Vol. 1 No. 4 August, 1947

ECONOMIC DIGEST 1/-

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A LANTERN PUBLICATION

Have We A Full Employment Policy?

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Condensed from "Economica"

IT is generally accepted in this country by economists as well as by the public that a higher level of employment can be maintained than before the war at a cost which is not greater than the benefits which would result. The benefits are easy to see, but in so far as there is any cost it would usually be argued that it is a cost to the unemployed—that of working instead of having leisure. This is not really a cost at all. In a dictatorship this perhaps would be the correct analysis, but in a democracy there are numerous repercussions to be analysed.

Not only is it accepted that we can permanently increase the level of employment, but also that it can be done in a free society, with only negligible additional costs, such as the maintenance of a small planning staff. The argument is that before the war we had a national income which was produced by some 90 per cent. or less of the population available for work. If this 90 per cent. could be increased, then so would the real national income, and the standard of living. In the limit it appears that production could be increased by 10 units on every 90, or say by 11 per cent. It is, however, admitted that this limit will not be achieved. Given the present limitation of capital equipment and the inexperience or inability of those unemployed, an 11 per cent. increase in employment would give less than an 11 per cent. increase in production. In the long run the increase in employment would itself generate an increase in capital equipment, whilst the inexperience would disappear gradually, so that ultimately the deficiency would be due simply to any completely inelastic supply of capital, or to any inherent incapacity of those who had been unemployed.

Queue for Employment

Further, we live in a world where conditions both of supply and demand change, where mines get worked out, and technical conditions of production change. Especially it is a world where tastes change. Employees have to be prepared to change their occupations and/or workplaces, and it is usually assumed that provision has to be made for a certain amount of (frictional) unemployment. It is agreed that loss of flexibility in the economic system is a cost of full employment which would be greater than the advantages. Usually it is assumed that over long periods of normal activity unemployment could not be reduced below some 3 per cent. or 5 per cent. Therefore the achievement of full employment could be expected to raise production, not by 11 per cent., but perhaps by 5 per cent.

What are some of the other possible costs of full employment? There is probably something to be learned from the example of houses, in which it has been decided that the cost of full employment in a free society would be too great, and the freedom was abandoned in one respect. In a free society rents would have risen more than the majority of the society would like.

Before the war there was a constant queue for employment. During the war and since there have been other kinds of queue, in which consumers have been waiting. Both kinds are objectionable. Full employment policy might be likened to the retention of the consumers' rather than the producers' queues. Presumably there is some optimum position between the two types, but there seems to be no way of determining where it is. It might be with 3 per cent., it might be with 5 per cent. unemployed; one guess seems as good as another.

Suppose it is decided that the object is to maintain unemployment at 5 per cent. It should not be assumed that the maintenance at an unchanged level of some index number of prices can be achieved at the same time in a free society. Policy ought to be directed towards one or the other, not both. Yet many theorists try to run with the hare of full employment and hunt with the hounds of constant prices.

Lord Keynes seems to have been under no delusions on this problem. *In present discussion we rarely hear that real wages must fall if employment is to be increased, yet Keynes said it.* He confirms that "with a given organisation, equipment and technique, real wages and the volume of output (and hence of employment) are uniquely correlated, so that, in general, an increase in employment can only occur to the accompaniment of a decline in the rate of real wages. Thus I am not disputing this vital fact which the classical economists have (rightly) asserted as indefeasible". *In effect he goes on to argue that the increase in employment is to* be obtained by increasing prices so that prices rise more rapidly than wage rates. Does not that proposition still hold ? Is not production, at least in the short run, subject to decreasing returns, and will not more labour be employed only if the entrepreneur expects the cost to be lower than the value of its additional output ? If wage rates do not fall, this seems to require at least the expectation by the entrepreneur of price increases.

According to Keynes, true inflation is reached only when no further increase in output can be obtained with a further increase in effective demand. Roughly, we might say that this was when wage rates rose as rapidly as prices. Is there not some optimum position between changes in prices and the level of employment ? Few of us want full employment at the cost of "true inflation".

In this paper full employment policy is taken to mean attempts to increase employment by increasing the expenditure of savings, and thereby increasing the volume of savings, by increasing total income without altering the propensity to save. Alternatively it is decreasing the propensity to save, but not the expenditure of, and hence the volume of, savings, because income is increased. The definition is not comprehensive, but it is assumed that the policy only implies the interaction of the factors enumerated. It will be noted that the expenditure of and the volume of savings are so defined that they are always equal.

Redistribution of Income

The argument behind the theories of full employment has been developed from the observed fact that in a relatively stable economy with a moderate volume of unemployment it is usually possible to increase employment by the injection of additional money and credit into the system at suitable points. This is normally achieved by increasing government expenditure or decreasing taxation; in other words, by increased Government borrowing. The other favourite method is by the redistribution of income in such a way that those who do not save get an increased proportion.

The argument may be put another way. This says that investment should be increased—investment meaning expenditure on capital equipment including public works.

One of the fundamental questions of a full employment policy is how far a given increase in income will be absorbed in increased costs (and prices) and how far it will increase employment. The answer is that it will depend very largely upon conditions of employment. It is as a result of discussion of the "Great

Depression" that full employment policy was developed, but what will happen with unemployment at 5 per cent. is very different from what would happen with it at 20 per cent.

Workers in their demands for increased wages are concerned not only with prices and the level of employment, but also with what might be called progress. They like periodical increases such as can be granted when real national production per unit of effort is rising. In manufacturing industries output per man hour rose by about 2 per cent. per year between 1924 and 1935, so that if the distribution of the product remains unchanged there ought to be a trend of about this amount in wage rates. But there are many factors to allow for, including changes in the conditions of employment, such as holidays with pay, as well as real standards of consumption.

Real Wages Falling

We might conclude that the rate of rise in money wages can usefully be expressed as a function partly of the rise in prices, partly of the volume of employment and partly of the increase in efficiency. Normally, the proportionate rise in prices is greater than the proportionate rise in wage rates, so that with rising prices real wages are falling and hence employment increasing. The influence of the employment factor is to modify this ; as employment gets high it is positive, but if employment is low it is negative. The efficiency factor may be considered for the moment as a constant positive trend. If employment is high, the employment factor, being positive, adds to the normal rise in wage rates when prices increase, and the rise in wages may be as great as the increase in prices, in which case "full employment policy" would have no influence in increasing employment further. In Keynes's definition, there would be true inflation.

It is difficult to think that, because of the war, workers will be less anxious for wage increases than they were. It is probable that increased demands for wage increases are associated with the present high level of employment. Increases of wage rates, however, depend also upon employers. Again a high level of employment will be inflationary, for it increases willingness on the part of employers to grant increases. If employment is high it is because employers think it pays them to keep it high, and so they will be reluctant to lose employees either to other firms or for short periods because of strikes.

There is a further difficulty. When prices rise, wage rates may at first tend to lag and so employment will rise. If prices rise 5 per cent. and in the same period wages rise 2 per cent., what happens when prices are stabilised? Usually wages continue to rise, typically until they have risen 5 per cent., partly because of the argument that the cost of living has risen by that amount, but also because the average rise of 2 per cent. will conceal many cases of no change as well as some of 5 per cent. increase. The "no change" people will continue pressing for increases because of the rise in other industries. It seems likely, therefore, that the increased employment will persist only for a short time, and that unemployment will gradually increase when the price rise ceases.

Does this mean that full employment requires a continuously increasing price level? If prices rise at a constant rate, will wages consistently lag behind so that real earnings have fallen? This is improbable.

The conclusion reached so far is that, as a long-term continuous policy, full employment as usually understood will fail to reduce by itself the average proportion of unemployment in a free society, whether prices are kept stable or allowed to rise, though in the latter case employment might continue high for a longer period than the former. This does not mean that an average of 10 per cent. unemployment need be a persistent feature of our economy, but simply that the "full employment policy" is merely a policy for preventing "great depressions". If it is used to try to raise the average volume of employment, it is likely to be successful only for a time, and to cause in the long run more troubles than it cures.

An important qualification is that, if employment is increased, it is likely to have an influence upon the trend of real income by increasing efficiency. Output per man-hour depends upon capital equipment, and with increased employment investment is likely to increase. This will happen if the increased employment is associated with wise investment rather than with a budget deficit on current account. It is more likely to follow investment in industrial equipment than in houses. This possibility of increasing earnings because of increased efficiency may help to satisfy the demand for increased wages because of the high level of employment, though its probable effects may easily be magnified.

High Volume of Employment

With the wartime net loss of capital at home and abroad, it may be some time before the pre-war level of consumption per unit of effort again becomes possible. If employment is high, it will be difficult to get this fact accepted as a reasonable argument for not increasing wages. There seems to be a desire to maintain the pre-war volume of consumption with decreased effort, as typified by obtaining more holidays with pay and requests for shorter working weeks without reductions of pay. It may be that workers expect an increase in real earnings from a redistribution of income in favour of themselves. They may expect taxation that reduces income from investments and increases income from direct effort. Such a transfer might allow for the maintenance of a high volume of employment for a long time, but it has to be done carefully.

Keynes has taught that rentier income can be cut without affecting demand for labour, but that this is not true of entrepreneur income. Rentier income has been cut greatly during the war, but because of cheap money and the rise in prices, the entrepreneur has his profits increased. It is his natural reaction to increase production, and this may increase employment for a long time, but it depends on the maintenance of low interest rates and the increased prices: the "euthanasia of the rentier". Nationalisation would replace ordinary shareholders with rentiers receiving the lower return obtainable on Government securities, and might thus also redistribute income in favour of earners.

Employment can nearly always be increased over short periods by increasing expenditure, but this may be compared to a drug which is likely to lose its efficiency if used persistently, whilst it is an expensive drug, likely to cost the stability of prices. *It is doubted if there is any justification for assuming that employment in a free society can permanently be held at a level substantially higher than before merely by the maintenance of purchasing power, or even by its increase.*

Civil Service Under Central Planning and Control

By Sir OLIVER FRANKS, *K.C.B.*

(Provost of Queen's College, Oxford)

*From CENTRAL PLANNING and CONTROL in WAR and PEACE**

THE main functions of civil servants in central planning and control are four: they have to assemble and interpret information, advise Ministers on the most general decisions, take consequent general decisions themselves and explain plans and polities to business. An awareness of how things happen is required, of the interrelations of commercial and industrial processes, of the factors which enter into the business decisions of business men. That is why good forecasting and estimating is an art though using all the scientific techniques that the study of statistics has made available. It requires knowledge of the world as well as highly specialised training. It is no criticism of the Civil Service to say that it has not enough experts of this kind. There are not enough in existence. But it must be a first concern of the Civil Service to increase their number if there is to be central planning and control in peace.

After Ministers have taken their general decision on policy, civil servants find themselves confronted with the need to take further decision within the framework of Ministerial policy. In central planning these decisions are not simply regulative: they are positive and help in making something come to pass. This type of work clearly requires a high quality of theoretical and practical talents. The decisions whether or what to advise or what to do carry large responsibilities. Their consequences in practice are often great. In addition to practical wisdom, nerve and vigour are needed. A condition of success is a fresh mind, and a fresh mind is one that enjoys some degree of leisure.

Difficulties of Economic General Staff

It is here that difficulties appear. They centre round the frequency of chronic overwork amongst senior civil servants in the Government Departments dealing with economic affairs. A good deal of administrative work can be done passably well by fatigued civil servants, but not their part in central planning. These Government Departments are very large organisations. They throw up a great volume of business to be transacted by their senior officials. The result is too often that the conditions of good judgment do not exist. Fatigue becomes a habit and the effort to think ahead is too great. The tendency grows to substitute tactics for strategy: to let things drift until crisis forces a decision and the methods which war has made familiar for dealing with crises can easily be deployed. If this were the position, it would give central planning no chance of success.

The remedy that some suggest is the creation of an Economic General Staff. The idea is not to create an intelligence unit or secretariat but a body with wider responsibilities which would take from the rest of the Civil Service the main burden of advising Ministers on the general issues and of taking the decisions, consequent on Ministerial action, which would initiate the process of carrying out the programmes adopted. This body would hold any major negotiations with industry and commerce: it would deal with the Government Departments in the economic field. Its members would have fresh minds because they would not be encumbered with the details of departmental routine.

* *(Longmans Green,* 15/-)

I think the attractions of the suggestion are superficial, while its difficulties are great. Such a staff as is suggested would necessarily grow out of contact with the changing pressures and realities of business and political life as they are experienced by the departmental official. An Economic General Staff cannot act as a substitute for the Permanent Secretaries of the economic Departments.

There are two other suggestions worth consideration, though their adoption could only give limited help. One of the great sources of strength to the Civil Service in its war job was the co-operation of industrialists and merchants of ability and experience within the Departments. They were the pillars on which the edifice depended. These men are now mostly back with industry and commerce where they are needed. But they could still help. A Government might do something to lessen the burden on the Civil Service if it encouraged the formation of groups, the membership of which would be largely drawn from industry and commerce. A group would be strengthened if an academic economist and a Trade Union leader were also included. Its numbers should be small. It would be a body acting on behalf of Government with terms of reference given by Government. It would need to be linked to the regular organisation through its chairman who should therefore be a civil servant acquainted with the general context of Government planning.

Secretaries Without Departmental Duties

How are these chairmen to be found without adding to the burdens of senior civil servants ? I think that the answer, in terms of the present organisation of Government Departments, might be to create one or two additional posts of Second Secretary at the Treasury. These additional Second Secretaries would not have departmental duties. Their business would be to act as chairmen of these and similar bodies. They could not become remote from the business of Government because, as officials of the Treasury, they would be in continuous touch with all the main activities and policies of Government in the economic field. Experiments have already been made in America with groups of this kind, and they have met with success.

Again something can be done to lighten the burden of Permanent Secretaries and their deputies if they are allowed, so to speak, to multiply themselves by having special assistants. Special assistants are civil servants relieved from the administrative duties of looking after a branch or division of a Department. They are, therefore, free to think and to plan.

These suggestions, even if sound, only touch the fringe of the difficulty. The main point is that there seems no prospect of the burden on senior civil servants decreasing in coming years, and the burden is too great. Only men of exceptional physical endurance can do the work which every day brings and find time and vitality to contribute their share to central planning. If central planning is inevitable, Government must find some solution to this difficulty. It is no answer to breathe the word "delegation" as if it were an incantation. Most senior civil servants delegate as much as they can within what the system allows. Central planning means more and more difficult work, and, without changes, it can hardly be done.

The remaining function of the Civil Service in central planning and control lies in its relation to industry and commerce. When Government has made its decisions, they have to be communicated and applied. It will fall to the Civil Service, after the Ministerial pronouncements have been made, to carry matters further. It will largely depend on civil servants whether the line where Government leaves off and business begins is clearly drawn. This is where clear definition and understanding of different functions is most important. They must leave industry and commerce in no doubt about where the carrying out of programmes is their responsibility and rests on their initiative.

This function of the Civil Service implies as a counterpart a new outlook on the part of industry and commerce in peace. In the past, business has been accustomed to regulative action by Government in economic affairs. Government itself did nothing positive. The civil servant appeared to business to belong to a separate order of being and to be activated by unlike thoughts and policies comprehensively denominated and dismissed as political. If he acted, it was to prevent. Central planning commits Government to positive intervention in economic affairs. The entire situation is changed. When Government centrally plans, the activities of many undertakings will involve an explicit relation to programmes laid down by Government. What the undertakings produce and sell will affect not only their own success, but the success of the national plan expressed in the programmes. A condition of central planning is that Government and business meet each other half-way in the issue of confidence. Distrust of intentions, whether one-sided, or mutual, is fatal.

At this point a problem emerges. If central planning implies, as a necessary condition, this inter-communication between business and Government, how is it to be achieved ? Government is one, but business is many. A single industry may consist of hundreds or of thousands of firms of varying size. The solution to the difficulty must rest with industry and commerce. It must lie in the creation of representative bodies through whom the work can be done, whether regionally or nationally. This conclusion may not be liked, but it cannot be avoided. If there is to be central planning, it is part of the picture.

CONTROL THROUGH FINANCE

The main instruments of control at our disposal, and the instrument which so far has been most surprisingly neglected, is the financial instrument. The Government has direct control over a vast field of capital investment. It has powerful indirect control over consumption expenditure *via* taxation and price policy. And since one of the main roots of our trouble is an excess of aggregate demand which tends to absorb resources which should be available for the increase of exports, it is clear that until we grapple with this evil at its source our present difficulties will continue.

We must, therefore, prune our programmes of development. We must curb unnecessary expenditure. We must budget for a true, rather than an apparent, surplus. We must plan to live within our resources. This is not to say that there are not all sorts of other controls which must also be kept in action. But it is to say that, unless we are willing to use the financial instrument as well, the other controls will be working against the stream instead of with it ; and, in spite of spectacular efforts from time to time to deal with particular evils, we shall persist in a state of chronic unbalance until we are brought to our senses by the imminence of economic difficulties very much more severe than any we have yet experienced.

Hence, in the anxious months that lie ahead, our hopes and fears must be concentrated more than usually on the Chancellor of the Exchequer—PROFESSOR LIONEL ROBBINS, C.B., F.B.A. (University of London). Extract from the *SUNDAY TIMES*, July 6th, 1947

Retail Trade and Monopoly

By Professor HERMANN LEVY

From an address to the Joint Council for Monetary and Economic Research

IT is a mistake to refer to large retail stores as monopolies, for they are simply big units. But retail trade is not free from monopolistic practices. In Britain we have what should probably be called cartels, although we avoid the use of the word in relation to retail trade and choose to call them "trade associations".

Many of these retail trade associations are "harmless", but some of them are concerned with the regulation of price, or rather of margins. These associations do not fix prices, but they do seek to control the margin between the price charged by the manufacturer and the price the retailer demands of the public, *i.e.*, the gross margin.

Why has this practice grown up? Formerly a manufacturer was not concerned with retail prices. If prices fell he was satisfied that he could increase production. But to-day we have to do with fixed price branded articles. A manufacturer produces a new brand and tries to create a market at a specified retail price. Now it may well be that the retailer's margin as fixed by the manufacturer is over-generous, and the enterprising retailer will say "Instead of charging the stipulated price of say, 15s. for this article, I can make a good profit if I sell at 14s. or even 13s." If he is permitted to do so, the less efficient retailer will soon be protesting that "price-cutters" are making it impossible for him to sell at 15s. "Therefore (so the argument runs) you, the manufacturer, must reduce your price to me to compensate me for the reduction". In other words, the less efficient retailer is anxious to preserve his "margin".

Interest in the Profit Margin

Another modern feature of retail trade is the composite business—that is a business which deals with two or more of the three functions of manufacturing, wholesaling and retailing. Such a business clearly has an interest in maintaining the retail profit-margin.

The average retailer is at the same time for restriction and for freedom. In his relations with the big stores, the co-operative stores, the mail-order undertakings, and the open markets, he wants to see restriction. But the effect of restriction is to keep less efficient traders in business.

Bonus and dividend schemes of all kinds are now opposed by many retailers, for they are regarded as disguised price-cutting and pilloried as unfair competition. Yet, it is just price-maintenance which assists the tendency to give bonuses and have gift-schemes. When a retailer is actually forced to make higher profits on price-fixed branded articles than he would take otherwise, why should he not spend part of these excessive profits on gift schemes to attract more customers?

Retail associations are not concerned only with price policies, but with other restrictive matters. Having themselves created conditions that keep incompetent traders in business, they still feel that they must remedy the evil of over-crowding. This they would like to achieve by systems of registration and licensing, and by setting up qualification tests for new entrants. Thus one restrictive practice begets a family of further restrictive practices. All manner of devices are employed —snoopers, and even ex-C.I.D. men as searchers—to detect those who break any of the restrictive rules, and the whole anti-social enterprise is buttressed by domestic tribunals which arrogate to themselves powers in the way of fines and even severer penalties for offenders. These things are clearly the structure of monopoly.

What can we do about it? Very little, unless we can restore by statute the old Common Law provisions against the restraint of trade. Most of the anomalies would disappear if we could re-open the gates and make restraint of trade again impossible. There would then be no need to consider forbidding trade associations, for they would be restricted to their proper functions if agreements as to the restriction of prices or margins were not enforceable. This is far better than any attempt to control the controllers by putting a check on price margins.

CO-PARTNERSHIP: ATTITUDE OF LABOUR

In the past, trade unions have expressed opposition to the principle of co-partnership. The German Social Democrats always opposed it, at least officially. In the United States to-day the trade unions, increasingly conscious of their power, are largely hostile to the principle. The British trade unions, after showing considerable opposition in the years 1923-25, now tend to make up a more accommodating attitude. For this the record of the co-partnership firms themselves is largely responsible.

The few examples of schemes established to combat the inroads of trade unionism have passed away. Few firms would consider establishing profit-sharing or co-partnership to-day without taking the relevant unions into their confidence, and no protagonist of profit-sharing would think of seeing it established unless the basic wage of the employee was at least equal to the prevailing wage. Any profit-sharing which is aimed at keeping down wages is doomed from the start.

It may be said, incidentally, that the record of American firms in the matter of unionism is equally correct; opposition of American unions is probably due to jealousy of their new-found status and fear that co-partnership will "divert the employees' attention from unionism". British trade unions have to some extent got beyond this stage, but the attitude still lingers. One case has been brought to our notice in which the trade union representatives have unofficially made it known to the management that they would regard a projected co-partnership scheme as tending to undermine their influence in the works.

As to the attitude of unorganised labour, an unusual poll was undertaken by the United States Senate Committee in 1939 among 90,000 employees in 104 non-profit-sharing establishments. The salient feature of this poll is that to the question "Are you in favour of profit-sharing?" 87 per cent. of those replying answered "yes", 13 per cent. answered "no". Over 90 per cent. thought that profit-sharing would result in (1) increased profits to the company; (2) fewer strikes, and (3) greater care in the handling of work and equipment by employees.

The significance of this poll is no more than this, that a scheme of profit-sharing stands a good chance of a favourable reception when first introduced. There is no doubt that on its novelty value alone a profit-sharing scheme will usually be able to get a good start providing that the necessary steps are taken to clear away initial suspicions. The payment of the first bonus is accepted as a welcome addition to pay. It is after this that the testing-time of the scheme will come. If the bonus is maintained, but distributed unimaginatively, there is a tendency for the worker to regard it as a right. If the bonus fails the employee may lapse into apathy or even hostility. Over twenty years ago the economist, James Bowie, pointed out that no scheme of profit-sharing or co-partnership can be judged until it is at least five years old.

Food Distribution Costs

By E. A. BRAMALL, *M.P.*

From a Speech in the House of Commons, June 27, 1947

IN normal times there were two processes which might be distinguished in getting tomatoes into the shops, either from the importer, who brought in the imported tomatoes from overseas, or from the grower, who grew them in this country. The tomatoes have to be got from the importer or grower to the market and they have to be sold in the market to the retailer.

In 1941 the Ministry of Food decided to rationalise this process. They quite rightly set up a number of centralised associations to carry out the operations so that they were not left to the haggling of the market between the separate individuals in each category in the process of distribution. In order to set up this distribution, they made what was purely a logical abstraction between different stages in the distributive process. They said, on the one hand, that the process of conveying the tomatoes to the market from the dockside where the importer brings them into the country, or from the garden where the home grower grows them, is one process of distribution called, in the case of importing, the function of first-hand salesmen and, for home-grown tomatoes, that of primary wholesaler. Then, they said, there is a quite separate function of selling them in the market which is clearly the function of the wholesaler.

Commission Anomalies on Tomatoes and Flour

They set up distributive agencies to embrace each of these functions. They set up an association of first-hand salesmen, an association of primary wholesalers; and an associaton of secondary wholesalers. When imported from abroad, tomatoes are sold, not to any individual, but to an association of first-hand salesmen. The individual, whether he be an importer who also carries out this duty of first-hand salesman, or whether he be a wholesaler who bought direct from the docks, is entitled by reason of the fact that before 1941 he carried out that task, to carry out the onerous task of standing at the dockside—or sending one of his servants to do so, pointing out a particular consignment of tomatoes and saying: "Those are mine"; and hand them over to the agent of the association. He is thereby said to have carried out a stage in distribution, and he receives a quite reasonable reward merely by reason of the fact that he happens to be a member of this association of first-hand salesmen, even though he might also be an importer, a wholesaler and a retailer, and even though he carries out no function other than merely to point out to the agent of the association which is his consignment of tomatoes. For that he is entitled to draw a commission of 1s. 6d. per 26 lb.

The tomatoes then go on to the wholesaler proper who again draws his commission of 1s. 9d. for 26 lb. One might imagine that out of that they had to pay carriage, but in addition there are laid down in the Food (Tomatoes) Order, 1947, separate excess charges which may be added for carriage. Before the war the position was that either the importer wholesaled the goods himself or the wholesaler bought from the importer. and between them they probably netted 6d. for those 26 lb. Now we have two people who draw a commission of 1s. 6d. and 1s. 9d. respectively for doing exactly the same job, and they are two people only in the sense that they are members of two separate associations. In the vast majority of cases those two people are one and the same person.

We get the same thing with regard to home-grown tomatoes. Two separate associations have been created—the primary and the secondary wholesalers' distributive associations—and the Order lays it down that a separate commission may be charged for sales through each of these agencies. They may charge 1s. 1d. in the case of primary wholesalers and 1s. 2d. in the case of the secondary wholesaler.

Let us examine what relation these commission charges actually bear to the real cost of distribution. We know that in the case of home-grown tomatoes the real task of distribution is not done by these people at all, but by people who have depots in the markets where they actually carry out the sale to the retailers They, of course, perform a real function and incur administrative costs in having to keep their stands in the market. But the payment for this is 2d. per 12 lb. as against the commission given to the primary wholesaler and the 1s. 3d. to the secondary.

I turn now to the case of flour. At the beginning of the war, the Ministry of Food took over the flour milling industry and, as an act of benevolence, pensioned it off. The industry has remained substantially pensioned to this day. The general scheme is that the mills are taken over by the Ministry and the costs of flour milling are borne by the Ministry. The flour millers are not in any sense risking their money in running these mills, as all the legitimate expenses of running the mills are borne by the Ministry. But a payment still continues to be made to the millers on the basis of the pre-war rate of profit on every sack.

I gather that the scheme has been amended, and in view of the fact that as much or more flour is being milled as before the war, they are now allowed more profit than before the war.

The Committee on Public Accounts of 1942/43 expressed surprise that this arrangement was continuing in view of the fact that at that time the Minister of Food had no idea of what profit they were paying to the flour millers. The following year the matter appears to have been allowed to drop, but in 1944/45 the Committee raised the matter again, and at that time the Ministry of Food had some information. The information showed that they were, in fact, paying these millers, as a result of a wartime scheme, for the whole period of six years for which the scheme had been operated, at the rate of 13 per cent. of their capital.

Rationalising Meat Distribution

Finally, I wish to deal with meat. The Ministry of Food decided, very properly, to rationalise the whole process of meat distribution. They decided that it could not be left to every individual farmer, slaughterer and butcher to be responsible for this vital item in the nation's diet, and that, therefore, all the meat should be brought under the ownership of the Ministry of Food. It was either imported on account of the Ministry, or slaughtered in slaughterhouses rented to the Ministry. In the wholesale stage it was entrusted to a public body, the Wholesale Meat Suppliers' Association, and it was not left to the individual wholesaler to be responsible for conveying the meat to the retailers. The Wholesale Meat Suppliers' Association organised the markets through which meat was conveyed, and in turn sold the meat to other corporate bodies, the retail buying groups of 50 or 100 retailers. The individual wholesaler has been cut out, and the real work is done by the Association. But the wholesalers as individuals have not to a large extent. Many of them work in the Ministry's slaughterhouses, or operate on the docksides as buyers for the Ministry, organising the purchase of the meat from the importers. They receive salaries.

Again, many people are employed by the Wholesale Meat Suppliers' Association in the depots and are performing useful functions. Many of them are people who were formerly wholesalers and took part in the wholesale side of the meat trade. No one would criticise them for getting proper remuneration for the work they are actually doing, but it is quite clear that the money which is being paid for this process of wholesaling is something far more than is required for remunerating these people who, to-day, carry out the functions of wholesaling. The Wholesale Supply Association is paid much more than covers all their operating costs, and then there is enough to pay to each wholesaler who was wholesaling in 1938 a percentage—I think 1¾ per cent.—on each man's turnover in 1938. If a wholesaler had a turnover of £50,000 a year, which was by no means unusual, he can look forward, without doing any work for it or taking any active part in the business of meat distribution, to £1,000 a year merely because in the year 1938 he was a meat wholesaler who had a certain turnover.

PATTERNS OF POST-WAR ECONOMICS

M. Theunis presiding over the Geneva Economic Conference of 1927, said: "The eight years of post-war experience has demonstrated the outstanding fact that, except in the actual fields of conflict, the *dislocation* caused by the war was immensely more serious than the actual destruction. The main trouble now is neither any material shortage in the resources of Nature nor any inadequacy in man's power to exploit them. It is all, in one form or another, a maladjustment—not an insufficient productive capacity, but a series of impediments to the full utilisation of that capacity".

He is quoted, with approval by Professor A. C. Pigou in his final chapter on "The Upshot for Real Income and Real Wages", in *Aspects of British Economic History*, 1918-1925 (Macmillan 15s.).

Professor A. C. Pigou explains that the object of the study is to set out and explain the facts of the immediate post-war period from the Armistice of 1918 to the restoration of the Gold Standard in 1925, not primarily for their own sake, but in the hope that knowledge about them may provide some guidance for post-war policy.

Part I is introductory. Part II, "Employment", deals with the post-Armistice contraction in employment, the transfer of workpeople from war to peace employment, the course of employment in the period 1918-1925, and what he calls the Doldrums and the "intractable million of unemployed". Part III, "Production", covers the course of physical production over the Boom, Slump and Doldrums, Ship Building, and Housing Building and Cotton exports. Part IV, "Government Intervention in Industry", is concerned with the rise and fall of industrial controls, Price restriction, rationing of consumers and Foreign Trade Policy. Part V, "The Monetary Factor", is the longest, and in Professor Pigou's view, the most important section since, as he says, the history of the post-war period is so closely intertwined with, and so much disturbed by, monetary happenings that the real situation which underlies and dominates everything else is not always clearly envisaged. The questions dealt with are the money link with America, monetary movements in the period, prices of commodities and money rates of wages, causes and conditions of the monetary Boom and Slump and the relations between movements in money income and in employment during the Boom, Slump and Doldrums.—G.B.

I.C.F.C.—A New Factor in Industrial Finance

(Condensed from *The Midland Bank Review*)

IF evidence were required of the continuing vitality of business enterprise in Great Britain, it could be seen in part in the foundation and early experience of the Industrial and Commercial Finance Corporation. In March 1945, the formation of two financial institutions was announced, the intention being that both should be ready to provide their aid during the period of reconversion.

Even allowing for the initiative of several private undertakings following the report of the Macmillan Committee in 1931, it was felt that further facilities were required. The two corporations were called Finance Corporation for Industry Ltd., and Industrial and Commercial Finance Corporation Ltd., and they were founded upon the co-operative resources of a wide range of existing institutions, including the banks.

With the first-named company we are not here concerned. It was designed chiefly to finance the re-organisation—erstwhile "rationalisation"—of existing industries or parts of industries. The main purpose of the other was to assist new or expanding undertakings, and it is upon the far more evident activities of the ICFC that attention is here concentrated.

The Industrial and Commercial Finance Corporation is a private company, though it was stated at the outset that its balance sheet and profit and loss account would be published. It has a nominal capital of £15 millions, subscribed by the English and Scottish joint stock banks, with a "token subscription" by the Bank of England, and this capital is to be paid up as required. In addition, the Corporation may borrow from its shareholders up to £30 millions, such loans being provided by the subscribing banks strictly in proportion to their holdings in the Corporation. Thus resources of £45 million are available, and so far £1½ millions of capital has been called up, and £1½ millions borrowed. Of 8 directors one has been nominated by each of the 5 large English Banks, one by the smaller clearing banks, one by the Scottish Banks, and one, the first Chairman, by the Bank of England. A special Committee has been appointed to advise on applications from Scotland. The new undertaking does not operate in Northern Ireland, for which, however, a somewhat similar body has been formed with resources provided by Irish banks.

Contrary to frequent mis-description, the Corporation is in no sense a Government organ, though by reason of the various controls—not least the control of capital issues—it is in more or less continuous touch with the Treasury and the Board of Trade.

It is, moreover, complementary to existing financial institutions, especially the Banks. On the whole, Banks should not be regarded as an appropriate source of funds when what is required is permanent investment to provide fixed assets, rather than an advance for floating capital. For smaller companies, particularly in the growing stages, this is just where the shoe pinches. It is unlikely that capital can be found through the regular machinery of the London capital market, if only because the sum required does not justify the expense involved in a public issue. Private sources of capital are less readily available than in the past, while the proposition may not be suitable for specialised credit institutions. When this is the position, the new Corporation is a proper source of funds.

It provides either long-term loans intended for repayment over a period of years, or permanent investment in preference or ordinary shares or both. It has no binding conceptions as to the form of finance. The range of business is, generally speaking, for sums of not less than £5,000, and not more than £200,000, made available on a strictly commercial basis. The Corporation must look to the profitability and prospects of an enterprise which seeks to borrow, and has to be satisfied that the management is competent. In the words of the Chairman: "We do not exist to carry lame ducks, but to help ducks that can swim". While it endeavours to keep its charges low, and to offer reasonable terms, it does not provide capital at rates below the market level.

The Corporation opened for business just over a year ago, and the demand for its services has been encouraging. Much of this, no doubt, is a consequence of war conditions. Broadly speaking, funds are required for two main purposes: to provide for expenditure upon re-equipment or re-conversion, or to finance deferred expansion and development.

The Corporation likes to have the authority of borrowers to discuss the position with their bankers, since often finance will be required from both sources. The wide adaptability of the arrangements can best be illustrated by a series of examples, based upon actual cases:—

The first arrangement is that under which the Corporation provides finance partly against security which takes priority over that of the bank, and partly unsecured, or on security ranking after that of the bank. The plan recognises that the bank would scarcely be prepared to supply more working capital if the Corporation had already taken a charge over all the assets. For example, makers of machinery needed finance to buy a new factory for £36,000, to instal fresh plant costing £4,000, and to have the use of additional working capital, over and above its own resources, amounting to £15,000. This was arranged by a loan from the Corporation for £20,000 at 4½ per cent., secured by a mortgage on the factory and repayable by instalments over twenty years; by the Corporation taking a block of £20,000 of cumulative participating preference shares, and by the Bank lending £15,000 secured by a general charge on all assets, subject to the Corporation's mortgage on the factory.

A second example shows the Corporation taking share capital, ranking in security position after the bank, which has provided funds secured by a general charge. The Corporation, in consideration of its larger risk, participates in the distribution of profits, up to a maximum rate, if available in addition to the cumulative dividend. A firm sought to raise £65,000 for plant and £40,000 for additional working capital. The total was provided through the subscription by the Corporation of £65,000 in 5 per cent. cumulative participating preference shares, participating up to one-fifth in profits, and by the bank lending £40,000 secured on a general charge.

A third arrangement consists in support from the Corporation secured in part on fixed assets and provided in part against notes or share capital, while the bank is secured by the floating assets. Thus a company required £41,000 for factory extension and an additional £33,000 for working capital. The Corporation agreed to lend £20,000 at 4½ per cent., redeemable by instalments over 20 years and secured by a mortgage on the fixed assets. It further provided £21,000 against notes at 5 per cent. also redeemable over a period of 20 years, and invested £4,000 in ordinary shares, thus furnishing £45,000 in all. At the same time the Bank advanced £29,000, secured by a charge on the floating assets. A variant is the method of interlocking security, the Corporation, for example, taking a first charge on a building and a second charge on all other assets, while the Bank is secured by a second charge on the building and a first charge on all other assets.

Finally, in some cases both the Corporation and the bank have provided funds without any specific security at all.

The rates may range from 4 per cent. to 5 per cent. Loans are ordinarily repayable by equal instalments over a period of about 20 years. When providing risk capital, however, the Corporation commonly arranges an appropriate basic return and a share in profits. Generally, the Corporation gives as fine a rate to the small business as the larger one, variations depending upon the previous earning record of the borrower, and the element of risk. The only other charge is a "coverage" fee, which normally is ½ per cent. on the amount provided, though the borrower pays any legal expenses involved. No introduction fee is payable.

The acceptance by the Corporation of a part of the "equity" risk is usually accompanied by special conditions. First, it is laid down that a part of the profits shall be ploughed back into the business ; and secondly, provision is made for a fairly close association to be maintained between the borrower and the Corporation. Sometimes the Corporation may appoint a director. The need of continuing contact has led to the formation of a liaison department, with officers who visit borrowing customers regularly, giving advice when it is sought, and watching the general position on behalf of the Corporation.

The Corporation has agreed to provide funds to roughly 160 borrowers, amounting to about £5 millions. Of this total £1.6 millions is actually outstanding, the remainder being available for use as required. The most numerous advances have been made to engineering and allied undertakings.

The Corporation does business all over Great Britain, but about one quarter of the finance provided so far has gone to companies in the Development Areas.

FROM THE NEW BOOKS

Lord Keynes was acutely aware of the dangers of "grooviness" in economics A good antidote is to read an occasional book on economic geography. The "Principles of Economic Geography," by Dr. Rudmose Brown, D.Sc. (*Pitman 7s. 6d.*) is a competent work of the kind. The scope is wide and the treatment sound.

Native problems have their due place and taxation is mentioned as an indirect means to forced labour. In this connection the part played by the introduction of European money might usefully have been emphasised. Professor Brown foresees a reduction in one type of international trade—the exchange of temperate products between countries in the temperate belts.—P.E.B.

* * *

In "A Summary of Findings" by Simon Kuzmets, published in America, the first of the Twenty-fifth Anniversary Series of the National Bureau of Economic Research of New York, the author, a prominent American economist, analyses the structure of the national income of the United States during the two decades between the two world wars. On the basis of estimates for the seven decades 1869-1938 the longer term changes in the national income and its components are analysed, and their fluctuations during trade cycles 1900-1938 are considered in the light of statistical evidence. Finally, the author discusses some of the problems in the use and interpretation of statistical estimates. The book contains 34 statistical tables—L.W.B.

Canadian Economic Highlights

Condensed from BOARD of TRADE JOURNAL

CANADA has been peculiarly vulnerable to the ebb and flow of world economy, and in particular to the degree of prosperity or depression prevailing in the United Kingdom. Although the relationship between agriculture and industry has been profoundly altered, until to-day manufacture contributes rather more than 54% of the value of total net production, Canada has more to lose from bilateralism in an unstable world than almost any other nation.

Notwithstanding prolonged stoppages in the steel, textile, shipping, rubber, electrical, glass and other industries, reconversion has been accomplished with a relatively minor reduction in total output and without far-reaching unemployment. The reduction in war expenditure and in exports has largely been counter-balanced by increased private investment, and enhanced expenditure for consumer goods and services, which have, in turn, enabled production and income to be maintained at a high level. National production is now more than double what it was pre-war, and the average of unemployment in 1946 was no more than 3%.

The anti-inflationary measures instituted by the Canadian Government have been designed and carried out with more wisdom, more determination and with greater success than in most countries. So has their policy of decontrol, which has not sought to avoid the realities of higher costs by unduly prolonging the restrictions. The year 1946 and the first quarter of 1947 have been notable for a substantial measure of relaxation of controls over prices, income, production and distribution, which has gone a long way towards the restoration of economic flexibility.

Many Subsidies Eliminated

From the beginning of 1946 to the spring of 1947 many subsidies were eliminated, others were sharply reduced, and the subsidy field narrowed to a few basic items such as cotton, steel, vegetable oils and coal. On imported goods originating in a specified number of countries like the United Kingdom which had suffered heavy war losses and dislocation, a system of pricing based on laid-down cost plus a restricted mark-up was introduced and extended in July 1946 to a wide range of goods from all countries.

In the domestic field, too, many price adjustments were made in recognition of rising costs of labour and materials. Early in 1946 a cautious step was taken in removing the ceilings entirely from some 300 relatively unimportant items. The results of this policy justified further cancellations at a later stage. A very considerable number of goods and services were removed from price control in January 1947, and in April a further major step was taken in abolishing controls. Restrictions still remain, however, on basic foodstuffs, most clothing, housing, and agricultural machinery and implements.

In announcing these alleviations the Minister of Finance observed that it was the Government's policy to remove end-products and fabricated commodities from price control as and when their production reached the point where no major shortage existed.

The export control list is now confined to certain foodstuffs, because of Canada's commitments to the United Kingdom, UNRRA, and the International Emergency Food Council ; cotton, woollen, rayon and nylon textiles, because of domestic requirements ; building materials, because of the re-housing programme ; iron and steel, because of shortage ; and arms, ammunition and munitions, for strategic reasons.

The control of wages and salaries was repealed at the end of November 1946 and the restrictions on consumer credit were rescinded early in 1947.

Price increases since the end of the war have been moderate. The dramatic and far-reaching abolition of controls in the United States promoted a more vigorous upsurge of the price level than in Canada. Canada is always sensitive to the price structure in the United States, and, despite controls, it is doubtful whether the disequilibrium in the respective price levels could persist for long. The re-valuation of the Canadian dollar mitigated, but did not remove the pressure on Canadian prices.

Consumers' expenditures are now greater than at any other time in Canada's history. Costs of production are causing some perturbation in the minds of Canadian manufacturers, but a forecast of 1947 investment by Canadian business shows an increase of 70% over 1946. The most marked expansion appears likely to take place in the mining industry.

Canada derives between 25% and 30% of her national income from her merchandise export trade, compared with from 5% to 6% in the United States. For this reason she is much more intimately concerned with the purchasing power and the recovery prospects of other countries than her neighbour. In 1946 Canada's export trade created a record for any peace-time year, but one-third of these exports were financed on credit. As the Governor of the Bank of Canada warned in his annual report for 1946, "Canada cannot continue indefinitely to sell on credit in overseas markets while she is incurring a substantial cash deficit in her balance of payments with the United States".

In 1946, Canada had a favourable trade balance with the world of $400 million, but an adverse balance with the United States of $500 million. Canada's more distant future depends entirely on her utilisation of surplus and freely convertible currencies derived from her export trade to meet her requirements in the United States.

Canadian demand for goods from the United Kingdom is at present beyond our capacity to supply. Therefore Canada is turning increasingly towards the United States for what she must have. In time, the Dominion's progress in industrialisation will involve a gradual, though inevitable, change in the complexion of our export trade, but it does not necessarily mean that Canada will be a less valuable market to us than formerly. The question of price is much more pertinent. If we are not to lose ground in the Canadian market, let alone make progress, it is of the very greatest importance that our prices should soon come down to less inflated levels.

Wall Street View of Canadian Dollar

From MONTHLY LETTER May, 1947, of National City Bank of New York

THE Canadian exchange position has been a subject of increasing inquiry in this country in recent weeks. The discount at which the unofficial or "free" Canadian dollar has been selling under the "official" dollar (which was raised in July 1946 to parity with the American dollar) widened during April to over 10 per cent. At the same time it has become generally known that substantial inroads were being made into Canada's U.S. dollar resources. In the public mind these two developments naturally have become associated. There have even been rumours that a new devaluation of the Canadian dollar may be impending. Canada is by far the largest buyer of American goods and about $5 billion of American funds are invested there, including some $800 million placed in Canadian securities and direct investments during the war.

The first point on which people who are interested in the Canadian dollar should have a clear understanding is that the discount currently quoted applies only in the unofficial or "free" market for Canadian funds, and that this market is a relatively narrow one. It exists because Canadian dollars owned under certain circumstances or derived from certain kinds of transactions cannot be converted under Canadian regulations into U.S. funds through official channels at the official rate. However, they can be sold and bought by non-residents. In essence the market is one in which one non-resident may take over another's holdings of inconvertible funds. The total of the funds thus dealt in is seldom large, and small offerings or bids may sway the price considerably. The unofficial market has accounted for only about 3 per cent. of Canada's international transactions during the past three years.

The supply of Canadian dollars in the unofficial market comes from (1) bank balances held by non-residents of Canada at the time when foreign exchange control was introduced in September 1939 ; (2) sales of Canadian securities bought for cash since 1940 and registered with the Foreign Exchange Control Board ; (3) sales of Canadian real estate ; (4) liquidation of American direct investments, and (5) proceeds from maturing securities payable in Canadian funds.

Unofficial Market for Canadian Dollars

Canadian dollars acquired through the unofficial market—usually through the intermediary of an American bank—may be used in Canada only for specified transactions. These include (1) purchase of Canadian securities ; (2) purchase of Canadian real estate ; (3) making loans and direct investments in Canadian businesses. They may also be used by tourists.

These limited-purpose or "inconvertible" dollars therefore cannot be used to pay for exports from Canada. Canadian exporters are required to obtain payment in U.S. dollars which must be turned over to the Foreign Exchange Control Board. Similarly, Canadian residents must surrender to the Board all U.S. dollars received from services of all types and from investments in the United States obtained either as income or through the sale of securities.

On the other hand, the Exchange Board provides dollars at official rates out of official reserves for all current transactions. Hence Canadian dollar interest or dividend checks will, if presented to a Canadian bank by a non-resident, be converted into U.S. dollars at par. Certain capital payments, such as payment for bond issues payable in U.S. dollars, are also made at par out of official reserves.

From 1943 to the middle of 1946, the demand for inconvertible Canadian dollars by non-residents was large enough to maintain the free market rate close to the official rate. Following the up-valuation of the dollar in July, 1946, however, the supply exceeded the demand, largely because of repatriation of U.S. capital invested in Canadian securities. This repatriation may have been induced first by profit-taking, and probably has been speeded up in the past few months by concern about Canada's loss of U.S. dollars. There would seem to be a strong possibility that demand for inconvertible dollars will improve once the tourist season opens, for the present discount and the relatively low level of prices in Canada combine to make vacation trips by Americans attractive. Moreover, the discount is an inducement to Americans to make capital investments in Canada.

The inroads into Canada's U.S. dollar reserves are occurring despite the fact that her over-all current account transactions are showing a record peacetime surplus. The official gold and U.S. dollar resources, reported at $1,508 million at the end of 1945, declined to $1,245 million by the end of 1946. The explanation lies in the fact that Canada's deficit in her balance of payments with the United States must be met out of her own U.S. dollar resources, while Canada's surpluses in her balance of payments with other countries up to now have been largely financed on credit, or are in funds not yet convertible into U.S. dollars.

Last year, with a high level of employment and income, and with many war-deferred purchases of industrial equipment and raw materials made here, Canadian expenditures in the U.S. were of record proportions. In the closing months of the year, Canada's imports from the United States reached an annual rate of $1,800 million, reflecting in part the rise of prices here.

The table below shows Canada's current transactions with the United States and the sources from which the deficit of $603 million was financed. Interest and dividend payments were the largest since 1940, due to heavy dividends paid by Canadian subsidiaries of American enterprises. Record American tourist expenditures of $214 million were reduced by Canadian travel expenditures here which also reached a new peak of $131 million. Shipments of the newly mined gold fell considerably below prewar. But the output of the gold mines is rising despite the shortage of labour and the lower price of gold.

Canada's Current Transactions with U.S. in 1946

(In Millions of Canadian Dollars)

Canadian Payments to U.S.	
For imports from U.S. (*a*)	dollars 1,378
Interest and dividends (net)	204
Freight and shipping (net)	66
Others include purchase of U.S. fixed assets (net)	82
Total Payments	dollars 1,730
Canadian Receipts from U.S.	
For exports to U.S. (*a*)	948
Shipment of non-monetary gold	96
Tourist and travel (net)	83
	dollars 1,127
Balance in U.S. favour	603
Settled as follows :	
Draft on Canadian gold and dollar reserves	263
Surrender of gold purchased in U.K.	150
Transfer of dollar credits from other countries	87
Capital inflow and exchange adjustments	103

(*a*) Adjusted figures. Source : Annual Report of the Canadian Foreign Exchange Control Board.

While the deficit in Canada's 1946 transactions with us aggregated $603 million, she had on the other hand a credit of $954 million (without counting $102 million for Mutual Aid and official relief) in her current transactions with Great Britain and other countries. There would have been no strain in Canada's current balance of payments with the United States, and hence no question about the soundness of the Canadian dollar had all the customers of the Dominion been able to pay her in freely convertible currencies. Unlike the French franc and other Continental currencies that are under pressure because of internal complications, the pressure on the Canadian dollar stems entirely from the fact that multilateral trading and currency convertibility have not yet been sufficiently restored.

Canada's economic position probably has never been stronger. Not only did she escape war-time destruction, but there was a great expansion and diversification of productive capacity. The number of employees in manufacturing industries has nearly doubled since pre-war. Moreover, the Dominion has handled her postwar transition problems as well as any country. Her cost and price structure has remained considerably below that of the United States. As a result, Canadian products in world markets are in an improved competitive position.

But the final solution of Canada's exchange problem is tied up with the extension of multilateral trading and world-wide currency convertibility. The decision of the British authorities last January making the net balance of sterling earned by Canada (and a number of other countries) on current transactions freely convertible into U.S. dollars, was a step in the right direction.

MIDDLE EAST OIL PIPES

Some glimpse of the magnitude of oil developments in the Middle East is provided by the news from the United States that this summer more than one million tons of steel pipeline will start leaving the United States for Saudi Arabia for the construction of the pipeline which is being built by the Arabian-American Oil Company from Bahrein to the Mediterranean. This represents the greatest single commercial shipment in history and the steel tonnage involved is equivalent to almost one-tenth of the total steel produced in Great Britain in one year.

Although construction of this enormous pipeline is about to begin there appears to be no certainty yet as to where the pipeline will reach the Mediterranean. The American company is still arguing with Syria and the Lebanon regarding the site for the ultimate destination. The other pipeline project now under construction, namely, that of the Anglo-Iranian Company from the head of the Persian Gulf, is being provided with its steel from British sources, and this has been ordered. This line will probably reach the Mediterranean at Haifa, and will, therefore, cross the line carrying the Bahrein oil. The capital expenditure involved in these projects for the development of Middle East oil runs into hundreds of millions, and is being undertaken by a tangled and intertwined net-work of American and British and French interests. Whatever may happen to the so-called Marshall offer, the Americans probably have enough at stake in these enterprises alone to guarantee their future participation in world affairs and ensure that there can be no withdrawal into isolation.—Oscar Hobson, *News Chronicle.*

Local Authorities and Capital Expenditure

By JOHN AINSWORTH, *M.B.E., City Treasurer, Liverpool.*

From Presidential Address to Conference of Institute of Municipal Treasurers and Accountants, June, 1947

CHAIRMEN of Finance Committees will recall the wording of the Ministry of Health Circular of 27th January, 1947, which invited local authorities to submit estimates of capital expenditure for 1947-48, and the two succeeding years. They will not have overlooked the significance of the following extract from the circular :—

> "It is essential that the estimates be framed on the basis of thorough realism, taking into account the marked excess of demand over supply *which should be assumed to continue throughout the period covered by the estimate.*"

The Circular further stated that the Government attached the utmost importance to the information supplied by local authorities in these returns in connection with the arrangements aimed at maintaining employment.

By the courtesy of the Accountant-General to the Ministry of Health (Mr. H. H. George, C.B., M.C.) I am able to include some interesting details of the estimates submitted for the year 1946-47, together with the corresponding figures of actual expenditure for the year 1938-39.

	Estimate 1946-47 £'000	*Actual* 1938-39 £'000
Housing	319,202	46,601
Electricity	47,463	20,125
Health	43,208	15,956
Education	40,099	15,596
Highways	29,252	15,257
Water	21,505	7,439
Transport	8,787	3,452
Gas	7,464	1,999
Municipal Buildings	2,679	3,553
Harbours, Piers, etc.	1,137	1,357
List "B" Services	34,227	18,727
	£555,023	£150,062

In December, 1946, the Ministry of Health made a test inquiry from a number of selected authorities in order to form an assessment as to how actual expenditure was proceeding in relation to the estimates set out above.

The total estimated capital expenditure included in column 2 above of the selected authorities to whom the inquiry was addressed amounted to £134,354,000, whilst the test inquiry revealed that the actual expenditure at 31st March, 1947, against this estimate would probably be £52,685,000, or 39%.

Instances of the wide variations between estimates and actual expenditure of eleven selected authorities included in the preceding totals are as follows :—

Estimate £'000	*Actual* £'000	*% of Estimate*
8,403	2,344	28
8,996	2,966	33
6,758	3,016	45
5,269	1,942	37

1·2 0

Estimate £'000	*Actual* £'000	% *of Estimate*
3,732	1,289	35
125	21	17
312	83	27
202	34	17
241	64	27
242	67	28

Obviously there is an enormous reservoir of capital work waiting to be put into execution by local authorities if and when the time comes to operate the policy laid down for maintaining a high and stable level of employment. Under present conditions, however, I suggest that it is apparent that the overall estimate of £550,000,000 for 1946-47 compared with the actual expenditure of £150,000,000 in 1938-39, when labour and materials were in adequate supply, is over-optimistic planning, and is not conforming to the realities of the present situation.

May I apply a further test? The Economic Survey in its estimate of the distribution of the total national resources allocates £1,700 million (being 20% of the whole) to capital investment of all kinds. To satisfy in full the needs of local authorities based on the 1946-47 estimates would appropriate more than one-third of the sum available for capital investment of all kinds.

It seems obvious that, in the short run at least, there must be a scaling down in the total of local authority plans for capital investment and an establishment of priorities based upon national urgency.

India and Pakistan: Resources Compared

From BRITISH BULLETIN of COMMERCE

ACCORDING to Mr. Birla, India's leading industrialist, the Hindustan section of India will be economically stronger than the Muslim Pakistan in nearly every instance.

This thesis is put forward in a booklet recently written by Mr. Birla and entitled "Basic Food Facts Relating to Hindustan and Pakistan", although it should be noted that, with the exception of figures for mineral resources, he includes the Indian States in Hindustan. Mr. Birla's definition of the geographical extent of Pakistan covers all those areas of British India with over 60 p.c. Muslim population according to the 1942 census.

Public expenditure of Pakistan, according to Mr. Birla, would be bigger on almost all counts if the present level of administration and social services were to be maintained.

Pakistan would have two major ports, Karachi on the Arabian Sea and Chittagong on the Bay of Bengal.

India would have Bombay and Cochine on the Arabian Sea and Madras and Calcutta on the Bay of Bengal.

On the basis of official statistics, the booklet gives the following figures:—

	India	Pakistan	
Industry			
Cotton mills	300	9	
Jute mills	108	—	
Sugar refineries	156	10	
Iron and steel	18	—	
Cement	16	3	
Paper	16	—	
Glass	77	2	
Agricultural and Food Resources			
Raw jute	983,519	1,403,700	acres
Raw cotton	13,770,000	1,630,000	,,
Tea	641,243	96,657	,,
Rice	17,000,000	5,000,000	,,
Wheat	4,000,000	3,000,000	,,
Raw sugar	2,500,000	500,000	,,
Mineral Resources			
Coal	25,000,000	200,000	tons
Chromide	5,000	22,000	,,
Copper ore	300,000	—	,,
Iron ore	1,500,000	—	,,
Manganese ore	800,000	—	,,
Petroleum	66,000,000	21,000,000	gals.
Mica	100,000	—	cwts.
Communications			
Railways	26,000	14,500	miles
Roads	250,000	50,000	,,
Potential water power	1,300,000	2,800,000	k.w.

Speech that Made Economic History

By GEORGE MARSHALL

U.S. Secretary of State

This speech, made at Cambridge, Mass., on June 5, 1947, has become, and is likely to remain, the centre of controversy. Therefore it is now printed in full for reference purposes. Detailed extracts are also given from his Washington speech of July 1, from President Truman's statement to his Press conference on June 26, and his address to the Canadian Parliament in Ottawa, on June 11. As background to these momentous statements we also include a digest of the U.S. Government Committee's estimate of Europe's needs.

"In considering the requirements for the rehabilitation of Europe, the physical loss of life, the visible destruction of cities, factories, mines and railroads was correctly estimated, but it has become obvious during recent months that this visible destruction was probably less serious than the dislocation of the entire fabric of European economy. For the past 10 years conditions have been highly abnormal. The feverish preparation for war and the more feverish maintenance of the war effort engulfed all aspects of national economies. Machinery has fallen into disrepair or is entirely obsolete. Under the arbitrary and destructive Nazi rule, virtually every possible enterprise was geared into the German war machine. Long-standing commercial ties, private institutions, banks, insurance companies and shipping companies disappeared, through loss of capital, absorption through nationalisation or by simple destruction. In many countries, confidence in the local currency has been severely shaken. The breakdown of the business structure of Europe during the war was complete.

"Recovery has been seriously retarded by the fact that two years after the close of hostilities a peace settlement with Germany and Austria has not been agreed upon. But even given a more prompt solution of these difficult problems, the rehabilitation of the economic structure of Europe quite evidently will require a much longer time and greater effort than had been foreseen.

"There is a phase of this matter which is both interesting and serious. The farmer has always produced the foodstuffs to exchange with the city dweller for the other necessities of life. This division of labour is the basis of modern civilisation. At the present time it is threatened with breakdown. The town and city industries are not producing adequate goods to exchange with the food-producing farmer. Raw materials and fuel are in short supply. Machinery is lacking or worn out. The farmer or the peasant cannot find the goods for sale which he desires to purchase. So the sale of his farm produce for money which he cannot use seems to him an unprofitable transaction. He, therefore, has withdrawn many fields from crop cultivation and is using them for grazing. He feeds more grain to stock and finds for himself and his family an ample supply of food, however short he may be of clothing and the other ordinary gadgets of civilisation. Meanwhile, people in the cities are short of food and fuel. So the governments are forced to use their foreign money and credits to procure these necessities abroad. This process exhausts funds which are urgently needed for reconstruction. Thus a very serious situation is rapidly developing which bodes no good for the world. The modern system of the division of labour upon which the exchange of products is based is in danger of breaking down.

"The truth of the matter is that Europe's requirements for the next three or four years of foreign food and other essential products—principally from America—are so much greater than her present ability to pay that she must have substantial additional help, or face economic, social and political deterioration of a very grave character.

"The remedy lies in breaking the vicious circle and restoring the confidence of the European people in the economic future of their own countries and of Europe as a whole. The manufacturer and the farmer throughout wide areas must be able and willing to exchange their products for currencies, the continuing value of which is not open to question.

Opposition of the United States

"Aside from the demoralising effect on the world at large and the possibilities of disturbances arising as a result of the desperation of the people concerned, the consequences to the economy of the United States should be apparent to all. It is logical that the United States should do whatever it is able to do to assist in the return of normal economic health in the world, without which there can be no political stability and no assured peace. Our policy is directed not against any country or doctrine, but against hunger, poverty, desperation and chaos. Its purpose should be the revival of a working economy in the world so as to permit the emergence of political and social conditions in which free institutions can exist. Such assistance, I am convinced, must not be on a piece-meal basis as various crises develop. Any assistance that this Government may render in the future should provide a cure rather than a mere palliative. Any government that is willing to assist in the task of recovery will find full co-operation, I am sure, on the part of the United States Government. Any government which manœuvres to block the recovery of other countries cannot expect help from us. Furthermore, governments, political parties or groups which seek to perpetuate human misery in order to profit therefrom politically or otherwise will encounter the opposition of the United States.

"It is already evident that, before the United States Government can proceed much further in its efforts to alleviate the situation and help start the European world on its way to recovery, there must be some agreement among the countries of Europe as to the requirements of the situation and the part these countries themselves will take in order to give proper effect to whatever action might be undertaken by this Government. It would be neither fitting nor efficacious for this Government to undertake to draw up unilaterally a programme designed to place Europe on its feet economically. This is the business of the Europeans. The initiative, I think, must come from Europe. The role of this country should consist of friendly aid in the drafting of a European programme, and of later support of such a programme so far as it may be practical for us to do so. The programme should be a joint one, agreed to by a number, if not all European nations.

"An essential part of any successful action on the part of the United States is an understanding on the part of the people of America of the character of the problem and the remedies to be applied. Political passion and prejudice should have no part. With foresight, and a willingness on the part of our people to face up to the vast responsibilities which history has clearly placed upon our country, the difficulties I have outlined can, and will, be overcome."

Within a week it had become necessary for the Secretary of State to rebut attacks. He then said (Washington, July 1):—

"It would not be entirely accurate to say that the efforts of this Government to contribute to the restoration of world economy since the termination of the recent war have been motivated solely by considerations of charity. Our people do realise, I feel sure, that a stable and prosperous world is important to their own well-being. They also recognise that a contribution has already been made by many peoples or nations to such a world in the way of tremendous sacrifices in life and property suffered in the course of military operations.

"Since the United States suffered no such destruction on its own territory, although suffering heavy losses in lives and national wealth, our people felt it right that this country should make a direct contribution to reconstruction abroad. Accordingly they offered and expended out of the fruits of their own labour the enormous quantities of American goods and services which have gone to other countries during the past two years. And they have voiced no complaint that for the considerable part of this contribution there has been little of favourable reaction from certain areas abroad, that in fact there has been more of criticism than of appreciation.

"There could be no more malicious distortion of the truth than the frequent propaganda assertions or implications that the United States has imperialist aims or that American aid has been offered in order to fasten upon the recipients some form of political and economic domination. At the end of the war our Government demobilised the greatest concentration of military power that the world has ever seen. Our armed strength was deployed from the Elbe in Germany to the islands of Japan. This great array was demobilised with amazing rapidity until only comparatively small garrisons of troops were left on the necessary occupation duty in the principal enemy countries. No conditions were attached to this withdrawal.

"Since the termination of the war, American goods in the amount of some 82,000,000 tons, valued at over 9,000,000,000 dollars, have flowed into Europe from this country. No political parties subservient to United States interests have been left behind in European countries to attempt conquest of governments from within. No American agents have sought to dominate the policy establishment of European countries. No 'joint American-European companies' have been forced upon reluctant governments.

Truman Declaration of Interdependence

"It would be incorrect to say that the people of this country make no demands regarding the utilisation of their contribution to world recovery. They emphatically demand that whatever they contribute shall be effectively used for the purpose for which it was intended ; that it should not be expended to serve selfish economic or political interests ; and that it should be employed specifically to assist in economic rehabilitation ; finally, that it should serve a great purpose in restoring hope and confidence among the people concerned that the world will know peace and security in the future."

Meantime President Truman told his press conference on June 26 in Washington that he, Secretary of State Marshall, and Treasury Secretary Snyder (who had been represented otherwise) were in complete agreement on what he now called the "U.S. Government Plan for European Recovery.".

Also, addressing the Canadian Parliament in Ottawa, on June 11, he laid down the following broad principles :

"Our goal is a vast expansion of agriculture and industry throughout the world, with freer access to raw materials and markets for all nations, and a wider distribution of the products of the earth's fields and factories among all peoples. Our hope is to multiply the fruitfulness of the earth and to diffuse its benefits among all mankind.

"At this critical point in history, we of the United States are deeply conscious of our responsibilities to the world. We know that in this trying period, between a war that is over and a peace that is not yet secure, the destitution and the oppressed of the earth look chiefly to us for sustenance and support until they can again face life with self-confidence and self-reliance.

"We are keenly aware that much depends upon the internal strength, the economic stability and the moral stamina of the United States. We face this challenge with determination and confidence. Free men everywhere know that the purpose of the United States is to restore the world to health and to re-establish conditions in which the common people of the earth can work out their own salvation by their own efforts.

"We seek a peaceful world, a prosperous world, a free world, a world of good neighbours, living on terms of equality and mutual respect, as Canada and the United States have lived for generations.

"We intend to expand our energies and invest our substance in promoting world recovery by assisting those who are able and willing to make their maximum contribution to the same cause. We intend to support those who are determined to govern themselves in their own way, and who honour the rights of others to do likewise. We intend to aid those who seek to live at peace with their neighbours, without coercing or being coerced, without intimidating or being intimidated. We intend to co-operate actively and loyally with all who honestly seek, as we do, to build a better world in which mankind can live in peace and prosperity."

U.S. Government Committee Estimates Europe's Needs

Approximately 10,000,000,000 dollars will be required to finance European deficits during the three-year period 1947-49, according to a preliminary study issued on July 3 by a sub-committee of the House Foreign Affairs Committee.

The sub-committee report indicated that about 7,000,000,000 dollars of the estimated 9,970,000,000 additional dollars needed to finance net deficits in balances of international payments are as yet uncovered either by existing dollar availabilities or probable availabilities from existing institutions and sources.

The report covered only the requirement of Europe, excluding the Soviet Union, and did not include Asia, Africa, South America or British Dominions. Its estimates are not comparable to the over-all world requirements either for dollar balances or for U.S. exports.

The sub-committee, headed by Representative John M. Vorys, Republican, pointed out that the report "does not represent a policy statement and its publication is authorised only as a progress report which analyses the nature of the problem and some of the existing studies that have already been made as well as outlining future studies."

In a statement issued upon release of the report, Mr. Vorys declared that although the Paris conference had ended on a note of failure, so far as Russian participation is concerned, "we do not believe this is the end of our efforts to help Europe". However, he added: "We do not believe that we should rely entirely upon the estimate of European nations, separately or collectively, as to their own needs".

Other members of the sub-committee are Representatives James G. Fulton and Jacob K. Javits, Republicans, and James P. Richards and William M. Colmer, Democrats.

All the estimates made by the sub-committee, the report pointed out, "by their very nature, must be extremely tentative. Much depends upon the effectiveness with which shortages of goods—particularly of such key materials as coal and transportation equipment—are eliminated in sufficient time to enable the recipient countries to step up their industrial and agricultural production".

Seven Significant Questions

The sub-committee stated that "any programme for meeting these requirements for healthy economic recovery will depend upon answers to the following policy questions :—

"1. Do we 'write off' Russian co-operation, as every previous Russian action has indicated that we must, and proceed with building up of Western Europe and rehabilitation of the Far East ?

"2. Are reparations from Western Germany to be continued in the picture for Russia and the satellite countries, and what will be the volume of any reparations put upon the economies of Japan and Germany, which for years to come cannot be expected to be even self-supporting without tremendous American help the cost of which will fall on American taxpayers. If we are to make this help productive, we should have to (a) insist on putting an end to current reparations and on cutting down the earlier punitive programmes of reparations aimed at weakening or destroying Germany and Japan ; (b) set new levels of industry that would enable Germany and Japan to balance their needs for imports and create export surplus which we could direct into the rebuilding of the rest of Europe and the necessary reconstruction of the Far East.

"3. Is American shipping policy going to continue the requirement that countries like Germany, Japan, France, Italy and others should not use their merchant marine or ships which we could furnish them ? Present cost of shipping coal to Europe on American bottoms at our high freight rates for this item alone involves an annual bill that runs close to 400,000,000 dollars. Total cost of handling cargoes that must be paid for in American dollars is calculated to run to something around 700,000,000 to 800,000,000 dollars a year which we must lend or give these countries, since they cannot produce exports to pay for it now. Over half the cost of a bulk cargo like coal landed in Europe goes into shipping cost for which these countries at present must find dollars.

"4. Is this country prepared to make larger exports of food and consumer goods and to finance them by necessary loans ? This seems necessary to start production, for example, increasing mining of German coal and manufacture of fertilizers in Germany in order to decrease the continuous drain of relief which is otherwise necessary.

"5. Does our policy at present contemplate tying strings to all our loans for such countries so that American economic supervision may be had as is the case with the Greek Loan ?

"6. Are we prepared to insist that Britain come to terms on a pooling of the Ruhr with our own occupation zone on our terms as a condition to continuance of further extension of credits to Britain ?

"7. A question of as great importance as any of the foregoing, and which was propounded by Secretary Marshall in his recent speech at Harvard University, is how much can European countries help themselves by mutual trade and increased production?"

Unless answers to these questions can be had, the report continued, the "European picture puzzle remains one of parts that do not fit into each other".

The report said that "by far the most succinct study so far made of the nature and limits of American aid to foreign countries" is contained in the open letter from former President Hoover to Senator Styles Bridges on June 16.

The sub-committee estimated that European dollar requirements in 1947 will total 6,200,000,000 dollars. This was broken down regionally as follows: United Kingdom, 2,000,000,000; Western Europe, 2,990,000,000; Central Europe, 650,000,000; and Eastern Europe, 538,000,000.

The sub-committee estimated that about 1,000,000,000 dollars of Europe's capital requirements for 1947 are not yet covered either by existing or probable dollar availabilities.

BRITAIN'S POST-WAR RELIEF CONTRIBUTIONS

The following is an official statement of the United Kingdom's contribution to world recovery in grants and credits:—

	In £ millions
(a) NON-RECOVERABLE EXPENDITURE	
Unrra contributions	155
United Kingdom share of non-recoverable cost of Combined Civil Affairs supplies (Military Relief)	38
Malta	30
Greece (maintenance and initial equipment of armed forces)	29
Greece (surpluses)	2.5
Italy (estimated value of surpluses after allowing for payments from Italy in respect of this and other United Kingdom claims under the Financial Agreements of April 17, 1947)	55
Austria (supplies to British Zone before Unrra undertook supply responsibility in April, 1946)	10
Austria (estimated non-recoverable portion of £8,500,000 post-Unrra assistance to Austria)	6
Austria (surplus machine tools)	0.1
Hungary (surplus machine tools)	0.2
Total (round figures)	325
(b) REPAYABLE LOANS AND CREDITS	
United Kingdom share of recoverable cost of Combined Civil Affairs supplies (Military Relief)	62
Burma (Grants to March 31)	30
France (under Financial Agreements)	100
Greece (Stabilization Loan)	10
Netherlands (Government Loan and estimated value, subject to adjustment, of military equipment and surpluses)	60
Czechoslovakia (credit for commercial purposes)	5
Czechoslovakia (surplus goods credit)	2.5
Austria (estimated recoverable portion of post-Unrra assistance, including raw material credit)	4
Hungary (wool credit)	0.5
TOTAL (round figures)	275
(c) GERMANY	
Approximate total cost to March 31 of assistance to German economy (excluding occupation costs)	140
GRAND TOTAL OF THREE CLASSIFICATIONS	740

Points from "Letters to the Editor"

Extracts from MANCHESTER GUARDIAN, The TIMES and ECONOMIST

Milliards of Occupation Marks

It is well known that in Germany all the Occupying Powers are issuing paper marks in amounts which are believed to run into the milliards. But the exact sums which have been put in circulation by the Occupying Powers, are not known because there is no regular information on this matter. This is highly incorrect.

Every bank and every Government issuing notes is under a moral obligation to inform the public about the amount of notes issued as soon as possible.

It is in the interest of all Germany's neighbours and also of the Occupying Powers themselves that the value of the mark should be saved from annihilation. Constantly diminishing the purchasing power of the mark means making Germany financially helpless, and that means losses and sacrifices for her neighbours and for the Occupying Powers.—Yours, etc., GUSTAV BUSCHER.

Tenna, Graubunden, Switzerland.—*Manchester Guardian.*

Exports From Russia

This planned economy which has driven Russia to her autarkic economic policy is responsible for the fact that Russia is the only country in the world where exports do not meet with favour. They are considered as a necessary evil. While all other countries in the world economy favour a policy of exporting as much as possible to be able to import as much as possible, Russia regrets every ton of exported food or of raw material or manufactured goods because otherwise they might have been poured into her planned economy.

At what costs these goods are produced is a matter of secondary consideration for Russia ; as they are not designed for exportation, costs are an absolutely internal affair. If Russia is able just to export as much as is needed to pay for the few remaining wants which have to be satisfied through importation, her commercial ideal is fully served. It is this factor which mainly explains the astounding shrinkage of Russian exports. According to Dr. Alexander Baykov, who, however, does not draw the relevant conclusions, Russia's annual export, which had been 24,590.8 thousand tons in the average between 1909 and 1913, fell to 8,873.7 thousand tons in 1928 ; in the following period the index of the physical volume of export showed a percentage decline from 100 in 1929 to 65.3 in 1938. Dr. Baykov, quoting Russian economists, says : "The pressing need to export to pay for imports came to an end when the necessity of importing industrial equipment, complex agricultural machinery (tractors and combines) and rolling stock was overcome by new expanding production at home."

A country taking this attitude towards external trade will indeed be little interested in credits so long as they carry with them some obligation to develop more export capacity for the benefit of a world-wide net of countries wishing to increase, on a co-operative basis, the internationally exchangeable supply of food and industrial products. Credits and assistance would merely enrich the home economy of the autarkic State.—HERMANN LEVY.—*The Times*

Non-Producers in Coal Mines

May I say that all miners do not get coal—only the minority do,—and may I say that the thousands of recruits (adult) have not increased and will not increase the production yet, because their training, in my opinion, is all wrong. They are not being trained to get coal with pick and shovel ; we want men who are not afraid to work and sweat with pick and shovel and learn the hard way. Let the coal-face men, the regulars, train them if the country wants coal now. Cut the non-producers out and the so-called trainers. Let them get to the production side of the table. Any miner will tell you there are too many non-producers in the pit. The pick-and-shovel man is still doing his best and a good best, but he cannot carry ten non-producers on his back much longer. He is still getting his 12-20 tons a day (varying with the different seams, hard and soft).

No ; long-term training is no good. It is now we want the coal, not to-morrow ; it is always to-morrow, and the blame is always with the old sweats. Cut out this lollipop training and get cracking, or we've had it this winter !—Yours, etc.—L. W. WARD (Miner for 23 Years).
Tibshelf, Derbyshire. *Manchester Guardian*

Day Nurseries

You state that at the present time about 63,000 babies are in the nurseries and therefore presumably about 63,000 mothers are enabled to go into industry. May I point out that approximately *12,600* attendants (probably an under estimate) are required to look after these babies so that the net effect of the nurseries is considerably smaller than you imply. Furthermore, these younger unmarried women would often be of more value than the mother of a family who so often has to stay away from work.—Yours faithfully, M. N. HILL.
Highgate, N.16 *Economist*

Millions

Why does not *The Times* take the lead in introducing the simple method, already very frequently used in scientific work, of writing "x10^x" to denote the number of zeros when figures over a million are involved, *e.g.*, £1,000,000=£10^6 ; £100,000,000=£10^8 ; £2,500,000=£2.5x10^6 ; £2,500,000,000=£2.5x10^9 ? This not only economizes space, but for large figures provides a much clearer realization of the difference between "astronomical" magnitudes than does the current lay practice. Thus for many people 10,000,000,000 and 1,000,000,000,000 are both of them just very large numbers ; however, when they are written as 10^{10} and 10^{12}, the fact that one is 100 times as large as the other is at once apparent. —JULIAN HUXLEY (*The Times*).

(Condensed from the *Manchester Guardian*) vov Vol 1 No 5

Printed in Great Britain by Henry Richardson (Printers) Ltd., 51-53 Greenwich Church Street, S.E.10, for the Proprietors, Lantern Publishing Company Ltd., 10 Drake Street, Red Lion Square, London, W.C.1