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DECEMBER, 1895.

GOLD and SILVER and the MONEY of the WORLD.

By LESLEY C. PROBYN.

[Read before the Royal Statistical Society, 19th November, 1895.

SIR RAWSON W. RAWSON, K.C.M.G., C.B., in the]

It is necessary for the proper consideration of monetary problems that the statistical position of money in the world should be clearly presented. A good deal has been done in this direction by Mr. Ottomar Haupt in his admirable work "*Arbitrages et Parités*," to which I am much indebted. But, so far as I know, the only attempt that has been made to bring together in one view the moneys of the world generally is the statement published in the Mint Report of the United States, which was reproduced with some alterations as an appendix to the paper read by Mr. Barr Robertson before this Society last June. But this statement is not only professedly an incomplete account of the world's money, but, as pointed out by Mr. Robertson, its classification is defective; and it takes no account of the difference between the nominal and real values of the several monetary units. Thus, for instance, countries whose monetary systems are so divergent as the United Kingdom and Portugal, as the United States of America and India, as Mexico and Russia, are described as under the same monetary systems—gold, gold and silver, and silver, respectively, while the Greek drachma is taken as of the same value as the French franc. Mr. J. H. Norman has lately, in the "*Economist*," given a much more correct classification. But that great misapprehension prevails on the subject is shown by the recent statement in Parliament of a gentleman, who has given great attention to the matter, that silver still formed the standard of value of two-thirds of the population of the world.

It is as a very preliminary step towards supplying this important want that I have prepared the present paper. I have neither the leisure nor the ability to present the matter in the way in which it should be presented to the Fellows of this Society. I

only hope that my action may lead to attention being given to the subject, and that before long we may have some more authoritative statement of the various monetary systems of the world, in which the omissions from this paper may have been supplied and its imperfections removed.

The classification which I have adopted is based on the manner in which values appear to be measured in the several countries. I have endeavoured to arrange all the countries of the world which have any monetary system at all, according as values are measured in gold, in silver, in inconvertible paper, and in monopoly rupees respectively, and I have prepared separate abstracts for each of these classes (see Appendices I to IV).

I have assumed the population of the world to be 1,500 millions, adding 20 millions to the estimate given by H. Wagner and A. Supan (*Journal* for December, 1891). The figures are generally for the 31st December, 1894. The gold and silver in the banks has been taken as far as possible from the "Bulletin de Statistique et de Legislation comparée," Paris, and, with the amount of paper in circulation, may be accepted as fairly reliable.

The amount of coin in circulation can of course only be an estimate. I have very largely availed myself of the estimates made by Mr. Haupt as to this amount, and I may state that in the course of my inquiry I received unsolicited testimony as to the reliability of the source from which he obtained some of his figures.

The amount of money in the different abstracts has been shown in £'s, that in the silver countries being turned into sterling at the rate of 3*1*/*d*. per ounce, and the inconvertible paper and rupee money at about present prices. It has also been thus distributed in £'s and decimals of *1*/*l*. per head of population.

The total money in circulation in the world amounts, according to these estimates, to 1,780,582,000*l*., or to 1*·*187*l*. per head of population. The bulk of the 688,627,000*l*. shown as State and bank holdings consists of metallic reserves against the paper in circulation.

Appendix.	Classification of Countries.	Population.		Gold in £'s. [000's omitted.]		Silver, Nickel, and Copper in £'s. [000's omitted.]		(e). Paper in Circulation in £'s. [000's omitted.]	Total in £'s. [000's omitted.]	
		Total. [000's omitted.]	Percentage to Population of Whole World.	(a). State and Bank Holdings.	(b). In Circulation.	(c). State and Bank Holdings.	(d). In Circulation.		(a) + (c). State and Bank Holdings.	(b) + (d) + (e). In Circulation.
I	Gold	359,506,	23·97	307,812,	374,498,	192,271,	241,017,	625,778,	500,083,	1,241,293,
II	Silver	509,742,	33·98	16,528,	—	13,616,	107,422,	26,417,	30,144,	133,839,
III	Inconvertible paper	205,828,	13·72	122,575,	—	13,431,	40,735,	259,809,	136,006,	300,544,
IV	Monopoly rupees	296,264,	19·75	—	—	13,856,	£6,038,	18,868,	13,856,	104,903,
	Without monetary system	128,660,	8·58	—	—	—	—	—	—	—
	Total	1,500,000,	100·00	446,915,	374,498,	233,372,	475,212,	930,872,	688,627,	1,780,582,

I will now proceed to the examination of each of these tables in detail. The first, and the most important, accounting as it does for about 70 per cent. of the total circulation of the world, for 82 per cent. of the total gold used as money and reserves, although only for 24 per cent. of the population, refers to countries whose values are measured in gold. These countries have been divided into three sections, each of which must be separately considered.

(a) Where the principal currency is gold or paper exchangeable into gold.

The principal country in this group is the United Kingdom, with the currency system of which we are all familiar. I will, however, dwell for a moment on the nature of our large representative or token currency. Although by careful management a token currency can and does exist side by side with a currency of the metal which is the recognised measure of value, each token is in effect a promise by the authority which issues it to deliver, if need be, the portion of the standard metal which it represents. Let me illustrate this. It is well known that with the present gold price of silver there is a strong inducement for the illicit coinage of full value silver tokens. Should the State by its police arrangements be unable to prevent it, and should there in consequence be such a plethora of silver coins in circulation that they become at a discount, the State would be bound to withdraw the surplusage, to redeem the promise to give gold, which in effect it makes, when it issues token coins.

In the United Kingdom, where they form but a small portion of the whole circulation, the matter may be of comparatively small consequence. But our token coins constitute practically the only legal full tender money of our West Indian possessions; and the danger there is greater. It is known that illicit fabrication of coins of full weight and fineness has already taken place for the Dutch East Indian possessions. I venture to think that the time has arrived when the silver in our token coins should be rated at something considerably nearer its real value than 66*d.* an oz. The change could be gradually made, the higher coins being first dealt with.

I would draw attention to the very large amount of gold held by the banks in Australia; owing, I have no doubt, to the number of centres over which it is distributed, and their distance from each other. On the other hand Canada represents the remarkable feature of a country with a larger population and a larger area which is able to maintain gold as the measure of value with a total stock of that metal about one-sixth of that held by Australasia. I thought it right to keep Newfoundland in its place as a gold country, notwithstanding the disastrous state of her financial and

banking arrangements. I have shown British Honduras separately, because, though the country is comparatively of such small importance, the change which has recently been made in its monetary position gives it a special interest. Up to last year it was a silver country, the legal and recognised measure of value being the silver dollar of the neighbouring Central American States. The bold step of changing the measure of value to gold was adopted by the government, the silver dollars in circulation being called in and being replaced by paper exchangeable into gold dollars (one gold dollar being given for two silver ones), and by specially struck representative silver fractional coins; and so far the measure has been successful. The monthly returns published in the "Gazette" show that the amount of paper varies up and down apparently with the necessities of trade; and the change, owing to the saving caused by the excess of the nominal over the intrinsic value of the new coins, was carried out without any direct expense, but, in fact, with a small profit. It is right to mention, however, that when the change was first introduced there was a good deal of trouble among the ignorant population, who naturally did not understand the number of dollars they received being reduced by one half, and it was necessary to move troops to the colony, which probably cost more than the profit derived from the coinage.

The only other countries in this group calling for special notice are the small State of Uruguay, which occupies a unique position in South America, and which is said to have the very large gold circulation of $5\frac{1}{2}l.$ per head, and of Egypt, in which the circulation is said to be $4l.$ One is inclined to think these figures must be excessive. I hope their mention may lead to a better estimate being forthcoming.

The countries which form section (b) of my table, from a monetary point of view, form the most important of the groups with which I am dealing.

The case of the United States of America is just now of special interest. The figures work out a circulation of $4\frac{3}{4}l.$ per head of population, compared with $2\frac{3}{4}l.$ in the United Kingdom—the paper circulation alone being more than $3\frac{1}{2}l.$ per head. The following tables show the details of this paper circulation, and also how the metallic figures have been arrived at.

Gold in Bank and State Reserves.

	\$	£
Gold in Treasury 31st December, 1894	139,606,000	
Gold and gold clearing house certificates held by } national banks 19th December, 1894	146,117,000	
Total gold in bank and State reserves.....	<u>285,723,000</u>	= 58,311,000

Gold in Circulation.

Gold outside Treasury on 1st November, 1894.....	500,181,000	
(See "Mint Report," p. 42.)		
Deduct gold held by national banks	146,117,000	
Total gold in circulation	<u>354,064,000</u>	= <u>72,258,000</u>

Silver in Bank and State Reserves.

	\$	£
Silver dollars in Treasury 31st December, 1894	364,588,000	
„ bullion 31st December, 1894.....	125,014,000	
Subsidiary money „	14,484,000	
Silver coins held by national banks 19th Decem- } ber, 1894.....	12,505,000	
Total silver in bank and State reserves	<u>516,591,000</u>	= 105,430,000

Silver, Nickel, and Copper in Circulation.

Silver, &c., held outside Treasury on 1st Novem- } ber, 1894	141,018,000	
(See "Mint Report," pp. 12 and 42.)		
Deduct silver held by national banks	12,505,000	
Total silver, &c., in circulation	<u>128,513,000</u>	= <u>26,227,000</u>

Paper in Circulation on 31st December, 1894.

	\$	£
United States notes, &c.	383,247,000	
National bank notes	207,473,000	
Gold certificates	53,362,000	
Silver „	331,078,000	
Deposit notes	47,005,000	
Treasury notes, Sherman's Act.....	122,454,000	
Total paper in circulation	<u>1,144,619,000</u>	= <u>233,595,000</u>

There are two points in connection with the United States' money to which I will draw attention. First as to the composition of the reserves, the main object of which is to secure the various kinds of paper. The United States government, though not legally bound to give gold for its silver certificates and the notes issued under the Sherman Act, has pledged itself to secure their parity with gold. The 100,000,000*l.* and more (nominal value) of

silver which it holds is absolutely useless for this purpose. There can be no doubt that if by a stroke of a magician's wand this 100,000,000*l.* of silver could be changed into its real value in gold (probably only about 64,000,000*l.*), though the nominal debt of the country would be increased, its currency would be in a sounder condition. They are living in a fool's paradise. The outstanding liability on account of their currency—a liability which the wealth and general economic condition of the country doubtless enables them to bear without injury—is concealed by the creation of a fictitious asset of about 36,000,000*l.* in the form of the difference between the nominal and real value of the silver held in the treasury, not required itself for circulation purposes. The other point to which I wish to advert is the wisdom shown by the executive government in the recognition of their obligation to maintain the value of the currency in circulation. I have already alluded to the obligations of a State in regard to what is generally known as its token currency. In the United States this obligation is to some extent recognised by law, which requires that all subsidiary money shall be changed if desired by the holder into lawful money of the country. But the greenbacks—the silver certificates—the Sherman treasury notes—even the silver dollars themselves—are mere tokens of the gold which, rightly or wrongly, has become the legalised measure of value of the country. A token does not cease to be a token because it may happen to be full legal tender. That metal cannot be the measure of value in a country which cannot be turned at the option of the holder into lawful or customary money—even if coined by the State, it can only be the representative of the metal which can be so turned. If all the silver coin and all the copper coin in England were by law made unlimited legal tender, they would still be merely tokens of gold; and if the State at the same time were compelled, as it should be, to give gold in exchange for the tokens it issued when demanded of it, there would be no practical change.

It is the recognition of this fact—of the obligation of a State to keep its representative money as good as the gold which it represents—which has induced the United States government, at great sacrifice, to maintain a gold reserve in its treasury without putting obstacles in the way of those entitled to do so withdrawing gold therefrom. It is the recognition of the fact that the currency added to the circulation of the country by unwise legislation—whether silver dollars, or silver certificates, or treasury notes—was really tokens or representatives of gold, which has enabled it to maintain those tokens or representatives at par. It is only to be regretted that in addition to the provision of the gold, the one further needful step of providing for the automatic withdrawal of

such of these representatives as proved to be redundant has not yet been taken.

France is estimated to have the enormous circulation of 8.715*l.* per head of population. Like the United States of America, too, she has a silver reserve practically useless for circulation purposes. But, unlike America, she makes use of the silver reserve (as does also Germany) to restrict the flow of gold from the country. It is done with so much dexterity, that it can scarcely be said to interfere with the gold measure of valuation, and it is probable that in the long run it has no effect on the composition of the reserves.

The division of the balances of Germany and Belgium, which is not given in the accounts published by the banks, has been taken from the "New York Chronicle's" estimate. The 6,000,000*l.* held at Spandau for the German war chest is included.

The money of Austria being now practically at par with the gold which it represents, I have included that country in this table.

I have also included European and Asiatic Turkey. It is difficult to ascertain precisely the monetary arrangements of the various countries which constitute the Ottoman Empire. But since the cessation of silver coinage the silver medjidie and the various divisional coins have gradually risen in gold value, until they have become more or less good representatives of the gold medjidie. In Palestine and Asiatic Turkey generally, I understand, gold, either Turkish, French or English, is really the basis of all important payments, the other coins having gradually become rated to gold, though at varying values. It is very desirable that further light should be thrown on this interesting position.

Everything, however, seems to point to gold being really the measure of value; a measurement carried out not by any decree or action of the Government (except indeed the closure of the mints to silver), but by the gradual action of natural forces under which gold, a great deal in the form of British sovereigns and French napoleons, has survived as the fittest of the two metals as the measure of value. Does it not seem that a lesson might be learnt when we contrast the difficulty which the United States of America, notwithstanding its boundless resources, has, owing to unwise legislation, encountered in maintaining a gold standard of valuation, with the ease with which Turkey, by letting things alone, has drifted into a gold measurement?

The last section includes colonies and possessions which have adopted the representative currencies of the mother country, with practically no gold to support them. The most important are the Dutch East India possessions, with 24 $\frac{1}{4}$ million inhabitants, where the florin or guilder acts efficiently as the representative of about

double its own intrinsic value in gold. The measurement in gold is of course only maintained by the careful restriction of the coins in circulation to the amount needed for exchanges. But it is worth consideration whether this system may not sooner or later be defeated, both in Java and in our West Indian possessions, by the illicit manufacture of these token coins, for which the present gold price of silver affords so strong an inducement. It was recently stated in the "Times"¹ that it was estimated that 2,000,000 counterfeit guilders of full weight and fineness, coined in China, were in circulation in Netherlands India.

One cannot but be struck, after carefully examining the figures in this table, even after making every allowance for faulty estimates of the metallic circulations, by the enormous difference there is between the amounts of gold with which the measurement is efficiently conducted in the several countries. According to the figures in this table the total gold money in reserve and in circulation in these countries is 682,310,000*l.* If all used their gold as economically as is done in Canada, 257,000,000*l.* only would be required. The demand for gold for monetary purposes is not, as is sometimes supposed, an unlimited demand. The amount required for circulation depends on the customs and laws of the different countries using it. The amount used for reserves too depends in a large measure on the same considerations.

Another point to which I have already alluded is the inutility of the large silver reserves held in those countries in which gold is the measure of value. The quantity of silver in circulation in the countries included in section (b) of the table is approximately as fixed as that in circulation in the countries of section (a), and the existence of the enormous sum of 190,973,000*l.* nominal value is, under the present system, worse than useless. It helps in no way to secure the paper on a gold basis, and besides its acquisition in the past having unduly encouraged the production of silver, it stands as an ever present menace to other silver holders, who cannot tell at what moment this silver, the bulk of which has been accumulated by unwise legislation, may not be thrown on the market.

Table II gives particulars of countries where values appear to be really measured in silver. The most important group is that for the further East. I need scarcely say that, both as regards population and the money circulation of the country, the figures for China proper are merely conjectural. I thought it better to take together with China and Corea not merely the British colony of Hong Kong, but the Straits Settlements, the Philippines, and other British, Dutch, and Spanish possessions in the East Indies

¹ See "Times," 21st August, 1895.

using the Mexican dollar. In the interior of China the silver circulation is for the most part carried out by means of shoes or small ingots of silver, from which pieces are cut off by weight. But the statement that silver is the measure of value in China needs some qualification, for there is a very large circulation of copper cash at no fixed ratio to the tael; and other commodities, such as bricks of tea, are used for money. Mr. Haupt, with the greatest reserve however, estimates the silver in circulation in China, including Corea, I suppose, at 20,000,000*l.* in dollars and 130,000,000*l.* in bars. I presume this is the nominal, and not the real present price, gold value. At present price it represents 82,500,000*l.*, or, assuming the population at 389 millions, an average of 0.212*l.* per head. I have taken the circulation (including silver, paper, and copper) for the whole group at 0.2*l.* per head of population. The paper shown in circulation is merely that issued by the European banks; for though there is apparently a good deal of Chinese paper money circulating in the interior of the country, I have found it impossible to obtain any accurate details. The money of the Philippines included in this group is on a peculiar footing. Strictly speaking, perhaps, it should have been classed as monopoly money, for the Spanish government endeavoured in 1877, and for a time succeeded, in giving an artificial value to the Mexican dollar by prohibiting its importation. A few months ago it was at a premium of 16 per cent., but, owing to successful smuggling and other causes, this is now changed, and it is worth little, if anything, more than the silver of which it is made. A similar attempt to give a monopoly value to the Mexican dollar was made in Porto Rico. In Persia too, owing to the absence of any clearly defined coinage law, the coinage being in the hands of a contractor, the kran sometimes, though not at present, has a monopoly value in excess of the silver contained in it. The circumstances of French Further India are instructive. Some years ago an attempt was made to put into circulation a new silver dollar a trifle more valuable than the Mexican dollar, but it failed, as the more valuable coin disappeared from circulation. It was recently stated in the "*Times*"² that the Paris mint is about to coin a new piastre lighter than the old ones for French Further India. This will probably approach the value of the 5-franc piece. There are certain European possessions on the east coast of Africa where silver in different forms, the Maria Theresa dollar, specially struck Italian and German coins, or the rupee, constitute the medium of exchange and the measure of value. It is not possible to draw an exact line showing where the use of each kind of money ends and the process of barter begins, and I have therefore

² See "*Times*," 8th August, 1895.

taken (as I have done for the west coast of Africa in Appendix I) a population of 2 millions, with a circulation of 0·2*l.* per head.

Table III shows the countries where values are measured by inconvertible paper. And here I must apologise for putting in the same category countries which are so near having a gold valuation as Chile, and so far off as Paraguay apparently is. The most important and interesting country of the group is Russia, in which I have included not merely Asiatic Russia, but the petty governments of Central Asia under Russian influence. There seems much misapprehension as to the monetary system of Russia. It is described in the "American Mint Report" as silver, and in p. 95 of the report of the Indian Currency Committee of 1893 it was stated that the Russian currency consisted of inconvertible paper roubles based on silver. But as was pointed out by a correspondent of the "Economist," on the 29th of July, 1893, not only is there a large special reserve of gold, but the rouble has on it the promise to pay gold or silver money on demand.

The gold reserve held in Russia amounted to 92,000,000*l.* at the end of 1894, and it is believed that there were other gold resources at the disposal of the Russian government. At 3*1d.* an ounce the value of the silver rouble is less than 19·4*d.* The value of the paper rouble is 26·2*d.* There can be no doubt that if the Russian government chose it could at once put its rouble currency on an absolutely effective gold basis at something like its present gold value, 26 pence. The Chilian currency is now in process of conversion. The government has adopted (as it seems to me) the wise plan, when arranging for gold to be the future measure of value, of putting the dollar at something like the value it possessed at the time of the change. There seems a fair prospect of success. But, as recently pointed out by Mr. Haupt, the scheme has been endangered by the disregard of the simple well known rule that the existence of a metallic representative currency depends upon the metal of that currency being certainly over valued compared with the standard metal. The silver token **must** be worth less than the gold which it represents. I have not heard that this error has yet been remedied. The total of this group of countries represents 13·72 per cent. of the population of the world. Probably sooner or later all the European countries of this group, as well as Chile, will place their currencies on a gold basis. If this be done there will be an addition of 179,754,000 to the population of the world using gold measurements. Whether they will wait till under the course of events the value of their monetary units reaches their issue values, or whether, as seems to me the wiser course—in respect to some of them at any rate—to Russia, Portugal, and also to the South American Republics—they

follow the example of Austria and Chile, and adapt their monetary units to something near their present gold valuation, it is impossible to say.

The last group in the series is the monopoly rupee. In order that any metal should perfectly measure values in a country, it is necessary that the holders of it should have the power to turn it into legal or customary current money without restriction. Strictly speaking then, unless there are open mints for the metal selected, or unless people are content, as in China, to carry about bars of silver and a pair of scales in their pockets, values are not accurately measured by it. There are some of the countries given in Appendix II in which the people have not the option of readily turning their silver into current money. But there are different degrees of imperfection. The large populations in the far East served by the Mexican dollar afford an illustration of my meaning. For all practical purposes the metal silver is the measure of value. But it cannot operate so directly, so surely—in the Straits Settlements for instance—as if a mint were opened at Singapore for the conversion, without charge, of bar silver into the required dollars. Cases of much greater imperfection I have already explained as occurring with the same Mexican dollar in the Philippines and Porto Rico, and with the kran in Persia, and there are other countries in Appendix II, notably Madagascar, where the manner in which silver is used as money prevents it exercising its functions perfectly as a measure of value. There are other cases in the world in which, though silver may be largely used as current money, it does not operate as the measure of value at all. In the countries included in Appendices I and III the coinage of silver, except on account of the State, is prohibited, and it is the determined policy of the several governments concerned not to coin it except when wanted for subsidiary purposes. And the rupee too has now ceased to record measurements in silver. The government when it adopted the policy of closing the Indian mints in 1893, virtually pledged itself not merely to the present but also to the permanent discharge of silver from its duty as the measure of value in that country. The case is so peculiar and important that it cannot be classed with any other monetary systems. The monetary unit cannot be stated in any terms of gold. It affects nearly 20 per cent. of the population of the globe. And beyond the general announcement that a gold standard of valuation was being aimed at, and the more specific statement of Sir Henry Fowler, late Secretary of State for India, that sooner or later, perhaps the sooner the better, India must come to have a gold standard, there has been no declaration of the future policy.

It will be well to explain briefly what the present position is.

The rupee is frequently erroneously called a token. As I have already said, a token is a promise to pay, and the rupee as it is at present not only does not constitute any such promise, but it has not yet been fixed by law what amount of gold it shall represent. When the Indian Act VIII of 1893 was passed, under which it ceased to be compulsory for the Indian mints to coin silver for the public, a notification was issued by the Governor-General in Council that gold would be received, until further orders, in exchange for government rupees at the rate of 1*l.* for fifteen rupees. If the rule laid down by this notification had been embodied in the Act as a permanent provision, although it would not have had the effect of making the rupee a token in the right interpretation of the word, it would have made the future policy of the government in this matter more defined; and if owing to the automatic action of trade, gold had gone to India at the rate adopted, a gold measure of value would have been secured, and eventually the rupee might have become a proper token. As it is, values are now measured in India not in silver but in terms of these monopoly rupees, whose intrinsic value in this country is roughly 2*d.* below their market value; but in India, owing to there being a 5 per cent. import duty, the difference is proportionally less. The total metallic circulation of India, including the protected States and Afghanistan, has been assumed at Rx. 148,950,000, which, at the exchange of 1*s.* 1 $\frac{3}{4}$ *d.*, is equivalent to 85,336,000*l.* The amount, which is based on the calculations made by Mr. F. C. Harrison on the rupee census, has been thus obtained:—

	Rx.
Rupees in circulation, including currency and bank } reserves as estimated by Mr. Harrison	128,000,000
Feadatory India using native coins	32,000,000
Afghanistan	1,000,000
Small silver, British and native copper.....	11,500,000
	<hr/>
Deduct cash reserve of the paper currency } department	172,500,000 23,550,000
	<hr/>
	Rx. 148,950,000
at 1 <i>s.</i> 1 $\frac{3}{4}$ <i>d.</i>	= £85,336,000
Add for Portuguese and French India.....	194,000
	<hr/>
	<u>£85,530,000</u>

Mr. F. C. Harrison's estimate is much more reliable than such estimates usually are. For the last twenty years annual examinations have been made of bags of rupees representing current circulation in the different treasuries of India, a careful record being kept of the number of rupees of each year's mintage. Allow-

ances are made by weighting certain figures according to their importance; and the percentage which the coinage of the last year bears to the whole circulation is then estimated. The amount of the coinage of the same year put into circulation is known, and from these figures the total volume of the circulation is calculated.

Of course these figures do not show the rupees which are hoarded, but comparison with the results of previous years enables an estimate to be formed of rupees which have come out of hoards. Mr. Harrison estimates that 3 crores have so reappeared since the closure of the mints. The matter is one of great interest and importance, not merely as affecting India, but as indicating to some extent the manner in which the precious metals operate as measures of value. Mr. Bagehot predicted a settlement of the silver difficulty by the rise in prices in India which would follow the large shipments of silver to that country. But though the net imports of silver into India since 1876 have amounted to about 164 crores, the actual rupee circulation has, including the 3 crores which came out of hoards last year, only increased by 13 crores. The Indian demand for silver has not been mainly a monetary demand, but has been principally for hoards and ornaments.³

The population of the world without any monetary system, including tropical Africa and some of the oceanic islands, is estimated at 128,600,000.

Imperfect as these tables are, I hope that some interesting conclusions may be drawn from them. In the first place they show what a large proportion of the countries of the world are either under a gold system of valuation at present or are more or less pledged to its adoption. If the European countries now using inconvertible paper and Chili are able to acquire the power of measuring their transactions in gold, and if the monopoly rupee becomes—as with a wise, firm policy it may eventually become—an efficient gold measure, we shall have more than 55 per cent. of the whole population of the world on a gold basis. And I do not think this prospect need fill us with alarm. Russia has sufficient gold—nearly 1*l.* per head of population—to maintain her money on a gold basis, the only question being the gold value to be assigned to the rouble. 30,000,000*l.* would, with their present stocks, give the other countries, except India, more than 1*l.* per head of population; while 30,000,000*l.* would probably be sufficient hereafter to

³ Particulars of the Indian Native States' coinage were received too late for incorporation in the paper. There are altogether 34 mints in the Native States of India. Of these 10, representing a population of about 13,000,000, are open for public coinage. These States should therefore have been treated as silver, and not as monopoly rupee, countries. See letter from author in the "Times," 27th November, 1895.—L.C.P.

secure the gold value of the rupee at the rate at which it may be settled to convert it. 60,000,000*l.* is but a small demand to make on the next few years' production of gold according to present estimates. It is impossible to predict the future monetary policy of the silver using countries of the far east, but it does not seem improbable that the important empire of Japan may before long follow the example of Europe, and discard silver as the measure of valuation.

The figures confirm too what our everyday experience teaches us—that countries whose economic condition enables the maintenance of a gold measure of valuation have had no difficulty in getting as much gold as was necessary for their purpose. There has been no scarcity of gold, either for currency or reserves, either in the United Kingdom or in other regular gold using countries. The scarcity of gold in the United States treasury has been the direct result predicted years ago of unwise legislation, the evil effects of which the vast resources of the great republic have enabled it in some measure to counteract. In Canada and other countries where, though gold measures value, it is not generally used for currency purposes, all the gold needed to maintain the measure of value is present, though the systems are in some cases crude and imperfect. In Australasia it was no want of the circulating medium, no deficiency of gold, which brought about the late financial crisis. It will be seen too that it is quite possible to maintain gold as the measure of value with little or none of that metal as the circulating medium, and that though the surest way of maintaining such a system—the true test of the effectivity of the measure of value—is for the authority issuing the circulating medium to make it freely convertible into gold, the result is in practice sometimes brought about by so carefully arranging the quantity in circulation as to make it for internal purposes as good as the gold it represents.

We learn too how powerful for evil or for good, how far reaching in its effects, is the legal tender attribute given to certain forms of currency. Without this attribute the different depreciated currencies of the world could never have existed; while by means of it the Government of British India is being enabled to tide over the period of transition from a silver to a gold measure of value, and with its help such practically useful systems as that partially founded on a small issue of Dominion notes in Canada, and as the token system of Netherlands India, have been built up. A more important use of the legal tender attribute we see as the relic of the system which has now passed away, probably never to return, under which gold and silver were made by law optional measures of valuation at a fixed ratio. Under this system

there was not a double but an alternating measure of valuation, for that one of the two metals was necessarily the measure of which the real had fallen below the rated value. No doubt the legal tender power which was given to each metal did exercise a very powerful influence in maintaining their relative values. We know the large existing stocks there were to deal with. The over valued metal was bound to displace the under valued metal from circulation; but during the process of displacement, the over valuation and under valuation of the respective metals was bound to be checked, though ultimately their relative values, as the relative values of everything else produced by the labour and ingenuity of man, was bound to be regulated by the relative cost of production of the two metals. We see a considerable quantity of these relics of bimetallism still retained in circulation, usefully representing gold by which alone values are measured in the countries in which they circulate, but representing it effectively not so much, if, indeed, at all, by virtue of their legal tender attribute, as in consequence of their practical convertibility into the metal measuring value. We see, however, a much larger quantity cumbering the vaults at Washington and Paris, which the legal tender attribute is powerless to force into circulation.

The consideration of the various monetary systems of the world enables us too to get some insight into what is perhaps the most difficult problem in the whole range of monetary economics, how a precious metal acts as a measure of value. The large increase, actual and prospective, in the production of gold makes the matter one of so much importance that even the suggestions of a layman anxious for the truth may be worth the consideration of professed economists. So far as we can see, the measurement does not depend on a specific portion of the metal. It is not the quantity which may be used as money, but it is the general commodity, say gold, against which other things are measured. Whatever may have been the origin of money, our sovereigns, and our representatives of gold, whether token coins, or notes, or credit in its various forms, are only means to an end, means to ascertain the relative values in gold of different things, and to transfer their ownership from one person to another. As Mr. Mill puts it, "money (is) a mere contrivance for facilitating exchanges."

But we also see how great a demand has been caused for the precious metals by the adoption of this contrivance. According to my estimate the present stock of metallic money is respectively 193,274,000 ozs. of gold and 3,167,000,000 ozs. of silver, while the total world's production since 1493 is estimated at only

414,465,000 ozs. of gold and 7,827,200,000 ozs. of silver;⁴ so that nearly one-half of the precious metals produced during the last four hundred years is now in use for monetary purposes. We can see then how their value must in the past have been, and must still now be, affected by the great demand arising for them as money. The monetary demand, however, appears to occur once for all when the metal is required for its monetary use. Although, as Chevalier says, money is in a constant state of supply and demand, yet this supply and demand are so absolutely continuous, the use of money is so essentially for the one purpose of facilitating exchanges, that ordinarily it does not go on the market at all. The supply of the precious metals in the shape of money appears to be any excess which may not be needed to carry out exchanges, and this with the supply from the mines and from released hoards and ornaments constitutes the supply offered on the market. The monetary demand for the precious metals appears to be for the quantity needed to carry out exchanges. The quantity so needed is affected principally by changes in the monetary systems of the world. When Germany discarded silver; when Austria determined to put her money on a gold basis; when Russia accumulated her enormous gold reserve, very large demands for gold were created. But when once such changes have been carried out, the quantity of the precious metals used as money, though it is affected by alterations in population and in the economic condition of the people, is limited by the essential characteristic of coin mentioned by Jevons, that "it yields no profit by keeping it in the pocket or the safe." This characteristic acts as a strong inducement on everyone to limit the amount of metal used as money to the quantity needed to carry out exchanges in the most economical manner consistent with convenience and with the laws and customs of the country; and for this reason any increase in the supply of gold is not directly or even necessarily followed by an increase in the quantity used as currency. For though an open mint, sometimes erroneously described as an insatiable customer, turns all metal brought to it into coin, it cannot force the coins to remain in circulation.

	Fine ozs. of Gold.
⁴ From 1493 to 1885 (Soetbeer).....	358,050,000
„ 1886 „ 1894	56,415,000
Total ozs.....	<u>414,465,000</u>
	Fine ozs. of Silver.
From 1493 to 1885 (Soetbeer)	6,668,500,000
„ 1886 „ 1894	1,158,700,000
Total ozs.	<u>7,827,200,000</u>

But notwithstanding this characteristic the use of the precious metals for the purposes of measuring value creates a demand for them for public and private hoards which would not otherwise exist, or, at any rate, to the same extent. The miser—from mistrust—or from worse motives—makes a demand on the supply of the precious metal by putting it in his stocking. The State—so as to strengthen its position in the event of war—forms a war-chest; and these demands, though they are made on the currency, have just the same effect as if made directly on unminted gold. But there is another, and it appears to me a more important, form of hoarding, though only temporary in its character, caused by the accumulation in bank reserves of gold over and above the amount required to secure paper issues and the quantity ordinarily needed to support banking accounts, representing balances at call which cannot profitably be employed. It seems to me that this locking up of gold must operate as a demand for that metal just as the demand for the miser's stocking; and that this "store of value" does not really come on to the market until the real holders are willing to exchange it for a profit-bearing security or some other thing. I venture to think that mistrust is one cause of this temporary hoarding of gold, and that it hinders the fall in the value of that metal which might otherwise occur.

The use of the precious metals for the arts and for ornaments, and their retention in this form, may also to some extent be encouraged by their monetary use. But at any rate it is an important factor in the demand. There is a striking example of this non-monetary use in India, where the precious metals now accumulated in the form of hoards and ornaments are estimated at 180,000,000*l.* in gold, and 1,356,000,000 oz. of silver, or more than one-tenth of the total production of gold and nearly one-sixth of that of silver in the last four hundred years. Probably we shall not be far wrong in assuming that the non-monetary demand for the precious metals in the period has been about equal to the monetary demand.

It should be remembered, however, that though the temporary values of the precious metals are thus influenced by the monetary and non-monetary demands for them, their permanent values, as the values of all other things, are ultimately regulated by the cost of production.

Allusion has already been made to the effectivity of the measure of value depending on the convertibility of the money by which the measuring process may happen to be carried out into the metal selected as the measure. This appears to be the essence of the whole matter. The metal selected can only act

with complete efficiency when every holder of it can turn it into legalised or recognised money, and when every holder of such money can turn it into the portion of the metal which it professes to represent. The most certain way for securing this end is for the money of the country to be of defined portions of the metal, the State undertaking to coin it for all comers either without charge or at a small seigniorage. But the same result may be, and in practice as we see has been, secured by the money consisting either of a less valuable metal or of paper, and being convertible into the precious metal under proper regulations. In either case the quantity of money in circulation automatically conforms to the requirements of the people, any excess going into the market as an ordinary commodity, any deficiency being demanded from the market, the value of money therefore exactly conforming to that of the metal of which it is composed or which it represents.

So far I have only considered the case in which one metal is established as the legalised measure of value. But, as has been already explained, when two metals are selected, and a ratio of parity is fixed between them, a new factor comes in. As Mr. Mill says, "practically that one of the metals will always be the standard" (or measure of value) "of which the real has fallen below the "rated value." But it is obvious that, if this be so, which of the two metals becomes the measure of value must depend on the ratio. To repeat an illustration I have used on another occasion.⁵ With a ratio of 5 of silver to 1 of gold, silver, while with a ratio of 50 of silver to 1 of gold, gold, would be permanently over-valued. Unless enormous changes occurred in the present relative cost of production of the two metals, in the former case, silver, in the latter case, gold, would be permanently established as the measure of value. In how short a time the gold in the one case, the silver in the other, would disappear from circulation—how long the complete disappearance would be delayed by the displacement action to which I have referred—need not be discussed. From the date of the passing of the law fixing a ratio of 5 to 1, silver, though its value would certainly be temporarily raised by the effect of the law, would alone operate under it as the common measure of value. And though I have taken an extreme case for the sake of illustration, I believe the same results would follow any ratio approaching $15\frac{1}{2}$ to 1, while the Gold-bugs of Lombard Street might look on with complacency, at all events for the present, at a ratio of say 31 to 1, under which I believe gold would continue its supremacy as the measure of value. [Continued on p. 583.]

⁵ "The Maintenance by England of her Single Gold Standard." Published by the Bimetallic League.

APPENDIX I.—*Estimate of Money in the Countries*

Countries.	Monetary Unit.		Population. [000's omitted.]	In the Aggregate	
	Designation.	Gold Value in PENCE.		Gold.	
				State and Bank Holdings.	In Circulation.
(a). Principal Currency. Gold or paper exchangeable into gold.					
United Kingdom	Pound	240	38,900,	41,211,	44,000,
Australasia			4,310,	24,272,	4,310,
South Africa			4,000,	3,958,	4,000,
Cyprus			211,	—	310,
Malta			177,	—	305,
Various islands			347,	—	173,
Canada	Dollar	49·316	4,840,	3,569,	—
British Honduras			31,	12,	—
Newfoundland	"	50	202,	—	—
Scandinavia	Crown	13·216	9,079,	6,356,	500,
Finland	Marka	9·515	2,412,	876,	—
Egypt	Egyptian pound	243·773	6,800,	—	27,000,
Uruguay	Peso	51·004	772,	1,213,	3,037,
Total	—	—	72,081,	81,467,	83,635,
(b). Principal Currency. Gold and silver or paper exchangeable into gold and silver.					
United States	Dollar	49·316	68,900,	58,311,	72,258,
France			38,238,	82,784,	104,000,
Algeria	Franc	—	4,125,	920,	1,280,
Tunis			1,500,	—	1,168,
Belgium			6,200,	3,453,	8,000,
Switzerland			2,933,	3,260,	600,
Roumania	Lei	—	5,800,	1,864,	1,000,
Bulgaria	Lev	—	3,310,	160,	—
Venezuela	Bolivar	—	2,324,	—	200,
German Empire	Mark	11·747	49,639,	44,033,	88,200,
Netherlands	Florin	19·823	4,700,	4,116,	2,000,
Austria-Hungary	"	19·985	42,889,	25,920,	—
European and Asiatic Turkey	Turkish pound	216·804	27,848,	955,	11,907,
" West Africa	Various	—	2,000,	—	250,
Total	—	—	260,406,	225,776,	290,863,
(c). Principal Currency. Silver or paper exchangeable into silver.					
Dutch East India possessions	Guilder or florin	19·823	24,285,	455,	—
British West India	Dollar	50	1,694,	114,	—
Sundry French	Franc	9·515	640,	—	—
" German	Mark	11·747	400,	—	—
Total	—	—	27,019,	569,	—
Grand total	—	—	359,506,	307,812,	374,498,

of the World where Values are Measured in Gold.

in £'s [000's omitted].					Per Capita in £'s in Circulation.			
Representative Silver, Nickel, and Copper at Nominal Values.		Paper in Circulation.	Total.		Gold.	Representative Silver, Nickel, and Copper.	Paper.	Total.
State and Bank Holdings.	In Circulation.		State and Bank Holdings.	In Circulation.				
—	23,931,	40,859,	41,211,	108,790,	1·131	0·615	1'051	2·797
—	1,303,	3,821,	24,272,	9,434,	1·000	0·303	0'887	2·190
—	1,200,	1,116,	3,958,	6,316,	1·000	0·300	0·279	1·579
—	70,	—	—	380,	1·470	0·331	—	1·801
—	125,	26,	—	456,	1·724	0·706	0'146	2·576
—	104,	—	—	277,	0·500	0·300	—	0·800
—	1,195,	7,838,	3,569,	9,033,	—	0·247	1'619	1·866
—	12,	12,	12,	24,	—	0·387	0'387	0·774
—	96,	292,	—	388,	—	0·475	1'446	1·921
724,	1,900,	13,208,	7,080,	15,608,	0·055	0·209	1'455	1·719
140,	492,	1,996,	1,016,	2,488,	—	0·204	0'827	1·031
—	1,260,	—	—	28,260,	3·971	0·185	—	4·156
—	425,	804,	1,213,	4,266,	3·934	0·550	1'042	5·526
864,	32,113,	69,972,	82,331,	185,720,	1·161	0·449	0'969	2·579
105,430,	26,227,	233,595,	163,741,	332,080,	1·049	0·381	3'390	4·820
49,680,	90,000,	139,264,	132,464,	333,264,	2·719	2·354	3'642	8·715
640,	1,760,	2,680,	1,560,	5,720,	0·310	0·427	0'649	1·386
—	268,	—	—	1,436,	0·779	0·178	—	0·957
1,727,	8,840,	17,868,	5,180,	34,708,	1·290	1·426	2·882	5·598
520,	2,080,	7,168,	3,780,	9,848,	0·205	0·709	2·444	3·358
160,	2,128,	4,196,	2,024,	7,324,	0·172	0·367	0'724	1·263
304,	1,320,	40,	464,	1,360,	—	0·397	0'012	0·409
—	528,	432,	—	1,160,	0·086	0·227	0'186	0·499
12,680,	32,720,	60,560,	56,713,	181,480,	1·777	0·659	1'220	3·656
6,948,	5,180,	17,040,	11,064,	24,220,	0·426	1·102	3'625	5·153
11,692,	13,506,	67,592,	37,612,	81,098,	—	0·314	1'572	1·886
792,	8,548,	839,	1,747,	21,294,	0·425	0·305	0'030	0·760
—	250,	—	—	500,	0·125	0·125	—	0·250
190,573,	193,355,	551,274,	416,349,	1,035,492,	1·119	0·742	2'120	3·981
195,	14,182,	3,529,	650,	17,711,	—	0·583	0'145	0·728
403,	847,	507,	517,	1,354,	—	0·500	0'299	0·799
236,	320,	496,	236,	816,	—	0·500	0'775	1·275
—	200,	—	—	200,	—	0·500	—	0·500
834,	15,549,	4,532,	1,403,	20,081,	—	0·576	0'168	0·744
192,271,	241,017,	625,778,	500,083,	1,241,293,	1·041	0·670	1'738	3·449

II.—*Estimate of Money in the Countries of the World where Values are Measured in Silver.*

Countries.	Monetary Unit.			Population. [000's omitted.]	Aggregate Stock, Silver and Paper being Converted into £'s [000's omitted] at 31d. per Ounce, 925 fine.				Per Capita in £'s in Circulation.			
	Designation.	GRAINS of Pure Silver.	Value in PENCE at 31d. per Ounce, 925 fine.		Gold. State and Bank Holdings.	Silver, Nickel, and Copper.		Paper in Circulation.	Total in Circulation.	Silver, Nickel, and Copper.	Paper.	Total.
Japan	Yen	374.4	26.142	41,090,	16,528,	2,641,	6,984,	19,169,	26,153,	0.170	0.467	0.637
Siam	Tical	206.29	14.403	5,000,	—	—	926,	74,	1,000,	0.185	0.015	0.200
Persia	Kran	62.03	4.401	9,000,	—	25,	1,731,	69,	1,800,	0.192	0.008	0.200
China, Corea, Straits Settlements, Dutch and other East India islands using Mexican dollars	Tael	Various	—	403,304,	—	5,914,	78,920,	1,741,	80,661,	0.196	0.004	0.200
French further India	Dollar	377.06	26.324									
Mexico	Dollar	377.06	26.324	17,834,	—	340,	2,819,	748,	3,567,	0.158	0.042	0.200
Porto Rico				12,056,	—	3,480,	8,470,	3,063,	11,533,	0.703	0.254	0.957
San Domingo	Sol	347.23	24.243	807,	—	176,	741,	124,	865,	0.918	0.154	1.072
Peru				610,	—	—	152,	—	152,	0.250	—	0.250
Bolivia	Bolivar	347.23	24.243	2,972,	—	—	1,414,	—	1,414,	0.470	—	0.470
Ecuador	Sucre			2,300,	—	95,	309,	614,	923,	0.134	0.266	0.400
Guatemala	Peso	347.23	24.243	1,270,	—	167,	152,	411,	563,	0.119	0.324	0.443
Honduras	"			1,510,	—	—	1,212,	—	1,212,	0.800	—	0.800
Salvador	"	347.23	24.243	396,	—	—	297,	—	297,	0.750	—	0.750
Nicaragua	"			780,	—	778,	1,111,	404,	1,515,	1.424	0.518	1.942
Morocco	—	—	—	313,	—	—	234,	—	234,	0.750	—	0.750
Madagascar	—	—	—	5,000,	—	—	900,	—	900,	0.180	—	0.180
European, money - using, East Africa	—	—	—	3,500,	—	—	650,	—	650,	0.186	—	0.186
Total	—	—	—	2,000,	—	—	400,	—	400,	0.200	—	0.200
Total	—	—	—	509,742,	16,528,	13,616,	107,422,	26,417,	133,839,	0.211	0.052	0.263

III.—*Estimate of Money in the Countries of the World where Values are Measured in Inconvertible Paper.*

Countries.	Monetary Unit.		Population. [000's omitted.]	In the Aggregate Converted into £'s [000's omitted] at the present Gold Value of Monetary Units.						Per Capita in £'s in Circulation.		
	Designation.	Gold Value in Pence.		Gold. State and Bank Holdings.	Silver, Nickel, and Copper.		Paper in Circula- tion.	Total.	Silver, Nickel, and Copper.	Paper.	Total.	
		Issue Value.			Present Value.	State and Bank Holdings.						In Circula- tion.
Russia.....	Rouble ...	38·059	26·2	92,158,	438,	9,391,	117,015,	92,596,	0·079	0·985	1·064	
Italy	Lire		9·0	19,960,	3,034,	3,938,	40,976,	22,994,	0·127	1·333	1·460	
Spain	Peseta ...		7·1	8,004,	8,153,	21,685,	26,903,	16,157,	1·233	1·528	2·761	
Greece.....	Drachma..	9·515	5·4	38,	21,	35,	4,354,	59,	0·016	1·747	1·763	
Servia	Dinar		8·0	256,	144,	25,	837,	400,	0·011	0·370	0·381	
Portugal	Milreis ...	53·278	42·0	896,	1,207,	3,887,	30,979,	2,103,	0·807	1·930	2·737	
Brazil	"	26·934	10·5	—	—	250,	18,532,	—	0·017	2·122	2·139	
Argentina	Peso		14·5	200,	—	75,	10,	200,	0·018	4·353	4·371	
Paraguay	"		7·4	—	—	—	230,	—	0·020	0·480	0·500	
Colombia	"	47·578	19·2	—	—	78,	2,091,	—	0·020	0·539	0·559	
Costa Rica	"		19·2	—	34,	5,	280,	34,	0·019	1·052	1·071	
Haiti	Gourde ...		39·6	50,	—	491,	604,	50,	0·511	0·629	1·140	
Cuba	Peso	45·66	38·1	1,000,	—	500,	3,505,	1,000,	0·306	2·148	2·454	
Chili	Dollar ...	18·0	17·5	13,	400,	365,	4,197,	413,	0·109	1·247	1·356	
Total	—	—	—	122,575,	13,431,	40,735,	259,809,	136,006,	0·198	1·262	1·460	

IV.—*Estimate of Money in the Countries of the World where Values are Measured in Monopoly Rupees.*

Countries.	Monetary Unit.			Population. [000's omitted.]	Stock of Money in the Aggregate Converted into £'s [100's omitted] at Present Gold Value of Monetary Unit.				Per Capita in £'s in Circulation.		
	Designation.	Intrinsic Gold Value in Pence of Monetary Unit at 31d. per Ounce of Silver, 925 Fine.	Present Gold Value in Pence of Monetary Unit.		Silver, Nickel, and Copper.		Paper in Circula- tion.	Total Circula- tion.	Silver, Nickel, and Copper.	Paper.	Total.
					Paper Currency, Cash Reserves.	In Circula- tion.					
British India and Native States, Afghanistan; Goa, and Pondicherry being included	Rupee	11.52	13.75	292,868,	13,491,	85,530,	18,178,	103,708,	0.292	0.062	0.354
Ceylon	" ...	11.52	13.75	3,008,	278,	450,	511,	961,	0.149	0.170	0.319
Mauritius				338,	87,	58,	179,	237,	0.150	0.461	0.611
Total	—	—	—	296,264,	13,856,	86,038,	18,868,	104,903,	0.290	0.064	0.354

What however will be the result of the enormous production of gold of which we are now assured? One possible solution of the question appears to be that these large supplies coming on the market may be answered by a demand for the purpose of measuring values in gold in countries where it is not now so used—of facilitating the exchanges of the whole world on a gold basis. But whether this be so or not, I would hazard a guess—for the circumstances attending the production of gold and silver, and therefore regulating their permanent values, are so uncertain that it can be only a guess—that if things be left alone, if there be no more unwise silver legislation, if the State accumulations of the past not wanted for currency are gradually dispersed, even the important yield of gold from South Africa will be insufficient to restore silver to its old gold ratio.

The real object of bimetallism, no matter in what form it is stated, is to lower the values of the monetary units of gold-using countries. And it is thought that the rise in prices expressed by these monetary units, which, if what is considered a reasonable ratio be fixed, will, I think, follow the adoption of bimetallism, will benefit the community generally. Debtors no doubt will benefit at the expense of creditors. But I fail to see, I do not think it has yet been shown, that this will add to the wealth of the world.

I venture to think that the figures which I have presented with this paper will to some extent show that the exchanges of the world can even now be arranged without bimetallism, that there has been and is no scarcity of gold in the ordinary acceptance of the term. Though the value of gold is undoubtedly less than it was in 1873, it appears to me that this is now at any rate in some measure due to the mistrust consequent on past mischievous currency legislation, fostered it may be by uncertainty as to the future, which has prevented the gold accumulated at our large banking centres from freely finding its way on the market. But whether I am right or not, the great increase in the production of gold now taking place must, I believe, sooner or later, even if the demand I have suggested should occur, bring about a rise in gold prices. More, however, than to any alterations in the conditions of the production or use of gold, the low prices of the past have been due to the ingenuity of man, and to what Mr. Leonard Courtney has happily described as the great rivalry of production going on all over the world. One might as well attempt to dam up a mighty river with shifting sand as to fight this great rivalry of production by artificially lowering the value of the monetary unit.

DISCUSSION *on* MR. PROBYN'S PAPER.

MR. H. R. BEETON said that a great monetary economist had recently observed that two kinds of problems were involved in the working of all monetary systems: (1), problems of internal equivalence or parity; and (2) problems of external valuation, or stability of purchasing power; and while it was evident that the latter category of problems most interested Mr. Probyn, yet the statistical method which he adopted was applicable only to the former. To compare the internal equivalence of different moneys which maintained the same external valuation, it was necessary to reduce their different constituents to a common denominator, as Mr. Probyn had done in Appendix I; but to compare the different external valuations of moneys it was useless to reduce their different constituents to a common denominator, as he had done in Appendices II, III, and IV. If a commodity was the equivalent of a certain amount of gold, silver, and inconvertible paper in different countries according to the measure of value of each, those amounts of gold, silver, and inconvertible paper were of course equivalent to each other, and what was wanted in such case, therefore, was not to compare the value of such moneys in terms of each other, but to compare the values of all of them in terms of commodities, so as to ascertain their comparative purchasing power. He ventured to suggest, accordingly, that there was a wide and useful field for investigation by Mr. Probyn in studying the comparative Index Numbers of the moneys of those countries which he had been observing.

As to internal equivalence, Appendix No. I, which related to different moneys maintaining the same external valuation (*viz.*, gold), was subdivided, the first category comprising such countries as the United Kingdom, Finland, Uruguay, &c., which rejoiced in gold or paper convertible into gold as full legal tender money, and the second category comprising less favoured countries such as the United States, France, Germany, &c., which retained the "relics of bimetallism" in the form of gold or silver, or paper convertible into gold or silver, as full legal tender money. Now, if it was undesirable to use a more expensive material when a less expensive one would serve the same purpose, it was a suggestive fact that the countries in the first category were obliged to employ over 80 per cent. of their money in gold to maintain the valuation which the countries in the second category were able to maintain with 60 per cent. of that metal. Further, in that same category, subdivision B of Appendix I, there was a total of 190,573,000*l.* of silver in banks as reserve against paper, with regard to which Mr. Probyn's said "that enormous sum was, under the system of those countries, worse than useless." As he understood Mr. Probyn's contention it was that as the paper in those countries was circu-

lating at par with gold, the whole of the silver deposited to secure the convertibility of that paper was useless, and that the world would be no poorer if it were to disappear, and would be actually richer if it were appropriated to other uses. There was a fallacy in that argument, because the paper that was in circulation at par with gold was not, as Mr. Probyn stated, "on a gold basis," but on a gold and silver basis, *i.e.*, it was convertible not into gold but into gold and silver, and as the silver must be regarded as indispensable to the *convertibility* of the paper, if the silver was eliminated the paper would not circulate at par with gold at all. Of course it might be matter of opinion whether the amount of reserve whether of gold or gold and silver, which the Government of any country maintained to secure the convertibility of its paper was or was not, excessive, but no *a priori* rule could be laid down as to the proportion of reserve necessary for the purpose, and the Governments of the United States and France must be held to be the best judges of the point in the circumstances. Mr. Probyn had also said that these countries by their action had "unduly encouraged the production of silver," but as far as France was concerned it would be in the recollection of the Society that M. de Foville, the Director of the French Mint, had stated in a note supplied to Mr. Barr Robertson (*Journal*, vol. lviii (1895), part 3, p. 433), that France had acquired no silver since 1876. Mr. Probyn had also said that the silver reserves of such nations were "an ever present menace to the market," but apart from the fact referred to by him in the case of the United States that \$331,078,000 existed in the form of paper issued under the Bland Act of 1878 convertible only into silver, and that such could not therefore be disposed of without destroying the value of such money altogether, no responsible statesman in that country would ever dream of suggesting such an alteration of the law as would permit of the silver reserves being expropriated and turned to any other use whatsoever.

As to external valuation, Mr. Probyn admitted to experiencing great difficulty in obtaining insight into the problem, and it was evident throughout his paper that he dealt with the point with diffidence. He (Mr. Beeton) believed that Mr. Probyn's difficulty would have been largely removed if he had understood that the measure of value in every country was the volume of legal tender money in that country, *and nothing else*. If the money of a country exchanged at par with one of the precious metals, then, because such money was equivalent to such metal, gold or silver, as the case might be, was said to be the measure of value in that country, but the measure of value in so-called gold-standard nations was not gold, but the legal tender money of such nations which was compounded of gold and silver and other metals as well as paper. The moneys of the countries enumerated in Appendix I were convertible into gold, and in the conventional sense gold was their measure of value; but that metal was not "selected," as Mr. Probyn said, the measure of value being unknown to law, although the law might so define money as to make it homogeneous to gold as a measure of value. The difficulty which Mr. Probyn had in grasping the true nature of a measure of value was no doubt

largely accountable for the strange conclusions at which he arrived, that "countries whose economic condition enables the maintenance of a gold measure of valuation" (*i.e.*, countries whose economic conditions were as divergent as those of the United Kingdom, Finland, Venezuela, &c.), "have had no difficulty in getting as much gold as was necessary for their purpose," and that "there was no scarcity of gold in the ordinary acceptation of the word." But we required gold not merely for the purpose of carrying on exchanges, but for the purpose of carrying on exchanges *at a more or less constant level of values*, which was a wholly different thing. As much gold as was necessary for our purpose in the ordinary acceptation of the word, was as much gold as was necessary to provide us with a money which would supply us with a comparatively stable measure of value. An amount of gold which resulted in our money being a depreciating measure of value was redundant, while an amount of gold which resulted in our money being an appreciating standard was insufficient. Mr. Probyn had said that "one might as well attempt to dam up a mighty river with shifting sand as to fight the great rivalry of production by artificially lowering the value of the monetary unit," but he (Mr. Beeton) believed in the possibility of maintaining a stable, or even a depreciating, measure of value notwithstanding the great rivalry of production, because he had seen it done in India and in the Argentine Republic. History, therefore, disposed of Mr. Probyn's rhetorical conclusion that the effects of production due to improved methods rendered the maintenance of a stable measure of value beyond the resources of Government.

Mr. A. SAUERBECK said that, with regard to what the requirements would be if a gold standard was introduced into other countries, it was stated that 30,000,000*l.* would perhaps be sufficient for those countries which now had a paper currency, and about 30,000,000*l.* for India. It was a very difficult matter to give any definite sum, because no one knew the quantity of rupees in existence. It was all very well to estimate it at 128 crores, but they knew that during the last sixty years about 350 crores had been coined, and how much of that was still in existence they could not tell. Of course a great quantity had been melted down and a great deal hoarded, and any attempt to fix the value would lead to the rupees now being hoarded coming out to be exchanged for gold. He considered it impossible to say what quantity of gold would be required to establish a gold standard in India. A parity could only be maintained by greatly reducing the quantity of rupees, and there would practically be no market for all the silver to be sold.

As to prices in the future, he quite agreed with Mr. Probyn that there might be a rise owing to the large discoveries of gold, but this improvement would come, to a certain extent, if confidence returned. They all knew that there were times of depression and times of confidence, and that prices moved up and down independently of money to a certain extent. If that confidence returned,

and if the reserves now hoarded were spent, and if there was a large production of gold, it might have the effect of maintaining prices at a somewhat higher level than the present; but if all the gold now being produced was to be used in replacing the 700,000,000*l.* of silver money, no such result would follow. It would be quite impossible, in his opinion, to discard silver altogether, and any attempt in that direction would be most disastrous. The value of gold and silver was not immediately dependent on the cost of production, although it might ultimately be so, but on the demand. If the demand should require another 700,000,000*l.* of gold to replace the silver, the value of gold and silver then established would have nothing whatever to do with any cost of production, it would be simply the demand which would fix the value. As he had pointed out in his last report on prices in the March number of the *Journal*, about 15,000,000*l.* of gold might be required every year for industrial purposes and for the East, Africa, and South America, and with a production of 36,000,000*l.* as in 1894 that would leave about 21,000,000*l.* available for monetary purposes in Europe and North America, which would be about sufficient to meet the increase of population, but would not be enough to make any changes in the currency. If any fresh changes were made, and silver was to be sold to any extent, he was afraid that they would not have a rise in prices, but a further fall.

MR. THOMAS CORNISH, M.E., said that he differed very materially from many of the authorities who had been before the world with reference to the production of gold and silver. It had been drilled into his head for the last forty years that there was going to be an over-production of gold, but he had not seen it, nor had he ever met anyone yet who had enough gold and silver. During the last forty-five years about 800,000,000*l.* sterling of gold had been produced, about twice the quantity the world previously possessed, and, as there was still not enough for the various communities, it was not likely that there would ever be any over production. Gold was real wealth, and the standard by which all other wealth was measured. Its production created new purchasing power, not only so far as its intrinsic value was concerned, but because it was a wealth that, when produced, was the germ or means of producing other wealth to meet human requirements. The man who produced an ounce of gold added practically four new sovereigns to the currency of the country in which he lived, and all the trade and commerce of London could not do as much, for it could only concentrate wealth in certain hands, and concentration was not production. An increased supply of gold could only be obtained by gold mining, therefore gold mining was one of the most important industries in the world. Some time back gold mining became much neglected on many gold fields, and there consequently soon followed much financial depression, and many of those who had been employed in producing gold, rushed to the large towns or entered into other occupations to compete with other workmen. He maintained that the whole currency question

could be best settled if the ratio of silver and gold was fixed at 10 per cent., that is to say, if in every 100*l.*, 90*l.* could be paid in gold and 10*l.* in silver. This, he thought, would increase the value and more general use of silver, without depreciating the value of gold, and was consequently the most simple solution of the gold and silver question.

Mr. J. E. C. MUNRO said that with regard to the adoption of a gold standard in India he agreed with Mr. Sauerbeck. An ounce of gold in one country might be as effective in purchasing power as an ounce of gold in another. When Germany, for example, adopted a gold standard, the total amount of gold in the world was not reduced by a single ounce; and, although there might have been a temporary disturbance of prices by gold passing from other countries to Germany, the gold was there and the purchasing power was there. The real monetary disturbance arose from silver going out of circulation and being turned into a commodity, so that the same amount of gold had to be used to deal with a greater amount of commodities, and there was bound to be a fall in prices. If a gold standard were to be adopted in India the same thing would happen there, and prices again would fall. But it must be remembered that one ounce of gold might be more effective in one country than in another. In England, where credit was well developed, one sovereign might develop 50*l.*, 60*l.*, or 100*l.* of credit, and that credit had enormous force in affecting prices. If the gold went to countries in which credit was not developed, it could not be so effective or have the same rapidity of circulation, and it would be a disadvantage to have the gold flowing to countries where it might be to a large extent hoarded, and not used for the purpose of circulation. It was very desirable to obtain further information as to the probable course of events that would follow any future discoveries of gold, and the increasing output in South Africa and Western Australia. He agreed with Mr. Cornish that the man who found an ounce of gold added to his purchasing power, for he must go into the market to buy commodities, and it was that demand for commodities which affected prices. The exchange of gold for the various materials of well-being necessarily took place in the locality where the gold was found; it had taken place in Western Australia, and the result was a general rise of prices there. He did not think that the demand for commodities would be felt nearly so much in this country, at any rate, as it was in 1850 and subsequent years, after the discoveries of gold in California and Victoria, when England was supreme in the markets of the world and supplied the bulk of all manufactured goods. But now in Western Australia the gold-mining population could obtain a substantial amount of the imports they required from the other Australian colonies, Canada, and the United States, and he would expect to see in the future a gradual rise in prices, distributed much more widely over the commercial nations of the world than had been the case in 1850, which would be felt in England chiefly in the manufacture of machinery and those things which the colonies could not produce in sufficiently large quantities.

Mr. ROWLAND HAMILTON said that the old fallacies connected with paper currency, when that question used to be much discussed some time ago, were coming up again in the discussions on a duplicate currency and a fixed ratio between gold and silver. He could not agree with the last speaker, who looked on gold and silver as not being commodities. All other articles were ranged in a certain order of value as measured in terms of money, but it did not follow that gold was therefore not a commodity; on the contrary, it was pre-eminently a commodity which, with respect to all others, had a specific name, because from the very nature of its use it was in opposition to all other commodities. Gold and silver were not required for themselves, except, of course, as regards their use in the arts. The whole endeavour of men engaged in the production of articles was to bring them together in commerce, and to balance commodities by commodities, only using money for the payment of the ultimate balances, and the more trade extended, the greater became the facilities for making these interchanges, and the less money in any specific form became necessary. If they could attain complete prescience and adapt supply exactly to demand, a reserve of money would not be required at all. As it is, they had to keep up, especially as a reserve, a considerable amount of the commodity most generally available in all parts of the world of commerce. When there was an over-production of gold and silver they must expect to have some of the inconvenience which they used to experience from an over-use of paper. He agreed with Mr. Probyn that it was impossible to trace out the great changes through which the precious metals had passed, especially in those countries where gold was habitually used as a reserve by the people at large. In India the reserve consisted principally in bangles and personal ornaments, and in times of famine or scarcity these articles came in in the place of other reserves from the vast mass of poorer population, who were, after all, the great *consumers* of the precious metals. At present they had to encounter the difficulty of having different standards in different parts of the world, but he did not believe that any fixed ratio could ever be established by any effort of legislation, and any attempt to fix such a ratio would be productive only of confusion and instability in a more aggravated form.

Mr. PROBYN, in reply, said that Mr. Beeton had stated that the measure of value was the amount of legal tender money, but to his mind the measure of value was not the legal tender money, but the commodity gold or silver, whichever it might be. The measure of value was not sovereigns or half sovereigns, but the general commodity, gold, and with a proper monetary system you could turn gold, or silver, or whatever it might be, into legal tender money.

Mr. Sauerbeck seemed to think that 30,000,000*l.* would not be sufficient to put India on a gold basis, but in the evidence taken before Lord Herschell's committee, Sir James McKay's idea was that 15 millions would be enough, and Sir David Barbour 20 millions, this being the largest figure given. It must be remembered

that the great mass of the people were comparatively poor, and would not use gold for currency; and Sir David Barbour's idea, which he shared, was that the currency of India should remain silver, merely being supported by gold, so that gold might become the only measure of value. He thought that the best opinions were that 30 millions would be quite sufficient for this purpose. As Mr. Sauerbeck knew, in Java the gold value was supported without any gold at all. All that was wanted to ensure a gold value was to be able to turn the current money into the standard, but that could not be done without withdrawing the current money from circulation. Therefore unless there were more money to put into circulation to take its place, such an exchange would not be wanted. In Java and the West Indies the exchanges all went on perfectly well without any gold, although they were really on a gold basis. All that gold was wanted for was to be able to withdraw any redundant token currency, or on the other hand to be able, should the token currency be insufficient, to place an increased supply of that currency on the market.

Mr. SAUERBECK said that 30 millions might possibly be sufficient if all in circulation was a known fixed quantity, as was the case in Java, which moreover was financed by Holland, a rich country with the same standard, and where the florin sent from Java was legal tender; but beyond these 128 crores supposed to be in circulation, there was an unknown quantity of rupees hoarded, perhaps 50 or even 100 crores, and these would cause considerable difficulty.

Mr. PROBYN said that that was an important point to which he wished to draw attention. The researches made by Mr. F. C. Harrison, to which he alluded, were most important, and had shown clearly what the amount of circulation in India was. Mr. Harrison had also, after very careful investigation, come to the conclusion, and Sir David Barbour agreed with him, that the total amount hoarded was about 30 crores. The truth of that had been proved in the last few months. If these great hoards of coined rupees had been in existence when the coined rupee was worth more than 2*d*. more than the silver of which it was made, they would have been bound to come out, but instead of that only 3 crores came out during the last eighteen months. The conclusion was that the amount of 50 crores was an over-estimate. The most popular way of hoarding silver in India was to melt it down and turn it into bangles and personal ornaments, and it was in that form that the 400 crores existed, and not as money. With regard to the suggestion of Mr. Cornish that the ratio of gold and silver should be 10 to 1, he was quite certain that if that ratio were established no one would be foolish enough to pay a debt with 1 oz. of gold if he could pay it with 10 ozs. of silver.

The CHAIRMAN (Sir RAWSON W. RAWSON) then proposed a cordial vote of thanks to Mr. Probyn for his paper, which was carried unanimously.