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POPULATION AND AGRICULTURE.

A General Review

BY

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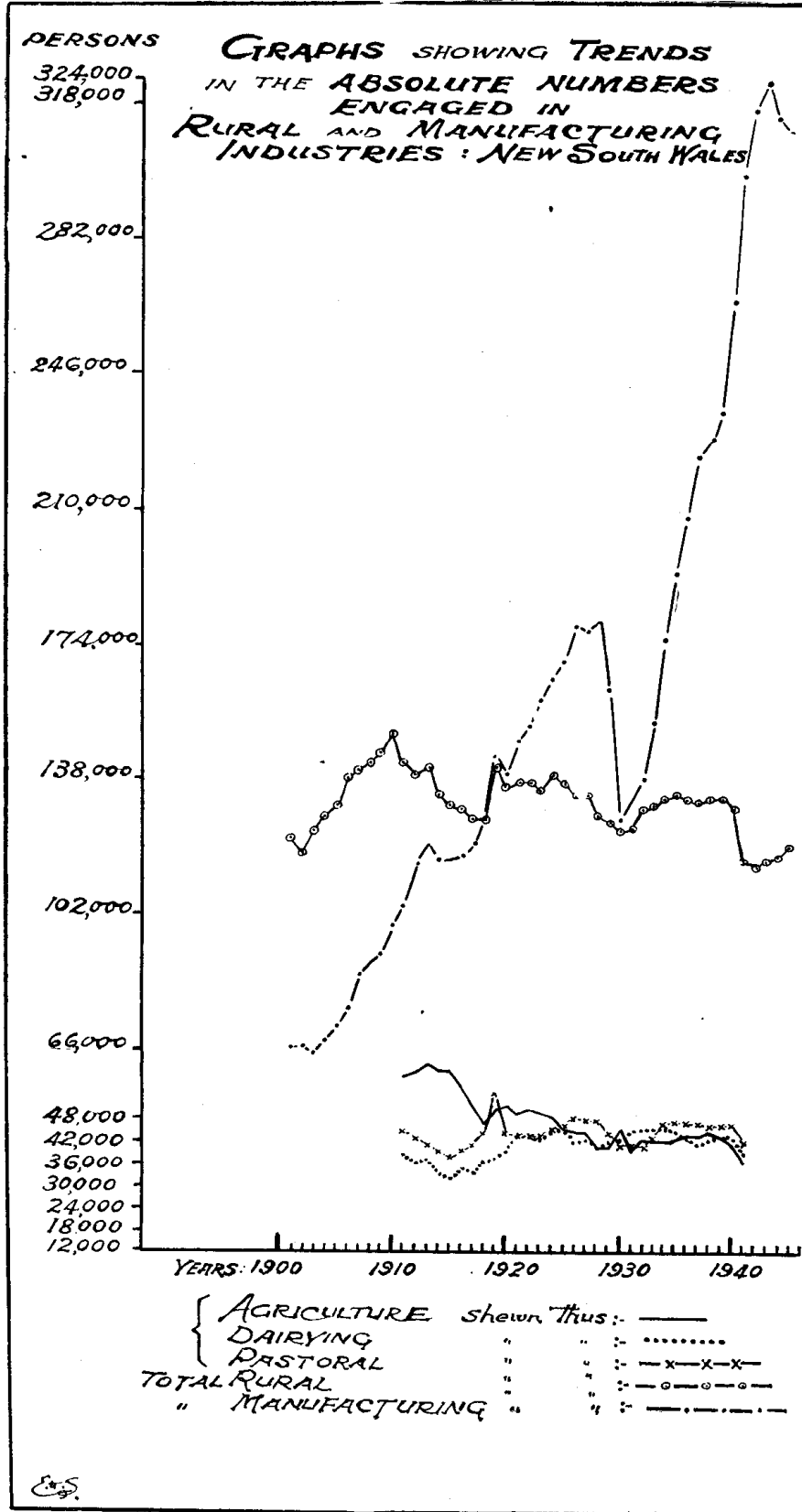
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The phenomena known as "drift to the cities" is one which is frequently quoted in relation to problems facing rural industries. Arguments often take the form that this redistribution of population is depleting the rural industry labour force and as such is detrimental to the economy. The cause given or implied, in many cases, is the lack of amenities in the country; the general dullness of farm life in comparison with the life of the city. But while there are many important problems to be faced in relation to income, employment, education and amenities in rural areas, such arguments tend to emphasise symptoms and obscure causes. The purpose of this article is to analyse in a general way some of the fundamental issues involved in the distribution of the working population of a country, with particular reference to Australia.

It is a fact that in Australia the proportion of the population living in the few large cities is steadily increasing even in spite of the considerably higher birthrate in rural areas. Between 1921 and 1947 the rural population of Australia increased by only 16 per cent., whilst that of the metropolitan areas increased by 65 per cent. In N.S.W. the increases were 25 per cent. and 65 per cent. respectively. But more significant than the fact that the number of people actually living in rural areas has failed to increase at a similar rate to the number living in metropolitan areas is the definite tendency towards a decline in the absolute numbers engaged in rural industries. This is particularly so in the case of crop production. The numbers of males engaged in crop production throughout Australia fell by approximately 12 per cent. between 1914 and 1938. Trends in the numbers engaged in rural industries in N.S.W. during this century are illustrated in Graph I. The total number so engaged has been showing a definite downward trend, although the decline has not been rapid since 1920.

The truth of the matter is that even though, as a result of both natural increase and immigration, the population of N.S.W. more than doubled between 1900 and 1940, rural industries have not absorbed a greater number of workers. The population of country towns has increased to some extent, but the marked tendency has been for more and more people to congregate in the largest cities. Is this a serious problem? What light can be thrown on the question by an examination of the position in other countries?

GRAPH I.



Employment in Primary Industries and Average Real Income per Head in Various Countries.

It is to be noted that, speaking generally of all countries in the world, those whose peoples have a high standard of living, in terms of a high average real income per head, tend to have a surprisingly small proportion of their working population engaged in rural industries.

This tendency is illustrated in Table A.* In this table the various countries are arranged in order of average real income per head of working populations over the period 1925-34. Average real income is expressed in terms of International Units; an International Unit is defined as the amount of goods and services which could be purchased in the U.S.A. over the decade 1925-34 for one dollar or its equivalent in other countries. The real incomes of the various countries have been corrected to a basis of a forty-eight hours working week. The figures for percentage breadwinners engaged in the three industry groups have been obtained from census data collected in the various countries around about the year 1930.

Of the nineteen countries shown with an average real income of over 400 International Units, only two (Ireland and Spain) had over 40 per cent., and only seven over 30 per cent., of their working population engaged in primary industries. In all fourteen countries with an average real income under 400 International Units the proportion of primary producers exceeded 40 per cent. of the working population. In twelve of these countries it exceeded 60 per cent. It is to be noted also that those large exporters of primary products which have relatively high average real income levels such as New Zealand, Australia and Argentina, are amongst the countries which have only a very small proportion of their workers engaged in primary industry.

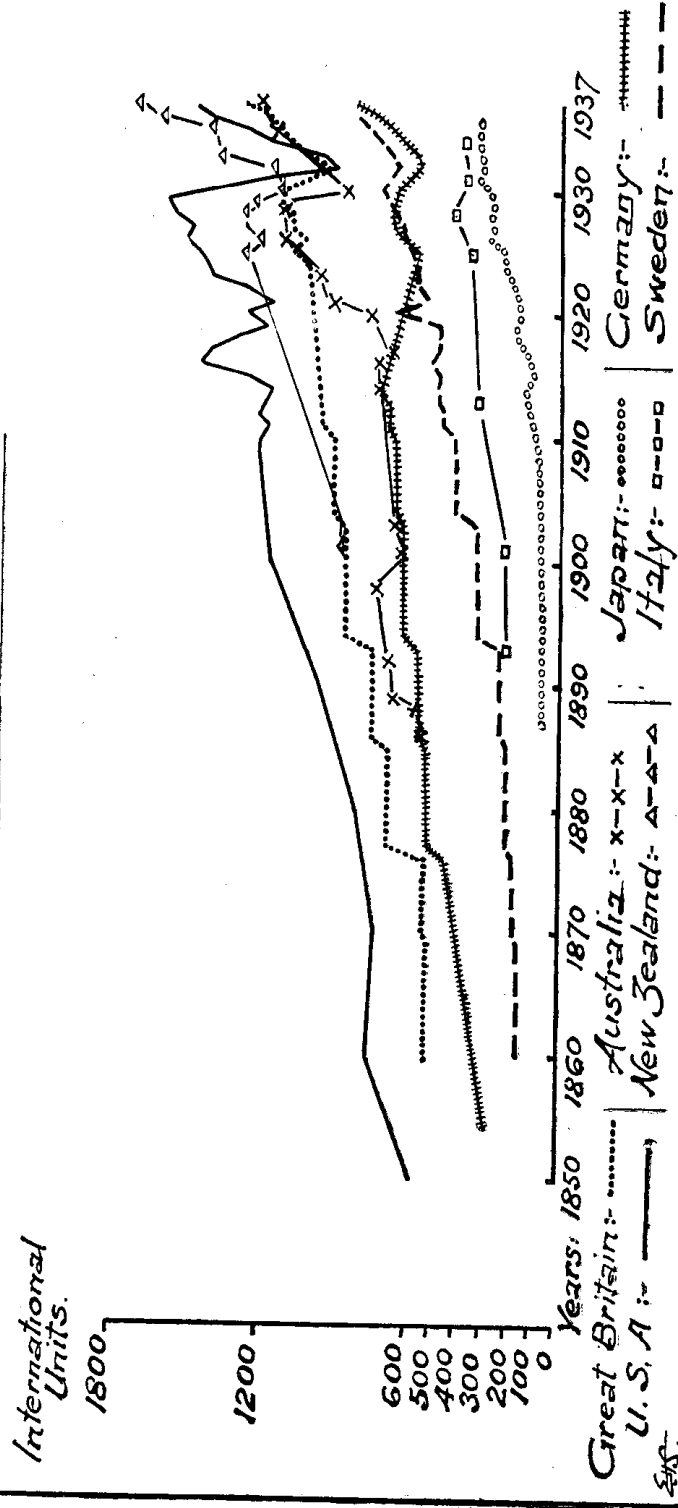
A study of the historical development of various countries indicates that where there has been a rising level of average real income there has also been a pronounced tendency for the proportion of the working population engaged in rural industries to decline. This point is illustrated by Graphs II and III.⁽¹⁾

*From Colin Clarke: "The Conditions of Economic Progress," p. 179. Macmillan & Co. Ltd., London.

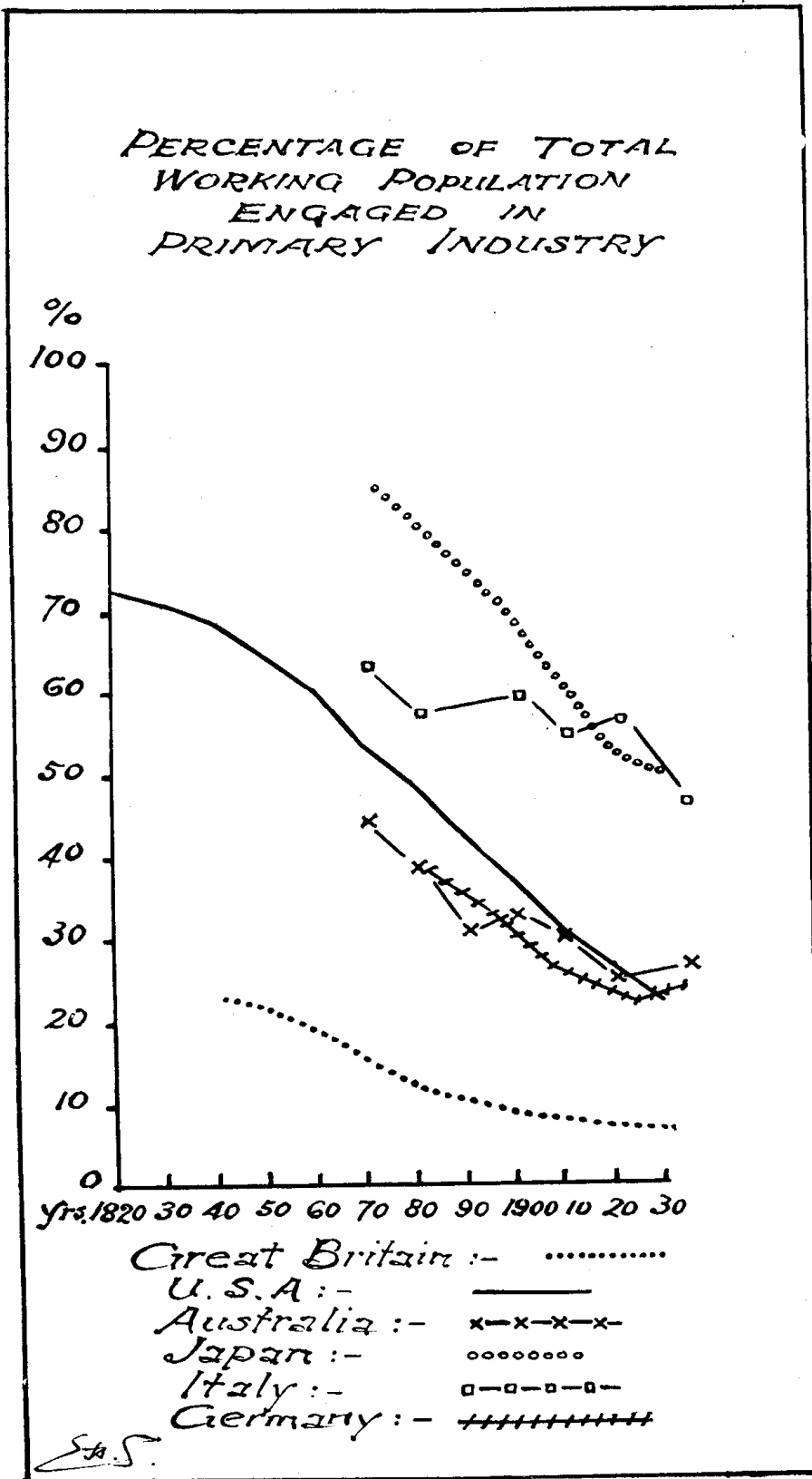
⁽¹⁾ Graph II indicates that in most cases shown the average real income per head of the working population has not risen continuously during the twentieth century. The over-all trend still has been upward but it has been marked by large fluctuations. In addition, the upward trend has been more pronounced in some countries, such as New Zealand, Australia and Japan, than in others, *e.g.*, U.S.A., Great Britain and Germany. The explanation for the apparent slowing down of economic progress in some countries, and for the marked fluctuations in average real income during this century, lies largely in the increased and variable proportion of the potential working population which has been fully or partially unemployed. In most countries shown in Graph II it is found that, while the rate of increase in the average real income per head of total population, or of the total potential working population, has varied considerably, real income per hour actually worked has advanced more or less continuously. The determination of the most efficient working week and the maintenance of stability at full employment level are therefore major problems in these countries.

GRAPH II.

**NATIONAL INCOME PRODUCED PER HEAD
OF WORKING POPULATION**
(In work and unemployed) expressed in International Units
on basis of 48 hour week.



GRAPH III.



An examination of the basic forces behind this trend indicates that in most countries it does not operate quickly enough and the resulting excess labour resources in primary industry become a serious brake to economic progress.

There are two main reasons for a gradual and continuous decline in the relative opportunities for employment in primary industries in a progressive country. These are: first, the particular characteristics of the demand for the products of primary industries, in comparison with that for the products of secondary industry and the services of tertiary industries; and, secondly, the continuously increasing productivity of labour in primary industries.

TABLE A.

Average Real Income per Head, and Distribution, of the Working Population in 33 Countries.

Country.	Average Real Income per Head 1925-34 of Working Population.	Primary Industries.	Secondary Industries.	Tertiary Industries.
		(Agriculture, Forestry, Fishing.)	(Mining, Building Industry.)	(Commerce, Transport and Services.)
	International Units.	%	%	%
U.S.A. ...	1,368	19.3	31.1	49.6
Canada ...	1,337	34.5	23.2	42.3
New Zealand ...	1,202	27.1	24.2	48.7
Great Britain ...	1,069	6.4	43.9	49.7
Switzerland ...	1,018	21.3	44.9	32.8
Argentina ...	1,000 approx.	22.6	43.0	34.4
Australia ...	980	24.4	29.4	46.2
Holland ...	855	20.8	39.2	40.0
Ireland ...	770	53.4	13.1	33.5
France ...	684	25.0	39.7	35.3
Denmark ...	680	35.7	27.5	36.8
Sweden ...	653	32.3	29.2	38.5
Germany ...	649	24.3	38.5	37.2
Spain ...	628	57.0	24.6	18.4
Belgium ...	600	17.1	47.8	35.1
Chile ...	550	37.9	27.9	34.2
Norway ...	539	35.3	26.5	38.2
Austria ...	572	24.5	38.6	36.9
Czechoslovakia ...	455	27.3	43.6	29.1
Greece ...	397	44.2	33.9	21.9
Finland ...	380	51.0	30.4	18.6
Hungary ...	359	54.1	24.8	21.8
Japan ...	353	50.3	19.5	30.2
Poland ...	352	61.6	18.0	20.3
Latvia ...	345	52.0	23.6	24.4
Italy ...	343	42.9	31.1	26.0
Estonia ...	341	51.6	24.3	24.1
Palestine	52.6	17.9	28.5
U.S.S.R. ...	285	74.1	15.4	10.5
Bulgaria ...	284	67.3	17.4	15.3
Lithuania ...	207	64.5	15.0	20.5
Turkey	73.1	11.5	15.4
India ...	110	62.4	14.4	23.2

The Demand for Primary Products in Relation to the Demand for the Products and Services of Other Industries.

Most of the products of the land are the raw materials for food and clothing and are eventually used to satisfy basic human needs. From the point of view of the consumer, the first essential is an income large enough to allow him to buy sufficient clothing and basic food commodities such as bread, potatoes, meat, sugar, etc., to maintain his physical health. But once this requirement is satisfied, irrespective of how much higher the consumer's real income rises, it is unlikely that his total demand for farm products, expressed in physical terms, will continue to increase at the same rate. Taking the particular example of food materials, which are the most important farm products, as the consumer's income rises above a certain level, his total consumption of food in terms of calories will only increase at a rapidly decreasing rate. Rather he will tend to substitute the more expensive but higher protein and vitamin types of food like milk, eggs, butter and fruit, for the more basic food materials—the cheapest source of calories, such as bread and potatoes. This is the way to an improved nutrition standard and, in fact, total calorie intake is likely to reach a maximum and then decline to some extent as the consumer's rising income enables him to achieve a more satisfactorily balanced diet.

But accompanying the above trend, as the consumers' income rises, he will devote a progressively increasing proportion of his income to the purchase of the diverse products of secondary industry and the services of tertiary industry. There is an almost unlimited demand for these "luxury" or "semi-luxury" goods and services from consumers with high incomes. A high consumption of them is an indication of a high standard of living.

This tendency for a changing pattern of consumer's expenditure as incomes rise has become known as *Engel's Law*, and the ratio between the relative increase in consumption of a product and the relative increase in income of consumers, as *Income Elasticity*. Except at very low levels of income, it can be taken that the income elasticity of farm products is considerably below unity and that, as incomes rise, it falls continuously. At very high income levels, income elasticity for certain farm products, such as basic food materials like bread, will even fall below zero.

It is apt at this stage to indicate how various countries in the world fit into the picture so far outlined. According to Colin Clarke,* before the war seven countries (namely, U.S.A., Canada, Australia, New Zealand, Great Britain, Argentina and Switzerland) had an average real income per head of over 1,000 International Units. In these countries the total consumption of food expressed in calorie value approximated to the maximum, that is, the income elasticity for food had fallen to a very low value. In the U.S.A., at least, total calorie consumption was showing a tendency to decline, due to improvements in the general quality

* "The Conditions of Economic Progress." Macmillan & Co. Ltd., London.

of the diet. Of course in all of these countries, to different degrees, there was still a considerable proportion of the population which did not have a completely satisfactory nutrition standard. The real income in sections of these countries was insufficient to allow for the purchase of the variety of foods necessary for a properly balanced diet, even if such necessities were available. However, the internal problems in these countries, at least theoretically, were fairly clear-cut, involving a continuance of the progress already taking place, but coupled with the definite objectives of permanently eliminating involuntary unemployment and of seeking to distribute more equitably the total national income.

But the population of these seven countries only amounted to approximately 10 per cent. of the world's population. What of the remainder? Before the war at least 50 per cent. of the world's population received an average real income of less than 200 International Units, and the total intake of food for this proportion of the world's peoples was less than 2,250 calories per capita daily. Furthermore, for approximately two-thirds of the world's population the average daily intake of food was less than a considerable minimum requirement of 2,750 calories per person.* The great majority of the world's population are either grossly or partially underfed. Most countries of the world do not produce enough food to satisfy the basic needs of their people, let alone provide a balanced diet. Neither can they import sufficient to make up the deficit, because irrespective of the price they may offer, the fact is that so far the world as a whole has not produced sufficient food for its total population. Increased production of food is the major internal problem of most countries—it is a world problem.

However, in spite of the fact that only very few countries can be said to have a high general standard of living, it is clear that the attainment of such does not involve merely satisfying the wants of the people for basic necessities of life, which are mainly the products of primary industry. While this can be said to be a first essential, as yet not attained in most countries, once it is attained, as in Australia, a still higher standard of living then involves the ability of the people to satisfy their wants in regard to other products and services, namely, those of secondary and tertiary industry.

There is little evidence available on which to calculate the actual income elasticity for farm products in Australia, although undoubtedly it has been falling for many decades and is now at a low figure. However, T. W. Schultz† suggests that for the U.S.A. its value to-day is approximately 0.25, and there is reason to believe that a similar figure would be applicable in this country. This means, first, that only about a quarter of any further rise in incomes in this country would be spent on farm products, and secondly, that the bulk of the remainder would add to the demand for other goods and services.

* World Food Survey, F.A.O., Washington, 5th July, 1946.

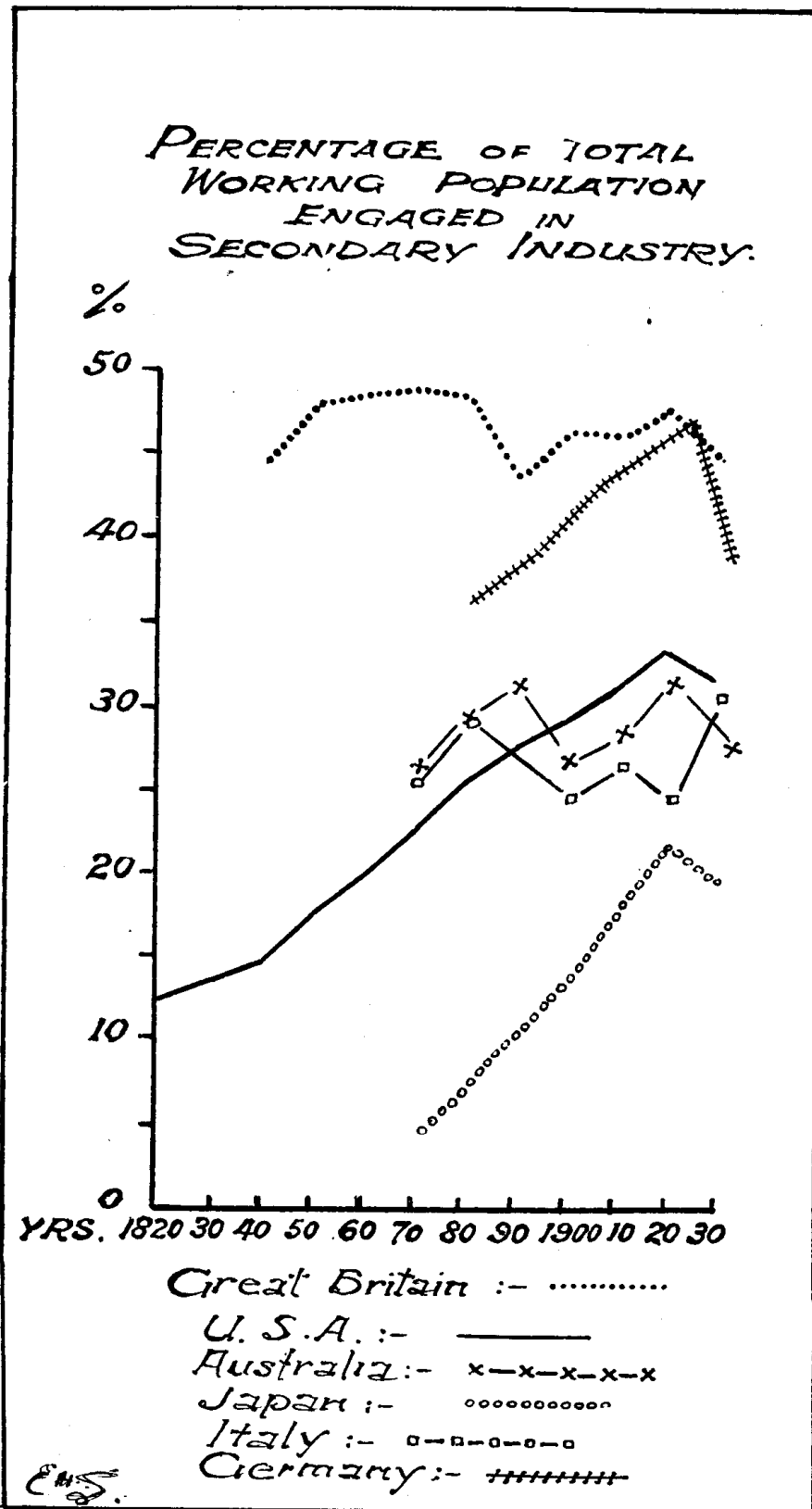
† Agriculture in an Unstable Economy. McGraw Hill Book Co., Inc. N.Y. & London.

The important fact is that in order to support a higher level of money income by transferring it into its equivalent in terms of real income in any country which already has a high standard of living, the supplies of industrial goods must increase more than proportionately to the increase in supply of primary products. In countries like Australia, New Zealand, U.S.A., Great Britain, etc., this has been the position for many years.

Of course, in the pursuit of a higher standard of living, the rate of industrialisation necessarily has been more rapid in some countries than in others. (See Graph IV.) This is for the reason that it pays countries, in terms of real income, to develop export surpluses of primary and secondary industry goods according to their particular comparative advantage in the field of international trade. Great Britain and Australia are cases in point; both have a relatively high standard of living. In Great Britain this has been produced and maintained by the development of an export surplus of industrial and capital goods with which to counterbalance a deficiency in the productivity of her primary industries. In Australia the reverse has been true. Generally speaking, it would be impossible for most countries to achieve their highest possible standard of living without taking advantage of the opportunities of international trade.

But although the rate of industrialisation has varied greatly between countries of a similar standard of living, even in a country like Australia there has been a considerable development of secondary industry. (See Graphs I and IV.) The main reason for this has been a failure of export opportunities to expand sufficiently to warrant further intensification of production methods in our primary industries. This in turn has been due to the fact that the main markets within the range of the Australian primary producer so far have been in other countries with relatively high standards of living. In these countries before the war, as in Australia, the per capita demand for most agricultural commodities was approaching the maximum, and by reason of the fact that their total populations were no longer increasing at a significant rate, total demand for primary products was also more or less stable. Furthermore, as these markets paid the highest price, conditions were strongly competitive, and Australia could only expect to increase her exports of primary products if she could supply at a lower price than her competitors. But as labour costs in Australia's primary industries are approximately fifty per cent. of total costs, increased production by way of an increase in the use of labour and intensification of farming methods has not been practicable. As will be seen later, much has been achieved in the way of increasing output by more efficient methods. But it has proved relatively more profitable to the country as a whole for an increasing amount of labour to be absorbed in the home production of certain secondary industry goods.

GRAPH IV.

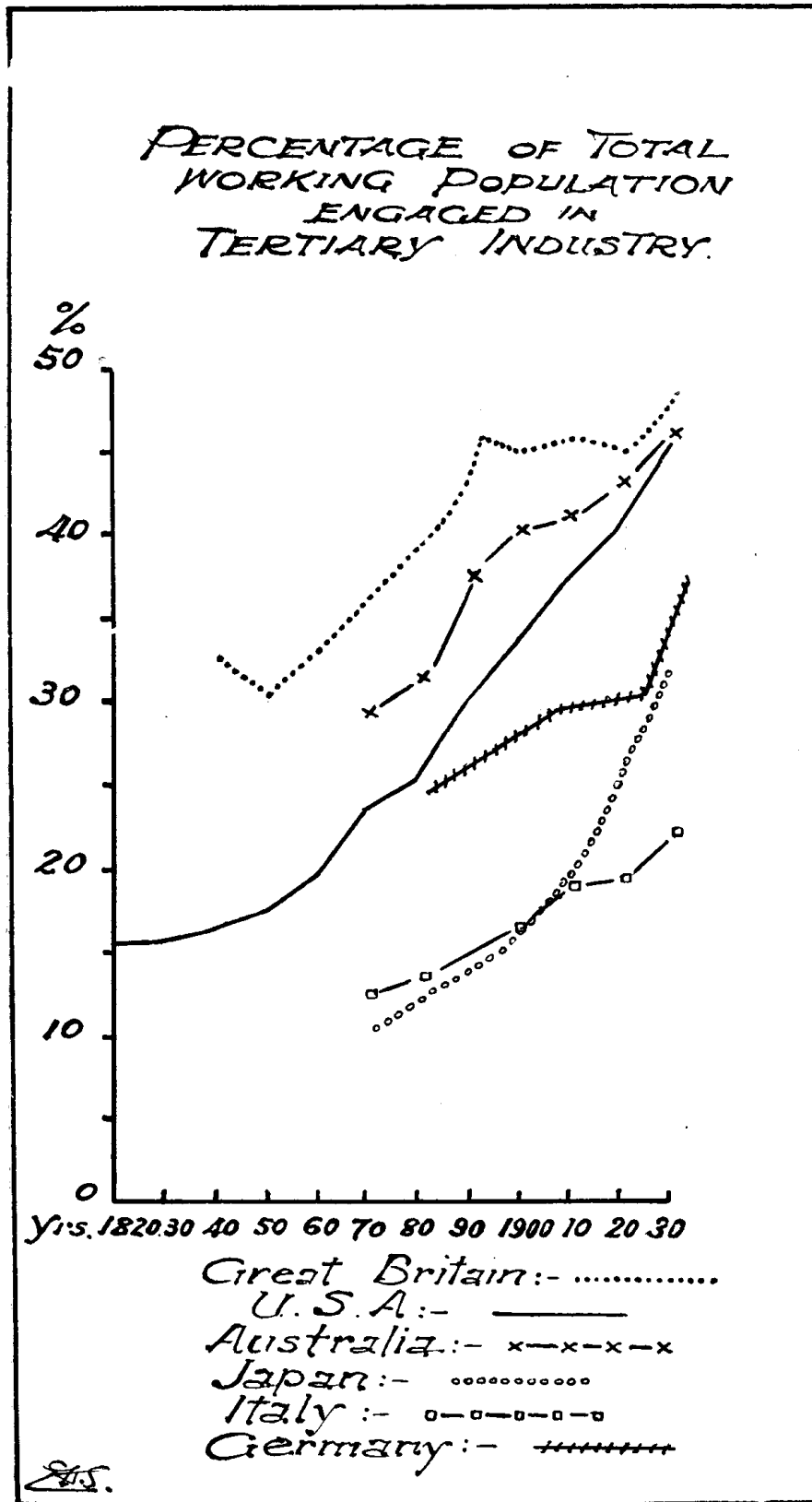


However, although some industrialisation has been evidenced in all progressive countries, it is in the field of tertiary industry that the most phenomenal and continuous advances have occurred, irrespective of whether the country be predominantly industrial or agricultural. (See Graph V.) In fact, in the countries which have shown the most rapid rates of industrialisation, *e.g.*, U.S.A., Great Britain, Japan, etc. (see Graph IV), the rate of increase in the proportion of the working population engaged in secondary industry has not been continuous. There are signs of a maximum being approached in these countries. In this connection it is probable that the development of tertiary industry, at least up to a point, would be conditioned only by a prior or joint development of secondary industry, or on the other hand, the opportunity of importing secondary industry goods in exchange for increased exports of primary products. However, it is likely, with further advances in the standard of living at relatively high levels of real income, that the demands for the services of tertiary industry would tend to outpace that for the products of secondary industry. Furthermore, there is reason to believe that because of their particular characteristics, output per worker in many of the occupations included under tertiary industry, has not increased at as rapid a rate as that in primary and secondary industry. In all events it can be said that well developed and expanding tertiary industries will be found invariably in countries with a high and increasing standard of living.

The necessity for employment in secondary and tertiary industries, particularly the latter, to expand more rapidly than that of primary industry if an increasing standard of living is to be achieved is obvious from the foregoing discussion. The main reason why this has taken place, at least to some extent in various countries of the world, is also obvious. In any predominantly free market economy the natural result of the demand for the goods and services of secondary and tertiary industry continuously outpacing that for primary industry products is a tendency for the former to offer expanding opportunities and continuously to outbid the later, for common factors of production, in particular for labour. This has previously been, and is, the position, although to differing degrees, in most countries of the world. Demand tends to create supply, and the return for labour in primary industry tends to lag behind that in secondary and tertiary industries.

In response to the differences in relative opportunities for remunerative employment, the proportion of the working population engaged in secondary and tertiary industries has increased in most progressive countries. Likewise the proportion engaged in primary industry has decreased. But in some countries, including Australia and U.S.A., not only has this been so, but also the absolute numbers engaged in primary industry have fallen, even in spite of an increasing total population. There has been an actual migration of workers out of primary industry. The latter has not been able to maintain sufficiently remunerative employment for its existing labour force. The explanation for

GRAPH . .



† 70731—B

this lies in the fact that increasing output per worker in primary industries has been able more than to keep pace with any expansion in available demand.

Output per Worker in Primary Industries.

The most important factor contributing towards increased output per worker in agriculture during this century has been progressive technical improvements in production methods such as through farm mechanisation, plant and animal selection and better farming practices. The result can only be described as a revolution. In Australia to-day a smaller number of rural workers provide for twice the population and a vastly-expanded export trade over that existing forty years ago. An illustration of the advances made in New South Wales is given in Table B. This table provides a comparison between three successive ten-year periods, namely, 1914-23, 1924-33 and 1933-42, to show differences in the average annual output, related to the average annual number of persons permanently engaged in various rural industries.

The average total area cultivated in New South Wales showed the very marked increase of 35 per cent. between the first and last ten-year periods, in spite of a decline of 32.3 per cent. in persons permanently engaged. This means that the average annual area under crop per person permanently engaged in agriculture increased by 78.5 per cent. The increase in acreage and the decline in persons engaged was most rapid during the nineteen-twenties. It is to be noted also that, while the acreage under wheat increased substantially, that is, by 27.3 per cent. between the first and last period, there was also a very significant increase in the cultivation of other crops, namely 63.4 per cent. There is little doubt that the increase in acreage per worker varied between different crops, although figures are not available to illustrate this point.

TABLE B.

Comparative Figures of Production and Numbers of Permanent Workers in Rural Industries in N.S.W.

Average Annual Figure For—	10 Year Period.		
	1914-23.	1924-33.	1933-42.
Average annual area under crop acres	4,609,252	5,306,193	6,219,382
Average annual area under wheat acres	3,637,583	4,156,431	4,631,144
Average annual area under crops other than wheat acres	971,669	1,149,762	1,588,238
Average annual No. of persons permanently engaged in crop production No.	62,608	41,250	47,314
Average annual area under crop per person permanently engaged acres/person	73.62	128.63	131.45
Average annual production of milk '000 gallons	230,040	290,602	325,190
Average annual number of persons permanently engaged in dairy farming No.	44,794	43,242	40,187
Average annual output of milk per person permanently engaged in dairy farming gallons/person	5,135.5	6,720.4	8,091.9
Average annual production of wool (as in grease) '000 lb.	325,879	432,166	505,000
Average annual number of persons permanently engaged in pastoral pursuits No.	51,847	44,628	44,738
Average annual production of Bacon and Ham '000 lb.	16,784	22,072	22,466
Average annual production of Honey '000 lb.	1,716	2,074	3,816
Average annual number of persons permanently engaged in Poultry, Pig and Bee farming No.	3,407	3,027	3,466

The total number of workers engaged in poultry, pig and bee-farming in New South Wales has remained fairly constant over the last 30 years but production greatly increased between the two ten-year periods ended 1923 and 1942; average annual production of bacon and ham increased by 40 per cent., and the production of honey by 122 per cent.

The figures given in Table B do not take into account gains in output resulting from increased yields per acre. If these could be determined for all crops it is likely that in total they would show a greater percentage increase in output per worker than is indicated by the acreage figures. In this connection it is to be noted that in N.S.W. since 1938, there have been record production levels established for wheat, barley, oats, rye, rice, sugar cane, wine, dried grapes and fruit.

In spite of a declining number of workers engaged in the dairying industry, the average annual production of milk per person permanently engaged in the industry increased by 57.6 per cent. between the two ten-year periods ended 1923 and 1942. Between these two periods the total number of persons permanently engaged in dairy farming decreased by 11.5 per cent., while total production, expressed in terms of milk, increased by 41.4 per cent.

In the pastoral industry the number of persons permanently engaged declined considerably up till the end of the nineteen-twenties and thereafter has remained fairly constant. It is difficult to obtain an accurate picture of the trend in production per worker in this industry. However, that the increase was considerable is indicated by the fact that the average annual production of wool between the two ten-year periods ended 1923 and 1942 increased by 55 per cent. Furthermore, if the total number of livestock is converted to the equivalent of sheep by adopting the arbitrary equivalent of ten sheep to every head of large stock, it becomes evident that there was also some increase in the average quantity of livestock carried between these periods. This is illustrated in Table C.

TABLE C.

Figures Showing the Trend, in the Equivalent in Sheep, of Livestock Raised in N.S.W.

Period.	Equivalent in Sheep.
	million.
1920-21	78.0
Average for 8 years ended 1933	87.0
Average for 10 years ended 1942	89.4

The figures in Table B make it clear that the declining relative importance of rural pursuits as a source of livelihood in N.S.W. has been accompanied by a considerable increase in output in most rural industries. How has this increase in output compared

with total population? Table D sets out the average population of New South Wales over the three ten-year periods given in Table B.

TABLE D.
Average Population of N.S.W.

Period.	Average Annual Population.	Per cent. Increase over first period.
1914-23	2,120,941	...
1924-33	2,472,643	16%
1933-42	2,721,648	28%

Expressed in physical terms, the increase in total output of rural industries in New South Wales over the periods shown in Table D considerably exceeded the percentage increase in population. In comparison, it is interesting to note that, excluding the war period, total output of American agriculture during this century tended to rise at a relatively slower rate than population and it is significant that the American export of primary products—in comparison with Australia—was decreasing in the pre-war period. However, in the United States, while employment in agriculture declined some 15 per cent. during the first four decades of this century, output per rural worker increased by something over 50 per cent. But perhaps the most striking example of increased output per worker in agriculture was seen during the war period in the U.S.A. Between 1939 and 1944, although the number of farms in the U.S.A. fell by 10 per cent. and the total farm population by 17 per cent., total agricultural production increased by as much as 25 per cent.*

But, despite the great advances which so far have been made in farm technology, this branch of scientific progress is still only in its infancy, and it is probable that the supply of primary products from a country like Australia will continue in normal times to tend to outpace the expansion of demand within the market range available, even in spite of a declining number of rural workers. The widespread adoption of technological advances in primary industry is facilitated by the fact that most research into new methods is handled by public agencies and most new discoveries hence are generally available. In industry on the other hand new discoveries often become the property of a particular firm or group which may postpone or make very costly the general adoption of new techniques. In addition, the highly competitive relationship between farms within the primary industry tends to hasten the adoption of new techniques. As the individual farmer has little influence over his market price, failure to adopt quickly more efficient methods and equipment leaves him at a relative disadvantage as regards income to his fellow producers.

* T. W. Schultz, *Agriculture in an Unstable Economy*. McGraw-Hill Book Co. Inc. New York and London. p. 77.

In addition to the effect on output per worker of technological progress being made in agriculture, important too, has been the influence on overall labour requirements in rural industries of the loss of certain production functions to other occupations. While it would be difficult to measure the net effect of this trend there is no doubt that it has been considerable. Some examples that might be quoted to illustrate the point are as follows:—The manufacture of butter and cheese and the slaughtering of animals to-day are carried out mainly by non-farm establishments; tractors, motor vehicles, gasoline and oil—all purchased goods—have to a large extent replaced the horse and the products previously grown on the farm for work animals. The transport and marketing of farm products have become less and less the duty of the farmer. All of these changes have helped to make farming a more specialised occupation. That is the scope, and hence the labour requirements of the industry as such have been considerably reduced.

Conclusion.

Returning now to the overall question of the distribution of the working population within a country like Australia, and its implications for agriculture, it is clear that progress towards a higher standard of living must invariably be accompanied by a changing proportionate distribution of the working population. Also, except in countries which are very favourably situated for the production of “protective” foodstuffs¹, as a result of the changing pattern of consumers’ demand and increasing output per worker in agriculture, some migration of labour from primary to other industries probably will be necessary. Considered in this light the trend known as “drift to the cities” is merely evidence of the fact that at least some workers are responding to more attractive opportunities in secondary and tertiary industry, and in terms of the standard of living of a country this normally is desirable. *The basic reasons for the drift of working population being towards the city are simply that, in most countries, secondary industry has developed in the cities and that, invariably, the rate of natural increase in population is highest in country districts.*

Relative earnings, or relative levels of real income which, to a large extent, include the existence of most modern amenities, are the main indications of the extent to which an economy has been able to adapt itself to changing conditions. Although it is important to distinguish between the long-term trend of declining employment opportunities in primary industry conducive to an

¹ That is, foods rich in proteins and vitamins. Generally speaking the production of these types of food requires more intensive land use and more labour per unit of output than the production of more basic foodstuffs. New Zealand is one country which, in pre-war years, was able to support a rapidly-rising standard of living, along with an increasing number of workers in primary industry. Most of her exports of food are of the “protective” type, for which there has been a more rapid expansion of demand in her main markets than for basic foodstuffs. It is significant, too, that in N.S.W., over recent decades, while the rural population west of the Great Dividing Range—that is, in the extensive farming areas—has decreased, that of the “intensive” farming areas on the coast, where the bulk of our “protective” foodstuffs are produced, has continued to increase.

increasing general level of real income, and possible short-term depressions of farm incomes caused by cyclical movements in farm prices, it is a fact that in most countries the migration of labour out of rural industries, in the past, has not been rapid enough to achieve the maximum possible average income per head.

The problem of eliminating or of seeking to prevent a continuous accumulation of excess labour in agriculture has no simple solution. This is evidenced by its seriousness throughout the world. *The mobility of labour from farm to factory is not as high as is commonly believed.* For example, during the inter-war period in many countries of a high general standard of living, and particularly in the U.S.A. and Canada, the disparity between rural and industrial earnings tended to widen. By 1939 in the U.S.A. rural workers earned only 42 per cent. of the average wage earnings of industrial workers.* Thus, in spite of considerable financial loss to themselves, many workers stayed on the land. This may have been due partly to the strong attraction of farm life to some people and to educational and social barriers to the migration of farm labour to other jobs. It does appear, however, that the most important reasons for the presence and development of the excess labour problem in rural industries in most countries has been general economic instability and industrial unemployment. That is, migration of labour from agriculture to industry has been determined more by the actual availability of work, than by relative earnings. There is little doubt that the depression of the thirties accentuated the excess labour problem in agriculture throughout the world. Agriculture, because of its inherent characteristics, has offered a greater degree of security to its workers than other industries. In the last depression there was little actual unemployment in primary industry—there was under-employment, but workers naturally were reluctant to leave this for possible unemployment in other industries, even if these did, on the average, offer much higher earnings to labour actually employed. The excess labour problem in agriculture therefore cannot be divorced from national policy. To a large extent the solution is to be found outside agriculture, that is, in the actual development and stability of secondary and tertiary industries. The latter must develop at a sufficient and continuous rate to absorb any excess resources which may accumulate in agriculture as a result of an increasing standard of living. This, too, has world-wide application.¹

* T. W. Schultz—"Agriculture in an Unstable Economy." McGraw-Hill Book Co. Inc. New York and London. p. 98.

¹ Throughout this article attention has been centred mainly on countries which have a relatively high standard of living, as Australia belongs to this group. However, the discussion has an important bearing on the position in other countries and on the problem of the insufficiency of total world food production. As was seen earlier, the great majority of the world's peoples still has a very low standard of living. Actually, this is traceable largely to the excessive pressure of population on the land in the countries in which most of these people live. While such a condition remains there is little hope of finding any real solution to the world food problem, and the old Malthusian doctrine, that increasing population tends to outpace the supply of food, will remain applicable in

It is difficult to arrive at an accurate estimate of the comparative earnings of rural and secondary industry workers in Australia. Colin Clarke* has stated that they compare fairly well and that, as opposed to the U.S.A., the changing proportionate distribution of the working population in this country has kept more or less in long-terms equilibrium with the movement in relative earnings. However, while some farmers in Australia make a living quite comparable with that offered by other industries, it is also true that many do not earn anything approaching the basic wage. For example, of a sample of 30 dairy farms in N.S.W. examined by this Division in 1945, 14 earned less than the basic wage, and although there is no claim made that this sample was representative of the State, there is reason to believe that the bias was in favour of high income farmers. In any case, it is true that the range of incomes in primary industry is considerable, and in this country a large proportion of farmers earn less per hour of work than workers of similar capacity in secondary and tertiary industries.

Thus, while it is true that the problem of an over-supply of labour or under-productive employment in rural industries, so far, has not become as serious in Australia as in most other countries, nevertheless the nucleus of this historically fundamental disease of agriculture is present, and is liable to spread as the country becomes more mature. It is possible, too, that it might be unwittingly nurtured to the detriment of the economy as a whole by unwise policy in regard to such things as subsidisation and closer settlement schemes. These could easily have the effect of inhibiting alterations in the distribution of labour which may well be necessary if the country is to achieve a higher general standard of living and the re-organisation of farming conducive to maximum efficiency under modern conditions.

It would be unwise to assume that what has happened in most other countries more fully developed than Australia could not happen here, and statements frequently read and heard, to the effect that agriculture is being depleted of its labour force and that this is detrimental to the economy, are to be strongly criticised. Except for the temporary shortages of rural labour caused by war-time influences, Australia is fortunate that the migration of workers to secondary and tertiary industries has been so rapid. It is quite evident from experience in other countries that, because

many countries. For the ultimate solution to the deficit problem in world food production does not lie in the hands of the few countries which already have a high standard of living. These countries can make little contribution, without sacrificing their standard of living and, in any case, their excess productive capacity is not unlimited. Rather is it for those countries which come within the lower income groups to seek to stimulate a more rapid absorption of workers into secondary and tertiary industry. Not only will this enable them to greatly increase food production on their own account by making possible the introduction of more efficient methods, but also the industrial goods so produced will assist them to compete on a more equal basis in world food markets. This, in turn, will stimulate greater production in other countries.

* "The Conditions of Economic Progress." Macmillan and Co. Ltd., London.