·15 as compared with an index of 6·52 times pre-war level for plant produce. The low prices for live-stock products are due to the price of beef

TABLE II. *Home-Production, Consumption, Surplus and Deficiency of home production of some agricultural commodities in Czechoslovakia on the average of the years 1930/31 to 1934/35.*

Commodity	Production	Consumption	Surplus		Deficiency	
			Quantity	in per cent. of production	Quantity	in per cent. of consumption
	'000 truckloads	'000 truckloads	'000 truckloads	%	'000 truckloads	%
Wheat . . .	146	177	..	..	31	17·6
Rye . . .	179	184	..	..	5	2·7
Wheat and Rye	325	362	..	..	36	10·0
Barley . . .	124	102	21	17·2	..	..
Oats . . .	139	134	5	3·4	..	..
Maize . . .	24	56	..	..	32	57·3
Potatoes . .	915	915	..	..	0·6	0·1
Sugar . . .	75	40	35	46·5	..	..
Hops . . .	1	0·3	0·7	72·4	..	..
Beer, (in hl.)	9,459	9,332	127	1·3	..	..
Meat, fat, and bacon . . .	44	50	..	..	5	10·5
Butter . . .	7	7	..	..	0·09	1·3
Timber . . .	1,093	1,001	92	8·4	..	..

and dairy produce. The main reasons are the complete lack of import duties for the fat raw materials and the very slight tariff protection for lard and heavy pigs. These are the commodities chiefly imported into Czechoslovakia. At the end of the year 1935 the import duty for lard was 90 kč. per 100 kg., i.e. twice the pre-war duty, the duty for heavy pigs was 80 kč. per 100 kg., i.e. 5 times the pre-war rate.

The exceptional importance of agricultural production for the whole community was proved during the World War and in the present restless times. Agriculture ought to provide sufficient food for the general public even when food imports are endangered. Czechoslovakian agriculture fulfils its duty, as can be gathered from the average of the years 1930 to 1935 (Table II).

In the period 1930 to 1934, in the case of cereals (wheat and rye) 10 per cent. of the requirements for home demand were lacking, but in the last two years production of cereals exceeded demand, so that for the year 1937 a reduction of the wheat acreage will be decreed. The

import of 30,000 truckloads of maize is balanced on the average by the export of 26,000 truckloads of oats and barley. Respecting potatoes, self-sufficiency is attained, apart from an insignificant amount of early potatoes. Sugar production is 47 per cent. dependent on exports, hops almost three-quarters. Exports of timber amount to about one-tenth of the annual production. Self-sufficiency is reached in beef, light pigs, poultry and eggs, but 10 per cent. of fats are wanting, and, of course, the greater part of the fibres and wool needed must be imported.

Agriculture, however, is not only the source of the food supplies of the whole nation, but it represents, with its conservative spirit, its sane views of life, and with the nature of its production, an unchanging basis—the soil—a free element of health, humble-mindedness, thrift and content, without tendencies of expansion. And it is thus an important force, working towards the understanding amongst the nations and towards the peace of the world.

J. F. DUNCAN, *Scottish Farm Servants' Union.*

I am going to give you what I hope is the reaction of an ordinary practical agriculturalist to the discussion we have had to-day on the relation of agriculture and industry as seen by the pure economist and by some of those who have been speaking. The feeling I had in listening to Professor Scott in the morning was that his analysis from 1913 did not carry us far enough back because, from his own statement, for sixty years past, with the short interval of the war years, the exchange of agricultural products against industrial products had been to the disadvantage of agriculture. Now I am not enough of a statistician, and I have not enough belief in the statisticians, to be able to say whether that is correct or not. But we do know that, during that period at any rate, most agriculturalists had complained of serious times and depression. It does seem to me, therefore, that we cannot explain the relation of industry and agriculture merely in terms of the very disturbed time that we have had since the year 1913.

If we are to examine the question, we have to go deeper into it than that. I suggest that a lead will be found in another of the statements of Professor Scott, when he assumes the free play of economic forces. Dr. Ladd also assumed more or less the free play of economic forces. I am going to suggest that the free play of economic forces has never been at work in agriculture; that agriculture cannot respond readily to the free play of economic forces, once we leave frontier conditions and come into settled conditions and intensive agriculture; that there is no mobility for the peasant. His only

mobility is to leave his farm and go on the road. He cannot contract his production when the market goes against him. He cannot expand his production sufficiently, when times are favourable, to enable him to create a reserve that will carry him over the bad times. There is an essentially different response to price stimulus in agriculture from that in industry, and I believe it is in that difference in response to price stimulus that the reason can be found why industry has relatively had the better of agriculture.

I suggest, also, that the normal financing of capitalism by the joint-stock system and the fact that companies can cut their capital when times go bad is an effective way that the capitalist has of skinning the money lender—I am sorry to use slang. The agriculturalist has few opportunities of cutting his indebtedness that way and of getting rid of his burden. It is only when times become so very serious and the whole structure of the State is in danger that we find the nation stepping in and reducing the indebtedness by means that no economist, of course, could defend, but are absolutely necessary in the interest of the life of the State.

The other thing I am going to suggest is that since the seventies of last century, in every country in the world, the standard of living of the worker in agriculture, whether he is the working farmer or the wage-earner in European agriculture, has been decidedly below the standard of living generally of the industrial population. I am going to suggest that the reason why the industrial population has been able to raise its standard of living has simply been because it has continually interfered with the free play of economic forces. The industrial worker had very little respect for economic forces; he said, 'We are not going to trust the economic forces, we are going to look after ourselves.' And step by step the industrial workers have limited the free play of economic forces, and step by step Governments have been forced into following up the industrial workers, and in that way putting very severe control on the working of economic forces. There is no free play in the way the pure economist discusses it.

Now come to our present situation and the difficulties that we are faced with. There has been a tendency in every country in the world to protect agriculture during the worst of the crisis that we are passing through. I agree with Dr. Ladd that some of the measures have been wise, most of them have been otherwise. But at least it has been an attempt made on the part of the nations to protect the agricultural population from the unprotected impact of those economic forces. And it has meant that every nation has had to take

emergency measures. We all defend emergency measures and we all agree with Dr. Ladd that the sooner we can get rid of the emergency measures, the better. But what are we thinking about? We are thinking that the world will go back to the normal way that we knew in the nineteenth century and the beginning of the twentieth century, that the trade cycles will occur as they did during that period, that we can conquer the emergency period, cast off the things we have done during the emergency period, and go back to some normal period.

The world does not work that way. Every step taken during the emergency period becomes part of the experience of the people, becomes part of the government experience, affects economic forces and affects the economic thinking of the people, and becomes woven more or less into the development of life thereafter. My suggestion, therefore, is that we cannot simply look to the past and think that the economic theory which was more or less, and I want to stress that, which was more or less applicable to the expansive period of the nineteenth century, to the extension of the frontier, to the opening up of new lands, to the scattering of surplus populations all over the world, is necessarily applicable to a condition of things where we have closed doors and nations seeking to establish economic nationalism. Nor is it applicable to a period when we are more likely to be facing a shrinking population rather than the entirely abnormal increase of population which occurred during the nineteenth century. As a matter of fact, the nineteenth century is the peculiarly abnormal period so far as we know history, and the economics, based on the free play of economic forces, which was particularly applicable to the situation in Great Britain in the early nineteenth century, which was adopted and successfully adopted in the colonization of countries over the world, but which was never so completely adopted by the European nations, that economic theory which we look upon as the classical theory, is not necessarily applicable to the situation that we are to be faced with in the future. The return to an effort on the part of Governments and an effort on the part of peoples to direct and control their affairs is not an abnormal development which we have recently been facing, but, if it is examined, is more a return to what is the normal effort on the part of the human race to control its affairs and not leave them simply to the free play of economic forces.

I am not going to suggest a new theory. I am not an economist, I am simply a critic of economists. I have spent my life trying to prove economists wrong in the ordinary industrial field as those of

us have done who are engaged in looking after the interests of workmen. Whether we were right or wrong, at any rate we persisted and we have been successful in protecting to a certain extent the standard of living of the workers during that period. And at the same time as that work has been going on there has been this tremendous growth of social services. All this growth of social services has divided the industrial and the rural worker. Only in very few countries are the social services extended to the rural areas and to the rural workers on the same basis as they are to the industrial workers. Whether you take education, housing, health services, leisure, provision for unemployment, invalidity, or old age, you will find that only within recent years have some countries attempted to give the same social protection to those engaged in rural occupations as they have to the industrial workers, and all that does of course widen the gap between the industrial and the rural populations. No country yet has attempted to give to the working peasant, as distinct from the wage-earner, any of the social protection that is given to the industrial worker in the manufacturing areas. So long as that state of affairs persists, all these things have got to be taken into account as well as the effect of the price level, the effect of production, and the effect of demand. These things are as important in estimating a standard of living and estimating the relative positions of the workers in agriculture and the workers in industry. All these have been conscious attempts on the part of the community to direct things.

We have got to adjust our theories of economy to the conditions of production and the desires of the community in which we are living and make the best of the job. It may be unfortunate that we are no longer following Adam Smith and his followers, but the human race will go its own way, and the best thing we can do is not to imagine that we can bring back the world to our theories, but rather to adjust our theories to the world that we see around us. In other words, agriculture has not worked according to the classical economic theory. The question is whether you are going to revise the theories or to ignore the facts. I suggest that you stick to the facts and reconsider the theory.

T. W. SCHULTZ, *Iowa State College, U.S.A.*

All too often in discussing the relation of agriculture and industry it is assumed that a peculiar conflict of interests exists. This idea of basic conflict has been given far too much attention. It is high time that we go back and examine the dominant economic characteristics

of each. It seemed to me that although Professor Scott on several occasions in his most able manner stressed the complementary nature of agriculture and industry, yet the paper in its entirety appeared to leave the impression that really, after all, agriculture and industry had less in common than otherwise. It would have been extremely helpful if Professor Scott, with his rich understanding of economic phenomena and with his knowledge of agriculture, had outlined the characteristics of both agriculture and industry, and on the basis of such analysis had pointed out to us why it is that certain producers respond in one way while others respond quite differently when they adjust their production to the general influence of, for instance, (1) the several phases of the trade cycle, (2) rapid technical advances, and (3) abrupt shifts in the demand for specific commodities such as had been occasioned by the recent tidal wave of nationalism and its inevitable corollary, economic isolation. But for students of agricultural affairs to proceed upon the assumption that the producers of agricultural goods are in a fundamental economic conflict with non-farm producers is wholly misleading. To do so is evidence of loose thinking.

Instead of lumping all farmers and all industry and calling one white and the other black, progress lies in the direction of classifying producing units on the basis of selected economic criteria regardless of whether the producers are engaged in agriculture or in other phases of our complex economic society. Naturally, the economic criteria employed would depend upon what problem one was seeking to understand.

A line of attack, I believe, which holds considerable promise is to be found in the rather recent contributions to economic theory by Miss Robinson of Cambridge, Mr. Chamberlain of Harvard, and the statistical study of Mr. Means on inflexible prices. We have there set forth why competition in much of economic activity is imperfect in character. The implications and applications of this line of thought are indeed numerous.

This approach would entail the classification of producing units according to the degree of competition that was effective. At the one pole there would be classified those producers who operate under essentially competitive conditions. Looking upon the agriculture of the United States for a moment and considering chiefly the short-run picture, it would appear that the farmers producing the major staples—wheat, corn, cotton, hogs, &c.—all fall into this class, i.e. the producer of these commodities depends upon the demand curve for his individual output as being strictly horizontal in character. Hence, whether he contracts or expands his production as an individual

producer, the price he receives remains unchanged. With over a million farmers producing corn in the United States a single farmer may double his corn production or cut it one half without having any measurable effect upon the market price of corn. Accordingly, with a given prospective price for corn and with alternative opportunities available, the producer of corn will combine his factors of production so that the marginal cost (per unit) is the same as the expected price. At the other pole would fall all producers who have a monopolistic position. In between these two extremes a number of subclasses are required to take care of the varying degree of the *imperfect competition* that commonly prevails.

With a classification of this kind before us instead of the 'agriculture versus industry' type, it will be found that while most producing units in agriculture are at the competitive end of the scale yet there are some agricultural producers who are several classes removed and have substantial monopolistic components in evidence, such as is the case of many of the fluid milk producers in the eastern metropolitan areas and of certain specialized fruit producers in the far west.

But more significant is the fact that this general line of approach suggests a number of interesting fields of inquiry. The first of these would be to determine the proportions of our economic activity that are distinctly in the realm of imperfect competition, and what effect this stratification of producing units has upon the rewards to factors of production. With at least a partially closed door—the policy enforced by the producers at the one end of the scale—what effect does this resistance to the mobility of the labour and capital have upon (1) production in much of agriculture and similar producing units, and (2) income of farmers and others thus situated? To what extent is the apparent general over-production in agriculture due to the controlled production policy of much of our non-agricultural societies with its resulting too high prices for non-agricultural goods and services and consequently a curtailed employment of capital and labour in these producing units? If fewer of our producing units were permitted to exercise the semi-monopolistic position they enjoy, what influence would this have on (1) the additional demand for factors of production not recorded as high elsewhere, and (2) the total income of the community?

Obviously in these brief comments it is not my purpose to follow out all of the many implications herein alluded to. I hope, however, we can soon get away from the too simplified and misleading belief that agricultural production is unique and that the rest of our economic society is in conflict with it.

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At some points in to-day's proceedings the discussion has tended towards the duties of agricultural science and the possibilities of scientific investigation of agricultural problems. I would like to deal with this point in a few words. We have in Germany to-day a somewhat different grouping in the scientific treatment of agricultural problems to that of the Anglo-Saxon countries. We have the science of farm management, and we have agrarian policy as a branch of the whole science of political economy or political science. Especially in the field of agrarian policy, which is my subject, we feel very keenly and clearly the necessity of the free exchange of thought, which our president emphasized to-day, not only across the boundaries of states and peoples, but also across the boundaries of the various sections of science. Thus our Conference has the very welcome task of uniting the economic, biological, and sociological aspects, in order to gain a clear perception of the fundamentals of the vital agrarian problems.

I think, in the discussions starting here to-day, we must not limit ourselves to saying 'the classical theory is good or bad, it is useful or useless'; we must rather put the questions: In which problems can the classical theory give us useful aid? and which problems outstep the limitations within which this classical theory is applicable?

We have not sufficient evidence to support the suggestion that was made here to-day, namely, that the classical theory is only of importance for the conditions of the nineteenth century. But, on the other hand, we must coolly and sincerely take full account of the facts which have so materially shifted and altered all conditions since the beginning of the twentieth century, and particularly in the last six years. To-day we have heard of the special aspects of agriculture, of its limited adaptability to changing prices; there was even mentioned a negative reaction to prices in agriculture as compared with industry. This observation undoubtedly contains much truth, and it leads us right out of the domain which can successfully be investigated by science under the rule of economic theory which is based on the assumption of a *homo oeconomicus*. In agriculture we have the *homo rusticus*, toiling, in the main, as I may say, in the interests of his family, and if in agriculture the reaction to changing prices and particularly the possibilities of restriction of production are other than in industry, that is not so much a result of the technical and natural differences between agricultural and industrial production as of the dominating influence of the family unit in agriculture. For

the family unit cannot reduce its supply of labour and, in the event of unfavourable prices, must try to balance the effect on the total income, very often by increasing the output.

In mentioning the family economy, which I will treat of further in the course of our Conference in another connexion, we have already passed out of the field of economy into that of sociology. And, in regarding the changes in trade of commodities and the migrations of men and capital, we are urged again to outstep the bounds of economic theory. If to-day, in the whole world, the conditions of exchange of goods are different to what they were a few decades ago, political events are mainly responsible for this change, if, indeed, they are not the decisive factor. The growth of great empires, which completed their development in the second half of the nineteenth century by economic methods, is a fact which cannot be neglected in dealing with the problems of international exchange of goods, which are so important to the position of agriculture.

Wherever, therefore, we follow the questions of agriculture and its present position, we come to limits beyond which we cannot master these problems with the conceptions and the means of the classical theory. But that does not signify that this classical theory is useless and quite obsolete to-day. Which school of thought, striving, as is our task, to adapt thought to facts, could presume, of its own accord, to pursue the welter of problems to the very end by one single method? We need the approach from various angles. We need the economic, sociological, and also the biological approaches. To quote one example, how would it be possible to understand the currency problems and currency policy, so important to present agriculture, without economic theory? Nevertheless, we shall serve our purpose at this Conference best, if we do not confine ourselves to the economic aspects. This Conference will be more than just this session of to-day, which promotes the discussion of economic problems and methods, if we really are determined to practise the free exchange of ideas between the various branches of science to the mutual benefit of them all and to the benefit of our Conference and this meeting.