

UNIVERSAL
LIBRARY

OU_152848

UNIVERSAL
LIBRARY

ECONOMIC SCARES

ECONOMIC SCARES

BY

EDWIN CANNAN

EMERITUS PROFESSOR OF POLITICAL ECONOMY
IN THE UNIVERSITY OF LONDON

152848

LONDON

P. S. KING & SON, LTD.

ORCHARD HOUSE, WESTMINSTER, S.W. 1

1933

Printed in Great Britain

BY RICHARD CLAY AND SONS, LIMITED
BUNGAY, SUFFOLK

PREFACE

THIS collection does not profess to be exhaustive. Economic scares are numerous, and their ramifications complicated. But it seems at the present time to be the urgent duty of every economist to do all he can to allay the fear of an adverse balance of trade which threatens to wreck all international co-operation in industry, the fear of insufficiency of ~~work~~ which is giving rise to all sorts of crazy schemes of social reorganisation, and the fear of spending too much or living on capital which is nearly killing the increase of capital. The fear of over-population was perhaps not a bad thing in its time, but that time is long past, and whatever influence it still exerts on public and private action is baneful. If anyone complains that I am here flogging a dead horse, I entreat him to be good-natured enough not to grudge me the satisfaction of showing that I began to flog nearly forty years ago when the scare was still very much alive.

For kind permissions to reprint I have to thank the Editors of the *Economic Journal* in regard to Articles II and IV and Appendix I, Messrs. Chapman and Hall in regard to Appendix II, and Barnett

House, Oxford, in regard to Article I, which may still be obtained from Barnett House or any bookseller under the title of *Balance of Trade Delusions*, price 1s. 6d.

Oxford,

February 3, 1933.

CONTENTS

I

"AN ADVERSE BALANCE OF TRADE" . . .	PAGE I
-------------------------------------	-----------

II

"NOT ENOUGH WORK FOR ALL" . . .	21
---------------------------------	----

III

"TOO LITTLE SAVING"	42
-------------------------------	----

IV

"OVER-POPULATION"	83
-----------------------------	----

APPENDICES

I. A FORECAST OF POPULATION MADE IN 1895	108
II. A FORECAST OF NATALITY MADE IN 1901	125

I

“AN ADVERSE BALANCE OF TRADE”¹

THIS lecture is going to be a very elementary one. I do not think the founders of the Sidney Ball Lecture intended it for the kind of discussion of which we see examples in the *Economic Journal* when the inmost circle of experts dispute about imaginary phenomena with all the fervour of Roman augurs interpreting the meaning of the entrails of a sacrificed goose. But I would not have ventured on so elementary a subject as balance-of-trade delusions three months ago. It is the immense volume of silly talk about the balance of trade which has emerged from the highest quarters both of the political and the business world which has convinced me that we economists have hitherto completely failed in our duty to make this matter clear to the public. So completely have we failed in the two hundred years since we began to exist as a class, that if David Hume were still alive, he could repeat to-day with perfect truth what he said in 1752—“ This apprehension of the wrong balance of trade . . . discovers itself wherever one is out of humour with the ministry or in low spirits,” and he could add, as he added then, that if the Heptarchy was still in existence in England, the

¹ Sidney Ball Lecture delivered at Oxford, November 13, 1931, entitled *Balance of Trade Delusions*.

legislature of each of the seven states would have been continually in fear of a wrong balance and would have loaded and oppressed all its commerce with the others "by a jealous and superfluous caution."¹

The guise in which the bogy of a "wrong," "unfavourable," or "adverse" balance of trade appears has indeed changed somewhat since Hume's time, but the bogy itself remains as unsubstantial as ever.

The balance-of-trade theory began to be taught about the beginning of the seventeenth century or a little earlier, and underwent no appreciable modification for at least a hundred and fifty years. Postlethwayt's *Dictionary*, in 1755, says "that which is commonly meant by the balance of trade is the equal importing of foreign commodities with the exporting of the native," *i.e.* trade balances exactly when the imports and exports of commodities are exactly equal. But the term "commodities," though it might be explained as including services, did not include money and the two precious metals of which money used to be made, gold and silver. It was taken for granted and accepted by all that imports and exports *including* gold and silver must be equal, and if that is so, it is obvious that if the imports and exports of commodities and services other than gold and silver do not balance, "the balance" as it is called, *i.e.* the amount necessary to make the two sides of the account equal, must be

¹ "Of the Balance of Trade" in *Political Discourses*, subsequently republished in *Essays, Moral and Political*, Part II.

made up by a net import or export of gold and silver. Then, as the acquisition of gold and silver was supposed to be the great end of trade, the "balance" was said to be "favourable" when it showed a net import of precious metals, and "unfavourable" or "wrong," to use Hume's phrase, when it showed a net export of those metals.

Postlethwayt makes this quite clear. After saying that trade balances when imports and exports are equal in value, he goes on to explain that a nation is reckoned to have the advantage in the balance of trade when it exports a greater value than it imports, and that "the reason of this is," that if the exports exceed the imports, the balance "must be made up in bullion or money" and the nation consequently "grows richer" by that amount. This being the balance-of-trade theory as understood from its birth about the beginning of the seventeenth century to the middle of the eighteenth, what were then the balance-of-trade delusions? There was little need in that period for anyone to quarrel very much with the basic assumption that when proper allowance is made for transport expenses, imports and exports *including* gold and silver must be equal in value. There were indeed already some economic transactions between different countries which were not purchases and sales of merchandise; tributes and gifts were not unknown. But what Thomas Mun said in 1630 remained true, that these things were "uncertain and of small consideration."¹ Later

¹ *England's Treasure by Forraign Trade*, ch. ii; cf. ch. xx at end.

they become of paramount importance, as we shall see presently.

If we accept that main assumption, not as absolutely correct, but as a tolerable approximation to the facts of the time, we can say there were during that period two balance-of-trade delusions: firstly, the belief which Adam Smith ridiculed, that a perpetual and indefinitely large net inflow of gold and silver was a thing to be desired by each country, and secondly, the belief which Hume scoffed at, that the way to get a sufficient inflow into a country, and more especially to prevent a country from being "drained" of such gold and silver as it had got, was for the government of that country to watch over and manipulate its foreign trade so as to keep it from having a "wrong" balance.

I need not waste time over the first of these delusions. Adam Smith killed it, and it is not now held even by the American Federal Reserve Board and the Bank of France, though these institutions have acted as if they did believe in it. But pray do not credit those white-washers of our ancestors who allege that it never was widely accepted. It certainly was, even, strange as it appears, in countries which were the sources of the precious metals. Spain and Portugal wanted to keep all the gold and silver which was produced within their dominions, and not to part with a single ounce of it.

The other delusion, that foreign trade must be watched and manipulated in order that precious metal may be gained and retained, still survives among the vulgar, and has begotten a child as bad as

or worse than itself, which has recently been harboured in higher circles.

Of course it is true that if imports and exports *including* gold must be equal, the difference, if any, between the value of the imports and exports other than gold must be made up by a "balance" of imported or exported gold. But the same thing is true of any other article of commerce. If the imports and exports including gold and lead must be equal, then any difference between the imports and exports *excluding* lead must be made up by a balance of lead. Where the delusion comes in is in supposing that the way to secure the required "favourable" balance of gold is to pull the trade in other things this way and that instead of adopting the much more simple and obvious plan of offering a sufficient value of other things in exchange for the required metal. When a country which does not produce lead wants lead, it does not propose to secure a sufficient supply by restricting and hindering imports of all things other than lead and encouraging exports of all things other than lead. It takes the much more effectual course of offering an attractive price for the lead it requires. And it is never afraid of being "drained" of its lead by an "unfavourable" balance of trade; it recognises that owners of lead in the country will only part with it to foreigners if the foreigners will give them more for it than it is worth at home; and that as the foreigner buys and takes away more and more of it, the lead remaining will become of higher and higher value at home, so that the "drain" or "loss" of lead will stop at some early stage long

before all the lead is "drained away." The fact of a particular metal being used as the material of money cannot exempt it from the ordinary laws of value. If a country makes its money of gold or lead, and reckons prices in what are practically weights of gold or lead, that will not prevent it being able to acquire just as much of the money-metal as it chooses to give the market value for, this value being, of course, measured in things other than the metal itself. Every ounce of the metal in the countries which do not produce it must have been brought or sent there by persons who wanted commodities or services in exchange for it, and who sent much or little according to the demand. Once inside such a country, the metal will remain there without "flowing" or "being drained" away so long as the foreigners do not offer more commodities and services for it than it is worth at home, and if they do acquire some of it by offering more, the process will come to an end long before all or indeed any large proportion is "drained away," *i.e.* given to the foreigners in exchange for goods and services. The process will come to an end because the more currency that goes the higher will rise the home value of what remains.

After Hume all intelligent people accepted this view of the matter. They saw that unless paper substitutes took the place of gold withdrawn, the contraction of the currency caused by the withdrawal must raise the value of the gold currency remaining and check further withdrawals, so that if the currency was kept sound, no one need fear that the "balance of trade" would carry it away.

But as time went on it became less and less approximately true that the whole of the goods and services coming to a country must be equal in value to those going from it, no matter whether short or long periods are under consideration. Large payments unbalanced by equally large payments in the opposite direction came into vogue. In the Napoleonic wars this country sent out large quantities of cloth to clothe the armies of her Continental Allies which were paid for by subsidies voted by the British Parliament, *i.e.* the country taken as a whole gave away that amount of exports without getting any return of a more tangible character than an uncertain gratitude and a delusive sense of increased security. Irish landlords, apprehensive of being shot, came over to live in Cheltenham, and so much of their rents as did not go to pay their agents for their work and risks, came over to England in the shape of butter and eggs. Irish emigrants to the United States, on the other hand, would send the old people in Ireland a few of the dollars which they earned, and these dollars would buy wheat or something else from the United States, which would thus get nothing in return except the old people's letter of thanks. Then foreign investment became a still greater disturbing factor. New countries began to borrow money and issue shares for money in the old countries; the money raised was spent in the old countries on rails and locomotives and such-like things which thereupon swelled the exports of the old countries without causing at once any counterbalancing import. If, indeed, as sometimes happened, the

borrowing country promptly failed to pay any interest, nothing was ever imported into the lending country to balance the exports from it ; if interest was paid, it was paid in subsequent years, and if it went on long enough, it did not stop at balancing, but in the long run was indefinitely greater than, the original export ; and of course if it went on for a limited time and then the capital was paid off, the investing country received more than it sent out during the whole period.

In this, the modern state of affairs, the rich old countries came to receive quite regularly more than they gave, because though they made many bad investments, on the whole their foreign investments paid a moderate rate of interest, and in time this interest had become big enough to exceed their annual new foreign investments. Then the value of their imports regularly exceeded that of their exports, and the excess was, of course, just the good which they got from having invested abroad. What would be the good of investing abroad unless sooner or later such a surplus was received? If you invest £1,000 in Argentina, what do you do it for except to get something annually from Argentina? The Argentines will pay you your dividends or interest in wheat and beef exported to England. "What!" you say, "me receive dividends in wheat and beef? Non-sense! I'm paid in *l. s. d.*" No doubt, but how do the Argentines get *l. s. d.* to pay you? Obviously by sending wheat and beef here to be sold and then handing you the proceeds in *l. s. d.*

While the rich old countries thus received pretty

regularly more than they gave, the countries in which their foreign investments were made, taken all together, gave out more than they received. But taken separately, each of them did not always show a steady excess of outgoings, because each of them had occasional bursts of large borrowing during the continuance of which the new borrowing would exceed the interest paid on the old obligations; during these periods, which might last for many years, the imports into that country would exceed the exports; then, when borrowing slackened or stopped, the exports would exceed the imports. Such fluctuations were very distinctly observable in the Australian statistics.

In this modern world where investment overleapt international boundaries, there was clearly no longer any justification for assuming equality between the imports and exports of any country, and "the balance of trade" became a misleading expression. No one tries to think of the Isle of Wight's "balance of trade"; we think of the island quite simply as having no exports worth mentioning, and having very large imports because people living in the island have incomes secured in Great Britain and other places outside the island, and they draw these incomes into the island in the shape of many articles of food and drink, every scrap of the materials of their clothing, etc. But the hide-bound traditionalism of the nineteenth century prevented the entities called "countries" (which are generally areas having customs barriers and consequently statistics of imports and exports) from being treated in the same

simple and intelligible way as we treat the Isle of Wight. People went on talking about "the balance of trade," and even kept up the old practice of calling an excess of exports a "favourable," and an excess of imports an "unfavourable," balance. The more intelligent, indeed, said that "favourable" and "unfavourable" were technical terms which no longer carried their ordinary signification, and they managed to get the general public in the rich old countries to submit to a steady predominance of imports. The submission—a rather grudging submission—was due largely to the invention of a phantom called invisible exports and imports.¹ The public was led to believe that, though recorded imports and exports did not balance, there were unrecorded or "invisible" imports and exports in addition, which when added into the account would make it balance. To treat various services rendered as unrecorded imports and exports, the value of which should be added to that of the recorded imports and exports, and called "invisible" imports and exports, was defensible. But it was quite absurd to call the registration of a person's name as an owner of colonial or foreign stock, or even "scrip" issued to owners of colonial and foreign bonds, an "invisible import" counterbalancing the export of locomotives and rails bought with the loan, and to

¹ Giffen at a meeting of the Statistical Society on March 21, 1882, spoke of insurance and freight making a total of eighty millions, "which is really, to use a phrase which I have tried to make familiar, an invisible export." See the Society's *Journal*, June, 1882, p. 219. He was arguing against the belief that the foreign trade figures showed that the country was "living on its capital."

call the letter in which Bidly O'Callaghan thanked her son Pat for sending her ten dollars from Chicago an invisible export to be set down at £2 1s. 1*d.* in the British account. What exactly is the "invisible export" from the Isle of Wight which counterbalances the import of all the things bought by people in the island with incomes accruing on the mainland was never explained. But the public's uneasiness about the balance of trade was somehow lulled when it was told, "Oh, but you mustn't look only at the recorded imports and exports; you must include the invisible imports and exports, and then you'll find the account balance all right!"

This very confusing application of the term invisible imports and exports to things which were really neither invisible nor imports and exports, did nothing to disabuse the public of the traditional belief in the beneficial character of exports, and the pernicious character of imports. Of old, exports had been looked on as beneficial because they brought in gold and silver, and imports as evils—necessary sometimes, but still evils—because they tended to take gold and silver out. This view was now abandoned by all except the most ignorant, but the new method of drawing up accounts of the external relations of countries suggested to the common man that exports were good because they tended to pay off monetary obligations of the country and imports were bad because they tended to increase those obligations. So firmly rooted was the belief that it was better to give to the foreigner than to receive from him that even ardent free-traders would defend

imports not on the ground that it is a happy thing to receive goods and services and the less you pay for them the better, but because, as they put it, "if you don't import you won't be able to export"! As if to send out goods and services and get back as little as possible was the ideal. And quite recently the governments of more than one country have been found willing to guarantee that the government of another country will eventually pay for exports sent to it on credit, although that country has completely and continuously repudiated older debts.

The consequence of the continuance of the old bias against imports and in favour of exports was that a new delusion took the place of the old delusion that gold and silver would be lost unless the balance of trade was regulated. The large class of people who spend their time in arguing that their country is going to the dogs began to take every opportunity of raising a scare that their country was not really able to pay for all the imports it was taking, and either was or soon would be paying for them by running into debt to the foreigner—a course which, they said, could only end in some rather unexplained phenomenon called "national bankruptcy." They conceived their nation as being in the position of a private individual who runs up enormous unpaid bills with his butcher, his tailor, and his garage, and eventually goes into liquidation and pays sixpence in the £. Great Britain, for example, would be conceived as receiving wheat on tick from Western Canadian farmers, beef on tick from Argentine ranchers, tea on tick from Ceylon planters, and so on,

and eventually being obliged to confess inability to pay. *Who* exactly would be unable to pay, and why whoever was unable to pay for what he had got should not be allowed to go bankrupt in the ordinary way were never explained.

A few moments' consideration will suggest that the very best time for raising a scare of this kind is when the countries in which the rich old countries have invested capital are doing badly. Then the dividends paid by them to the investors in the old countries shrink, and default is made on some of the interest payable, so that the amounts paid to the investors in the rich old countries become less; and it is easy to suggest that it will become less still. The scaremongers then rush about the rich old countries declaring that it is already difficult, and will soon be impossible for them to pay for their imports. The balance of trade, they say, must be "redressed," and it is necessary to subsidise exports and impose duties or prohibitions on imports, or the country will be buying more imports than it can pay for, and consequently be on the high road to national bankruptcy. Now if the same thing happened to the Isle of Wight, that is, if the property which inhabitants of the island own outside the island began to yield less income than before, we might be sorry for those Isle of Wight owners of property, but we should not worry at all about the island's balance of trade. We should simply take it as the natural thing that those persons in the Isle of Wight whose incomes were reduced would spend less and invest less in and out of the island. If they could and did

counterbalance the whole reduction of their income by not investing as much as they used to do outside the island, nothing would happen to the movement of goods across the Solent; if they could and did counterbalance the whole reduction of their incomes by cutting down their expenditure on things brought into the island, the simple result would be a reduction by that amount of the imports; if they met the whole reduction of their incomes by reducing their expenditure on new potatoes and other things produced in the island, people in the island would sell these things to the world outside the island, so that the loss on income derivable from outside would be counterbalanced, and imports paid for as usual. It is quite certain that there would be no appeal to the County Council of the Isle of Wight to get parliamentary powers to give bounties on exports and impose duties or prohibitions on imports in order to "redress" or "put right the balance of trade and save the island from bankruptcy."

There is no conceivable reason for supposing the case of Great Britain or any other great country to be different from that of the Isle of Wight as we have just described it. If the income from foreign investments falls off, the balance of trade will "redress" itself so far as is necessary without any of the politicians' impertinent and ignorant attempts to assist it to do so.

But reduction of income from abroad is not the only thing likely to help the scaremongers when the new countries are relatively less prosperous. In such

times these countries offer relatively less attraction to investors in the old countries, who therefore are more inclined to put their new savings into something in their own country. This change will necessarily depress the exports of the old countries. If any of us here lend money to or invest in Australia or Argentina instead of investing it here, exports will go to those countries which otherwise they would not have been able to pay for. We may think if we like of ourselves as posting banknotes to Australia or Argentina, but if we did the notes would be sent back to buy something in the old country where they circulate freely. Conversely a diminution of fresh foreign investment tends to depress the exports from the old country and increase the excess of imports into it. Then the balance-of-trade scaremongers start lamenting the diminution of the exports as if it were the result of *incapacity* to save and invest instead of merely a sign of preference for home as against foreign investment.

Applying our Isle of Wight example once more, would it not be absurd to lament the widening of the gap between the island's exports and imports if that widening were caused by relative prosperity in the island which led to the people there investing their savings in new lodging-houses and hotels there instead of in new investments on the mainland?

I can fancy somebody saying, "Why all this general elementary stuff? What John Bull wants is to be told about his condition at the present moment." But if he wants that, my reply to him

is *De te fabula narratur*. We are passing through exactly one of those phases which I have been describing as so favourable to the balance-of-trade scaremonger. The decline in the rate of growth of population over the civilised world is tending to worsen the position of the primary producers who provide the coarse necessities of life, and various improvements in agricultural and other primary production also tend in that direction. The inducement to open up new areas and extend cultivation and occupation has greatly diminished. Openings for new capital and industry are now tending to be more and more in the production of the semi-necessary luxuries and refinements of life than in the production of the coarser necessities, and these luxuries and refinements are likely to be produced in the rich old countries rather than in the poor and new countries. As if this were not enough, some of the most important of the undeveloped countries have done their best to hamper their own development by imposing all sorts of trammels on commerce and by actually refusing to admit immigrants able and willing to work. Then, when their miserable policy, joined to the unavoidable conditions, has brought them into some difficulty, many of them have naturally begun to pay worse dividends or none at all on capital invested in them by the old countries, and some of them have failed to meet definite obligations to lenders in the old countries.

No wonder then that investors in the rich old countries have preferred to keep more of their savings at home !

I will not quarrel with anyone who says that these savings have somewhat diminished since the pre-war period. It would be rather astonishing if they had not diminished, in view of the enormous redistribution of wealth which has been effected by the post-1914 increases of income-tax, super-tax, and death duties. The easiest and least thankless method of dealing with a very large income is to invest a large proportion of it, and even with moderate incomes the rule is that the bigger they are the larger is the proportion likely to be saved. Redistribute net income in the direction of taking from the rich and giving to the poor, and you are pretty certain to diminish savings. Moreover, there is some justification for less savings in the diminished rate of growth of the population; an equal population does not require so much new capital as an increasing one. Of course the average citizen does not think about that, but if he has only one or two children or none at all he is likely to be less inclined to leave much behind him than if he has half a dozen, though of course it may be easier for him to do so.

But even if savings have somewhat diminished and, what is more doubtful, have diminished more than is reasonable under the circumstances, how perfectly ridiculous is the assumption of those (some of them in quite high places and with immense reputations for mental ability) who talk of us as "living on our capital," as if we had not been adding enormously to our capital!

Remember that the important thing is not how much individuals have subscribed to new issues on the

stock exchange, but how much has been actually added to the useful property of the whole community. In recent years no doubt we have misspent much of the money raised by the motor-vehicle licences, but at any rate we have more now to show for the money than we have to show for the money subscribed in the eighteen-eighties on Russian bonds. The statistics of savings commonly put forward ignore losses, and are apt to omit accretions to property which are paid for out of rates and taxes or out of what the individual regards as expenditure rather than savings. To get a true estimate of what is going on you must look at the property itself and consider whether it is greater or less. Looking at the actual material equipment of the country, can any of us who remember what it was thirteen years ago have the least doubt that it is enormously bigger and better? What proportions of it can be supposed smaller or worse than in 1918? Some industries are suffering considerable depression, but it would be difficult to find even one of these with smaller or worse equipment than it had in 1918. The mines, cotton mills and shipyards have as great a productive capacity as they ever had; the railways have more. In most other directions the increase and improvement of material equipment are undeniably enormous. What of the wider, smoother and dustless roads? What of the millions of additional motor-vehicles which crowd them, and the works at which these vehicles are made and the garages in which they are stored and repaired? What of the millions of new houses which have been built, and the improvements

to the old ones? What of the additional and improved furniture and fittings of the houses—the wireless sets, gramophones, telephones, and all the other things almost unknown at the beginning of the century? What of the additions to the equipment of buildings and apparatus for new and old schools and universities?

Does any one pooh-pooh these things as trivial, and say we don't want these luxuries and refinements, but more food? Of him I would ask, "Are we then swine demanding nothing but more and more hogs' wash? Is it not luxuries and refinements that we live for? Are we short of food? Is not the great cry of a large section of the scaremongers that we are getting our food too cheap?"

Difficulties we certainly have. In common with most of the civilised world we have the great difficulty which arises from the stupid desire of central banks, backed by legislatures and nationalist public opinion, to hoard the standard of currency and thereby raise its value. We are the special prey of the too ingenious bureaucrats who, "immured in Whitehall," devise schemes which, at any rate as botched by the politicians at Westminster, sap the existing incentives to industry and good conduct without putting any substitute in their place. And thus we manage to throw away more than 10 per cent. of our productive power.

But even so we manage to carry on, and whether on or off the gold standard we certainly shall not benefit by reviving the three-hundred-year-old and long-ago exploded superstition that the balance of trade must

be watched over and kept right by Parliament—a superstition which can only be ranked with the once equally widespread belief that witchcraft must be smelt out and witches burnt at the stake.

II

“NOT ENOUGH WORK FOR ALL”¹

IF everything were as it should be, the demand for labour would be too elementary a subject for me to take in addressing the Fellows of the Royal Economic Society in the forty-second year of its existence. But it is a melancholy fact that the forty-one completed volumes of the Society's *Journal* have not succeeded in producing any considerable improvement in the mind of the public in connection with this matter. Within the last few years the governments of two great countries have actually congratulated themselves on the fact that the demand for labour had increased along with the increase of population, as if that were something unusual; a British Cabinet Minister supposed to be in charge of Employment has entreated pensioners and owners of property (other than his wealthy colleagues) to get out of their jobs to make room for the unemployed; and eminent statisticians have found great comfort in the declining growth of population, being apparently under the impression that the smaller the population is, the less likely is it to come up to the amount of employment.

¹ Address on “The Demand for Labour” delivered on inauguration as President of the Royal Economic Society at its annual meeting, May 26, 1932. Printed in the *Economic Journal* for September 1932.

The whole trouble arises from the failure of the public to realise that labour as a whole produces all sorts of things, and that this prevents human appetite from being satiated at an early stage by an increase in the whole produce of labour in the same way as it is satiated by an increase of any particular product.

In spite of the jeers of those who find that Robinson Crusoe's moccasins pinch their feet, let us proceed from the simple to the more complicated by asking ourselves in the first place what would happen if there were no sort of communication between individuals.

In that case the number of workers would coincide exactly with the number capable of work, for the very cogent reason that nobody could live without employing himself. Stark necessity would drive every one to work to some extent—in fact, a very considerable extent—and beyond this he would work for just as long as seemed to him worth while. He could not possibly imagine himself as “wanting work”; his feeling would always be that he had far more work than he wanted. The more persons capable of work there were, the more work would there be. No observer, not even one coming from the midst of our more complicated and confusing organisation, could suppose that in such conditions there would ever be any danger of “the demand for labour falling short of the supply and leaving would-be workers unemployed.” The demand for labour would always absorb the whole supply, and “employment,” in the sense of number of persons employed, would simply be equal to the numbers of persons able and willing

to work. The unable and unwilling would be dead. Defoe never depicts his Robinson Crusoe as in want of a job.

Nor does he suggest that if there had been a hundred survivors from the wreck instead of only one, they would have sat on the shore and said: "Our teeming population is too great for the work to be done; we must have an eight-hour instead of a ten-hour day, or else put twenty of us on the unemployed register." It might be more difficult for a hundred to subsist on the little island than it was for one, but that would suggest working more rather than less.

The situation would not be altered by the hundred persons deciding to co-operate by dividing themselves between the different classes of labour.

If the first attempt to distribute the hundred workers between the different tasks provided jobs for only eighty of them, this would be promptly corrected either by distributing the surplus twenty among the occupations already staffed, so as to give the society a little more of the products of all or some of those occupations, or by starting them on the production of some new products—or, of course, thirdly and more probably, by a combination of these two methods.

If somebody from our present Ministry of Labour arrived and asked the Directors of the society, "Don't you find it difficult to keep so many people in employment?" they would answer, "Certainly not; we want a lot more things than we have. Of course if we were very much better off than we are, it might

not be worth our while to work as hard and long as we do, but that would not be what you would call a difficulty in finding employment."

Whether such a society worked under conscious direction—autocratic or democratic—or worked by way of countless individual bargains and contracts, would not matter at all. The system of co-operation by individual agreement could only come into existence gradually, owing to individuals finding that they could get more by exchanging services than by working each in isolation, and we cannot imagine anyone complaining that he had been "thrown out of work" or "deprived of his employment" when he improved his condition by concentrating on a special kind of labour. A person who gave up making his own clothes and going a long distance to the salterns to fetch salt, because he found he could get clothes and salt more easily by increasing his agricultural output and selling the addition for clothes and salt, would scarcely be likely to complain of "loss of employment."

Expansion of the co-operating circle would present no difficulty. There would be no obvious "vacancies" for additional workers, but to say that therefore no new workers could be received, would be like saying that a tree cannot grow because there are no obvious vacancies on the trunk for new branches, nor on the branches for new twigs. Of course if would-be recruits fell down from heaven at the rate of a hundred thousand a week on some Stow on the Wold or Bury St. Edmunds, and declared that they were skilled mustard-makers, and mustard-makers

they must always be, they could not all be employed. No cheapening of mustard, no "publicity campaign," however aided by fictitious "Mustard Clubs" and "Barons de Beef," would suffice to enlarge the demand for mustard to the necessary extent. But if we imagine the recruits arriving, as they do in real life, in the shape of boys and girls spread all over the area, and becoming adolescent workers under the care and influence of their parents and friends, who push them into the various occupations wherever the most promising openings present themselves, we can see that the expansion of the different classes of employment would be sufficiently simultaneous to secure an all-round increased demand for goods and services to meet the increased supply. It is clearly wrong to assume, as the less instructed members of the public are apt to do, that because increase in the amount of mustard or of any other single product makes it more difficult to sell the whole of that product, therefore an increase in the amount of all products will make it more difficult to sell them all. When one is increased alone, the value of it necessarily tends to fall, because it is more plentiful relatively to other things. But when all are increased, there is no tendency for all to fall in value, because the increased plenty of each is counteracted by the increased plenty of the others.

It would not be from expansion of numbers that unemployment might be feared, but from dislocations inside the co-operating circle. A cessation or diminution of demand for some product, or a dis-

covery of some improved method of producing it, might render it impossible for some or all of the persons who had become specialised in a particular occupation to continue to be employed in it. These persons would not go back to the old non-co-operative way of living, because the condition of persons inside the co-operating circle would have become so obviously superior to that of those outside that no one would willingly try to live in isolation. Anyone thrown out would prefer to cadge on those remaining in; he would say he was "willing to work but unable to obtain employment."

But a better possibility than either going back to self-support or cadging on others would clearly exist in a redistribution of employment between the different kinds of labour.

Owing to the shortness of working lifetime, much redistribution of the working force between different occupations could be effected in the course of a few years without any individual being required to change his occupation. Human beings begin to work in their teens and drop out at various times, most of them within sixty and nearly all within seventy years. If we put the average duration of working life at forty years, and suppose the population stationary, $2\frac{1}{2}$ per cent. of the workers would be dropping out per annum and being replaced by an equal number of recruits. There are few occupations which could not be wiped out in less than sixty years simply by a cessation of recruiting, and without anyone being obliged to leave unless by infirmity or death.

It is worthy of notice that the mutability of the working force owing to the shortness of working life, while thus making redistribution easier when population is stationary, makes it still easier when population is increasing. This can best be shown by a numerical example : if when the population is stationary each member of it reduces his consumption of some product by 10 per cent., the aggregate consumption of that product will fall 10 per cent. ; but if the population has increased a little over 11 per cent., a 10 per cent. reduction of consumption per head will leave the aggregate consumption undiminished, and no diminution of the number of workers producing the article will be required.

Nevertheless, changes would often be sudden and large enough to require that the redistribution should be carried out in part at least by a transference of living individuals from one occupation to another, and difficulty would be involved in this transference.

Often the reduction of demand for one particular kind of labour would be necessarily accompanied by an increase in the demand for another kind, and sometimes the new kind would be easily undertaken by persons accustomed to the old. If, for example, horses were superseded by automobiles, the demand for horse-drivers would diminish, but it is easy for a horse-driver, if not addicted to drink, to become an automobile-driver. In such cases redistribution would be easy, but it might present great difficulties in other cases. If straw hats went out of fashion, and felt hats took their place, the straw-hat makers would find it difficult to "take to" felt-hat making,

which is a very different kind of art. Besides, the two arts might have been carried on in different places, the straw-hat making in a Luton, and the felt-hat making in a Stockport; the change of fashion might come suddenly, so that the felt-hat making would draw all the necessary recruits from the neighbourhood of Stockport before the straw-hat makers of Luton realised that their trade was dead. In such cases the workers in the superseded trade would not, like the horse-drivers, find a new and possibly more lucrative employment obviously calling for their services. They would find it difficult to move to Stockport, and if they succeeded in doing so after some delay, they would by that time find no vacancies in the felt-hat industry even if they were competent to fill them. If they started felt-hat making at Luton when the industry at Stockport was already supplying all the new demand, the trade would be over-supplied; more felt hats would be produced than people would demand even if they could buy them cheaper. Some pessimist economists would look round despairingly and say there was "no evidence of vacancies for workers anywhere." But in fact there would be vacancies, because the felt-hat industry at Stockport would have attracted persons who would have been employed in certain other industries if there had been no change of fashion. A small drift of industry all the way to Stockport from Luton would then relieve matters, the Luton straw-hat makers being widely distributed among all the industries a little depleted by the increase of felt-hat makers at Stockport.

Pressure, of course, would be necessary, but it would be applied by the prosperity of the Stockport and the adversity of the Luton hat-making, each of which would be shared to some extent by the other trades in the neighbourhoods of Stockport and Luton.

To the pessimist economist an even more desperate situation would seem to arise when something occurred which altogether wiped out the demand for some product without obviously putting an increased demand for some other product in its place. Thus we might imagine not that straw hats were superseded by felt hats, but that all hats and other head-coverings were superseded by bare heads in consequence of fashion decreeing that hats shall no longer be worn. Where, the pessimist would ask, are there any vacancies now? But the answer would almost obviously be: "The community, or rather the individuals of which it is composed, having no further need for hats, all that they formerly gave for hats can now be given in exchange for other products, and it is in the making of these products that the displaced hatters should look for employment. It is true that no single product—barring perhaps hair-oil and remedies for sunstroke—is indicated as more necessary than before, but the demand for most things is more or less elastic, so that people's means being enlarged by their not having to pay for hats, we may be sure that they will slightly enlarge their purchases of a good many other things if the displaced hat-makers distribute themselves judiciously over the remaining field of industry, increasing most largely the produce of various things for which the

demand is most elastic, and also perhaps starting the production of some entirely new services or commodities." In practice this would mean the displaced hat-makers spreading themselves very widely, with a decided bias in favour of luxuries as against necessaries. It is obvious that spreading would be necessary; to put all the hat-makers into the manufacture of any other single article would multiply it till its value fell so much as to make earnings in it disproportionately low and perhaps below the level of bare subsistence. The bias in favour of luxuries as against necessaries would be required, because in regard to necessaries people are always nearer the point of satiety than they are in regard to luxuries. Indeed, if "necessaries" were only used in literally necessary amounts and qualities, we could say that everyone alive proved by the mere fact of being alive that he had all the necessaries of life in sufficient quantities, and therefore that, except for the increase of population, no increase of necessaries was wanted at all. In fact, a certain excess and elaboration of necessaries are enjoyed; one pair of braces may be a necessary of life, but there is some convenience in having as many pairs as one has trousers, and some people are believed to find an æsthetic pleasure in wearing beautiful braces. Consequently it would not be true to say that since the unemployed as well as all other people were already fed and clothed, none at all should be drafted into the production of food and clothes, but it remains true as a general rule that more room would be found in the luxury trades than in the necessary.

So, in the simple state of things which we have been supposing, it is clear that there would be no limits to employment except those imposed by the number of potential workers and their willingness to "go anywhere and do anything" on such terms as could be got. Unemployment would occur, but would be the result, not of there being too little work to go round, but of circumstances which caused some persons to offer to produce things or services on terms which the rest did not think good enough to be accepted by themselves. Ex-hatters would be out of employment if they persisted in offering to produce hats when people had decided that it was better to do without hats, or if they persisted in asking more for some other kind of labour than the consumers, potential and actual, of the product of that labour thought it was worth.

The source of employment would remain what it is in the case of isolated individuals—the desire of man to satisfy his needs. But while the isolated individual satisfies his own needs directly by his own labour, each of the associated individuals would satisfy them by the indirect method of satisfying other persons' needs, and having his own satisfied by what he got from them in exchange. When they failed to agree in the bargain, unemployment would appear.

Now is this Robinsoniad, as I am sure some of you will contemptuously call it, utterly unlike what we have to face in real life?

Real life is not nearly so unlike as it appears at first sight. To talk of the thousand million workers in the world as having arranged terms on which they

will work for each other, certainly seems a little unreal. Human imagination boggles at the task of conceiving what would happen if we all lost both our memories and our records and had to start afresh, each of us having to come to an agreement with all the others who might want his services or be prepared to serve him. But we never need a fresh start. The beginning was made ages ago when population was sparse and facilities of transport were trifling, so that each man had few neighbours and little chance of serving and being served by people at a distance. It is only by a very gradual process that the little circles within which co-operation was possible have widened till they have cut into each other and produced an organisation which covers the whole earth, and is so complicated that it is quite exceptional for anyone to have more than a vague impression of the thousands of men and women in all parts of the globe who have contributed their mites of labour to the production of the food which he eats and the clothes which he puts on, and it is unusual for anyone to have very much more knowledge of those whom he serves directly and indirectly and who may sometimes be as numerous as those who serve him. Moreover, though the body of persons in economic co-operation cannot, any more than the human body, be resolved into the atoms of which it is composed, and be reconstituted in a new form, old atoms are continually going out of it, and new atoms are continually coming into it, so that the complicated mutual agreement is constantly subject to gradual modification. There does not seem to be the smallest

ground for the common belief that under existing conditions increase of population can outrun increase of employment. The additional workers make employment for each other just as much as they would do in our supposed simple state.

As far as those are concerned who work, as we say, "on their own account," for purchasers of their products or services rather than for "employers" in the ordinary sense of that word, there can be little doubt or difficulty. When we see in a growing town or suburb the new brass plate of a fresh doctor or dentist, the new shop-front of a fresh butcher or grocer, and the new board of a one-man garage or a one-woman laundry, we do not doubt that these people are working for each other, and that the increase of persons of working age willing to work for each other and successful in agreeing about the terms on which they will do so has been the cause of the increased employment. Unemployment may appear for just the same reasons as in our supposed simple state. If a doctor puts up his plate where nobody is ill or where everyone already has sufficient medical attendance, and if a laundress offers to wash only at prohibitive prices, such persons will fail to get employment, but their failure will not show that the organisation is closed against all recruits, but only that the doctor and the laundress are not offering the right kind of work on acceptable terms.

The fact that some or all of these independent workers have to use instruments which are private property—"capital," as most economists call it—does not destroy the argument. If the property is

their own, those that are better provided with it will be able to produce more or better products, but there is nothing in this to alter the demand for labour. If we suppose that some of the workers have not sufficient property of their own, and therefore hire instruments from others, as farmers hire land from landowners and as cab-drivers used to hire cabs from cab proprietors, or if we suppose them to borrow money from others to buy such things, there is still no reason for supposing that new limits to the amount of employment will be introduced. Workers who borrow in this way will indeed have to share the produce with the owners of the property, but that is all.

Difficulty only seems to arise when a somewhat different method of co-operation is adopted as between the workers and the owners of property. Instead of workers paying owners of property an agreed rent or hire for the use of it and having the whole of the produce either for their own consumption or for exchange for other things and services, the workers may agree with the owners of property to work more or less under their direction, using their land or instruments, and abandoning to them the whole of the produce in return for agreed wages or salaries.

Now though the truth has been much obscured by verbose sophistries, it is easy to see that no new limit to employment can be introduced by the workers contracting with owners of property to work for an agreed sum and to let the owners of the property have the produce instead of contracting to give the owners a fixed rent and keeping the produce for

themselves. The difference is that under the first system the workers take the residue after paying the owners what has been agreed upon, and under the other system the owners take the residue after paying the workers what has been agreed upon, and there is no reason to suppose that this causes the amount of employment to be limited by capital or anything else.

What *can* be said is that when, instead of bargaining directly with the consumers of their products, large numbers of persons are employed by intermediaries,¹ unemployment is likely to be somewhat greater, because the persons so employed are less likely to adapt themselves quickly to the needs of varying situations. When a person is offering services to an employer who re-sells to the consumers, it is much less obvious to him that in order to keep in employment he must produce what the consumer wants at a price which the consumer will pay, than it is when he is offering goods or services directly to the consumer. His bargain now has to be made with the employer, and he is naturally apt to concentrate his mind on the fact that within certain limits he can

¹ I use the neutral word "intermediaries" rather than "capitalist-employers" because there are now, growing in number and importance, intermediary employing bodies which are not owners, but only borrowers of the capital used in their business. Such are distributive co-operative societies and many port authorities which pay an agreed rate of interest on the capital lent to them and give whatever surplus over expenses there may be to the customers, either by way of dividend on purchases or by reduction of charges or by improvement of facilities. Governments, national and subsidiary, fall into the same category when they work a service "on business lines" so that the charges which they make cover expenses, including interest on borrowed capital, but do not yield a profit beyond or above.

get more by squeezing the employer, and to give too little weight to the fact that the employer will not be able to sell more than certain amounts at each step in prices, the amounts diminishing as the price rises. He will always be inclined to say at first that the employer's residue is too large. If that is disproved by a demonstration that as a matter of fact it is very small, or even negative—a loss, in fact—he will fall back on an assertion that the business is badly run, or that the employers are not getting as good prices as they might do if they were better bargainers or did not compete so vigorously. If he is one of a large number of persons either employed by the same employer or employed under uniform standard terms by a number of employers, conversation with his colleagues is likely to confirm his belief that the difficulty could be removed by better management, and if he and his colleagues are members of an organisation of which the principal business is to make the best possible bargain for its members, he and they are likely to hear the arguments which can be put forward in their favour more often and more trustfully than those which tell on the other side.

In this way the natural reluctance of the individual to leave his occupation and adopt another is made greater than it would be in a simpler state. Mobility is further reduced when the workers' organisations in flourishing trades hamper the admission of recruits to those trades by restrictions on learners and insistence on standard uniform wages. Transference from a declining to a flourishing industry is clearly

hindered if adult persons cannot be employed in the flourishing industry unless they have been apprenticed to it in youth, or must be paid full standard wages while they are still inexperienced and consequently inefficient.

Opinions may differ about the exact importance of these obstacles to mobility, but that they are of considerable practical importance is certainly suggested by the fact that the unemployment of ordinary times is much greater in the occupations in which people are employed by intermediary individuals and institutions than in those in which they work directly for the consumers, whether they sell services or goods.

“ This line of argument,” it may perhaps be objected, “ is plausible as an explanation of the manner in which the doctrine of ‘ there is room for all in industry ’ may be reconciled with the existence of unemployment in particular trades, but it does not account for depressions in which unemployment is general. Employment is certainly never uniformly bad in all trades at once—in some it is always better than in others—but it is often so widespread that it cannot be attributed entirely to want of mobility.”

But general unemployment is in reality to be explained almost in the same way as particular unemployment. In a particular employment, provided demand for its product is elastic, more persons can be employed if they will work for less remuneration. In all employments *taken together*, demand is indefinitely elastic, and consequently indefinite

numbers can be employed if they do not ask for too high a remuneration. General unemployment appears when asking too much is a general phenomenon.

It seems unlikely that such a phenomenon could appear in our supposititious simple state. If A was expecting much more than he could get from B, he would be disillusioned when he found that B had equally extravagant expectations of what he could get from A.

But when nearly all bargains are made in terms of money, and incomes are universally reckoned in money, general illusion is easier and disillusionment is not likely to come so quickly. It becomes much easier to expect more than can be got, and it takes longer to discover the mistake. When A and B, instead of exchanging their products directly, both sell them for money in the market and do not come face to face, their extravagant pretensions are not confronted with each other. Each imagines himself as getting money from an impalpable entity called "the consumer," whom he credits with infinite means of payment, rather than as bartering his own product for the products of other people. The terms on which he parts with his product depend, in fact, just as much on the purchasing power of the money he receives as on its amount, but it is very seldom that he fully realises this. Everyone who produces and sells some particular kind of goods or services naturally watches the prices of the things he sells more carefully and intelligently than the prices of those which he buys. The things which he sells are his specialty

and are small in number ; those which he buys are a multitude, and each of them taken separately is only a part, and usually a small part, of his expense. Their prices seldom move all in the same direction at once, and if they do, they never do so all at exactly the same rate, so that to make out what is the rate of movement of the whole is by no means easy. Therefore producers, with very few exceptions, take far more notice of changes in the amount of money which they get than they do of changes in the amount of things which they can buy with the money when they have got it. Nearly everyone is more pleased with a rise of 10 per cent. in his money-income than he is annoyed by a coincident 10 per cent. rise in the price of the things he buys, and nearly everyone is very much more annoyed by a fall of 10 per cent. in his money-income than he is pleased by a coincident fall of 10 per cent. in the price of the things he buys.

Consequently, when a variation in the general purchasing power of money is taking place, the readiness of people to co-operate on the terms which they offer one another is very seriously affected. If the variation is a fall in the value or purchasing power of money, their readiness, as a whole, is increased, because those who buy services with the intention of selling the products of those services are made more ready to buy them by the expectation of their profit on selling being improved by the intervening rise of prices. Their greater readiness to buy the services is not at once counterbalanced by an equal increase of reluctance to sell in the minds of those who render the services, because these persons, accustomed

to reckon their economic welfare by their money-income, are slow to grasp the fact that their real income is being reduced, and so do not at once insist on their money-income being raised sufficiently to prevent this worsening of their condition.

On the other hand, when the variation is a rise in the value or purchasing power of money, the readiness of the intermediaries to buy services is diminished by the expectation of themselves realising lower prices, and the diminution is not counterbalanced by an equal increase of readiness to sell the services, because the sellers of services—wage-earners and salary-earners—accustomed, as I said before, to reckon economic welfare by money-income, are slow to recognise that a somewhat diminished money-income will give them as much real income as before. Their refusal to accept lower money-earnings knocks out the demand of some of the weaker employers altogether, and causes the stronger to reduce their staff, and this creates such widespread unemployment that we call it general, though of course it is not universal, since some trades will be expanding in consequence of special causes which alter the relative position of occupations.

I have never been one of those who believe that great inconvenient changes of price-level are as unavoidable as changes of weather, and I am convinced that the present trouble is due to the reigning school of monetary experts having mixed up the rate of interest and the purchasing power of money in such confusion that they no longer know how to maintain or raise a price-level, while the Treasuries,

which know very well, are afraid of medicine of which an overdose is so easy. But this does not in the least invalidate my thesis that the demand for labour is indefinitely extensible with the number of persons able and willing to work for a remuneration compatible with the conditions of the time and place. It does not in the least impugn the truth that general unemployment is the result of a general asking too much. It only means that those who are asking too much have been led into doing so unconsciously.

“ What is to be done if the world is too stupid to prevent great declines of price-level? ”

In that case, it should learn to submit to declines of money-incomes without squealing. Money-profits should be allowed to fall without subsidies and protective duties being called in to support them. So-called “ fixed interest ” should be allowed to be eaten away by defaults and stoppages without too much attention being given to the injustices involved. Money-wages and salaries should be allowed to be reduced without resistance to the reductions being backed by the State and public opinion.

If I may be allowed to add a word specially appropriate to the present moment, I would say the public should learn to distinguish between the false “ economy ” effected by stopping quite desirable work without putting any other in its place, and the real economy effected when rates of pay are reduced so that more persons are employed and production increased.

III

“TOO LITTLE SAVING”¹

“The Minister of Health has informed Reading Town Council, who wished to construct an open-air swimming-pool, that, in view of the need for economy, swimming-pools cannot be regarded as being in the highest degree urgent or necessary.”—*The Times*, January 11, 1933.

THE first thing to do in economic, as in all other discussions, is to make sure that we are all talking about the same thing. Most commonly-used words have many different meanings, and we can only tell which is the right one at the moment by looking at the context or the surroundings. “So-and-So has got the post,” by itself may mean that So-and-So has got a long thing to which the aerial of his wireless is to be attached, or that he has got some employment for which he was applying, or that he has got the letters from the letter-carrier or is taking them to the pillar-box, or very likely several other things which I have not thought of. It is only the more illiterate economists who complain of this and fail to see that to tie words down to one meaning only would make it impossible for us to communicate our thoughts unless our vocabulary was enormously enlarged. The others are content to make sure that

¹ A portion of this article was used in an unreported and unprinted Barnett House lecture on the “Nature of Saving and Accumulation” in February, 1933.

both they themselves and their audiences understand in which of its various senses a word is being used.

The general environment of the present discussion will prevent anyone thinking that I am going to treat of saving lives from drowning or souls from damnation. Evidently the saving which we are to consider is the saving of economic goods. But there are at least three different senses in which the saving of economic goods may be understood. First, the sense in which the housewife says she "saves the bones for to-morrow's soup"; secondly, the sense in which an obscurantist Chancellor of the Exchequer says he "has saved a million on education"; and thirdly, the sense in which comfortable people, if more inclined to be confidential than they are, would tell you that they were "saving about a quarter" of their income, and in which the less comfortable have no hesitation in assuring you that in these hard times they "can't save anything at all." The housewife means that she is not wasting the bones, but rescuing them from immediate consignment to the dog or the dustbin; the Chancellor of the Exchequer means that a million less than last year is to be spent, or that a million less than the estimates has been spent, on education; the comfortable people mean that their current expenditure is so much less than their income that a quarter of the income remains over, and the less comfortable people mean that their income does not exceed their current expenditure.

It is with the third of these meanings that I am

concerned. It is never, I think, confused with the first, but in recent controversy it has sometimes been very unfortunately confused with the second. This has happened because some writers have inadvertently assumed that income does not change, so that if you save in the second sense, of reducing your expenditure, you will have a surplus of income over expenditure and so have saved in the third sense. That, of course, is quite an illegitimate assumption, since the amount saved in the third sense depends just as much on the income received as on the expenditure. If your expenditure last year was £800 and your income £1,000, you saved £200 in the third sense. If your income next year falls to £700 and you cut your expenditure down to the same sum, you will save £100 in the second sense but nothing at all in the third sense.

As I have explained at some length in my textbook, *Wealth*, our conception of an individual's income is a somewhat makeshift one owing to the impossibility of foreseeing all contingencies. If it is common knowledge that some piece of material equipment will wear out in five or ten years, we should have no hesitation in saying that the owner should regard the cost of replacement as part of his working expenses to be provided for year by year before reckoning his profits. For him to say for four or nine years that his profits were his receipts without this deduction among others and then to say in the fifth or tenth year that he had lost some of his capital would be considered grossly improper. But if the destruction of the equipment was caused

by earthquake, civil commotion or anything else which could not be regarded as reasonably certain to occur within some definite length of time, no one would say that it ought to have been allowed for. A crucial example may be found in losses by fire. When there was no fire insurance system, and a factory was burnt, the owner was not blamed because he had made no provision for such a contingency, but was simply pitied for having lost his capital. But nowadays, when fire insurance companies exist, everyone thinks it proper that he should pay fire insurance premiums as part of his regular working expenses. Thus the conception of income has been altered by the introduction of insurance, because insurance has made receipts from certain properties less liable to violent and unforeseeable stoppages. If all other such stoppages could be insured against and were insured against, incomes would be reckoned at considerably smaller amounts than they are.

Our conception of expenditure for consumption is also surrounded with difficulty. "What we spend on ourselves" does not help much when we think of our taxes and rates, our subscriptions to charities, and what we pay for educating our children to make them capable of earning their living. It may be that it would be better to regard expenditure for consumption as the residue of income left after savings are taken out than to think of savings as the difference between income and expenditure for consumption. For savings, from the individual standpoint, seem to be neither more nor less than the portion of money-income devoted to the acquisition of addi-

tional property, including in that phrase the improvement of property already held.

The purpose which the individual has in view in devoting a portion of his income to the acquisition of additional property is to make himself or some existing or future persons in whom he feels an interest better off than he or they would otherwise be. So far as a whole self-contained society of individuals is concerned, the analogous purpose is served by what we may call accumulation, by which I mean the creation of additional stock and equipment, both external and internal, both physical and mental and moral.

I believe in proceeding from the simple to the more complicated, and therefore propose to begin by considering accumulation as carried out by a single non-co-operating individual and then by a communistic society of the simplest kind before I come to our own more complicated organisation.

First I will ask each of my readers to suppose himself a gardener who is cultivating his own garden exclusively to satisfy his own needs for flowers and vegetables.

He will not in that capacity, I am sure, talk of himself as either "saving" or "spending," because these are monetary terms appropriate only where buying and selling for money take place. He will not say, "In addition to having eaten ten pounds of strawberries and a bushel of potatoes and feasted my eyes on that magnificent row of daffodils, I have *saved* a nice little path gravelled with stones picked off the beds, and also that trench which drains the

bottom end of the garden." But in reviewing the operations and results of his gardening during any period of time, he will make some distinction between the improvements which he has managed to make in external and internal equipment on the one side and the enjoyment, now all past and gone, which he has had in eating and looking at his garden produce on the other side. He will say to himself and his friends, "I have had just as good flowers and vegetables as last year, and in addition I have made this path and that channel, which are great improvements. I have also learned a lot more about gardening than I knew before, so that I am now altogether in a much better position than I was a year ago."

Unless he had become extremely sophisticated by reading economic treatises, it is very unlikely that he would make any sort of estimate of the additional vegetables and flowers which he *might have* produced and consumed if he had given all his time to growing flowers and vegetables instead of giving part to making improvements. He would not say, "I have saved," or "abstained from consuming," or "gone without," or "lacked" or "waited for" a bushel of potatoes and two hundred daffodils in order to have time to produce the path, the channel and the knowledge. Still less would he say, "I have invested a hundred pounds of potatoes and two hundred daffodils in these improvements and I am expecting a return or profit of 10 per cent. on this capital, viz. ten pounds of potatoes and twenty daffodils per annum." He would simply reckon that he had

enjoyed eating the vegetables and seeing the flowers, and that now he had the path he would not have to put on those stiff gardening boots so often and that the drainage would prevent the potatoes being so liable to disease, while the experience and knowledge gained would make some of his crops bigger and better. He would feel that he had kept himself in vegetables and flowers, and in addition had somewhat improved his position with regard to the future.

Things would be just like this in any communistic society if, like Peru under the Incas and unlike Russia under the Bolshevists, it had not been confused by being preceded by a capitalistic society and having adopted the muddled doctrines of capitalistic socialists. The greater portion of its labour and equipment would be employed in producing what was required for everyday consumption, to maintaining in proper condition clothes and houses, machinery, roads, sewers and other forms of material equipment, and to training the young people so that they might be able to take the place of the old when the time came. Another and almost certainly smaller portion of the labour and machinery would be applied to making accretions to the material and non-material or personal equipment, to adding new houses, new machinery, new engineering works of all kinds, new roads, sewers and other such things to the existing stock, besides adding to scientific knowledge by research. There would be great differences of opinion about the distribution of the productive force between the two great classes of production and about the distribution of the force

allotted to each of the two classes between its various subdivisions. Some people would think too much of the force was being devoted to the first class, and that too little regard for the future was being shown, while others would say the present was being unduly starved for the sake of the future, but the controversy would not be called "Saving versus Spending." Some people would say that more attention should be given to improving agricultural land and less to building new automobile-manufacturing works and swimming-baths, while others would say food was likely to be plentiful enough and ask for change in just the opposite direction. There could be no attempt to decide in favour of one or the other course by appeal to the rates of profit or interest obtainable in the different branches of industry, since neither the advantages arising from the different kinds of production nor the costs involved by them would be valued in money. People would not say, "Agricultural improvement will bring in less than 2 per cent., but an artificial-ice skating rink will bring in 10 per cent." They would content themselves with the much simpler proposition, "We have plenty of food, but we do want more skating than our wretched climate will give us on natural ice."

There would be no thought of saying that additions to material and non-material equipment were the result of "abstinence from consumption." It would be obvious indeed that the additions formed a surplus of what was produced over what was consumed, but no one would think there was any

more reason for saying that the surplus was due to consumption being kept below production than for saying that it was due to production being kept above consumption. To attribute it to "abstinence from consumption" would seem as one-sided as to attribute it to "application to production."

How much the society would accumulate would clearly depend partly on its productive power and partly on the proportion of that productive power which it chose to devote to making accretions to stock and equipment. If the society reduced or stopped the labour and machinery employed in producing these accretions without diverting them into the work of producing goods and services for consumption, accumulation would be reduced or stopped, the output or income of the society being *ipso facto* reduced by the amount of the accretions knocked off it.

In defiance of those who believe that money alters everything, and that all analysis of economic life must start from central-bank parlours, I maintain that these sketches of an individual working alone and of a communistic society acting under a single authority and making no use of separate property and free exchange of goods and services form a good introduction to an examination of the process of accumulation in a society such as our own is to-day. The introduction of separate property, exchange and money, and even banks, into the picture will not alter its main features. It will remain true that when production exceeds consumption a surplus will appear embodied in additional

or improved material things, in additional or improved personal capabilities and in additional or improved knowledge. It will remain true that to attribute the additional stock and material and immaterial equipment to "abstinence from consumption" will be as one-sided and misleading as to attribute it to "application to production"—it will remain a surplus due to more having been produced than was consumed. It will remain true that the magnitude of this surplus will depend on society's power to produce and its will to devote a large or small proportion of that power to making accretions to stock and equipment, material and moral. And, finally, it will remain true (and this is the thing which should interest us most in 1933) that if the labour and machinery employed in producing these accretions are reduced or stopped and not diverted to producing for consumption, accumulation will be reduced or stopped, the income of society being reduced by the amount of the accretions knocked off it.

The facts are obscured by our habit of thinking of the money-savings of individuals as if they and nothing else were the real accumulation made by society as a whole. The truth is that they do not form even a tolerable measure of the amount of accumulation.

In the first place, we must not forget that the total of individuals' savings, as commonly reckoned, is a gross total of all the amounts by which the money-incomes of the savers exceed their expenditure for consumption. To arrive at the net total which

we want as the first approximation to the value of the aggregate accumulation, we must first deduct from the gross total of these savings all that is needed to counterbalance what may be called the negative savings—the excesses of expenditure for consumption over income—made by those persons and institutions who are living, as we say, “over their income.” It has always been recognised that the “spendthrift” who sells his property to the saving person or borrows from him and then spends the proceeds of the sale or the loan in riotous living nullifies or negatives that amount of the savings of the thrifty. The idea requires extension to make it cover all the cases of quite prudent persons who live on savings or life annuities in their old age, and also the much more important case of sovereign States when they go to war with one another and pay the expense by borrowing from individuals who are then said to have “invested in war loans.” The bonds which these persons receive remain a valuable property to their owners, at least till the States repudiate their debts or pay them off in worthless currency, but they do not represent any accumulation, since the belligerent States do not use the resources placed at their command in order to make accretions to stock and equipment which would be useful after the war is over.¹ So far from adding such

¹ While the war of 1914-18 was proceeding, some optimists used to point to the extension of engineering works and ship-building yards and say we were still adding to our material equipment; the more sanguine even had hopes that great war factories like that at Gretna would be turned to some vaguely conceived useful purpose. We know now that this was all moonshine; we have not found these things much more use than

equipment they make it one of their main objects to destroy each other's useful equipment. In the war of 1914-18 the gross savings of individuals, and indeed even their aggregate net savings, were very considerable, but they were nearly completely counterbalanced by the fact that they were lent to the belligerent States and spent in ways which did not add to equipment, but rather subtracted from it.

Secondly, we must take account of the fact that even when the persons have every intention of adding in some way or other to equipment, they often fail to succeed in carrying out their intention. I do not mean that they entrust the disposal of their savings to persons who deliberately misappropriate them and live upon them—that is only a negation of savings which would come under our first head. What we have to think of here is that the savers themselves or the persons whom they trust may blunder in their effort to increase or improve material equipment. For example, a company may be formed to find mineral in a particular place and may use up considerable funds subscribed by shareholders in boring, and then find no mineral.

the ruined aerodromes which disfigure the countryside. As to personal equipment, the war very seriously damaged that by killing men in their first maturity and the prime of life, and so leaving the world rather more than usually at the mercy of doddering age and feather-brained youth. It is only in regard to the improvement of equipment effected by experience and research that the war can perhaps be claimed to have done some good. It is true that many of the discoveries made were merely of new powers of destruction, but the horrible character of these is becoming so well recognised that it is possible their existence may prevent rather than promote light-hearted resort to war.

In such cases the savings are commonly reckoned as having been "lost" after being made, not as having never been made. As no accumulation or increase of equipment thus takes place, this is a clear case of savings being greater than the accumulation.

Should we add "hoarding" as a third cause of individuals' savings sometimes exceeding additions to stock and equipment? I think not.

In past ages when "treasure" in gold and silver was accumulated in real hoards by misers who had no intention of using them, it might quite well have been held that these hoards were not additions to useful stock and equipment, since the potentially useful matter of which they consisted was kept out of use; it would only become useful when the hoards were dissipated and ceased to exist. Similarly in modern times it might well be held that a new house is not an addition to useful stock and equipment so long as it is kept empty.

But this kind of temporary sterilisation of potentially useful things is not what is in the minds of those who attribute the evils of a modern depression partly to what they call hoarding. The "hoards" of which they are thinking are the heavy additions to the aggregate of bank deposits or "money in the banks" which are common in times of depression, if unaccompanied by distrust in the solvency of the banks. They call these additions "savings piling up in banks," and treat them as if they were a clear addition to the property of the bank customers not at all counterbalanced by diminution of other

property owned by them. Since by hypothesis little addition to stock and equipment is being made, large clear additions to the whole property of the bank customers must indicate savings being in excess of additions to stock and equipment. But there is nothing to show that the additions to their bank balances are not counterbalanced by diminutions in the rest of their property. It is notorious that in periods such as we have in view the banks are driven to hold a great addition to their "investments," and that these investments are not newly-created property but holdings of securities which were in existence before the depression began, and therefore must have been bought by the banks from the former holders, nearly all of whom are included amongst the banks' customers. Thus the increase of deposits is no proof whatever of savings. If, for example, the deposits have increased £200,000,000 and the banks' investments by the same sum, it is true that the customers own £200,000,000 more in money due to them by the banks, but it is also true that they have got this amount, not by saving, but by selling two hundred millions' worth of securities to the banks.

The view of the plain man that "people can't save much in these hard times" is perfectly correct, and is not in the least refuted by increase of bank assets and liabilities.

Sometimes the existence of savings in excess of additions to stock and equipment is supposed to be shown by the rise in the prices of gilt-edged investments which is characteristic of a period of depres-

sion. It is imagined that this rise shows the presence of savings which would normally be invested, but are instead "driven into" gilt-edged investments, so that, instead of additional stock and equipment, a rise in the value of these investments represents the savings which have taken place. But this absorption of savings by gilt-edged investments rising in value is altogether chimerical. No one supposes that £78 was "put into" or "absorbed by" each copy of Smith's *Wealth of Nations* between 1780 and 1930 if it was worth £2 at the former date and rose to £80 by the latter. To those copies which were not sold nothing happened except that their value rose. In regard to those which were sold, the sellers indeed got the higher prices, but got no more than the purchasers paid out. Neither the copies which changed hands nor the others had any banknotes "put into them." Similarly, the fact that securities rise in value does not indicate that they have absorbed money or had it put into them; if a Victory Bond was bought in 1919 for £80 and sold in 1932 for £110, there is no reason for alleging that £30 more has been put "into it."

It is true, of course, that the owners of the gilt-edged securities profit by the rise, but neither they nor anyone else reckons the rise as savings. It is not income, but a rise of the value of a particular kind of property, and the rise, it may be added, is largely if not wholly counterbalanced by diminution in the value of the kind of securities which is furthest from the gilt-edged end.

After noticing that the gross savings of individuals

are in excess of the accretions of stock and equipment because some are, so to speak, negated by over-spending and others are destroyed by various forms of waste, we may console ourselves by reflecting that a good deal of accretion to stock and equipment is not covered by the savings of individuals as commonly understood.

Firstly, we may take the fact that an appreciable amount of additional stock and material equipment is provided by persons and companies accumulating it in their own possession in so unobtrusive a way that it escapes being commonly reckoned as paid for out of savings. In the course of modern history the stock of household furniture has grown enormously, but only a moderate proportion of the increase has been bought with money regarded by the purchasers as saved. Much of it has been bought from time to time as required "out of income," as it is said, that is, without any attempt to distinguish the expense from current expenditure on services and goods not in any way added to stock and equipment. Similarly, commercial companies, when prosperous, often accumulate stock and equipment, as it is said, "out of profits." The amounts so set aside will indeed appear in income-tax statistics if these are modelled on the lines followed in Great Britain, but they do not become part of what any individuals regard as their incomes nor consequently of their savings. We have at present before our eyes a very remarkable example of such addition to equipment not paid for by what anyone thinks of as his savings, in the great new building of the

Bank of England, costing something in seven figures without making so much as a ripple in the Bank's weekly published account, to say nothing of its dividend.¹

Where small ownership of agricultural land exists, considerable amounts are added to equipment in the shape of improvements of land without appearing in any way in calculations of either income or savings. If a small owner improves his land with his own and his family's labour, it does not occur to him to put down the value of the labour or the improvement in his income and regard it as saved. The efforts of small owners to improve their holdings are often pathetic in their intensity,² and sum up to a quite considerable total in the world at large.

Secondly, we must allow for sums given to various institutions by individuals, and spent by those institutions in equipping themselves with new buildings and other things of a permanent character

¹ Joint-stock companies are intended, of course, to divide the whole of their profits among their shareholders, but there is not and there scarcely could be any rule that the whole of the profits of any particular definite period of time, such as a week, a month, a year, or ten years, should all be divided among the shareholders within that time. It is always possible to say that the profits of any such period are exceptional, that a leaner time is shortly to be expected, so that it is desirable not to divide the profits obtained "up to the hilt" and thereby perhaps cause the shareholders to suffer later an unpleasant drop in their individual incomes, even if the financial position of the company is not permanently injured, as it may be if the profits are succeeded by losses or if reduction of dividend causes a loss of confidence in its powers.

² An Irish small owner, finding a large boulder on his land to be too heavy for him to move and too hard to break, resolved to bury it where it lay. He dug and dug till at last the boulder rolled into the grave which he had made for it—and in doing so crushed him to death.

required for carrying on their work. Very large gifts of this kind, it is true, will often be regarded as transfers of capital. If a man saves a thousand a year for ten years, and then hands over £10,000 to the building fund of a hospital, he and everyone else will consider that he has saved that amount and then transferred his savings to the hospital. There will then be no discrepancy between savings and accumulation. But if £10,000 is collected for the building fund from ten thousand persons in amounts none of which exceeds £5, none of it, or at the most a very small part, will be regarded as having been saved by the contributors. They and everyone else will regard their outlay as made directly from income without being " saved " for the purpose. It follows that most of what is added to the material equipment of the institutions which are supported chiefly by recurring voluntary contributions is not covered by estimates of individuals' savings.

Thirdly, we have to allow for increase and improvements of the material equipment of States, both independent and subordinate. All civilised States have acquired administrative, judicial and legislative buildings in which their work is carried on. All of them have constructed their roads, and some of them their railways, canals, telegraphs and telephones, lighthouses and seaports. It is true that the greater part of the cost of these things has been paid for by individuals' savings, borrowed for the purpose by the States, so that it is, at any rate at the outset, fully covered by individuals' savings. The construction of the Panama Canal by the

United States and the draining of the Zuyder Zee by Holland were no less paid for by private savings because the governments concerned borrowed the savings than they would have been if the work had been carried out by companies which raised the money by issuing shares and borrowing. But in peaceful and prosperous times even sovereign States often manage to increase and improve their material equipment somewhat more than is set off by their borrowings, and occasionally at the same time they manage to reduce their debts and so enable the paid-off lenders to add to the equipment in private hands without any additional individual savings. The surplus revenue required for either or both purposes may be raised either by taxation or from the profits of enterprises such as post offices and State railways.

The United States, Great Britain, and others of the better-managed States, have sometimes for many years together thus contributed considerable amounts of accumulation uncovered by individuals' savings, but on the whole the accumulations of the independent States have been small compared with their "negative savings." The record of subordinate local territorial authorities is, however, very much better. Being subject to laws enacted by superior authority, and unable to make war, to repudiate their debts at will or to pay them off in a depreciated currency, they are compelled to conduct their affairs more prudently. They are generally obliged by the superior authority to make some provision for the amortisation of debt. In England

and Wales for the year April 1929 to March 1930 the amount so provided was over thirty-two millions, which was about 3 per cent. on the total of debt outstanding. Some of this, no doubt, must be regarded as provision for depreciation and obsolescence rather than for amortisation, but any deduction under this head is largely if not completely counterbalanced by the gradual improvements effected in roadways and other things belonging to local authorities without recourse to borrowing.

Fourthly, we must not forget a number of hybrid institutions of rapidly growing importance such as Water Boards, Port Authorities, Co-operative Societies, Trusts for draining lands or building bridges, which sell their services to customers like commercial companies, but are unlike commercial companies in the fact that they raise all instead of only a part of the capital required by borrowing at fixed rates, and so have no shareholders to take profits. The principle of these institutions is that they are to be run for the benefit of the customers, so that when there is any surplus over working expenses and interest, it should go to the customers in reduction of charges or rebate on purchases. But, like companies, when they are prosperous they prefer to keep back a good deal and apply it to improvement of the property, so that their material equipment is sometimes increased or improved without any individuals reckoning that they have saved for the purpose.

Fifthly and lastly, we must remember that indi-

viduals' savings do not cover more than a small fraction of the improvements of society's equipment so far as it is not embodied in material objects. They only include separate property, and there is no separate property in by far the greater part of knowledge. Secrets and patents cover but a very small portion of acquired knowledge, and even when some knowledge can be held as separate property by being kept secret or by being made the subject of a patent, it is seldom that the cost of acquisition is reckoned as anyone's savings. A medical man might spend £50 a year for twenty years in research which ended in the discovery of a preventive for some serious disease, but unless he defied the etiquette of his profession and managed to get a patent for his discovery, his knowledge would not be a valuable property to him, and in any case he would not be considered to have saved the £50 a year as he would if he had expended it in buying his house by instalments. So too the whole cost of education borne by individual parents is regarded as "spent," though it is at any rate arguable that the children of each generation are usually somewhat better equipped than those of the last.

It is difficult to over-estimate the importance of this head, since the progress of knowledge, the fact that each generation is in possession of much greater knowledge than its predecessor, is certainly the most powerful factor in improving economic conditions.

The conclusion is that "savings" as commonly understood do not correspond at all closely with accumulation of material and moral equipment, and

that even if we throw out moral equipment and confine ourselves to material, the discrepancy is enormous. In time of serious warfare what are regarded as individuals' savings are likely to be much in excess of the accumulation, while in times of peace, and what moderns regard as normal prosperity, accumulation will be much in excess of those savings. We cannot even say that savings at any rate always *tend* to accumulation, since in time of war they are used for diverting people from productive to destructive work. If the individuals in the various countries had disregarded both immediate personal interest and patriotic appeals and had insisted on not saving and lending to the belligerent governments, the great war which began in August 1914 would have ended in 1915 or have been carried on in a much less expensive manner than it was. Even in time of peace the qualification of an emphatic *ceteris paribus* is required before it can be said that an increase of individuals' savings and an increase of accretions to stock and equipment go together. It might happen, for example, that an increase of taxation which diminished individual savings was devoted towards repayment of debt, and that the diminution of individuals' savings was less than the amount of debt repaid, so that a diminution of individuals' savings was coincident with an increase of accumulation.

By far the safest way to discover whether accretions to stock and equipment are being made, and to estimate approximately their amount, is not to try to build up the estimate on the basis of indi-

viduals' money-savings with all necessary additions and subtractions, but to look at the actual stock and equipment, physical and moral, and consider what have been the accretions in the period under review. There are no doubt great difficulties involved in this method; additions to the stock of houses and ships even are not easily estimated, as a new house or a new ship is seldom the same as an old house or an old ship, and both houses and ships are liable to alteration and improvement as well as to decay. But a correct judgment is more likely to be approached in this way than by any investigation of public issues of capital and of the accounts of savings banks and other banks. If the dreary pessimist defeatists who believe that we were "living on our capital" from 1921 to 1929 would only rub their eyes and look about them, they would see plenty of reason to doubt their conclusions.

When we have rid ourselves of the belief that accretions to stock and equipment are either exactly or approximately measured by the aggregate of individuals' savings, we are in a better position to deal with the cognate and even more pernicious error of supposing that society's accumulation involves two operations, the first being a storing-up of either money or some other goods, and the second an "investment" of this money or goods in some accretion to stock or equipment. We have seen that there is only one operation in the cases of the isolated individual and the self-contained communistic society. There is still only one in a society

like ours. There are not, as is commonly supposed, both a preliminary storing-up of one set of things and then a mysterious conversion or transformation of these things into another and different set of things which are the set which are finally added to the existing stock and equipment.

Now of course if we look at the matter from the point of view of a single individual thinking of his own action only, it seems very reasonable to hold that he saves up money until he has a sufficiency to invest, and then invests it. He receives a money-income, and does not spend it all on current consumption, so that he gradually saves up a sum big enough to make it worth his while to lend it out or invest it in the purchase of some income-yielding property. We may perfectly well say, and in fact every one of us does continually say, that he saves up money and then invests it.

But when, in our capacity of economists, we try to get to the bottom of economic activities, it occurs to us at once that even in rather primitive societies, where it is customary to accumulate coins in the houses of the savers, the fact that there are many savers and that they will not all invest their savings at the same date but at different dates will smooth investment out over the year. If each of 365 persons accumulate 100 sovereigns per annum, but all have different periods of accumulation, so that the first finishes his year and makes his investment of 100 on January 1, the second on January 2, and so on to December 31, the number of sovereigns in accumulation will always be 18,250, and 100

will be invested every day throughout the year. Taken as a whole the society would thus not be first saving up a pile of sovereigns and then investing it. So even in this primitive state of things if we go behind the money-income and think of the things and services of which the money is the value, we can see that we ought to regard the real income of the saving persons as consisting not of things and services enjoyed plus money saved, but of things and services bought and consumed plus things bought and not consumed.

But in less primitive society saving does not involve even the small and socially unimportant accumulations of money which I have just described. People do not now accumulate coins or other currency, and then pay out considerable amounts in loans or investments. They pay their money-income into their bank, or even let their bank collect it for them in the first place. The bank does not keep the amount due to each customer in a separate box, but puts all the amounts into one pool, and lends or invests nearly the whole of the pool, and this pooling entirely removes the necessity for little individual accumulations followed by little individual disposals of currency.

The economists have not scouted as they should have done the idea of some preliminary operation taking place before the actual accumulation. Adam Smith in his *Lectures* talked simply of the "accumulation of stock," and the worst that can be said of his treatment there is that he thinks too much of stocks of consumable goods and too little of the

machinery of production. But afterwards he was confused by the Physiocrats, and mixed up the simple idea of accumulation with the physiocratic will-o'-the-wisp "productive and sterile labour," and consequently gave his chapter in the *Wealth of Nations* on "The Accumulation of Capital" the alternative title "Of Productive and Unproductive Labour." Trying in that chapter, as usual, to build up his description of the economic action of society by aggregating individual actions rather than by first looking at the people as a whole, he conceived the surplus of produce over consumption as an aggregation of all the individual surpluses of incomes over expenses. Then, led by his constant and really praiseworthy desire to substitute the real thing for money valuations, and seeing that each individual seems to accumulate money, and that the money when paid over to workers is spent by them in buying what they want, he rashly alleged that the food, clothing and even the "lodging" of productive workers were what was saved and accumulated, instead of recognising that before the money is paid away by the workmen it has already bought for the savers the things produced by the workmen, and it is clearly these things which should be regarded as saved and accumulated.

The mistake led him to arrive at the paradox that "what is annually saved is as regularly consumed as what is annually spent," and to conceive a "rich man" who "saves a part of his revenue" as saving "the food, clothing and lodging" consumed by the workers who produce the things

actually added to the property of the rich man. Many subsequent economists have displayed an unwholesome affection for Smith's paradox. Roscher went so far as to make a primitive fisherman who wanted to make himself a boat think it necessary to begin by saving one fish (out of his daily catch of three) for one hundred days, so that he might have a hundred putrid stinking fish to live on for fifty days while giving his whole time to building his boat.¹ Of course the primitive fisherman, if not a primitive lunatic, would have given one-third of his time each day, or one day out of each three days, to the building of the boat from the beginning of the period, and have had the boat ready just as soon, whilst having two fresh fish daily all the time instead of having to put up with two putrid ones for the last fifty days of the period. Even the acute Jevons said, "You must have capital to live upon while you are digging a well,"² evidently believing with Roscher that the accumulation is preparatory to making the accretion to equipment, instead of being, as it is, the act of making the accretion itself.

This should be enough to convince anyone that not only in the numerous cases where accumulation is not preceded by individual "savings of money," but even where it is so preceded, there are not really two operations, first the storing-up of one lot of objects, and second the making of a different lot which are the actual accretions to stock and equip-

¹ *National Oekonomie*, § 189.

² *Primer of Political Economy*, 1878, p. 27.

ment. Having established that, I want to consider what will be the effect of reducing or stopping the work of making the accretions. Of course, if the productive force employed in making the accretions is simply diverted into the work of satisfying immediate consumption, nothing will happen, if we ignore friction, except that more immediate enjoyment will be available and less provision will be made for the future. That might or might not be desirable, but it is not the question for the moment. What I want to ask at present is, What will happen if the work of making the accretions is stopped and no other work taken up in its place?

Let us go back for a moment to our supposititious communistic society. If, owing to disaffection of the workers, mismanagement of the directors, or any other cause, the working force and machinery commonly employed in producing accretions to stock and equipment suddenly fall idle, the society's output will obviously be reduced exactly by the amount of the accretions. The substitution of a society based on separate property and free exchange of goods and services by means of money makes no substantial difference in this respect. If we suppose the society sharply divided into persons with their machinery of production producing goods and services for immediate consumption on the one side and persons with their machinery producing accretions to stock and equipment on the other side, this will be quite obvious. Let us take it that four-fifths of the whole society comprise the first portion, producing for consumption, and the remaining one-

fifth is the second portion, producing accretions to stock and equipment; and to simplify the argument let us suppose that the one-fifth live just "up to their incomes" and the four-fifths live "under their incomes" just sufficiently to be able to pay for all the accretions made by the one-fifth. Then the situation will be that the four-fifths are supplying the one-fifth (including both the workers and the owners of the machinery) with the food and other necessaries and luxuries which they consume, and are receiving in exchange the accretions to stock and equipment made by the one-fifth. What, we are to ask ourselves, will happen if the one-fifth is suddenly stopped from working as usual and not diverted to producing for immediate consumption?

A conceivable though quite unlikely possibility is that the society will decide by a four to one majority that the one-fifth is of no further use and must be at once annihilated. In that case the four-fifths, now rid of the burden of supporting the one-fifth, and producing as much as before, will at first sight seem to be able to save as much as before, since they will still be producing the surplus over consumption which they used to hand to the one-fifth. But this is a mistake, for the surplus will consist of things which cannot be usefully accumulated, and which, under the circumstances supposed, can no longer be exchanged for things which can be usefully accumulated. It must either be allowed to rot, or be consumed by the society which has been reduced in size by one-fifth. In order to consume it the reduced society must

increase its *per capita* consumption of the articles of which it consists by 25 per cent. But it will not want to consume 25 per cent. more per head of wheat and other articles for which the demand is not very elastic, and so complaints of "over-production" and of "starvation in the midst of plenty" will be loud and persistent, because the value of the things for which the demand is least elastic will fall so low relatively to that of the things for which the demand is more elastic that the producers of the greatest necessities of life (for which the demand is very inelastic) will get very small amounts of luxuries and semi-luxuries in exchange for the necessities which they produce not for their own consumption but for exchange.

This state of things, of course, cannot last. The changes of value will in the end force a change in the distribution of productive power, so that fewer necessities and more luxuries will be produced, and further, the saving disposition—the desire to do something to improve future conditions—will reassert itself, and lead to the diversion of some productive force into the employments formerly followed by the lost one-fifth. The diversion will be brought about by the "plight," as the newspapers call it, of the classes producing necessities; their condition will be so bad that they will find it desirable to move into the occupations which produce luxuries.

A more humane society, instead of annihilating the now superfluous one-fifth, might decide to pension it off, giving it "full maintenance"—that

is to say, just as much of necessaries and luxuries as it used to get in exchange for its work in making the accretions. In that case it is obvious that the levy which would have to be made on the four-fifths for the benefit of the idle one-fifth would take from them the whole of what used to be the surplus of money-income which they were in the habit of giving to the one-fifth in exchange for its product in accretions; instead of saving this portion of income, they would be paying it away in the levy and getting nothing in return.

Making our supposition more probable, we can easily imagine the society neither annihilating the idle one-fifth nor giving it full maintenance, but adopting the middle course of giving it certain allowances which fall considerably short of what it used to earn, in the hope that the reduction of its receipts will cause it to find new work for itself or to get back to the old work. Unless and until this hope is realised, the situation will be that the four-fifths will have to give the one-fifth, not indeed the whole, but a part of the necessaries and luxuries which they used to hand over, and now get nothing in exchange for this. For convenience of exposition let us put this part at 55 per cent. of what used to be paid to the one-fifth in exchange for its services. The capacity of the four-fifths to save will clearly, as under our previous supposition, be reduced by the levy, but will they not, it may be asked, be still able to save the remaining 45 per cent. of what they used to save?

But the answer is, Certainly not, so long as the

conditions supposed remain unchanged. The 45 per cent. left on the hands of the four-fifths till the conditions are changed will consist not of goods suitable for accumulation, but of necessaries and luxuries which used to be handed over to the one-fifth for their consumption. The four-fifths will, it is true, be rather better off than under our first supposition, since they will be able to consume at least a part of the semi-necessaries and luxuries left on their hands, but they will be thrown into some confusion by having too much of some things for which demand happens to be rather inelastic, and so complaints of certain stocks of materials and finished goods increasing unnecessarily, and of the prices of certain things falling too low, will be loud and continuous. Ignorant politicians will become a prey to producers who demand restrictions on their competitors, and a violent dispute will break out among those who fancy themselves as economists, one side exhorting individuals and the public authorities to spend more, and the other side insisting that they ought to save more.

The real remedy for this unfortunate state of things would clearly be to set the idle one-fifth to work again. Both "spending" and "saving" might be interpreted in such a way that they would effect this end. "Spending" might mean re-employing the one-fifth at its old jobs of making accretions to stock and equipment. "Saving" might mean exactly the same thing, but it is pretty certain that the words would not be understood in that way. The public would take the advice to

spend as advice to buy more things and services for consumption, and the advice to save as advice to buy as little as possible of everything. In those senses the advice to spend would be almost absolutely futile and the advice to save pernicious.

The advice to spend would be almost completely futile, because while it might do a little to mitigate the confusion in the industry of the four-fifths, it would do nothing to restore the activity of the one-fifth. Moreover, it would have no considerable influence, since it would be met by the angry reply, "We haven't got the money."

The advice to save, taken as it would be in the sense of buying as little as possible, would do nothing to re-employ the idle fifth, and would only add to the confusion among the four-fifths by causing unnecessary stocks to pile up still further, and producers of the least necessary articles and services to follow the one-fifth into unemployment.

By these suppositions I have, of course, been leading up to our actual state at the present time. We, and when I say "we" here, I do not mean the people of Great Britain and Northern Ireland only, but the whole Western world, have had, not perhaps so much as a fifth, but still a very considerable proportion of our productive force thrown into idleness. I will not provoke disagreement by saying here what I believe to be the ultimate cause of this, but will content myself with stating the fact, and adding that the force thrown out has all along been very largely, though not exclusively, comprised

in the industries which have most to do with the making of accretions to stock and equipment. I do not, of course, refer to the moderate unemployment of the years between the wind-up of the War and 1929. That was no more than might be expected under the influence of our modern arrangements for hindering necessary adjustments of earnings and for preventing unemployment being unduly painful. I am thinking of the subsequent slump which was inaugurated by the American Stock Exchange crash. That slump caused something very like what I have been putting as a supposition, namely, a sudden stoppage of the work of producing accretions to stock and equipment.

When this depression had been in existence for some time and we were thinking it had got to the bottom, the great British Economy Stunt of 1931-2 broke upon us. It began by utilising two very silly scares. The first was that the currency would be inflated and depreciated unless the excess of the State's current expenditure over its revenue was immediately stopped. To stop this excess was clearly desirable, but that was no excuse for working up an unfounded panic about the currency. State expenditure had exceeded revenue before in this and other countries in hundreds of cases without affecting currencies. There was indeed some trouble brewing in consequence of the financial houses in London having rashly taken money from one set of foreigners and lent it to another without taking sufficient precautions to prevent the first set from demanding repayment at a time when it could not

be immediately recovered from the second set, and it is true that the slovenly policy of the Treasury in not having funded the enormous short-term obligations left by the War had helped to give rise to this difficulty, but the deficit of the moment had itself little to do with it. The worked-up currency panic only aggravated it, and "balancing the budget" quite failed to remove it.

The second of the two scares, which was dealt with in my Sidney Ball lecture in November 1931, was absolutely childish. New countries had constantly been in the position of receiving more from abroad than they sent out, and had only prospered all the more by this investment of capital inside their borders; and any old country which had made investments abroad was certain to receive more than she sent out whenever she left off or sufficiently cut down her new exports of capital for investment abroad, unless, of course, her debtors abroad "redressed the balance of trade" by not paying the interest. The check which had occurred in our case was much more due to the growth of a well-founded distrust of foreign investment than to inability to lend, but the scaremongers imagined that it meant that we were "living beyond our means," and consequently being obliged to sell our investments abroad and borrow from foreigners, a course which they said "could only end in national bankruptcy," though none of them were ever able to explain what this terrible phrase, applied not to the State, but to the perfectly solvent inhabitants of the country taken as a whole, could possibly mean.

Under these distressful circumstances a cry for "drastic reduction of expenditure all round" was inevitable. The State could indeed "balance its budget" by raising more revenue instead of by reducing its expenses, but this would appear to those who believed that the nation was "living on its capital" only to put the State right at the cost of hastening the impending bankruptcy of the people; and if the nation was living on its capital by spending too much, the obvious remedy seemed to be to spend less. Every person and institution was exhorted to spend less, and the State and the local authorities were supposed to need the exhortation rather more than individuals because they were regarded as even more prone to extravagance. "Savings" were asked for, but not in the sense of surpluses of income over current expenses; what was meant by the term was reduction of expenditure as compared with that of the year before. Accumulation was not thought of, as the nation was supposed to be living on its capital rather than increasing it, and living on capital was not clearly conceived as the negative of accumulation, or indeed as anything more real than a boojum or jabberwock.

Now when an individual, a single individual, is told to reduce his expenses, it is not necessary to tell him that it is not intended that he should cut off any outlay which, as he would say, really costs him nothing because it brings in an amount of income more than equal to itself. What is meant is that he must do without something which he can

dispense with and yet leave his income as great as before. His interest alone is being considered, and consequently the effect of his action on other persons' incomes and the income of the whole society is not estimated or taken into account in any way. If, in fact, he is told to do without flowers and dismiss his gardener, it is not to be urged against this course that the gardener will suffer in consequence. That is the gardener's look-out. He must find himself another job, and if he cannot find one, he must go on the dole and "public assistance"; in the first case his old employer will lose nothing, and in the second he will only lose infinitesimally in consequence of his extra contribution to the dole or to the poor rate.

But when a whole society, or even an appreciably large proportion of it, is told that it ought to reduce its expenditure all round, what is negligible in the single individual case becomes vitally important. Let us go back for a moment to poor old Robinson Crusoe, who is a whole society in himself. Tell him not to "spend" so much, and he will only stare at you and say, "I have no money and no expenditure." Tell him you mean that he is "extravagant" in having put flower-boxes in the windows of his hut, and he will say, "Why not? They look nice, and remind me of my dear old home in York." You explain that he is living on his capital because he is wasting his time on the flowers when he ought to be repairing his nets and his tools, and perhaps getting on with building his boat. This means that you do not merely want him to

go without flowers and do nothing, but think he ought to be doing something which you think more important. Similarly, if we told a communistic society not to be "extravagant" in food and clothes, we should not mean that it ought to have less refined food and less magnificent raiment and let the persons released by this "economy" live in idleness, but that it should set these people to work in producing something which we considered more important than refinements in food and magnificence in raiment.

The same explanation must surely be given when modern civilised society with private property and exchange of goods and services is told that it ought not to spend so much. The advice cannot mean that the society is simply to do without the produce of some millions of persons, and either starve them to death or support them in idleness; it must be taken to mean that these millions are to produce something different and more important than what they are actually producing. It is no advantage to society to do without flowers unless it is to get something better instead. The flower-gardeners at present give society flowers and receive in return the bread and beer and other goods and services on which the money they get in exchange for flowers is expended by them. If they are told that they can leave off producing flowers because society has resolved to "economise," but that society will continue to pay them as much as before, nothing will happen so long as they live and continue to receive their pensions in idleness except that society

will have no flowers. Evidently there is no sense in the advice, "Dispense with flowers," unless it is to lead to something more really desirable being produced in their place.

Here lay the fatal objection to the great Economy Stunt. There was not the slightest reason to suppose that there was any need to redistribute the forces actually in employment. The preachers of the Stunt revelled in denouncing this, that, and the other employment as unnecessary or unimportant, but always completely failed to say what were the more necessary and important employments into which the persons and machinery now employed in what they said were unnecessary or unimportant ways should be drafted.

The fact was that there was very little wrong with the existing employment, and that little was quite unimportant compared with the enormous deficiency of employment already existing when the Stunt began. The deficiency prevailed chiefly in the industries which directly or indirectly take part in the making of accretions to stock and equipment. What was wanted was not to change the employment of the actually employed, but to re-employ the unemployed in their old work or in something substituted for it. If the Stunt had been merely an agitation for reducing the money-cost of production so as to make it more profitable to employ forces in production, there would have been much to be said for it, but in the main it was a campaign for stopping expenditure, with a consequential stoppage of employment, rather than one

for reducing money-payment for employment, with a consequent increase of employment.

On expenditure for consumption the propaganda had little direct influence. It was useful in saving the face of a person who was compelled to reduce his expenses by loss of income. Instead of saying he had made unfortunate investments he could pose as a patriot. But this did not make him spend appreciably less than he would otherwise have done. Even the State itself and the local authorities did not much reduce the forces employed by them for supplying immediate consumption. The police and the teachers, the dustmen and the road-sweepers were not much reduced in number: here the Stunt was content with the reasonable course of cutting down money-incomes to make them correspond with a rise in the value of money.

Where the Stunt exercised most of its maleficent influence was in more drastically reducing work which was producing accretions to stock and equipment. The central government called off its own enterprises and exerted the whole of its influence and powers of veto to make local authorities call off theirs. Down to the summer of 1931 it was commonly accepted that public authorities ought to counter booms and depressions by going slow in their enterprises in times of boom and fast in times of depression. The objection to this maxim was that it required greater level-headedness on the part of authorities than was possessed by the business community, and those who knew public authorities were aware that they have less rather than more

level-headedness than their subjects. But nobody doubted the theory as a counsel of perfection. Yet in 1931 all of a sudden there triumphed the exactly contrary doctrine, that in time of depression the duty of public authorities is to be more depressed than their subjects and stop making every kind of accretion to stock and equipment which cannot be described as "in the highest degree urgent or necessary."

At first the embargo on enterprise was intended to be confined to publicly-owned enterprise, and it was pretended that private enterprise would be encouraged by the new "economy" of public authorities. But later, the State, in order to save perhaps ten millions a year more by a conversion scheme than it had any right to expect, actually adopted the suicidal course of extending the embargo to private enterprise by inducing the banks to refuse to support new issues of capital.

By this miserable, suicidal policy the State has been assisting greatly to increase unemployment and to prevent accumulation. The enormous drop in the aggregate of individuals' savings—surpluses of income over current expenditure—is the natural result of the diminution of incomes caused by the stoppage of work and output.

IV

“OVER-POPULATION”¹

TIMES change, and economic theories change with them. We economists need no longer be ashamed of the fact, as we used to be inclined to be in the old days, when our colleagues in other Sections of the British Association professed to despise us for disagreeing among ourselves and perpetually overthrowing conclusions arrived at by our predecessors. We hear less now of the certainty and finality of the other sciences, and can face their exponents unabashed, confident that theories may be useful for leading us on towards the truth without being immutable and exempt from revision.

I think that the biggest change made in economic theory during the last hundred years is to be found in the treatment of the subject of Population. In 1831, Malthus was still alive, and quite unrepentant for the shock he had given the public thirty-three years earlier by his *Essay on the Principle of Population as it affects the future Improvement of Society*. No one, it is true, any longer attached much importance to his doctrine of the inherent incompatibility of the ratios in which it was possible for population

¹ Presidential Address to Section F of the British Association for the Advancement of Science, 1931. Reprinted in the *Economic Journal* for December 1931 with the title “The Changed Outlook in regard to Population, 1831-1931.”

and food to increase, but the disfavour with which he regarded what he considered the natural tendency of population to increase was shared by most of the economists of the orthodox school, who had adopted the theory of diminishing returns to agriculture which was evolved in England from the local conditions of the very "short period" of the Napoleonic war.

That theory, not as now taught in a form which makes it innocuous, but as taught in the early years of the nineteenth century, purported to show that the natural limitation of fertile and well-situated land must necessarily mean that the more numerous the people, the more difficult it must be for them to feed themselves. It was admitted that there were counteracting circumstances, summed up as "the progress of civilisation," which, in fact, had throughout history prevented the growing population of the civilised world from actually finding it more difficult to feed itself, but these circumstances were regarded as making only temporary headway against the general tendency, and not, like it, as being a law of nature. J. S. Mill, in his *Principles of Political Economy with some of their Applications to Social Philosophy*, which, though not made into a book until seventeen years after, was really thought out before 1831, and represents the ideas of 1800 to 1830 better than any other work, even ventured to assert that though the people of his time were better off than the people of a thousand years before, they would have been still better off if the increase of population had been less.

The economic history of the hundred years has tended to bring about a very complete reversal of economists' view of this matter.

The hundred years began with developments which threw great discredit on the fundamental assumption of the old school that the extension of human occupation of land necessarily meant that less fertile and less well-situated land must be occupied as numbers grew. It was easy for men who saw arable cultivation creeping over barren hills in England and stony "bogs" in Ireland to believe in that theory when Chicago was a collection of Indian huts, and Broadway, New York, a rough cart-track to a farm, but the application of steam to ships and railways enabled mankind to extend easily over an immense area of land more fertile than much of what was occupied before. And as for situation, not only did the improvement in transport, coupled with the violations of natural geography involved in the cutting of the great ship canals, bring the "more distant" lands nearer the "market," it also eventually brought "the market" to the "more distant" lands.

So we no longer think of the first cradle of the human race (or the first cradles of the human races if there are more than one) as the most fertile and well-situated spot (or spots) from which men have gradually been forced outwards. You all probably know the opinion of the British Army in Mesopotamia, expressed by the sergeant who was told by an officer that he was now on the very site of the Garden of Eden: "Well, Sir, all I can say is that

if this was the Garden of Eden it's no wonder the twelve apostles mutinied." Though the sergeant was evidently not a well-read man, the change of view had reached even him.

Later in the hundred years scientific discovery in various directions has led to a complete change of emphasis in regard to the importance of what the old economists used to call "improvements." The old economists thought of hedges and ditches, drains, and a few other trifles of that kind which would enable corn to be more easily produced from European fields, and just a little of better breeding of cattle and sheep. These were things which might, they believed, interrupt for a time, now and then, the general downward drift of the returns to agricultural industry, but could not do more than that. Modern science has changed our outlook. We set no bounds to the possibilities of improvement. We expect to make unwholesome areas healthy, and to modify vegetable as well as animal products so that they will better serve our needs. Primitive mankind presumably fought and killed some of the now extinct carnivora; advanced mankind fights and will kill the locusts and the smaller insects which have hitherto prevented much use being made of some of the most fertile areas of the world. It was not an economist who, only a few years ago in the Presidential chair of the British Association, foretold that very soon the world would be suffering from a shortage of wheat.

Thus, even if we still expected population to increase very rapidly, we should not believe, as

J. S. Mill did, that it "everywhere treads close on the heels of agricultural improvement, and effaces its effects as fast as they are produced" (*Principles*, Bk. IV, ch. iii, § 5). But, in fact, Cotter Morison's cry, made only a generation ago, that all would be well if only we could stop for a few years "the devastating torrent of babies" now seems grotesque, for we do not now expect rapid increase of population to continue much longer, even if it becomes progressively easier to obtain subsistence.

The approach of reduction in the rate of growth of population began to show itself in England in the second half of the 1871-80 decade, when the annual number of births became nearly stationary after the rapid increase recorded down to 1876. But the public takes little notice of the supply of people furnished by the births. Just in the wooden way in which illiterate farmers and unbusinesslike old ladies look at their balances at the bank, so the public looks at the censuses. The census of 1881 showed an increase of 14.36 per cent. in the decade, which was higher than that shown by any of the censuses except those of 1821 and 1831, which were probably unduly swollen by the diminishing incompleteness of the enumerations. In 1881-91, in spite of high emigration, the rate of increase only dropped to 11.65 per cent., so rapid increase of population was still regarded as the normal thing which everyone should expect. The Royal Commission on the Water Supply of the Metropolis in 1893 deliberately rejected the reasonable suggestion that the rate of increase in Greater London might continue to fall

as it had already begun to do, and relying on a continuance of observed increase, put the probable population in the year 1931 at two and three-quarter millions more than the recent census has shown it to be.

But I had noticed that the old rapid increase in the annual number of births seemed to have come to an end, and working on the ages of the people as recorded in successive censuses, I put before Section F of the British Association in 1895 a paper¹ in which I estimated the number of persons who would be living at each census up to that of 1951 on the assumptions that migration, mortality, and, not the rate, but the absolute number of births, remained stationary. I found that on these hypotheses the population of England and Wales would stop increasing during the present century, and would have only a trifling increase after 1941. The paper suggested that this was, at any rate, not improbable.

Hostile critics derided what they called my "prophecy," and for some time events were unfavourable to me. Emigration fell off enormously, mortality decreased, and the births increased slightly, so that the census of 1901 showed an increase of 12.17 per cent. in the decade, the absolute increase of three and a half millions being the largest recorded. But the situation was not fundamentally altered, since the increase of births was due entirely to the drop in emigration, which had caused a larger proportion of persons of parental age to remain in the country. At the Glasgow meeting of the

¹ See below, pp. 108-24.

British Association in 1901 and in the *Fortnightly Review* of March 1902, I produced a dissertation on the "Recent Decline of Natality in Great Britain,"¹ in which, using a method of weighting the annual numbers of marriages by their proximity to the births recorded for each year—a method which seems to have been beneath the notice of the mathematical statisticians of that period—I was able to show, I think conclusively, that the number of children resulting from each marriage was falling steadily and rapidly, and insisted with more emphasis than before on the "considerable probability of the disappearance of the natural increase of population—the excess of births over deaths—in Great Britain within the present century."

The decade 1901–11 was indecisive; the ratio of increase was smaller than in any of its ten predecessors, but the absolute amount of increase just topped that of 1891–1901, and the number of births till 1908 or 1909 seemed to indicate some recovery of natality. But this was illusory. Even before the War the births had got down again to the level of 1876. The War sent them tumbling down to about three-quarters of that number, and now, after a wild but very short-lived recovery when the Army returned from abroad, they seem inclined to settle at the War figure—three-quarters of the number attained more than fifty years ago when the total population was twenty-six millions instead of forty millions, as it is now. The ratio of births, legitimate and illegitimate, to my weighted figure of marriages

¹ See below, pp. 125–35.

which was just over $4\frac{1}{2}$ fifty years ago, fell gradually and steadily to 3·2 before the War caused it to collapse. (See the table below.)

Births and their Ratio to Marriages in England and Wales, 1851-1931

Year.	Births.	Ratio	Year.	Births.	Ratio	Year.	Births	Ratio.
1851	616	4·36	1878	892	4·51	1905	929	3·61
1852	624	4·30	1879	880	4·49	1906	935	3·58
1853	612	4·14	1880	882	4·56	1907	918	3·51
1854	634	4·17	1881	884	4·58	1908	941	3·55
1855	635	4·12	1882	889	4·59	1909	914	3·49
1856	657	4·25	1883	891	4·55	1910	897	3·39
1857	663	4·25	1884	907	4·58	1911	881	3·31
1858	655	4·18	1885	894	4·48	1912	873	3·26
1859	690	4·39	1886	904	4·53	1913	882	3·25
1860	684	4·28	1887	886	4·45	1914	879	3·19
1861	696	4·30	1888	880	4·41	1915	815	2·89
1862	713	4·43	1889	886	4·41	1916	786	2·67
1863	727	4·45	1890	870	4·27	1917	668	2·27
1864	740	4·46	1891	914	4·39	1918	663	2·29
1865	748	4·42	1892	898	4·22	1919	692	2·38
1866	754	4·35	1893	915	4·23	1920	958	3·12
1867	768	4·35	1894	890	4·07	1921	849	2·64
1868	787	4·42	1895	922	4·19	1922	780	2·41
1869	773	4·34	1896	915	4·11	1923	758	2·37
1870	793	4·44	1897	922	4·05	1924	730	2·31
1871	797	4·45	1898	923	3·97	1925	711	2·28
1872	826	4·54	1899	929	3·89	1926	695	2·26
1873	830	4·53	1900	927	3·79	1927	654	2·17
1874	855	4·48	1901	930	3·74	1928	660	2·19
1875	851	4·39	1902	941	3·74	1929	644	2·13
1876	888	4·53	1903	948	3·72	1930	649	2·13
1877	888	4·52	1904	945	3·69	1931	633	2·06

The above table gives the births in thousands for each year and the ratio between this number and a figure for marriages made up of the sum of 2·5 per cent. of the marriages of that year, 20 per cent. of those of the preceding year, and 17·5, 15, 12·5, 10, 7·5, 5, 3·75, 2·5, 1·75, 1·25 and 0·75 for the years before that. In the table for 1851 to 1900, printed in the 1901 Report of the Association, and the *Fortnightly Review* for March 1902, the ratio is calculated for the legitimate births only, but the

It was commonly supposed by many of those to whom percentages serve rather to hide than to expose the facts on which they are based, that the diminution of births was being counterbalanced by the decline of infant mortality. It is true, of course, that diminution of infant mortality mitigates the effect of decline of natality, but the degree in which it can do so obviously decreases as the rate of infant mortality falls. When that rate is 500 per thousand, as it probably was here in the reign of Queen Anne, and may be still in great parts of Africa, a cutting down of births by 25 per cent. can be counteracted completely by a drop of one-third in the infantile mortality rate. But when the infant mortality rate is down to 100 per thousand, it would have to fall to nothing at all in order to counteract a decline of only 10 per cent. in the number of births. In fact, the rate has fallen in England and Wales from about 140 to about 70 in the fifty years from 1881, and

inclusion of the illegitimate makes very little difference and is defensible. Mr. L. R. Connor, in the course of a much more elaborate study than mine, gives figures for 1892 to 1923 (*Statistical Journal*, May 1926, pp. 562-3) which agree very closely with the above, though his weighting of marriages is rather different and includes thirty years before the date instead of the twelve at which disinclination for further labour caused me to stop.

From 1914 onwards the ratio as well as the number of births is disturbed by (a) the absence of men from their homes owing to the War till 1919, and (b) by the abnormal mortality of husbands owing to the War. The effect of the second influence in reducing the proportion of births to marriages must, of course, have been steadily diminishing, which makes the decrease in the proportion shown since 1923 the more significant.

[Provisional figures for the births and ratio for 1932 are 614 and 2.00, but there will probably be some recovery or some deceleration of the decline when the depression and the housing shortage become less acute.]

this drop to one-half only balances about one-fifth of the decline in the number of births.

Though there were eminent dissentients only a few years ago, statisticians are now agreed that in the absence of some great and unexpected change, the increase of population in England and Wales will come to an end at a very early date. Even the lay public has been to some extent enlightened and rather shocked by the recent census announcements that the population of Scotland has actually decreased in the ten years, and that of England and Wales has increased only 2,061,000, as against 3,543,000 in the ten years from 1901-11, though the emigrants have been 324,000 less.

The same change is observable in some degree¹ in other Western European countries and our own oversea offshoots. The cause of it—birth control—will doubtless in time affect the rest of the world, so that while we may expect considerable increase—even an increase much more rapid than at present owing to decrease of huge infant mortality—to take place among the more backward peoples for another half-century at least, there is no reason whatever for expecting the population of the world to “tread close on the heels of subsistence” in the future, even if it may be correctly regarded as having done so in the past.

This change in our expectations involves many

¹ I should have omitted the words “in some degree” if, when writing this passage, I had seen Ernst Kahn’s remarkable book, *Der internationale Geburtenstreik* (Societäts-Verlag, Frankfurt am Main, 1930), which shows how strong and general the movement is.

changes of emphasis, both in the theory of production and in that of distribution.

Two of them are perfectly obvious. First, the need, which J. S. Mill and most of his contemporaries and immediate predecessors felt so strongly, for insisting on the due restriction of population, has completely disappeared in the Western countries. Economists do not now require to talk as if the first duty of men and women was to refrain from propagating their race. Secondly, the need for insisting on the desirability of saving has become less pressing. A rapidly increasing population requires a rapidly increasing number of tools, machines, ships, houses, and other articles of material equipment in order merely to maintain without improving its economic condition, while at the same time the maintenance of a larger proportion of children renders it more difficult to make the required additions. To a stationary population saving will still be desirable for the improvement of conditions, but it need no longer be insisted on as necessary for the mere maintenance of the existing standard.

But there are other changes of equal importance which are more likely to be overlooked. One is in regard to the weight which we attach to the different kinds of production. In the middle of the eighteenth century "subsistence," and what we should consider a very coarse and inadequate subsistence probably seriously deficient in vitamins, appeared so much the most important economic good that the French *économistes* insisted on calling all labour which did not get something out of the soil *stérile*

or barren; and our own Adam Smith, with all his common sense, while admitting the manufacturing class into the ranks of "productive" labourers, insisted on excluding domestic servants, physicians, guardians of law and order, and all other workers who did not make up material objects, or who were not employed for profit (he never was quite sure which criterion he meant to stand by). The great Christian philosopher Paley believed that nothing more than a "healthy subsistence" was required for perfect happiness.¹ Even Malthus and his immediate disciples, when they insisted on the desirability of the working class having a high standard of comfort, seem to have done so more because this would prevent the "misery" of semi-starvation for adults and absolute starvation for infants than because there is a direct advantage in being comfortable. Ricardo said "the friends of humanity cannot but wish that in all countries the labouring classes should have a taste for comforts and enjoyments," not apparently because comforts and enjoyments are good in themselves, but because "there cannot be a better security against a superabundant population," the population being superabundant, in his opinion, when it is subject to famine.

All this emphasis on food is now out of date. We no longer look forward to a future in which an increasing population will be forced by the operation of the law of diminishing returns to devote a larger and ever larger proportion of its whole labour

¹ *Moral and Political Philosophy*, 1785, Bk. VI, ch. xi.

force to the production of food. We know that even in the past, with a rapidly increasing population, the returns to agricultural industry have increased so much that civilised mankind has been able to feed itself better and better, while giving a smaller and ever smaller proportion of its whole labour force to the production of bare subsistence; and we can reasonably expect that the increase in the productiveness of agricultural industry will be at least as great in the future, so that under the combined influence of the "narrow capacity of the human stomach"¹ and the stationary number of stomachs, not only a smaller and ever smaller proportion, but a smaller and smaller absolute number of workers will be able to raise food for the whole.

Even the politicians, who for the most part follow the economists with a sixty or seventy years' lag, are beginning to realise the change, and are losing their enthusiasm for schemes for "settling more people on the land," either in colonies or at home, and thereby increasing the already excessive depreciation of agricultural compared with manufactured products. The numerous subsidies which they still give to agriculture are mostly of an eleemosynary character intended to relieve distress, and the encouragement which they give to agricultural production is only an incidental effect, unintended and often deplored. They are defended, not on the ground that they increase food, but because they are supposed to increase employment.

¹ Adam Smith, *Wealth of Nations*, Bk. I ch. xi, pt. 2., Vol. I, p. 165, Cannan Ed.

The necessary change of emphasis applies not only as between food and other things, but as between most primary and most finishing industries. In face of rapidly growing knowledge and slowly growing or stationary population, it is inevitable that the "staple" or "heavy" industries which provide materials should decline relatively to those which provide finished goods and services. The demand for each of such things as pig-iron and yards of cloth is easily satiated; and so also, no doubt, is the demand for cricket-bats and chauffeurs. But the minor or "lighter" industries are susceptible of an indefinite multiplication which makes the demand for their products, taken as a whole, insatiable. Increase a person's power of spending, and he will not increase his purchases in weight or bulk so much as in refinement of form, so that a richer people will devote a less proportion of their labour to producing things like pig-iron and bricks. Moreover, the mere fact of the disappearance of rapid increase of population tends to increase the proportion of demand which can be satisfied from scrap without fresh primary production. So, given a stationary population with rapidly increasing knowledge applied to production, we may expect the already observable tendency towards a less proportion of the whole labour-force being employed in the "heavy industries" and a larger in the lighter industries to become more pronounced. Perhaps we see this even now in the slight drift of industrial population from the North to the South of England which appears to be taking place.

Another change of emphasis, of little importance on the Continent, where the West-Ricardian theory of rent never took real root, but of great importance in England and other English-speaking areas, is in respect of the landowners' share of the community's income. The disappearing bugbear of diminishing returns carries away with it the vampire rural landlord, who was supposed to prosper exceedingly when diminution of returns made food scarce and dear. You all know the famous passage in which J. S. Mill described the landlords as they appeared to him and the school which he, a little belatedly, represented :

“ The ordinary progress of a society which increases in wealth is at all times tending to augment the incomes of landlords; to give them both a greater amount and a greater proportion of the wealth of the community, independently of any trouble or outlay incurred by themselves. They grow richer, as it were, in their sleep, without working, risking or economising.” (*Principles*, Bk. V, ch. ii, § 5.)

Perhaps the disciple went a little beyond his master, Ricardo, in asserting so roundly that in a prosperous society the landlords must tend to get a larger and ever larger *proportion* of the whole income, but there can be no doubt that this was the impression which the Ricardian school conveyed to the public, and which formed the foundation for Henry George's scheme of land nationalisation and the agitation for land-value taxation. If the school had only meant to teach that the land became more valuable absolutely—in the sense of

being worth a larger absolute amount of commodities rather than a larger proportion of all the commodities and services constituting the community's income—they could not have supposed land so peculiar, since it would share this characteristic with many other things—with anything which was more limited in supply than the generality.

To grasp the completeness of the change of view which has taken place in the last hundred years, we must notice that Mill and the whole school which he represented were thinking not of the few lucky landlords who have inherited land which has been selected by nature or accident as the site of a city, but of the ordinary rural agricultural landlords. So far have we moved that the land-value taxers of to-day quite cheerfully propose to exempt all "purely agricultural value" from the imposition which they advocate.

Envy of the happy owners of such urban land as rises in value more than enough to recoup what they and their predecessors in title paid in road-making, sewerage and other expenses of "development" plus loss, if any, in waiting for income, still plays a part in contemporary politics, but the economist foresees that there will be at any rate less of such rise of value when the adult population ceases to increase and the demand for additional houses and gardens consequently disappears. He realises that if any such rise continues, it will be due to the people being not only able, as they doubtless will be, to occupy a larger area with their houses and gardens, but also desirous of doing so. He will

think this quite possible, but will not be confident about it, when he reflects that the vast spread of villadom may be only a temporary phenomenon, and that the married couples of the future, childless or with small families, may be more content with flats in towns and little bungalows with tiny curtilages right in the country.

The disappearance from economic theory of the picture of the vampire landlord taking an ever-increasing proportion of the whole produce of industry which was itself decreasing per head of workers, leaves the theoretic arena open for discussion of the sharing of the whole produce between earnings of work and income derived from possession of property of all kinds.

As to this, the economists of a hundred years ago had nothing to say. If they thought of the question at all, they mixed it up hopelessly with the rate of interest on capital, imagining property to receive a smaller proportion when the rate of interest fell, and *vice versa*. The socialists, who followed them in fact the more closely the more they denounced them, failed completely to clear up the confusion, and it dominates the mind of the lay public even now—much, I admit, to the discredit of the economists, who should have taught that public better.

While there are no statistics on the subject worth much, and none covering any considerable area either of place or time, past history is sufficiently known to assure us that increasing civilisation has, in fact, made the aggregate share of property grow

faster than that of labour, the obvious cause of this being that useful things constituting property have grown faster than population, and so much faster that what decline of the rate of interest has taken place has not been sufficient to counteract the tendency. The most primitive people had scarcely any tools, and their buildings, if any, could be erected in a few hours. Ownership certainly did not then give a claim to about one-third of the whole income, as statistics suggest that it does in modern Western countries.

There is nothing to show that this tendency will be either reversed or intensified by a cessation of the growth of population. The cessation will, of course, tend to reduce the desirability of additional equipment; a large part of the additions of the past have been required simply to enable the additional people to be provided with tools, houses and other instruments of production or enjoyment. But additions to equipment will be made with less sacrifice of immediate enjoyable income than before, so that the increase of quantity may be sufficient to counteract the decline in the value of the units. Moreover, it is quite impossible to say what the tendency of invention may be in the future—whether to enhance or to diminish the value of additional material equipment.

But the history of the last hundred years suggests that this question of the division of income between property and labour is losing whatever importance it possessed. The economists and socialists of a hundred years ago were little removed from the

time when it was common to talk of "the labouring poor," as if society was pretty sharply divided into poor workers on the one side and rich owners of property on the other. There were, indeed, some members of the propertied classes who were poor, but they were offshoots of the wealthier families rather than members of the proletariat with a little property. How innocent the mass of the people were of the crime of owning anything you may realise if you recollect that none of the agencies with which we are familiar for enabling them to invest had then got beyond the embryo stage. Friendly societies, co-operative societies, building societies, savings banks, are all modern growths. Before their advent a worker could, of course, become a small master—never, I think, a small mistress—and from a small master grow to be a big master, but if, for any reason, this was not open to him, what could he do with savings, supposing he was able to make any? Put them in a stocking, or the thatch, or under the garden soil, and if they happily escaped accident there, and accumulated sufficiently, give them to an attorney of doubtful honesty to be lent out on mortgage. I remember only about fifty years ago being told by a booking-clerk at a moorland station, about a hundred miles from London, how two old women had recently paid for return tickets to London in threepenny-bits, and by a solicitor that an old man from the same district had just brought him for investment on mortgage a large sum in gold which he had so far been keeping in the thatch of his cottage. All this is now changed,

and when property, as a whole, and not merely the large property-owners, is attacked, the great investing agencies of the "working classes" become formidable opponents and are supported by the small direct investors who have been helped by them.

And while many of the working class have become property owners, many of the propertied class have become the paid servants of public companies and other institutions, so that the old sharp distinction between the wage-earner and the capitalist is become a thing of the past, and the division of income between property and labour is no longer a division between two classes composed of different individuals, but a division between two sources of income largely possessed by the same individuals.

Thus, in Distribution, emphasis on the old categories of land, capital and labour is rapidly becoming obsolete and is being replaced by emphasis on individual riches and poverty, however arising. No longer do we think of relieving poverty by improving the terms of the general bargain which theory conceives labour as making with capital; we are much more likely to meet with arguments that individual poverty is being caused by this general bargain being too much in favour of the wage-earners. It is no longer the lowness of standard earnings that worries the philanthropic economist, but the fact that so many people are unable to rank themselves among recipients of those wages. Emphasis is on unemployment.

Unemployment is not really a very modern pheno-

menon. The crowds of beggars who collected their daily dole in the Middle Ages from the monasteries and from private wayfarers and householders were, perhaps, as large a proportion of the population as the normal registered unemployed of to-day. The "distresses" of the period just preceding a hundred years ago seem to have been accompanied by enormous unemployment, but we have no reliable statistics, and the loose statements, such as that in Birmingham in 1817 one-third of the workpeople were wholly unemployed and all the rest on half-time, do not help us much. But so far as I know, it has never been contended that history shows unemployment to be greater when population (or even population of working age) is rapidly increasing.

Yet it is common to talk of "the difficulty of providing employment for a rapidly increasing population," and some eminent authorities quite recently endeavoured to console the public by alleging that the coming decline in the growth of numbers will greatly alleviate the present situation in regard to unemployment.

I believe this to be a profound error, based on an elementary misconception of the origin of demand. The old proverb "With every mouth God sends a pair of hands" is true and valuable, but no more so than its converse, "With every pair of hands God sends a mouth." The demand for the products of industry is not something outside and independent of the amount of products. The demand for each product depends on the supply of products offered in exchange for it, and the demand

for all products depends on the supply of all products. Consequently, there is not the slightest danger of the working population ever becoming too great for the demand for its products taken as a whole.

Unemployment arises not from insufficient demand for the products of industry as a whole, but from the number of persons offering to work in particular branches of industry being in excess of the number admissible, having regard to the conditions and wages which are required to satisfy both the would-be workers who are unemployed and the persons already in employment. If the unemployed will not take what employers would offer them, the case is simple, and it is only a little more complicated if they are willing to take, and the employers are willing to give, something less than what is paid to the persons already employed, but the two parties are prevented from coming to terms on that basis by the fact that those already employed would go out on strike if the additional contingent was accepted at a lower rate than that which they themselves are receiving.

Now one of the commonest causes of such a situation is a falling off of demand for the products of a particular branch of industry. The fact that the demand for any product, let us say coal, for example, falls off, is a good reason for fewer persons being employed in that branch of industry and more in other branches. If the diminution of demand is very gradual, the necessary reduction in personnel can be effected by a cessation of recruiting.

Many a branch of industry has gradually wilted away in this manner without much inconvenience or hardship to anyone. But if the diminution is more sudden, unemployment results owing to the natural reluctance of persons skilled, or at any rate experienced, in the particular branch of industry to leave it and try for employment in some other. The thoughtless outsider is apt to say that both the unemployed and those who are still employed in the branch should accept lower wages, and so by cheapening the product extend the demand for it. As a temporary palliative this may sometimes be reasonable, but it is evidently never the best final solution of the difficulty. It is not reasonable that a trade should be continuously worse paid than others merely because the demand for its products was once bigger than it has become. What the diminution of demand calls for is a redistribution of labour force, fewer persons being allotted to the branch of industry of which the products are less in demand, and more persons to the other branches.

But when population is increasing, absolute diminutions of demand are likely to be somewhat fewer, and somewhat less acute when they do occur, than when population is stationary. If, for example, by the introduction of oil, or more economical consumption, the average person's demand for coal is reduced by one-tenth, in a stationary population the total demand for coal would be reduced by one-tenth; but if the population in the same time increased 12 per cent., the total demand would be

not reduced but slightly increased, and there would be no employment difficulty.

We ought, therefore, not to imagine that a stationary or declining population will rid us of the trouble of unemployment. It will provide more rather than less reason for promoting mobility of labour in place and occupation, and we shall have to take more care, rather than less, than at present to secure that arrangements which seem superficially desirable do not hinder that mobility.

It is inevitable, I suppose, that the question will be asked, whether cessation of the growth of population is to be regarded as a good or an evil turn in human history. But the limitations of economics and perhaps of human nature prevent any straight answer being given. Nationalists in each nation want their own nation to increase in comparison with others; if they think of the others' interest at all, they say and believe that it will be promoted by the predominance of their own nation. We can get no further that way, since the pretension of each is contradicted by the pretensions of the others. If we try to avoid this obstacle by saying that we will ignore national and racial differences, and assume either that somehow the generally-fittest will grow at the expense of the others, or that each as well as the whole will have stationary numbers, we still have to face the fact that our conception of the distinction between economic welfare and welfare of other kinds is nebulous in the extreme, and that if it was clearer, we should not know—I think we never can know—how much of the one

should be regarded as equal to a given quantity of the other.

Different persons will give different answers. Some agree with Paley that ten persons with sufficient subsistence must be in possession of more welfare than a single millionaire; others with J. S. Mill that the world turned into a "human anthill" would be an undesirable place of residence. The same person will give different answers according to his mood at the moment. Personally, I spent my early boyhood in a town which throughout my life has been the most prosperous in England, and I have long lived in another which, having added motor manufacture to education in its old age, has lately been growing nearly as fast, and sometimes when I contemplate their growth I feel a little like G. R. Porter when he wrote the *Progress of the Nation*, during the period 1800 to 1831. At other times, and I think more often, I regret the open heath and the untouched pine wood which stretched in my early recollection to within a few hundred yards of the Bath Hotel at Bournemouth, and I hate the gasworks straddling the river and the bungalows shutting in the main roads out of Oxford; then I agree with Mill that it is well that population should become stationary long before necessity compels it.

After all, the increase must stop some time, and watching the effect of the stoppage will be a very interesting experience which I should like to have been born late enough to enjoy.

APPENDIX I

A FORECAST OF POPULATION MADE IN 1895¹

It is a good deal easier to utter warnings against prophecy than to abstain from it. The most hardened scoffer at the weather forecasts has to decide every day whether he will take out an umbrella or not. Not a single investment can be made without an estimate of the relative probability of future events which can be foretold with so little certainty that even the old lady of Threadneedle Street has been known, and that within the last few years, to err most egregiously as to the immediate future of the price of consols.

Many things about which we are habitually obliged to form estimates are of a much more speculative character than the growth of population, and the estimates which we do form about them in many cases actually depend on our estimate of the probable growth of population. There is not a builder nor a town council in the country that is not obliged to prophesy every month what the growth of population in a particular district is likely to be

¹ This article contains the substance of a paper read before Section F of the British Association at Ipswich, and was published in the *Economic Journal* for December 1895, with the title "The Probability of a Cessation of the Growth of Population in England and Wales during the next Century."

and it was the speculations of the Metropolitan Water Commission as to the population of London in 1931 that inspired me to make this contribution to the literature of the subject. The real question is not whether we shall abstain altogether from estimating the future growth of population, but whether we shall be content with estimates which have been formed without adequate consideration of all the data available, and can be shown to be founded on a wrong principle.

The generally accepted principle is that of "as the increase has been in the past so it will be in the future." This is susceptible of more than one interpretation. All we really know of the increase in the past is contained in the totals obtained by the censuses. A schoolboy whose arithmetic is described as "v. g." would probably boldly disregard all the intermediate censuses and divide the total increase of 20,109,989 between 1801 and 1891 by ninety years. The quotient of 223,444 he would call "the average annual increase," and say that in order to get the probable increase of population in a certain number of years after 1891 you must simply multiply 223,444 by that number of years. If you ask him "why?" he will be rather puzzled, and will probably take refuge in analogy. He may tell you, possibly, that if he sees a cyclist going by at twelve miles an hour he rather expects him to do about twelve miles in the next hour. But when you ask him whether he would expect a man whom he saw going at thirty miles an hour to arrive at the thirtieth milestone in an hour he would answer in the negative, because

“ it isn't all down-hill,” or because “ no one has ever done thirty in the hour,” or something of that kind, and it turns out that he only expects the same amount of progress to be made in the future as in the present if the present pace is what he looks upon as a pace likely to be maintained.

A person with a slight smattering of statistics will probably say that the schoolboy's method is quite wrong, and that in arguing from the past to the future, you ought to consider not the number which has been added to the population, but the factor by which the population has been multiplied. You ought to consider not the absolute amount, but the rate of the increase. But which rate? For there is a different rate in every one of the nine decades. Are we to take the rate from 1801 to 1891, disregarding the intermediate censuses, or are we to somehow deduce something which may be called an average rate from the nine different rates? The Metropolitan Water Commission groped for an answer to this question and found none. A very able mathematician to whom I gave the figures of the ten censuses tells me that they are so irregular that no law of increase of the smallest value can be deduced from them. The Registrar-General's method in forming what are called the “ official estimates ” cuts the knot by disregarding all the decades except the last. The only conceivable argument in favour of this course is the allegation that the immediate past being nearer the future than the long past, affords a better basis for estimating future probability. By itself this would justify the *reductio ad absurdum*, “ if

the last ten years are better than the last ninety, the last year must be better than the last ten," but "temporary fluctuations" have, of course, to be considered, and it may perhaps be asserted that ten years is sufficient, while twenty years is more than sufficient, to give an average unaffected by such fluctuations.

Which rate of multiplication be taken, however, does not very much matter, since any rate that can possibly be deduced from the census figures gives ridiculous results. Carried back into the past the assumption of a uniform rate of increase equal to that which prevailed in the decade 1881 to 1891 necessitates the supposition that in A.D. 525 there were scarcely two persons in England, and carried forward into the future it gives a population of a thousand millions in less than 300 years. After 350 years more there would be only just room for the people to lie down on the ground. Yet the rate of increase in the decade 1881-90 is the lowest of the nine.

These periods, it may be urged, are long. But applied to short periods the assumption of a uniform rate of increase equal to that shown by the last decade leads to just as absurd results as when it is applied to long periods. As is well known, the Registrar-General, whose annual reports reveal no acquaintance with the very accurate statistics of immigration and emigration now collected by the Board of Trade, ignores his own figures of births and deaths, on the ground that "emigration and immigration cannot be disregarded in estimating a

population.”¹ The official estimates of the population in the middle of each of the following ten years which he forms after each census on the assumption that the rate of increase shown by it will continue, are allowed to stand in each of his annual reports till the next census, and would, we must suppose, be allowed to stand if a plague swept away half the people. When the next census is taken they are, of course, found to be wrong. [At the last census the error amounted to 701,843 at the end of the decade, while Dr. Longstaff had estimated the population within 10,251.²] They are then corrected on the assumption that throughout the decade population annually increased at the rate observed during the whole decade. Now whenever the rate of increase in a decade is less than in the preceding decade, these “corrected” figures, on which the “corrected” birth, marriage and death-rates are calculated, present a very odd and most unnatural series of increases. Thus they represent the increase for 1871-2 to have been 307,901, and make the annual increase grow gradually till in 1879-80 it amounted to 342,799. Then comes the census year, which stands by itself, as three-quarters of it lie in one decade and the other quarter in another; it is allotted an increase of 331,854. After

¹ [The words are those of the Registrar-General's Report for 1893. Official estimates continued to be made on the principle censured above till the second decade of the twentieth century. They are now quite satisfactory. See the Preliminary Report of the 1931 census, pp. x, xi.]

² *Economic Journal* for March 1891, June 1891, p. 382. [See for similar estimates for 1901 and 1911, the same *Journal* for June 1901, p. 230, and for March 1911, p. 148.]

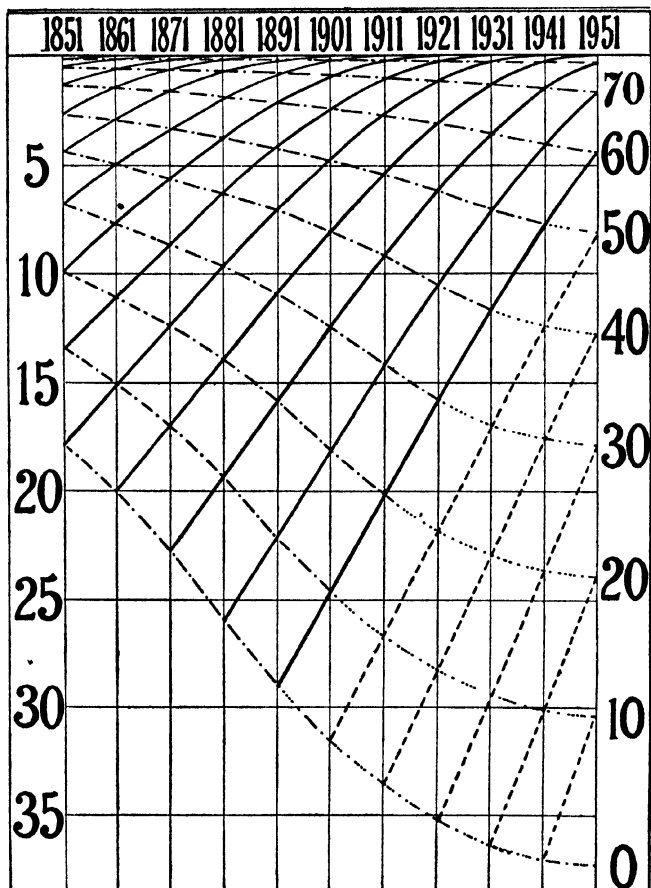
this the new period begins in earnest with an increase of only 288,800 in 1881-2; and the rising process starts again and continues till the increase of 1890-1 amounts to 318,912. In short, the increase grows steadily till it reaches the census of 1881, then it comes down with a crash only to begin immediately to rise again.¹ It must always happen under this system that the addition to the population in the last half of a decade is greater than the addition in the first half, even when the addition in each decade is less than the addition in the preceding decade. The truth is that every estimate of population, past, present and to come, ought to be founded on a consideration of the factors on which the growth or decline of population is dependent—births, deaths, immigration and emigration. The number of births and deaths, and of immigrants and emigrants, is now so well known, that if two government departments, the Board of Trade and the General Registry Office, would only recognise each other's existence, the population at the present time, or at any point in recent years, could be given within ten thousand of the actual number.²

¹ See the last column in Table I at the end of this article, where the official increase is compared with the excess of births over deaths. The official increase is calculated from the middle of one year to the middle of the next, and is therefore printed half-way between each pair of calendar years. It will be observed that in each year from 1863 to 1866, and also in 1870, 1875 and 1890, the official increase is actually greater than the excess of births over deaths—so that, if we accepted it, we should be obliged to assume that in those years immigrants exceeded emigrants.

² The Board of Trade statistics of migration relate to the United Kingdom as a whole, so that the distribution of migration between England, Scotland and Ireland would have to be

In estimating future population the most important data we have to rely upon are the ages of the people as taken at recent censuses. These are shown measured down from the top on the first five perpendicular lines of the diagram opposite. The lines sloping downwards from left to right divide the total population according to each ten years of age from eighty downwards, so that the top layer of persons includes all over eighty years of age, the next all between seventy and eighty, the next all between sixty and seventy, and so on down to the children under ten. Now as the number of immigrants at any particular decade of age is probably always exceeded by the number of emigrants of that age, the people who are between ten and twenty at one census are (with the exception that some immigrants are substituted for some emigrants) the survivors in England of those who were under ten at the preceding census, and similarly with each ten years of age. So if we call the persons born between one census and the next a generation, the lines sloping upwards from left to right divide each generation from the next, and show how each generation becomes smaller and smaller, till it finally becomes extinct on the death of some centenarian.

allowed for. But the Irish Registrar-General already gives real estimates of the population of Ireland, so that the adjustment has only to be made between England and Scotland. The fact that the Irish Registrar-General gives real estimates, and the English and Scotch Registrar-Generals only "official" estimates (*i.e.* estimates based on a hypothesis absolutely known to be wrong), has a singular effect on the published estimates of the population of the United Kingdom, as these are made up by adding the "official" estimate for Great Britain to the true estimate for Ireland.



The population in each census year is measured down from the top, the figures on the left indicating the number of millions. The lines sloping downwards from left to right divide the population at each census into persons over 80; persons between 60 and 80; between 60 and 70; and so on down to between 0 and 10. The ages are shown by the figures on the right. The lines sloping upwards from left to right divide the persons born in each decade from those born before and after it. They thus show graphically how each generation becomes small as it passes from under ten years of age at one census to over ten but under twenty at the next, and then to over twenty but under thirty, and so on.

Now, provided that the rate of mortality and loss by migration remain the same at each age period, it is possible to calculate with absolute accuracy from the observed decrease of a generation between any two censuses, how much the next generation will decrease when it arrives at the same age. For example, if it be known that everyone over 100 in 1881 died before 1891, it may be confidently assumed that everyone over 100 in 1891 will die before 1901. If it be known that the people between fifty and sixty in 1881 lost about 27 per cent. of their numbers before 1891, it may be taken for granted that the people between fifty and sixty in 1891 will lose the same proportion between 1891 and 1901. Nothing is requisite to get the total population over ten at the next census except to work out by proportion sums the population in each ten years of age and add up the results.

Before, however, we can apply this method, it is necessary to inquire whether we are justified in assuming that the rate of mortality and loss by migration will not change. As to the future of mortality and loss by migration every man has a right to his own opinion, but no one can expect to prove anything. We may therefore fairly treat it as an even chance whether the rate of loss is likely to increase or diminish. In the past a decrease of the rate of loss by mortality has been counteracted by an increase in the rate of loss by migration, so that estimates in which this method has been used have been surprisingly accurate. The compilers of the census returns of 1861 published one of these estim-

ates in 1863, according to which the population over twenty in 1881 should have been 14,167,745. When the census of 1881 was taken eighteen years afterwards, the recorded number was 13,958,616, the error being only fifteen per thousand. In 1871 the method was again applied to predict the 1881 population, and the number over ten in 1881 was estimated at 19,365,188. The recorded number was 19,306,179, so that the error was only just over three per thousand. The last two censuses have been, in many respects, far inferior to their predecessors, and no similar calculations appear in them. If, however, one had been inserted, the population over ten in 1891 would have been predicted at 22,129,736, and it was actually 22,053,857. The difference here is slightly greater than in 1881, but it is less than $3\frac{1}{2}$ per thousand, and would not amount to the thickness of a line in the diagram. I have worked this estimate out by quinquenniums of age instead of by vicenniads and decades like those of 1861 and 1871, and its accuracy all the way down is astonishing. Only in two quinquenniums does the error amount to 4 per cent., and both of these are among the ages over eighty-five, where the numbers are too small to give a very sound statistical basis.¹

In the diagram I have extended the lines dividing the population by ages so as to show how many people in each decade of life over ten there will be in

¹ See Table II at the end of this article, first five columns. The sixth column gives an estimate constructed by the same method for 1901. The last column is a similar estimate for 1991, with the additional assumption that the number of births in each decade remains the same.

1901, how many in each decade over twenty there will be in 1911, and so on to 1951, on the assumption that the rate of mortality and loss by migration at each age will remain the same as in the decade 1881-91. What will be the length of the line indicating the total population in 1901 and the following years now depends solely on the length added below for the new generations born after 1891, and, given the same assumption of no change in mortality and loss by migration, the size of each of these generations at each date depends on the number of births. If we decide how many will be born in each future decade we can add one generation after another with ease and certainty.

The question is, therefore, What is the probable number of births? Here we border on considerations of a more speculative character, but we have still something statistical to rely upon. The fact that it is the custom to calculate birth-rates as a rate per thousand on the whole population makes it natural to say that the number of births depends in the first place upon the population, so that if the population increases rapidly the births will increase rapidly. The continuous lines of the diagram show that the population over certain ages will increase rapidly for many decades, so that we might consequently expect a considerable increase in the number of births. But, of course, as a matter of fact the increase of population over and under certain ages has obviously no tendency to increase the number of births. The number of old women and children may be doubled without making it the least more likely that the

births will increase until the children have grown to marriageable age. The number of births is more likely indeed to be somewhat repressed, since the old people and children form a burden upon the shoulders of those in the prime of life. It is consequently much more true to say that the number of births depends in the first place upon the number of men and women between certain ages. For practical purposes the ages of twenty and forty are sufficiently near the mark, and they are much more convenient than the ages for each sex which would have to be taken if perfect accuracy were required. Now from 1853 to 1876 the number of births, after allowing for some deficiency in registration, increased rapidly and was almost uniformly just about 12 per cent. on the number of persons between twenty and forty. From 1876 onwards the number of births has been almost stationary, and the rate per cent. on the persons between twenty and forty has consequently been rapidly declining. In ten years it had fallen to 11 per cent. ; by 1890 it had further fallen to 10 per cent. ; in 1891 it went up to about 10·4 per cent. ; in the next two years it was 10 per cent. ; in 1894 it descended to 9·8 per cent.¹

Now if the future births were estimated at this rate on the number of persons between twenty and forty we should have no grounds for expecting a cessation of the growth of population, though the growth

¹ For the number of registered births in the two periods 1853-75, and 1876-94, see Table 1. The number of persons between 20 and 40 was 5,501,767 in 1851, 6,009,977 in 1861, 6,686,685 in 1871, 7,663,086 in 1881, and 8,805,930 in 1891. The numbers for the intermediate years can be estimated with sufficient accuracy for the present purpose.

would be at a much less rate than heretofore. But the statistics make it probable that the birth-rate on persons between twenty and forty will continue to fall. It must be remembered that the effect of the births having been nearly stationary for twenty years will be to change considerably the age distribution of the group of people between twenty and forty. A larger proportion of them will be at the higher ages. It seems at first sight paradoxical to say that the persons between twenty and forty can be older at one time than another, but it is really quite simple. The persons between 0 and 100 years old obviously do not average fifty years, and in just the same way the persons between twenty and forty do not average thirty. What the exact average age will be depends chiefly on the variation in the number of births between twenty and forty years before. As the number of persons born rose rapidly year by year before 1876, the number of persons becoming twenty years of age in each year has been rising rapidly and will continue to rise rapidly till 1896. After that it will still continue to rise because there has been a reduction of juvenile mortality, but the rise will be far less rapid. The consequence will be that while in 1891 30 per cent. of the twenty to forty group were under twenty-five, in 1911 not more than $27\frac{1}{3}$ per cent. will be so.

This increase in the average age of persons in the prime of life, or, to put the same thing in other words, this diminution in the increase of the number of persons reaching marriageable age in each year, must tend somewhat to reduce the birth-rate. How much

effect should be attributed to it would not be very difficult to calculate if the necessary statistics of the ages of parents were forthcoming, but unfortunately none such exist.

If, however, we take into account not only the diminution to be expected from this cause, but also the diminution to be expected from the working of the enormously strong economic and social forces which have brought about the diminution of the last twenty years, it seems a very moderate hypothesis to suppose that the rate of births on the number of persons between twenty and forty may fall to a little below 9 per cent. by 1901 and to the neighbourhood of 8 per cent. by 1911. This, with a further slight diminution to a little below 8 per cent. by 1921, is all that is necessary in order to keep the number of births stationary at the level of 1881-90. Adopting then this hypothesis, I have continued the lines of the diagram so as to show what the future of the population will be if the rate of mortality and loss by migration at each age, and also the absolute number of births, remain the same as in 1881-90. It will be seen that the increase of population, large at first, becomes less and less, till it is trifling in 1941-51. It would continue, but always growing less and less, till about 1995, when the last survivor of the period before 1891 would disappear, and the population would then stand at its maximum of 37,376,000.¹

I have no desire to stake my reputation as a prophet on the growth of population following exactly the line shown in the diagram, and ceasing to increase in

¹ See Table II, last column.

1991.¹ I am only prepared to assert confidently that the line shown is a much more probable one than that which might be laid down by the "official" method, and which would shoot through the bottom of the diagram between 1921 and 1931 and encircle the globe before the diagram was widened very many yards. Whether the cessation of the growth of population is reached, as I personally should expect, before 1991, or afterwards, it must be reached at last, and if it is reached without any violent changes in mortality, migration or natality, it will necessarily be reached by a curve of increase closely approximating to that laid down in the diagram. The value of the diagram lies not in its prediction of a maximum population of thirty-seven millions, but in the fact that it shows how a cessation of growth may be reached within no very long period without any violent or unnatural changes. Its lines are the curves of a wind-blown sandhill, not the jagged slopes of a rock or the equal slope of a railway embankment. During the last twenty years most of us have not succeeded in detecting any considerable change in the manners and customs and practices which affect natality, and yet it only requires a continuance of the change which has undoubtedly been going on to bring about a state of things which would cause the possibility of a decline of population, instead of the possibility of over-population, to be the bugbear of alarmists.

¹ Since the sentence above was in type, the Registrar-General's returns for the first three quarters of 1895 have been completed, and make it practically certain that the number of births in the present year will considerably exceed the highest yet recorded. It will probably be nearly 10·2 per cent. on the number of persons between twenty and forty.

This consideration need not lead us to the indiscriminate encouragement of natality which prevailed in the time of Pitt, but it may well serve to diminish hostility to measures which somewhat lighten the burden of parentage on the shoulders of those persons who are likely to bring up children such as will really be, in the old phrase, the true riches of the State.

TABLE I.—*Number of Births, Excess of Births over Deaths, and Official Estimate of the Increase of Population.*

1853-1875.				1876-1895.			
Year.	Births.	Excess of Births over Deaths.	" Official " Increase.	Year.	Births.	Excess of Births over Deaths.	" Official " Increase.
1853	612,391	191,294		1876	887,968	377,653	
1854	634,405	196,500		1877	888,200	387,704	329,272
1855	635,043	209,340		1878	891,906	352,034	333,720
1856	657,453	266,947		1879	880,389	354,134	338,230
1857	663,071	243,256		1880	881,643	353,019	342,799
1858	655,481	205,825		1881	883,642	391,707	331,854
1859	689,881	249,100		1882	889,014	372,360	288,800
1860	684,048	261,327		1883	890,722	367,725	292,007
1861	696,406	201,292		1884	906,750	375,922	295,243
1862	712,684	276,118	251,699	1885	894,270	371,520	298,514
1863	727,417	253,580	254,812	1886	903,760	366,484	301,826
1864	740,275	244,744	258,034	1887	886,331	355,573	305,174
1865	748,069	257,160	261,262	1888	879,868	368,897	308,552
1866	753,870	253,181	264,533	1889	885,944	367,591	311,981
1867	768,349	297,276	267,811	1890	869,937	307,689	315,434
1868	786,858	306,236	271,188	1891	914,157	326,232	318,912
1869	773,381	278,553	274,586	1892	897,957	338,273	322,469
1870	792,787	277,458	278,017	1893	914,542	344,584	326,046
1871	797,428	282,549	287,278	1894	889,242	390,727	329,663
1872	825,907	333,642	307,901	1895			333,315
1873	829,778	337,258	312,061				
1874	854,956	328,324	316,278				
1875	850,607	304,154	320,551				
			324,882				

TABLE II.—Population at the several Ages—Estimates and Recorded Numbers.

Age.	1881 Estimate (1863).	1881 Estimate (1873).	1881 Census.	1891 Estimate.	1891 Census.	1901 Estimate.	1991 Estimate (births sta- tionary).
Over 100	277	198	141	142	146	168	453
95-100		9,226	1,230	1,246	1,208	1,391	3,853
90-95			6,790	7,236	7,831	8,643	21,085
85-90		139,624	29,987	33,337	34,541	39,835	95,670
80-85			95,750	103,428	105,681	126,203	257,813
75-80		588,929	202,322	230,398	233,333	265,597	560,440
70-75			349,955	408,930	417,914	443,907	854,393
65-70		1,275,740	502,469	564,245	571,948	627,024	1,200,888
60-65			727,622	787,225	772,879	877,200	1,487,568
55-60		1,850,034	806,464	881,769	884,124	1,026,544	1,701,750
50-55		4,453,332	1,022,075	1,162,988	1,160,032	1,282,440	1,967,199
45-50			1,151,371	1,323,083	1,336,842	1,545,331	2,216,150
40-45		2,547,015	1,399,354	1,565,728	1,547,016	1,790,953	2,373,045
35-40			1,541,399	1,778,508	1,781,790	2,044,767	2,555,260
30-35		3,218,221	1,745,469	2,027,098	2,027,469	2,304,551	2,677,462
25-30		4,416,449	2,047,992	2,392,543	2,350,259	2,722,679	2,937,024
20-25			2,328,226	2,689,422	2,646,412	3,046,411	3,074,640
15-20		5,319,752	2,547,232	2,962,154	2,950,865	3,183,174	3,183,174
10-15			2,800,331	3,210,256	3,223,567	3,253,438	3,253,438
5-10			3,147,396	—	3,395,178	—	3,395,178
0-5			3,520,864	—	3,553,490	—	3,553,490

APPENDIX II

A FORECAST OF NATALITY MADE IN 1901 ¹

SIX years ago I read before the Economic and Statistical Section of the British Association, and subsequently published in the *Economic Journal*, a paper on the probability of a cessation of the growth of the population of England in the course of the present century. I drew attention to the fact that for some years the number of births in England had been nearly stationary, in spite of the increase of population, and showed how, if that continued, and mortality and migration remained as they were in 1881-91, the increase of population would gradually grow smaller and smaller, till it became trifling by the middle, and non-existent by the end, of the century.

The three conditions have not been fulfilled. The births, instead of remaining quite stationary, have slightly increased, mortality has somewhat decreased, and the large net loss by migration has been almost completely swept away. Consequently the increase of population in the last decade of the nineteenth century was larger than that of the decade 1881-91.

¹ [A paper read to Section F of the British Association at Glasgow in 1901 and published in the *Fortnightly Review* for March, 1902, with the title, "The Recent Decline of Natality in Great Britain."]

It would be rash indeed, however, to conclude from this that the probability of a cessation of growth within the twentieth century has diminished. The decrease of mortality we may hope will be continuous, but no very great augmentation of population can be expected from this cause. A diminution of mortality which raised the average duration of life from forty-five to fifty years would be enormous, but it would only increase by one-ninth the population which could be kept up by a given number of births. The loss by migration cannot disappear more than once, and I suppose few will contend that Great Britain is likely to go still further, and become a country which gains considerably by migration. The one factor of great and permanent importance is clearly the natality—the chance that persons reaching maturity will have children—and this has been steadily diminishing since about 1884.

What is called the “birth-rate” fell from nearly 36 per thousand to not much over 29 per thousand in the last quarter of the nineteenth century; but this rate, being merely the ratio of births in the year to the total population of the middle of the year, including children, does not show either accurately or fully the diminution of natality. Natality must be reckoned in relation to the number of persons of suitable age, if we are to avoid the absurdity of supposing it has increased when, for example, the population has been reduced by the deaths of old women or the emigration of children.

To get a perfectly accurate measure of natality in a country we ought to know exactly how many people

there are of certain ages, and weight these ages carefully according to the normal distribution of births. But this is impossible, even in census years, and so we must fall back on rougher methods. A rough measure of changes in natality may be obtained by comparing the number of births in each year with the number of persons reaching something like the average age of marriage in that year. We do not, of course, know the number of persons reaching this age in each year exactly but we know that if mortality and migration remain the same, it is exactly proportionate to the number of persons born a certain number of years before. We may begin, therefore, by comparing the number of persons born in each year with the number born, say, twenty-six years before, remembering to allow for changes in mortality and migration before we deduce conclusions.

The following table shows the number of births which took place in each of the years 1877-1900 in proportion to every hundred which were registered twenty-six years earlier.

Year.	Births.	Year.	Births.
1877 . . .	144	1889 . . .	122
1878 . . .	143	1890 . . .	117
1879 . . .	144	1891 . . .	122
1880 . . .	139	1892 . . .	119
1881 . . .	139	1893 . . .	119
1882 . . .	135	1894 . . .	113
1883 . . .	134	1895 . . .	119
1884 . . .	138	1896 . . .	115
1885 . . .	130	1897 . . .	116
1886 . . .	132	1898 . . .	112
1887 • . .	127	1899 . . .	112
1888 . . .	123	1900 . . .	108

It will be seen that, allowing for chance ups and

downs, there has been a very steady fall in the ratio. Defective but gradually improving registration from 1851 to 1874 doubtless accounts for some small portion of the fall, but against this we have to set the necessary allowances for alteration in mortality and migration, both of which go to strengthen the table as an indication of a fall in natality. It is certain that of a hundred persons born in 1874 more reached the age of twenty-six than of a hundred persons born in 1851, so that if we could have the ratio of the births of each year to the survivors only, instead of to the whole number of those born twenty-six years earlier, we should have a table showing a larger fall.¹

It is more difficult to gauge the effect of changes in migration. Emigration was much larger in the 'eighties than in the 'seventies, and remained considerable till 1893, after which it disappeared: people emigrate most largely between the ages of

¹ [The following table continues the series to 1932 :

Year.	Births.	Year.	Births.
1901 . . .	109	1917 . . .	73
1902 . . .	106	1918 . . .	74
1903 . . .	106	1919 . . .	76
1904 . . .	106	1920 . . .	108
1905 . . .	105	1921 . . .	92
1906 . . .	106	1922 . . .	85
1907 . . .	103	1923 . . .	82
1908 . . .	106	1924 . . .	79
1909 . . .	103	1925 . . .	77
1910 . . .	99	1926 . . .	75
1911 . . .	99	1927 . . .	70
1912 . . .	97	1928 . . .	70
1913 . . .	99	1929 . . .	68
1914 . . .	100	1930 . . .	69
1915 . . .	92	1931 . . .	69
1916 . . .	90	1932 . . .	66

The actual numbers will be found in the table on p. 90 above.]

fifteen and twenty-five. From these facts we may conjecture that a smaller proportion of the survivors of the persons born twenty-six years earlier remained in the country from some time after 1880 till about 1895, than in the earlier and later years of the period, so that if migration were properly allowed for we should probably get a more moderate fall down to about 1895, but a steeper one afterwards. Neither mortality nor migration, therefore, appears to require us to weaken in any way the effect of the table.

A decline of natality may be due to a decline of illegitimacy, a decline in nuptiality (the chances of being married), or a decline in the number of births per marriage. The present decline is partly caused by the decline of illegitimacy, but this is a small matter, with no large influence. Nuptiality possibly declined somewhat in the middle of the period, but revived towards the end. The really important cause of the decline seems to have been a diminution in the number of children born to each marriage or, to be more accurate, born within a limited period to each marriage, since we have not before us a long enough period to make it certain that there has not been a postponement of births rather than an absolute reduction.

To guess at the number of children per marriage by comparing the births of a particular year with the marriages of that year is obviously useless, since the births of one year do not depend much upon the marriages of that year and do depend very much on those of the year before, a good deal on those of the year before that, a little less on those of the year

before that, and so on. In order to allow for the marriages of earlier years I have calculated for each year what may be called a weighted marriage figure consisting of the sum of 2·5 per cent. for the marriages of that year, 20 per cent. of those of the first year before that, 17·5 per cent. of those of the second year before, and so on, the percentages for the earlier years being 15, 12·5, 10, 7·5, 5, 3·75, 2·5, 1·75, 1·25 and 0·75. If this is a tolerably correct representation of the average distribution of births over the years of married life—and a good deal of variation in it will be found to make little difference—then the ratio between the number of legitimate births in each year and the weighted marriage figure will indicate the natality per marriage. In the following table this ratio is given for the past half-century :

Year.	Ratio.	Year.	Ratio.	Year.	Ratio.	Year	Ratio.
1851	3·92	1864	4·17	1877	4·30	1889	4·21
1852	4·01	1865	4·14	1878	4·30	1890	4·08
1853	3·87	1866	4·09	1879	4·28	1891	4·21
1854	3·90	1867	4·10	1880	4·34	1892	4·05
1855	3·85	1868	4·16	1881	4·36	1893	4·05
1856	3·97	1869	4·09	1882	4·36	1894	3·90
1857	3·97	1870	4·19	1883	4·35	1895	4·01
1858	3·90	1871	4·19	1884	4·36	1896	3·94
1859	4·10	1872	4·29	1885	4·27	1897	3·88
1860	4·01	1873	4·22	1886	4·32	1898	3·80
1861	4·03	1874	4·26	1887	4·24	1899	3·74
1862	4·15	1875	4·18	1888	4·20	1900	3·63
1863	4·16	1876	4·31				

It will be seen that at the beginning of the period the ratio was a little below 4, that it rose to about 4½ in the early 'eighties and has since declined to about

$3\frac{2}{3}$.¹ The rise in the first period is to be accounted for in part by the deficient but gradually improving registration of births. The decline of the last sixteen years is also observable in Scotland, so that the inclusion of that country would not much alter the ratios, and I therefore entitle this article "The Decline of Natality in Great Britain," though I have not got out the Scotch figures in the same detail as the English.

It would be extremely difficult to answer exactly the obvious question, What must the ratio be in order that a stationary population may be permanently maintained? The simple answer, "Two, one to replace the father and one the mother," is clearly insufficient, because mature bachelors and spinsters must be replaced as well as married people, and when we have added something for this requirement we must increase the whole by at least 40 per cent. to replace those who die before they attain the parental age, and decrease it by only about 10 per cent. for second marriages. The necessary ratio is therefore probably a little above 3. We may conclude that another sixteen years' decline of natality per marriage at the same rate as that of the last sixteen years would dry up the source of the natural increase of population.² The increase would, of course, actually continue some time longer, but at a decreasing rate as the mortality increased with the increasing average age of the people.

¹ [What has happened since 1900 may be seen in the table on p. 90 above.]

² [The table on p. 90 above shows that the decline did in fact continue at almost exactly the same rate until the War accelerated it.]

The decline of natality has been attributed to a very great number of different causes, but I do not remember ever having seen it attributed to a cause which is likely to exercise less influence in the immediate future than in the immediate past. We ought therefore to admit frankly that there is at any rate a considerable probability of the disappearance of the natural increase of population—the excess of births over deaths—in Great Britain within the present century. So far as Great Britain alone is concerned I cannot see that there is much reason for lamenting the fact. The island is already tolerably full. With another ten millions or so it would be as full as any reasonable person can desire to see it.

But what of the British Empire beyond the seas, and the whole British race? It has been the fashion for so many years to talk of our over-populated island, and the necessary overflow to other lands, that politicians (who are always ten years behind) are still doing it; but what are the most recent facts? That in the last ten years Great Britain has had no civil overflow whatever. The whole net emigration, according to the figures provided by the censuses and the registration of births and deaths, only amounted to 123,461, which is considerably less than what may be called the military net emigration—the number of soldiers who had been sent out and who had not returned at the date of the census, because still buried—alive or dead—in South Africa. The conditions of trade at home and across the Atlantic will probably, before long, be more favourable to emigration, and emigration may revive, but the decline of

natality, if it continues, must make that revival temporary and unimportant. The waste places of the Empire must not look to Great Britain to send them more people than she receives from Europe. The great stream of Irish emigration, which has added more millions to the population of the United States than ever lived in Ireland, is not likely to be diverted to the British colonies, and so the British dominions beyond the seas will have to rely on their own natural increase and the immigration of foreigners.

As to the natality in the colonies and dependencies, statistics are lamentably deficient, but there seems to be little doubt that while the natality of some non-European elements and some non-British European elements, such as the French-Canadians and Cape Dutch, is considerable, that of the people of British extraction is small and decreasing. The whole European population of the British colonies and dependencies scarcely amounts to twelve millions, and ten of these are in the Canadian Dominion and Australasia. About Canadian natality and mortality there seems to be little direct information, but we know that the total increase of population in the enormous area covered by the Dominion was 839,000 in 1871-80, 508,000 in 1881-91, and only 506,000 in 1891-1901.¹ When we reflect that this 506,000 includes gain by migration as well as natural increase, and remember that Scotland, with a population 800,000 less to start with, had a natural increase of

¹ [The figures for 1871-80 should be 636,000 and for 1891-1901, 538,000.]

500,000 in the same decade, we cannot fail to admit that the natality of the Canadian population must be low. If the natality of the French portion is high, as is often alleged, the natality of the British portion must be that much the lower.

In regard to Australasia, we have more direct information, which indicates that the natality is both low and decreasing. In 1891 the six colonies of New South Wales, Victoria, South Australia, Queensland, Tasmania and New Zealand, with a total population of three and three-quarter millions, had 126,059 births, a low figure if we take into account the immigration, which reduces the average age of the population. But in 1898 the number had sunk to 112,805, and in 1899 it only got up again to 114,274. The figures for Western Australia are not forthcoming, but we need not look to mining camps for high natality. Thus there seems to be little hope of the colonies peopling themselves, and unless the British race within the Empire can succeed, as it has done outside the Empire, in engrafting into itself foreign elements, a continuance of the decline of natality at home will cause it to become one of the little nations or at any rate to fall with the French into the second class. It is already immensely outnumbered by the Russians in the dominions of the Tsar and by the white citizens of the United States. It is very considerably outnumbered by the Germans in the German Empire. It will soon be much more outnumbered. I have never heard any suggestion that Russian natality is declining—and there is great room for reduction in Russian mortality—so that the Russian population

may be expected to increase enormously. German natality does appear to be falling, but not so rapidly as British, and it is still much higher.¹ The natality of the old English element in the United States is believed to be falling, but immigration and the higher natality of the non-English elements will probably long suffice to increase the population of the United States at a rapid rate.²

¹ [Since this was written a great change has taken place. Natality in Germany has fallen precipitously, so that it is now the lowest in Europe. See the striking maps of Europe in 1900 and 1929, showing the decline in the different countries, in Ernst Kahn's book referred to above, p. 92, note.]

² [The drastic restrictions on immigration imposed by the United States in recent years, coupled with the decline of natality in the countries from which immigration was formerly large, have made this now much less probable.]

BY THE SAME AUTHOR

MONEY: Its connection with Rising and Falling Prices.

Seventh Edition. Crown 8vo. 140 pp. **3s. 6d.**

The first edition of this book was written in the summer of 1918, and in subsequent editions additional matter suggested by recent discussions and events has been added. This seventh edition is just double the length of the first, and contains an Appendix on the Breakdown of September, 1931, and its consequences.

MODERN CURRENCY AND THE REGULATION OF ITS VALUE.

Crown 8vo. 128 pp. **5s.**

In writing this work, Professor Cannan has had two aims in view. First, to explain the modern currency system without confusing readers under thirty years of age by assuming that they are familiar with conditions which passed away before they were old enough to have any important monetary experiences. Secondly, to show that the practice of prescribing minimum reserve ratios of gold against notes is indefensible in principle and tends to cause appreciation of gold and falling prices.

WEALTH: A Brief Examination of the Causes of Economic Welfare.

Third Edition. Crown 8vo. 330 pp. **5s.**

Has been translated into Spanish, Japanese, Chinese, Polish and Braille.

Manchester Guardian: "This is an excellent introduction to economics for the use of students or of other persons who would like to get clearer and firmer notions of the business side of life than they can get by merely casual observation and reflection upon such fragments as come within their personal purview."

A REVIEW OF ECONOMIC THEORY.

Second Impression. Demy 8vo. 460 pp. **16s.**

In this book Professor Cannan has been faithful to the principle which he followed at the London School of Economics—the principle that general economic theory can best be made intelligible by following its development from its simplest beginnings. The story told in his "Theories of Production and Distribution" is now retold, but in a much shorter form, so that room is found not only for starting the history of these theories at their birth and carrying it down to the present time, but also for a similar history of the theory of value, and for a chapter on "Aspirations and Tendencies," in which the drift of economic progress is discussed.

P. S. KING & SON, LTD.

14 GREAT SMITH STREET, LONDON, S.W.1

