

V.—*The Case for Bimetallism.* By Joseph John Murphy.

[Read Tuesday, 14th April, 1891.]

THE question which this essay is an attempt to answer, may be thus expressed :—What would be the effect on prices, and on the financial and industrial interests of the world in general, if the leading nations of the world were to agree to make both gold and silver unlimited legal tender at the ratio of value between the two that prevailed during the seventy years which closed with 1873 ;—namely, $15\frac{1}{2}$ ozs. silver as in France, or 16 ozs. as in the United States, equal to one oz. of gold ;—at the same time opening their mints to the unlimited and gratuitous coinage of both metals ?

The statistical data used in the present attempt to answer this question, are taken from the “Final Report of the Royal Commission, appointed to enquire into the recent changes in the relative values of the precious metals, 1888.”

The reply to such a question must of necessity be somewhat indefinite. The laws of political economy are laws of tendency only, though they are mathematical in their certainty, and almost mathematical in their nature ; yet, as in many branches of physical science, we can predict the general character and the direction of the effects of given causes, but not their magnitude. In a word, their certainty does not ensure precision.

Before endeavouring to reply to this question, much preliminary exposition will be required. We do not, however, propose to begin at the very beginning of the theory of money. We take as a fact of nature, justifying itself by its existence, that, from the dawn of civilization, men have agreed to use coined pieces of precious metal in payments ; and that this custom has so passed into law, that the state has universally assumed the function of coining money, and the prerogative of fixing by law the weight and fineness of the coins ; and of deciding in what money debts are to be paid, or at least presumed to be payable in the absence of any express agreement to the contrary.

We also take it as an established principle, that the value of money in exchange, though recognised by custom and legislation, is not originally due to either, but to the intrinsic value of the metals of which it is made ; and that however extensively the use of metallic money in transactions may be superseded by such paper representatives of money as bank-notes, cheques, and bills, the value of these also does not depend on law or convention, but on their function as assuring to the holder the actual or possible delivery of the quantity of precious metal which they represent. Hence the necessity of legal guarantees for the convertibility of paper money :—that is to say, for ensuring that the holder of a bank note shall have a certainty of obtaining on demand the quantity of gold or silver which the note professes to represent.

It has sometimes been asked, whether these paper representatives of money, are money ; but this is little more than a verbal question. Money is that which is universally taken in payment. When a

bank note or a cheque is accepted in discharge of a debt, it is money as between payer and receiver ; but so long as the convertibility of the note is maintained, the only money which is money for all purposes is metallic money, because it is the only money which is legal tender in all payments ; bank notes, under the system of convertibility, are not legal tender in payment by the bank issuing them.

From the fact that the value of money is intrinsic and not conventional, it follows that the supply of the country with currency is no part of the duties of the state. Its duties are limited to authenticating the currency by coinage ; the currency is supplied in the ordinary course of trade, by those persons who have gold, and to whom it is more useful in the coined than in the uncoined state, sending it to the mint to be coined. It would not be conceivably possible that the government should, in any commercial sense, supply the country with the gold coin which it needs.

Under our system of metallic currency, and a mint open to all who send gold to be coined—which system I assume throughout as right—gold is money to all intents and purposes, so that gold and money may be used as equivalent words. And under this system it follows from the principles stated above, that all buying and selling are but modifications of barter ; in other words, the exchangeable value of money is determined by the same agencies as the exchangeable value of commodities. The exchangeable value of commodities as against money, is called price ; that of money as against commodities, is called purchasing power ; the distinction is convenient, but not essential ; and both depend on the interaction of demand and supply. *Price of money* is a technical phrase for *rate of interest*, but though the rate of interest is no doubt determined by the interaction of demand and supply, it is a subject which does not enter into the present discussion ; and when we speak in the present paper of the abundance or scarcity of money, we do not mean money in the technical sense of loanable capital, but in the equally obvious and much simpler sense of the circulating medium, consisting, under our currency laws, almost exclusively of gold and notes payable in gold.

From this point of view it is easy to answer the question, How does the abundance or scarcity of money influence prices ? The exchangeable value of any articles whatever, whether of coins or of commodities, is increased by a diminution of the supply, and diminished by an increase of the supply. Consequently, in those countries where payments are made in gold, an increased supply of gold will diminish its purchasing power, or, what is the same thing conversely stated, will raise the prices of commodities. But this action will not be on all prices alike ; it will be first on those articles which the holders of gold want to purchase ; and the gold will get into general circulation, and will raise the general level of prices, by passing from hand to hand in the ordinary process of trade. Thus, at the time of the discovery of the Australian gold in 1851, the articles which rose the first and the most in price were those which were most in demand for the Australian markets.

The interaction of demand and supply in determining exchangeable values, though less visible, is really simpler in the case of money than in that of commodities. This is in consequence of a peculiarity of money which distinguishes it from all commodities; namely, that the market for it can never be glutted. A glutted state of the market for any article is that which occurs when there is a remnant left on the hands of sellers after the wants of all possible buyers have been fully supplied; and consequently, if sellers cannot afford to hold, they are compelled to sell at a price that bears no relation to the cost of production. The possibility of this depends on the fact that the power of using commodities is, in general, limited by the nature of things;—no community, for instance, however industrious, could find a use for an unlimited quantity of tools. But this is impossible with money, so long as its production is confined within any probable limits;—we do not contemplate such an event, possible no doubt, but almost infinitely improbable, as gold or silver becoming equally abundant with copper. But until such an event occurs, a glut of money is impossible, because there is no limit to the demand for it; every one wishes to have as much money as possible. Consequently, the exchangeable value of money not only decreases with its abundance and increases with its scarcity, which is true of all articles whatever; but the exchangeable value, or purchasing power, of money, tends, in a way which is not true of commodities, to vary in the exact reciprocal of its quantity. If the quantity of the precious metals in the world were, by any possibility, to be all at once exactly doubled, without their distribution being altered, their purchasing power would be exactly halved. This relation between quantity and purchasing power would be scarcely possible to prove by statistics, but it appears to be a necessary consequence of obviously true principles.

The exchangeable value of any article depends on the interaction of demand and supply; and it is equally true that the exchangeable value of any article tends to be equal to the cost of its production; in less abstract language, articles which have cost the same to produce, tend to bring the same price. Production, of course, is so defined as to include transit as well as growth or manufacture, and comprises the entire process of bringing to market. This equalization takes place through the interaction of demand and supply, and is a necessary result of the law that prices are determined by demand and supply. From this law of equalization it follows, or rather it is an instance of that law, that the cost of producing any coin—which under our system of gratuitous coinage, means the cost of producing the gold of which it is made—tends to be equal to the cost of producing the articles for which it will exchange. The cost of producing a sovereign, for instance, tends to equal the cost of producing twenty shilling loaves.

But the equalization between the market price and the cost of production, takes a longer time to bring about in the case of the precious metals than in that of any other articles. This is not because of their function as money, but because the stock in ex-

istence throughout the world bears a larger proportion to the annual production in their case than in any other.

It is with some regret that I have thought it necessary to occupy so much space with a preliminary discussion of so simple and elementary a subject as the theory of prices, and of the way in which they are influenced by the supply of the precious metals ; but recent controversy has convinced me that this subject is much less generally understood than might have been expected.

We have till now spoken of money and gold as synonymous terms. But there are also silver and copper money. If however we define money as that which is universally available for making payments,—in other words, unlimited legal tender,—we must define silver and copper coin as being money in only a subordinate sense ; for silver coin is legal tender only for payments not exceeding 40s., and copper, we believe, only up to one shilling. And they are coined under totally different conditions from gold ; their legal and customary value is greater than their intrinsic value ; a shilling contains less than a shilling's worth of silver, and a penny contains very much less than a penny's worth of copper. Money thus circulating at a greater than its intrinsic value is called token money, as distinguished from standard money, which circulates at its intrinsic value. Gold is with us the only standard money. It is obviously impossible to apply the system of free mintage to token money. Any one bringing gold to the mint may demand its weight in gold coin, but there is, and under the conditions can be no such law applying to silver or copper. Trade, as we have seen, supplies itself with gold money ; but the silver and copper coinages are limited in quantity, and are supplied by the government at a profit.

In the case of copper, there is an obvious necessity for this system. We need a coinage for very small payments ; such coins would be inconveniently small if made of gold or silver, and inconveniently heavy if made of copper at its intrinsic value ; but it is convenient, and quite unobjectionable, to make them of copper or some other inferior metal, and to give them a legal value greatly above their intrinsic value ; and accordingly this system has long been universal.

But there is no such necessity in the case of silver ; and in fact, silver was freely coined as standard money in France and in the United States, until the great disturbance of its value which followed the end of the war between France and Germany in 1871. In France, with the other nations contained in the Latin Union, and in the United States, both silver and gold were standard money ; the relative value of silver and gold was fixed by law for monetary purposes ; the mintage of both was unrestricted, as that of gold is under our laws, and debts were payable in either at the choice of the payer. In a word, those countries were bimetallic.

But here, for the first time in our enquiry, a theoretical difficulty arises. How is bimetallicism possible ? The supply of the two precious metals is peculiarly liable to great fluctuations, extending over

long periods of years; and with varying supplies of any two articles, how can their relative value be kept steady?

The most obvious reply to this question is, *Solvitur ambulando*—it is solved by the facts of the circulation of money. During both the scarcity of gold in the early part of the present century, and the abundant supply of gold from California and Australia in the middle of the century, the relative value of gold and silver, as tested by the quotations of the price of silver in the London market, varied but very little.

This apparent anomaly, however, may be very simply explained. Prices depend on the interaction of demand and supply. But when one article is capable of being substituted for another, any increase or diminution of the supply of either, acts on the market for both, almost as if they were the same article. Thus any increase or diminution in the supply of either beef or mutton would act almost equally on the price of both mutton and beef. Now, the same capacity for being substituted the one for the other, which the facts of nature cause in the case of beef and mutton, was caused, during the period of which we speak, by law and custom in the case of gold and silver. The laws of France and the other nations associated with France in the Latin Monetary Union, provided open mints for both gold and silver;—any one might get any quantity of either metal coined at their mints;—either, at the choice of the holder, was legal tender; and the ratio of value was fixed by law at one ounce of gold equal to $15\frac{1}{2}$ of silver. The ratio in the United States was 1 to 16, and there also silver was standard money, or legal tender, equally with gold.

It has been lately said in controversy on this subject, that silver and gold are not, in fact, capable of substitution each for the other, because they are naturally convenient for payments of very different orders of magnitude. But this difficulty may be practically overcome by the use of bank notes. A note payable in gold, and a note payable in an equal value of silver, are equally easy to carry in the pocket. It may be questioned, however, whether the difficulty in any case amounts to much. The remarkable steadiness in the relative values of gold and silver, during the greater part of the present century, of which we have spoken, appears to prove that they are naturally suited to be substitutes each for the other. That steadiness, it is true, was caused by legislation, acting through the French mint; but such legislation could not have been successful if it had not been in harmony with the nature of things. This steadiness did not consist in absolute fixity, but in the total absence of any except relatively very small fluctuations, contrasting most remarkably with those of later years. The report says (p. 2), "From a table presented by Mr. Pixley, it will be observed that from 1833 to 1872, the average annual price of bar silver in the London market was never lower than $59\frac{3}{16}$ d. per oz., nor higher than $62\frac{1}{8}$ d., showing a range of $2\frac{7}{8}$ d., during the forty years in question," equal to 4.85 per cent. on the smaller of these two extremes, or 4.63 on the larger. From a continuation of Mr. Pixley's table, "it ap-

pears that in the (fifteen) years from 1873 to 1887, both inclusive, the highest annual average was $59\frac{1}{4}$ d. in the first year of the period, and the lowest $44\frac{5}{8}$ d. in the last year, showing a variation of $14\frac{3}{8}$ d., "equal to 32.8 per cent. on the smaller of the two extremes, or 24.7 per cent. on the larger.

It is a commonplace, that legislation cannot fix prices, and ought not to make the attempt. This is generally true. But the case now under consideration is not so much an exception, as a case coming under an altogether different principle. Legislation cannot beneficially interfere between buyer and seller, or with the interaction of supply and demand. But this case was not one of such interference; in this case legislation created the demand; the relative price of gold and silver was maintained by the mints of the Latin Union constituting a market for both at a fixed ratio of price.

Since 1873, however, silver has been for the most part demonetized, that is to say rejected from circulation, by the Latin Union and the United States.

But it may be asked, is the power of legislation absolute in fixing the ratio of value between the metals used as money? Could legislation give to copper the value of silver, or to silver the value of gold? Certainly not. But the power of legislation in the matter must be considerable. Suppose silver to be rejected from all the currencies of the world, the consequent diminution in the demand for it would lower its value in proportion to gold to perhaps 28 to 1. If, on the other hand, gold were so rejected, the ratio would perhaps stand at 14 to 1. Between these limits, then, whatever they are, legislation can fix the relative value of the precious metals. This appears evident on the mere statement, though the limits may perhaps be much narrower than those here conjecturally assigned.

The extent of the power of legislation to fix the relative value of two metals in circulation may also be thus stated:—It is possible for legislation to fix their relative value within any limits, so long as it is worth while for persons having the metals, to bring them both to the mint for coinage at the legal ratio of value. But legislation cannot depress either metal to a lower value than what it would bear if it were so far undervalued at the mint, that it would be worth no one's while to bring it to be coined.

Even had money never been invented, the utility and beauty of the precious metals would have given them a high exchangeable value. Such appears to have been the case in ancient Peru. But the demand for them, and consequently their value, must be greatly increased by their use as money.

But another theoretical difficulty may be raised. The value of any article tends, as we have seen, in the long run to be equal to the cost of its production; and if the discovery of new mines, or the exhaustion of old ones, causes the cost of production of either of the precious metals to increase or to diminish, how can its value remain unchanged in relation either to commodities or to the other precious metal?

We reply, that the cost of production which tends to equal the

market value, is neither the average cost of production, nor the cost of production at the richest mine in the world, but the cost of production at the poorest mine which it will pay to work ; and though in the case of an article of practically unlimited production, such as cotton prints, the market price tends to be determined by the cost of production ; yet in the case of an article of limited production, like gold or silver, the equalization between the cost of production and the market price, or exchangeable value, may be brought about in the opposite way ;—the cost of production at the least productive mine which it will pay to work, may be determined by the market price ; for on the market price must depend the degree of productiveness at which it will pay to work a mine.

The events of the period which began in or about 1873, have lowered the value of silver in proportion to gold to a ratio of about 21 to 1 (an ounce of gold being worth £3 17s. 10½d., and one of silver 44½d.). The contention of some bimetallists, of whom the writer is one, is that this reduction in the gold price of silver need not have occurred ; that it is almost purely injurious ; and that a return to the old ratio of 15½ or 16 of silver equal in value to one of gold, would be practicable, and desirable in the interests of the civilized world in general, and of the British Empire in particular.

Having now given reasons for believing that bimetallism is practicable, we go on to give reasons for thinking it desirable.

One reason why mankind have fixed on gold and silver as the standards of value and the means of making payments, is that their exchangeable value remains almost unaltered for long periods. This is partly because, as already remarked, their yearly production bears but a small proportion to the total stock of them in the world ; and partly because the demand for them as currency is constant and steady ; subject to fluctuation, no doubt, with the briskness or dullness of trade, but not to fluctuations in any degree comparable with those which occur in the price of iron, for instance, according to the activity of ship-building and railway construction. But in the course of centuries the exchangeable value of the precious metals is subject to great and incalculable fluctuations, caused by the exhaustion of old mines and the discovery of new ones ; so that, as Adam Smith has remarked, though the exchangeable value of the precious metals, measured in commodities generally, is much steadier than that of corn from year to year, the exchangeable value of corn is much steadier than that of the precious metals from century to century.

It is most desirable that the exchangeable value of money should be stable. A very large proportion of payments are made under contracts which are perpetual, or for very long periods ; to this class belong the interest on public debts ; the rent of land, houses, and railways under long leases ; and generally all those payments from which fixed incomes are derived. Another large class of payments, though they may be nominally fixed by contract, are really fixed by custom ; to this class belongs a large proportion of salaries and payments for professional services. Any great increase in the

supply of precious metals, by diminishing the purchasing power of money, is consequently injurious to the holders of fixed incomes and to the professional class; while the trading and working classes are correspondingly benefited. On the other hand, any great diminution in the supply of the precious metals, by increasing the purchasing power of money, is beneficial to the interests of the receivers of fixed incomes, and correspondingly injurious to the trading and working classes. All such fluctuations are, on the whole, undesirable. This may not be generally admitted in the case of increased abundance of the precious metals, but few will probably be found to deny that their increased scarcity is an evil.

Now, the first advantage of bimetallism to be stated in logical order, is this:—If silver and gold were capable of substitution, each for the other, by law, as beef and mutton are by nature, any increase or diminution of the supply of either would act on the stock of both, which is necessarily larger than the stock of either alone; and would, therefore, have the less effect on the purchasing power of money and the prices of commodities, either by increase or by diminution; just as the effect of any increase or diminution of the supply of either beef or mutton will have the less effect on its price, because beef and mutton may be substituted each for the other.

It has been urged on the opposite side of the argument, that if silver were recognised as money equally with gold, the value of money would be subject to a double danger of disturbance, from fluctuations in the supply either of gold or silver. But it is improbable that great changes in the supply of both metals should occur together; and the mischief of such fluctuations does not depend on their frequency but on their magnitude. It would not be thought a good reason against keeping both cattle and sheep, that we are thereby exposed to a double chance of a scarcity of meat, by a murrain among either sheep or cattle.

Another, and a much more reasonable, objection to bimetallism is that derived from the operation of what is known as Gresham's law;—namely, that if two kinds of money of unequal intrinsic value are legally recognised as equal, it will be worth no one's while to keep or use that metal which is rated below its intrinsic value, and it will accordingly be exported and will disappear. It is argued that bimetallism, at the proposed ratio of say 16 to 1, is in fact impossible, because any country that should rate silver in relation to gold higher than its value in the markets of the world, would soon part with all its gold; so that bimetallism would, in effect, be silver monometallism. This would be quite true if the experiment were tried on a small scale—by only one nation for instance—without a tolerably certain prospect of the example being followed; but if a sufficient number of great nations were to unite in the restoration of silver to its former position with respect to gold, this objection would be overcome; for if all nations were bimetallic, there would be no part of the world into which the gold of the bimetallic nations could be drained away. The consent of the chief nations of Europe and America to the restoration of silver does not appear hopeless; and Asia uses silver currency almost exclusively.

We have now to consider the special reasons for desiring the general adoption of bimetallism by the civilised world, and especially by the British Empire. We shall begin with a brief sketch of the monetary history of the world during the past forty years.

It is about forty-three years since the first discovery of gold in California, and this was followed in a very short time by the discovery of the same in Australia. Great quantities of gold were imported into Europe, and the prices of commodities rose gradually and considerably. There was no counter-movement before 1873. During this period, say from 1850 till 1873, there was a general feeling of briskness and buoyancy in trade and industry, which, though not without interruption, yet was a contrast with the feeling of comparative depression which, on the whole, accompanied the general tendency to falling prices during the period from the return to cash payments after the pacification of Europe in 1815, until the time when the effect of the gold discoveries began to be felt.

At the time of the formation of the German Empire in 1871, the productiveness of the gold mines had for some years been falling off. This, of itself, must have caused a reaction towards lower prices; but the reaction has been greatly hastened by other events.

The first of these was the substitution of gold for silver as the standard money of the consolidated German Empire. This appears to have been decided on hastily, and without any perception of its enormous importance. It must have been greatly facilitated by the indemnity of two hundred millions sterling paid by France to Germany at the end of the war, a great part of which was paid in gold coin. The change from silver to gold in Germany, by constituting a new demand for gold, while the silver which it replaced was thrown on the market, of course tended to increase the value of gold and to diminish that of silver throughout the world. The silver which was replaced by gold in the new German coinage began to flow into France and Belgium, where upwards of ten millions sterling worth of silver was coined in 1873. France and the other nations of the Latin Monetary Union, fearing the depreciation of their silver money, first restricted its coinage to a limited amount, and afterwards, in 1873, ceased to coin silver at all except as token money, like our silver money, having an intrinsic value less than its legal or nominal value, and being legal tender for small payments only (Report, p. 6). The Americans practically did the same, by making gold their standard money on their return to cash payments, which had been suspended during the Civil War, and remained so for several years after its conclusion; silver was really, though not nominally, demonetized, by restricting the quantity permitted to be coined. At the same time, the production of silver has been greatly increased by discovery of new and very rich silver mines in the far interior of North America.

There has thus been a concurrence of a variety of events, all acting in the same direction, to increase the value of gold and diminish that of silver. The production of gold has diminished, and that of silver has increased; while silver has been rejected in

favour of gold in the monetary systems of Germany, France, and the United States.

There is another cause acting in this direction, to which some authorities appear to attach considerable importance, namely the great increase, during the past thirty years, of the "Indian tribute," or payments made by India to England, chiefly on government account, which has, of course, to be met by an excess of exports over imports. India has at all times been a great importer of silver, and seeing it obvious that any cause which tends to check the importation of silver into India must tend to depress its price, by narrowing one of the chief markets for it. But the elaborate table on p. 78 of the Report, comparing the exports and imports of India, from 1870-71 till 1877-78, with the remittances by the Indian government to England for the same period, does not appear to show that the importation either of silver or of gold into India has had any tendency to diminish with the increasing amount of these remittances. (See also the table on p. 4, which however gives the net imports of silver only.) The annual net imports of silver were never much greater than they were during the three years 1885-88, and for those three years they were at almost exactly the same annual rate as for the five years 1865-70, though the "amounts received by the home government for bills drawn on India" had more than doubled in the interval.

But even without any influence of this kind, there is quite enough in the other causes that we have enumerated, to account for the fall in the value of silver as measured in gold, which, as we have seen, amounts to about 25 per cent. since 1873.

But is it silver that has been depreciated, or gold that has been appreciated? This question can be answered only approximately; the data for an answer must be sought by a careful examination of the statistics of prices. In the gold-using countries of Europe and North America, the prices of commodities in general appear to have fallen in almost the same ratio as the price of silver; while in India, where silver is still standard money, prices are comparatively unchanged. In other words, the purchasing power of silver remains without any decided change, while that of gold has greatly increased. From several tables (Report p. 17) showing the average English prices of the most important commodities during a long series of years, it appears that they remained, without much fluctuation, from 1854 till 1874, at a considerably higher level than either before or afterwards; and that by 1887 (according to Mr. Sauerbeck's data, to which the unanimous part of the Report appears to attach the greatest importance), these prices had fallen to about 32 per cent. below that level.

All the tables are constructed on the same principle, though with different details; and all show a considerable fall, but Mr. Sauerbeck's shows the greatest. He takes as 100 the average of 45 English prices from 1867 to 1877, and finds the average for 1887 to be so low as 68. The average from 1867 to 1877, as shown by the tables generally, scarcely differs from that from 1854 to 1874.

The fall in the gold price of silver, which, conversely stated, is a rise in the silver price of gold, is what theory would have us to expect. But theory would not have us to expect the steadiness which we see in the silver prices of commodities in the Indian markets, which, conversely stated, means steadiness of the purchasing power of silver. We see a diminished supply of gold with an increased demand for it, and an increased supply of silver with a diminished demand for it; and from these we should have expected not only a fall in gold prices in England, or a rise in the purchasing power of gold, which we do see, but also a rise in silver prices in India, or a fall in the purchasing power of silver, which we do not see.

No attainable statistics, and perhaps no possible statistics, can explain an apparent anomaly like this. But general theoretical considerations suggest a very simple explanation, which we believe to be the true one. The world has been growing richer, and its commercial transactions have greatly increased in amount. In a thickly-peopled country like England, with an elaborate banking organization, increase of wealth and of trade do not need a proportionate increase of metallic money; the increase of transactions is provided for by paper instruments, especially cheques. But in a country like the United States, where constantly increasing population and wealth are spread over a constantly increasing surface; and in a country like India, where there is no elaborate and universally spread banking system able to meet the needs of commerce as they arise; increase of transactions requires an increase of metallic money wherein to make payments. Now, an increased demand for metallic money, so produced, is equivalent to a diminished supply, and must have the same effect in lowering prices.

Thus the general rates of prices, both in Europe and in India, since 1873, are in their totality the resultant effect of two entirely distinct sets of causes, which are to be thus described:—

An increase in the purchasing power of gold, and a decrease in that of silver, due to a complication of causes enumerated above:—

And an increase of the purchasing power of the precious metals generally, due to the commercial transactions of the world outgrowing its supply of metallic money.

It is scarcely possible to doubt that the general buoyancy of trade from 1850 to 1873, was due to the abundance of gold consequent on the supplies from the newly discovered mines; and if so, it is difficult to resist the conclusion that the depression of trade, which continued from 1873 until lately, was due to the relative scarcity of gold consequent on the failing supply from the mines, occurring at the same time with the substitution of gold for silver in the currencies of three of the most important nations of the world.

It has been argued, that the general fall in prices during the period commencing in 1873, was due exclusively to the improvements which have cheapened production and transport. But these improvements did not begin in 1873;—they began a century earlier, with the invention of the steam engine, and have been in constant progress ever since economical modern history began with the pacification of Europe in 1815, and the subsequent return

to cash payments in England. But if the general fall in prices were altogether due to improvements in production and transit, it would promote the increase of national wealth, whether measured in commodities or in money. Now it is very remarkable that from 1873 to 1886, the productiveness of the income tax increased only in exactly the ratio of the increase of population (Report, Appendix to Note by Mr. Barbour, p. 156), though previously it had been increasing much more rapidly; a result which seems impossible to account for except by the supposition, which in the writer's opinion is no mere supposition but a proved fact, that the increasing scarcity of gold caused lower prices of commodities; and consequently the true wealth of the country, consisting in commodities, increased during that period more rapidly than its apparent or nominal wealth, as measured in money.

A progressive fall in the general level of prices due to industrial improvements, would not have any tendency to cause a general depression of trade: but a progressive fall due to an increasing scarcity of precious metal, and consequently an increasing difficulty of making payments, has such a tendency; and this is what we have been witnessing. Such a cause may work evil in unexpected ways. It does not appear probable that the great depression in the price of agricultural produce which has occurred during the last few years can be altogether ascribed to the increased abundance of supplies brought from India on the one hand, and the Canadian North-west on the other. Increased foreign supplies have been acting on the market ever since the repeal of the corn laws in 1846, but it is only during the past few years that the scale of agricultural prices has so fallen as to leave land uncultivated in England, and to promote a social revolution in Ireland. Were this fall in prices merely evidence of more abundant food, it ought to be welcomed; but in so far as it is due to less abundant gold, it is a misfortune.

The usual reply to this is, that fluctuations in the supply of the precious metals, like fluctuations in the yield of the harvests, are not due to human agency, and must be accepted like other events of the natural world. But we maintain that it is not so; that the scarcity of gold ought to have been, at least in a great degree, counteracted by the abundance of silver; and that this would have been spontaneously effected, but for the blundering of governments in demonetizing silver. The whole thing was an accident, beginning with the hasty and ill-considered reconstruction of the German coinage on the formation of the German Empire. It was no doubt necessary for the German Empire to have a uniform coinage, but there was no necessity for deciding in haste whether the standard money of the Empire should be gold, or silver, or both. It seems probable that the action of all the three nations—Germany, France, and the United States—in refusing the advantages of a double standard of gold and silver, was influenced by a prejudice in favour of gold, due partly to the example of England in maintaining for generations an exclusive gold standard, and partly to the great increase in the use of gold in consequence of the Californian and Australian supply.

While Europe and America have been suffering from the appreciation of gold, India has been, and continues to be, suffering from the depreciation of silver. Since its military and industrial conquest by England, the economical position of India has been very peculiar. Silver is the standard money and the circulating medium of the country, and taxes are paid in silver. Consequently, in so far as the Indian government is a receiver and a payer of revenue in India itself, the appreciation of gold matters nothing to either government or people, and the depreciation of silver not much; for, as we have seen, the prices of commodities in India have changed but little. But though the Indian government receives all its revenues in silver, it has to make a very large part of its payments in gold; namely almost all those made in England, consisting of "interest on debts, interest on the stock of the guaranteed railway companies, expenses on account of the British forces maintained in India, pension and non-effective allowances payable in England, the cost of the home administration, and stores purchased in England for use or consumption in India"—(Report, p. 39). Practically and financially, though not nominally or legally, this (unless we except stores) is tribute paid by India to Great Britain. It has of course to be really paid by exports; and its amount, at a rough approximation, tends to be equalled by the excess of the exports of India over its imports.

The Report (p. 78) gives an elaborate tabular statement, to which we have already referred, analysing the commercial and financial movements connected with the payment of this tribute, from 1870-71 to 1887-88. For the purpose of showing the "loss by exchange," we take 1886-87, which may be regarded as a normal year; that is to say a year in which what we have called the tribute, or what is called in the statement the "payments in India of bills and transfers to defray home charges," differs but little in amount from the value of the excess of all exports, including those of gold and silver, over that of all imports, including the same. In that year, the "tribute" amounted to 175,340,000 rupees; the average rate of exchange was 17.44 pence to the rupee; but calling it 17.45 pence (for our purpose is not minute accuracy, but to show the nature and the scale of the effect which we are tracing) this was equal to £12,748,679, which was the amount of the tribute as paid in English money. In 1870-71, the average rate of exchange was 22.49 pence;—calling it 22.50, the above mentioned number of rupees would, if that rate of exchange had continued, have been equal to £16,438,125. The difference between those two sums is £3,689,446, or more than three and a half millions sterling, and is the loss shown, by the account, to be sustained by India in consequence of the fall in exchange, which is the result and the expression of the fall in the gold price of silver between those two years. The accounts of the Indian government show the loss by exchange to be greater than this, because they take the par value of the rupee at two shillings, so that the difference between this and its actual exchange value appears as loss. But I wish to exaggerate nothing, and there appears to be no reason to think that such a bimetallic

law as I advocate would raise the exchange value higher than it was in 1870-71.

But how far is the loss which we have here estimated real, and how far only apparent? We shall have to consider this question at the end of the present essay.

Now, there are no doubt great objections to our going out of our way to give relief to the finances of India; but the objections to allowing India to become insolvent are greater still; and the least objectionable way in which we can help India is by taking its silver money at the same ratio to gold that it bore previously to the general exclusion of silver from the currencies of the chief nations of the world;—in other words, by taking the rupee at about rs. 10½d, which was the rate of exchange in 1870-71, instead of rs. 5.44d., which was the rate in 1886-7, or rs. 44.89d., which was the average rate of the following year. For this purpose, there should be an act of the Imperial Parliament, making silver legal tender, equally with gold, through the entire British Empire, at a ratio about equal to that which existed in the markets of the world up to 1873; probably the best ratio would be that which still nominally exists in the United States, of one ounce of gold equal in value to 15.985, or almost exactly 16, of silver. The mint, at the same time, should be open for the coinage of all silver taken to it, as it is at present open for the coinage of all gold. This would at once benefit Great Britain, by allowing the abundance of silver to relieve the deficiency of gold, and India, by ending the depreciation of silver. Were we to do this, there is every reason to believe that other nations would follow our example. The United States, which are now the great silver-producing country, would wish to benefit the silver-mining industry; and France and Germany would gladly diminish their heavy financial burdens in an indirect and unobjectionable way, by increasing the abundance of legal tender metal. But none will move in the matter unless we do; and for our taking the lead in the movement there is not only the general reason of our financial prestige, but also the special reason that our Empire consists of two portions;—one, the United Kingdom with the colonies peopled by our own race, where the standard is gold; and the other, India, where the standard is silver. Such an act of Parliament would remove a great commercial and financial barrier between the two;—not only commercial, by making commerce uncertain by reason of the fluctuations of exchange, but financial, by placing a danger of the same kind in the way of the industrial investment of European capital in India.

It may be objected, that any legislation of the kind would be inadmissible, because it would be wrong to pay in silver, debts contracted in gold. The writer admits this to the full, and proposes to provide, in any legislation on the subject, that all debts contracted before the date of such an act, including of course the interest of the National Debt, should still be payable in gold, on the demand of the creditor.

We do not deny the greatness of the proposed change. But if it be called revolutionary, we reply that it would be only restoring the relation between gold and silver which worked perfectly well

for generations, lasted until our own times, and was only upset by an accident.

If however the change is too great for the courage of our statesmen to venture on, it would still be practicable, and would be much better than nothing, to recognise silver as standard money and legal tender throughout the Empire, at its present market price. If the reasonings in this paper are sound, such a law would stop the fall in the price of silver as measured in gold, and thus, while very far short of giving to the government and people of India that relief to which they appear fairly entitled, would at least enable their loss on this account to be definitely ascertained, and prevent it from indefinitely increasing.

But whatever ratio is fixed on between the values of gold and silver, it must be fixed once for all, not subject to revision, but as definitely fixed as any human ordinance can be; as far beyond liability to change as the weight of the sovereign. This is essential to the existence of a coinage of two metals circulating together and both being legal tender; for such a double legal tender would be impossible and contradictory, if the relative value of the two metals were subject to fluctuation.

It will be expected that something shall here be said about the stimulus given by the fall in the gold value of the rupee, to exports from India, especially of wheat; and the injurious effects of this on the British growers of the same. There appears to be no doubt of the reality of this effect; a pound sterling exchanges for more rupees than formerly, while the rupee buys as much wheat as formerly, and thus the exportation of wheat from India to Britain is stimulated. But its importance has probably been much exaggerated; and it is, necessarily, only temporary, and will cease when the prices of wheat and other commodities have had time to be adjusted to the change in the relative values of gold and silver. It is an effect which must always be produced, though it may not be always observed, when the currency of any country is undergoing depreciation from whatever cause; and it is due to the fact that the prices of commodities always adjust themselves to a depreciated or appreciated currency, more slowly than different moneys—gold and silver as in the present case, or coin and paper money as in a much commoner case—find their relative values as shown in the exchanges.

It will be expected that such an essay as this should conclude with an attempt to give a definite answer to the question propounded;—What would be the effect on the purchasing power of gold and of silver respectively, of a simultaneous return by law on the part of the principal nations of Europe and America, to the ratio of 1 to 15½, or 1 to 16, between the values of equal weights of silver and of gold, which prevailed previously to the year 1874.

Europe has for the most part a gold standard, and Asia a silver standard; so that the question may be otherwise expressed:—What would be the effect of a general return to bimetalism on European and Asiatic prices respectively?

To this question, in the writer's opinion, no approximately de-

finite answer is possible ; we can indicate the nature and direction of the changes to be expected, but not their magnitude.

It may be taken as self-evident, that no such legislation as that suggested, and indeed no legislation whatever, can alter the purchasing power of the entire mass of the precious metals in the world. Whatever purchasing power is conferred on one of them by such legislation as we propose, will be at the expense of the other. Such legislation will necessarily increase the purchasing power of silver, and diminish that of gold ; and, conversely, will lower the level of Asiatic or silver prices, and raise that of European or gold prices. As regards each other, the change in purchasing power is given in the terms of the problem ; the ratio of value is to be changed, say from 1 : 21 to 1 : 16. But how will their respective purchasing powers be changed as regards commodities ?

The only thing certain about this is, that the purchasing power of silver will be increased, and that of gold diminished. If we knew, to any moderately near approximation, the quantities of gold and of silver money in the world, and if other things were equal, it would only need an arithmetical calculation to ascertain the ratio by which the changes in the purchasing powers of both, as towards commodities, would be expressed. But we do not know, even approximately, the quantity of silver money in the world. Dr. Soetbeer (Report, p. 74) estimated the stock of metallic money in Europe and America in 1885 as follows :—

Gold,	...	...	...	£668,200,000
Silver,	...	...	...	392,150,000
Total,	...	...	...	£1,060,350,000

But most of this silver, including the well-known five-franc silver pieces, circulates at its old value in proportion to gold, and, for the purpose of any estimate of the effect of currency of legislation on prices, must be regarded as part of the gold circulation. By far the greater portion of the silver money which for the present enquiry is to be regarded as such, is in Asia, especially in India, where any estimate of its amount appears to be unattainable. It has been said, we know not on what evidence, that the metallic circulation of India probably amounts to about four hundred millions sterling, exclusive of an unknown amount of hoarded money. But the Report contains no estimate, or even guess, on the subject.*

* When this paper was read to the society, I had not seen a letter signed Robert Barclay in the *Economist* of 11th April, 1891. I quote its opening paragraph :—“The Director of the American Mint has recently issued a table showing approximately the amount of gold and silver money held in the different countries of the world, bringing out totals equal to 745.4 millions gold, and 764.1 millions silver. The first attempt to compile a similar table was made by the late Mr. Ernest Sneyd. He estimated that in 1870 there was 700 millions gold money, and 640 millions silver money in the world.” A tabular statement follows of Mr. Sneyd’s estimate, and the new American estimate of the gold and silver circulation of the several countries of the world, shown in parallel columns. In both estimates, the gold circulation of India and of all Asia is represented by a blank ; and yet, beyond doubt, there is an enormous quantity of gold hoarded and hidden away in India. This, however, so long as it remains hoarded, is, as Mr. Giffen remarks, only “potential money,” and can have no effect on prices.

It is obvious that the effect of a bimetallic law would be greater on the value, or purchasing power, of that one of the two precious metals whereof the circulation is least in quantity. If there were, for instance, a thousand millions of gold in circulation and only ten millions of silver, a bimetallic law would at once raise the purchasing power of silver to the old level, without perceptibly altering that of gold. The quantity of silver money in circulation is probably much less than that of gold, at least if we add to the gold the silver which, in America and the European Continent, circulates at a higher than its intrinsic value.

Now as, in general, European prices are measured in gold and Asiatic prices in silver, this brings us back to the question, which we have postponed—how far the loss to India by exchange is real and how far only apparent. If we suppose, what must be sufficiently near the truth, that the effect of the legal restoration of bimetalism would be to bring the level of both European and Asiatic prices to what it would have been if bimetalism had not been discontinued, it will appear that though the apparent loss is proportionate to the fall of the value of silver in proportion to that of gold, yet the real loss to the taxpayers of India is proportionate only to the increase of the purchasing power of gold as to wards commodities generally, above what it would have been if bimetalism had continued, and what it will be if bimetalism is restored. If the effect of a bimetallic law were solely to raise the level of prices measured in gold; or, in other words, to diminish the purchasing power of gold, leaving unchanged the purchasing power of silver and the level of prices measured in silver; in that case the relief given to the financial burdens of India would be really equal to the present so-called loss by exchange. If, on the contrary, the effect of a bimetallic law were solely to lower the level of prices measured in silver; or, in other words, to increase the purchasing power of silver, leaving unchanged the purchasing power of gold and the level of prices measured in gold; in that case, the relief would be only apparent; the burden would only have changed its form. The fact lies between these two extremes; but, in consequence of the smaller quantity of silver money than of gold, it is nearer to the second than to the first. Less than half the apparent loss is real loss. The loss by exchange, as such, would disappear; but the increase of the value of silver would be equivalent to a general fall in the prices of commodities in India, which would increase the burden of agricultural taxes, and of all taxes paid by the producing classes.

None the less, however, would it be an enormous advantage to India to get rid of the loss by exchange. It would give immediate relief to the treasury, and a solvent treasury is perhaps more vitally necessary to India than to any other state in the world. A real increase of burdens, due to a fall in prices, would probably be borne by the taxpayers almost unconsciously, while it might be difficult, and even dangerous, to attempt new taxation.

The conclusions at which we have arrived may be summed up as follows:—

Bimetalism is practicable. That is to say, it is practicable,

within tolerably wide limits, for legislation to fix the relative value of the precious metals.

Bimetallism is, on general grounds, preferable to either gold or silver monometallism, because it gives a less fluctuating standard of value. Any change in the supply of either gold or silver, whether by increase or decrease, will produce less effect on prices if it acts on a mass consisting of the entire quantity of the two precious metals, than on a mass consisting of the entire quantity of only one of the two.

Bimetallism existed in Europe during the greater part of the present century with the ratio of 1 : 15½ of value between equal weights of silver and gold; and ratios nearly identical with this had been maintained for generations (Report, p. 2), notwithstanding great fluctuations in the relative abundance of the supplies of gold and of silver from the mines. Its maintenance was chiefly due to the action of the French mint (and, later, the mints of the Latin Union), which constituted a market for both metals at the above-named legal ratio of values.

There is every reason to believe that this ratio would have continued, but for the action of the German, French, and American governments, after the formation of the German Empire, in rejecting silver as sterling money. The effect of this action on the relative values of the two metals has however been greatly increased by the diminution of the supply of gold from the mines, and the increase of that of silver.

The total result of these changes has been to alter the ratio of the values of the two metals in the market from 1 : 15½ to about 1 : 21. As debts throughout the greater part of the civilised world, since the general demonetization of silver, are payable in gold, the appreciation of gold which these figures show is injurious to the European nations, by lowering money prices in a way which is injurious to many industries and interests, especially those of agriculture; and by increasing all permanent burdens, whether public or private.

The fall of the price of silver has been injurious to India also; but the injurious effect there takes a different form, because the Indian government receives its revenues in silver, but has to make large payments in gold, and consequently loses heavily by the exchange. As India is a subject state, with its laws made by the conquering power, this loss, so far as it is real and not merely apparent, gives India a claim for relief based not only on expediency but on justice.

Both of these evils might be mitigated by an agreement between the leading nations of the world, to restore the old bimetallism; and for this purpose Great Britain ought to take the lead; and thus, if successful, to benefit both halves of the Empire at once; the European and Colonial, by diminishing the pressure of public and private burdens; the Asiatic, by checking the loss by exchange; and both, by removing a barrier which impedes commerce, and hinders the investment of European capital in India.

The writer would, however, earnestly protest against any bi-

metallic law which did not provide that the interest of the national debt, and every other payment arising out of any contract of date earlier than the enactment of the bimetallic law, should be payable in gold on the demand of the creditor. Formal contracts must be kept, not only in the spirit but in the letter.

Postscript.

The foregoing essay was written before the debate on bimetallism in the House of Commons on the 17th April, 1890. In that debate, Mr. W. H. Smith, First Lord of the Treasury, used the following argument against the necessity for any change:—

“During the last fifteen years, the rate of discount has been singularly low. In this country, there has been no want of money for commercial purposes.”

Of course the intended inference is, that the demonetization of silver has not deprived us of money for any useful purpose, and therefore its remonetization cannot be needed.

This has been already replied to by implication, in that passage of the foregoing essay where we have remarked that money in the sense of loanable capital, is not synonymous with money in the sense of circulating coin. The former is the technical Lombard-street meaning of the word money; the latter is the popular, and also the scientific meaning. Coined money constitutes but a very small part of the loanable, or immediately available, capital of a country; by far the greater part of it consists of commodities. Abundance of loanable capital in proportion to the demand for it causes a low rate of interest; abundance of coined money in proportion to the supply of commodities causes a high scale of prices of commodities. Between these two—abundance of money in the sense of coin, and abundance of money in the sense of loanable capital—there is, generally and in the long run, no assignable connexion; and it is obvious that they do not tend to occur together; gold is most abundant, and prices estimated in gold money are highest, in the countries where gold is produced; yet interest is higher in Australia than in England, because the demand for capital is greater in proportion to the supply in Australia than in England. It is true that a temporary abundance or scarcity of gold may have a great temporary effect on the rate of interest, but its average or permanent rate depends on the relation between the demand for capital and the supply. The permanent abundance or scarcity of precious metal in circulation cannot possibly have any effect on the rate of interest after the prices of commodities have been adjusted, through the operation of supply and demand, to the abundance or scarcity of precious metal. This will be made obvious by considering that, though silver is a more abundant metal than gold, in the sense that there are more ounces of silver in the world than of gold; yet the rate of interest is not lower in silver-using countries than in gold-using ones. Were any new discovery of mines to make gold as abundant as silver, there might be enormous disturbance of the rates

of interest while this mass of new gold was getting into circulation, and before the prices of commodities had been adjusted to it; but after these prices, as measured in gold, had found their permanent level, the rates of interest would cease to be influenced by the change.

VI.—*Banking Reserves and Currency Reform.* By Professor C. F. Bastable.

[Read Tuesday, 2nd June, 1891.]

THE best test of the merits of a monetary or credit system is the fact that its operations attract no notice. As long as all goes well, people in general are quite content with efficient practical working, and, very wisely, do not trouble themselves with theoretical anomalies or defects. Unfortunately what is at one time a matter of purely speculative interest may at another affect the conditions of national prosperity, and become of grave practical moment.

That the English credit system has recently approached this latter position is, I imagine, not likely to be questioned. When a minister, remarkable for his acquaintance with economic and financial principles, and placed by his position under special responsibility for the views that he sets forth, gives so unmistakeable a warning as that contained in Mr. Goschen's Leeds speech, we need seek for no further opinions as to the seriousness of the situation. Entirely apart from the weight of authority, there is little trouble in showing that what may be called the "natural" course of commercial development has brought the credit system to a highly delicate and easily-disturbed state.

The present difficulty is simply due to the passage of banking into a new stage, which existing legislation never contemplated, and with regard to which its provisions are of questionable service. On looking over the old and well-nigh endless controversies about currency and banking, the enquirer is struck by the fact that they are almost entirely devoted to the function of note issue. "Should small notes be prohibited?" "Could convertible paper money be issued to excess?" "What precautions should be taken to secure the holders of bank notes?" Such were the questions that were discussed and re-discussed in the first half of this century, and it is with them that the legislation of 1844 and 1845 is concerned.

In the last forty years bank deposits have put the older notes in the background; adequate guarantees of the note issues is still essential; but, for the purposes of commercial stability, a failure on the part of a bank to meet its deposits is just as dangerous as incapacity to pay its notes. We may hesitate to accept the views of some distinguished economists who treat deposits as currency;* but

* See Sidgwick, *Principles of Political Economy*, Book II., chap. iv., sec. 3. Dunbar, "Deposits as Currency."—*Quarterly Journal of Economics*, July, 1887, pp. 401, seq.