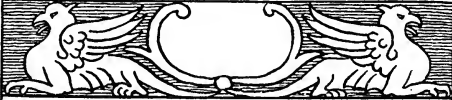




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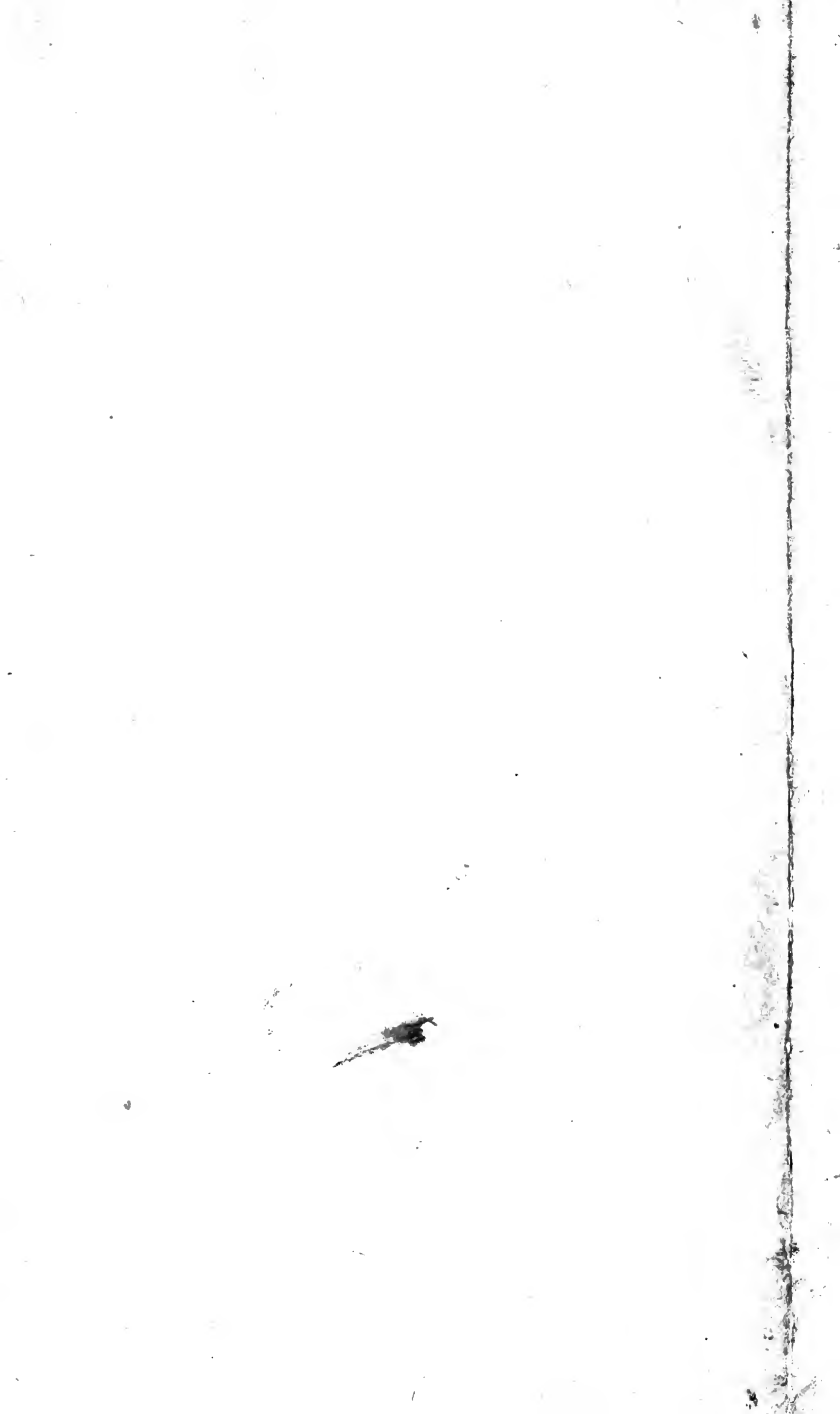


*Lux ex Tenebris.*



*Claus Spreckels Fund.*







TATE'S  
MODERN CAMBIST:

A

Manual of Foreign Exchanges and Bullion,

WITH THE

MONEYS AND OTHER MEDIUMS OF EXCHANGE OF  
ALL TRADING NATIONS;

ALSO

**TABLES OF FOREIGN WEIGHTS AND MEASURES,**

WITH THEIR

EQUIVALENTS IN ENGLISH AND FRENCH.

TWENTY-THIRD EDITION.

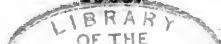
BY

HERMANN SCHMIDT.



LONDON:  
EFFINGHAM WILSON, ROYAL EXCHANGE.

1903.



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SPRECKELS

PREFACE  
TO  
THE TWENTY-THIRD EDITION.

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THE changes which during the last few years have taken place in the monetary legislation of several countries, notably of Austria and the United States, and the further depreciation of silver, which has materially affected the Eastern Exchanges, have rendered a new edition of 'Tate's Cambist' necessary. Great care has been taken to incorporate in same the latest monetary information.

HERMANN SCHMIDT.

*January, 1893.*

## PREFACE

TO

### THE SEVENTEENTH EDITION.

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DURING the last decade important alterations have taken place in the monetary systems of various countries; and, during the same period, the relative value of gold to silver, almost stationary for more than a century, has undergone extraordinary fluctuations. These changes have rendered it necessary that 'Tate's Cambist' should be almost rewritten. Some new matter has been introduced on this occasion, notably in the part of the work dealing with the Foreign Exchanges, in which the different Bill Stamps have been given; and in that dealing with Bullion Operations, in which the Mint Pars, and the Specie Points, have been incorporated. The proof sheets have, in almost all cases, been submitted to the respective Consuls of the different Countries.

The Editor takes this opportunity of thanking all those gentlemen whose valuable assistance he has received in the preparation of this edition, which, he hopes, will fully sustain the high reputation of the book, as a standard authority upon all the subjects of which it treats.

HERMANN SCHMIDT.

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## FOREIGN EXCHANGES.

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FOREIGN EXCHANGES are transfers from the money of one country to that of another country, effected by the operation of Bills of Exchange.

A Bill of Exchange is a written order for the payment of a specified sum of money.

A Rate of Exchange is the value or price of the money of one country reckoned in that of another country. There are, accordingly, two terms in a Rate of Exchange, of which the one is fixed, the other fluctuating. Thus, in the exchange between London and Paris the fixed term is the £ sterling, the fluctuating term the value or price given in francs or centimes in exchange for the £ sterling. In the exchange between London and Lisbon, on the other hand, the milreis is the fixed term, whilst the value given in pence sterling forms the fluctuating term.

When the fixed term is expressed in the money of the country drawing the Bill of Exchange, the drawing place is said to *receive* the fluctuating or variable price; whilst in the reverse case, where the fluctuating or variable term is expressed in the moneys of the drawing place, the latter is said to *give* the fluctuating or variable price. Thus, London *receives* from Paris—*francs and centimes* for £1 sterling, and London *gives* to Lisbon — *pence* for one milreis. In the quotations of Rates of Exchange the fixed terms are generally omitted, and the variable terms alone are called Rates of Exchange.

The exact equivalent value of the moneys or currencies of different countries are called Pairs of Exchange between these countries.

The short rate exchange between two countries will agree with the Par of Exchange if there is no balance of indebtedness between the two countries. If such a balance exists, the short exchange will deviate from the Par of Exchange until the difference between the Par of Exchange and the short exchange is large enough to cover the expenses of shipping bullion from the country with the greater indebtedness to the creditor country.

The long rate of exchange between two countries is based upon the short exchange between them, and is equal to the short exchange less the interest accruing on a long bill during its currency.

If all coins were of the same metal and of the exact weight and fineness laid down in the mintage regulations of the different countries, and if there were no such thing as loss from wear and tear, the Pars of Exchange could easily be calculated. As this condition, however, is very rarely found to be in actual existence, we are compelled to base our calculations of the Pars of Exchange between different countries upon the *assumption* or *supposition* that the several currencies are really of the exact weight and fineness fixed by their respective Mints. This one difficulty thus got over, another still more serious obstacle in the calculation of the Pars of Exchange presents itself, to wit, the different standards of value established in the several countries. Some countries take gold, others silver, for their standard of value. A fixed Par of Exchange exists only between countries using the same standard. Between two countries, of which one uses the gold, the other the silver standard, the Par of Exchange will vary according to the relative value of gold and silver. For in countries with the single gold valuation silver is merchandise, and coined only as subsidiary currency by the Government at an artificially high value; and in countries with the silver valuation, gold is simply an article of commerce, and gold coins are merely commercial money, bearing a variable *agio* or premium.

Since the adoption of the gold standard by Germany in 1871 there has been a tendency exhibited by the most important states of Europe and America to gravitate towards the single gold valuation which in England has been established ever since 1816. The result of this movement has been a

depreciation in the value of silver and a disorganisation in the gold standard countries of all those exchanges which are still based upon the silver standard.

The relations between a gold and a silver standard country may be said to have always been those of barter, but the inconveniences attending to such a state of things had for about sixty years, ever since England adopted the gold valuation, been minimised by the existence of countries using as their standard both gold and silver at a fixed ratio, countries with the so-called *Double Valuation*. The virtual abolition, a few years ago, of the double standard in France and elsewhere has, however, taken away this safety valve for preserving the equilibrium between gold and silver, and the consequence has been the rapid fluctuations of the price of silver in the gold using countries, and of the exchanges between the countries of the gold and the countries of the silver standard.

The moneys of all countries are classed under two heads, viz. *Metallic Currency* and *Paper Currency*.

Metallic Currency consists of stamped pieces of metal, chiefly gold or silver, of certain weights and of a certain degree of purity, which is generally called the *standard*, and is regulated by the laws of the country in which the coins are issued.

The manufacture and issue of coin is in almost all states in the hands of the Executive Government of the country. Private individuals, however, have in many countries the right to import such bullion as forms the standard of the country into the Mint and have it coined into money. In England this is done free of all expense; in France, Germany, and other countries a moderate charge is made on the gold bars to cover the mintage cost; in India a seigniorage\* of about 2 per cent. is levied on the coinage of silver.

Paper Currency consists of notes issued either by the Government or by public banks with the sanction of the Government. These notes bear on their face a promise to pay "on demand" to the holder or bearer a certain specified sum of money in metallic currency. As long as the notes are regularly paid on presentation a paper currency is simply a convenient substitute for the use of metallic money, and

\* A charge made by the Government for the privilege of coining money, which exceeds the actual mintage cost.

exercises no influence on the state of the currency and of the Foreign Exchanges. In many instances, however, notes have been issued to such an amount that the Government or bank which issued them found it impossible to redeem the promise of paying them on demand in coin. Such a suspension of specie payments is generally followed by a law making the notes legal tender, which establishes in the country an inconvertible paper currency, indicated by a premium on metallic money and by a rise in the Foreign Exchanges.

### WEIGHTS AND MEASURES.

The Standards or Models of the legal weights and measures of a country are generally determined or fixed by the Government of the state.

Unhappily, these models are entirely arbitrary, and there is thus a bewildering variety and discrepancy in the standard of the several countries.

Of late, great efforts have been made to introduce a better and more uniform system of weights and measures, and the French Metrical System, which in the opinion of those competent to judge is the most rational of all, is gradually adopted by different governments.



## EXCHANGE OPERATIONS

ARE generally divided into Direct Exchanges, Cross Exchanges, and Indirect or Arbitrated Exchanges.

### DIRECT EXCHANGES

ARE the operations of exchange between two Countries or Places, based upon their own rates of Exchange, without the interposition of a third place.

#### GREAT BRITAIN.

##### LONDON.

##### MONEYS.

4 Farthings = 1 Penny.

12 Pence = 1 Shilling.

20 Shillings = 1 Pound.

ACCOUNTS are kept in Pounds, Shillings, and Pence ; which money is called Sterling.

The Gold Coins are the Sovereign and the Half Sovereign.\*

The English Mint Law directs 1869 Sovereigns, or Pounds, to be coined out of 40 Troy Pounds' weight of Gold 11-12ths fine. The full weight, therefore, of a Sovereign, is 5 Dwts.  $3\frac{1}{2}\frac{1}{3}$  Grains, and the fine weight  $113\frac{1}{6}\frac{1}{3}$  Grains. The Mint price of 1 oz. standard is, therefore, £3 17s. 10½d.

Sovereigns less in weight than 5 Dwts.  $2\frac{1}{2}$  Grains, or Half Sovereigns less in weight than 2 Dwts.  $13\frac{1}{8}$  Grains, have no legal currency.

From these figures it follows :

1000 Sovereigns : legal weight ... 256·822 ozs.

1000 „ „ legal tender limit 255·208 „

Difference 1·614 ozs., or about  $6\frac{5}{8}$  per mille.

The Bank, however, rarely delivers Sovereigns weighing less than 256·20 ozs. per 1000 (difference  $2\frac{1}{2}$  per mille).

\* There are also gold coins of two and four pounds each, but they are not in circulation as money.

The Sovereign and Half Sovereign of the Sydney and Melbourne Mints are legal tender in Great Britain.

The Silver Coins are Half Crowns of Two Shillings and Six Pence each, Florins of Two Shillings each, Shillings and Sixpences and Threepences.\*

The rate of Coinage for Silver is 66 Shillings from 1 lb. Troy of Silver 37-40ths fine. The full weight of a Shilling is, therefore, 3 Dwts.  $15\frac{3}{11}$  Grains, and the fine weight  $80\frac{8}{11}$  Grains.

The Bronze (Copper, Tin, and Zinc) Coins are Penny, Half-Penny, and Farthing pieces, issued at the rate of 40 Pence, or 80 Half-Pence, or 160 Farthings per lb. Avoirdupois; for some of the Colonies Half-Farthings, or eighths of a Penny, have also been issued.†

The Promissory Notes of the Bank of England, which are payable on demand, are legal tender for sums of money amounting to more than £5.

The Silver Coins are legal tender only to the amount of 40s., Pence and Half-Pence to 12*d.*, and Farthings to 6*d.*

The Coinage of Gold is conducted for the public free of all charge. Everybody has the right to take Bar Gold to the Mint for Coinage, provided that the value is not less than £20,000, and for standard weight of metal the same weight of coin will be delivered to him without any expenses but those for assaying. However, as the Bank of England, by the Act of 1844, is obliged to buy Gold of standard fineness at 77*s.* 9*d.* per oz., bars are generally taken to the Bank, which has thereby practically become the only importer of Bullion to the Mint.‡ The conditions on which the Bank buys Gold Bars are :

---

\* The Four-penny-piece is no longer coined. Those still in circulation are being gradually withdrawn. There are also pieces of two pence and one penny in silver, which were minted for the particular purpose of forming gifts of royal beneficence on Maunday Thursday, and hence are called Maunday money.

† Farthing is another word for Fourthing. Sterling is a contraction of the word Easterling, and abroad is considered to be equivalent to "English money." The character £ is used to denote a pound of this money. £ *s.* and *d.* are contractions of the Latin words *librae*, *solidi*, and *denarii*.

‡ A mistake is frequently committed in supposing that, because gold is coined under the superintendence of Public Officers, and the crown, with the sanction of Parliament, prescribes the standards and current values, the Gold Coins are therefore issued by the Government. This supposition is altogether contrary to the fact. The Government coins no gold for itself;

(1.) That the gold must be melted by melters appointed by the Bank into bars about 400 ozs. in weight, charge  $\frac{1}{4}d.$  per oz.

(2.) That the bars are then assayed by an assayer appointed, but the Bank of England pays for assay expenses.

Besides buying Gold of standard fineness at 77s. 9d. per oz., the Bank buys and sells Foreign Gold coins at the following prices :

	Buying Price. per oz.	Selling Price. per oz.
French Coins ...	76s. 4 $\frac{1}{2}$ d.	76s. 9d.
New Russian Coins ...	76s. 4 $\frac{1}{2}$ d.	76s. 7 $\frac{1}{2}$ d.
U. S. Coins ...	76s. 4 $\frac{1}{2}$ d.	76s. 8d.
Dutch Coins ...	76s. 4 $\frac{1}{2}$ d.	76s. 9d.
German Coins ...	76s. 4 $\frac{1}{2}$ d.	76s. 9d.
Old Russian Imperials ...	77s. 7 $\frac{5}{8}$ d.	none in stock.
New Spanish Alfonsos ...	76s. 2d.	Ditto.
Older Spanish Cr. Piastres	76s.	76s. 5d.

These prices are changed from time to time, but it is noteworthy that both the purchasing and the selling prices are considerably higher than in former years, reflecting the Bank's desire to keep up the Gold reserves. Gold Bars which used to be sold at 77s. 11d. per oz. standard are no longer parted with.

The Bank delivers Gold at its Branches—Birmingham, Bristol, Hull, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Plymouth, Portsmouth—charging 4s. per mille for delivery, and 6d. per cent. for advice of the money; making the whole charge equal to 9s. per mille.

The privilege of having Silver or Copper wrought into Coin is vested solely in the Crown. The coins of these metals, therefore, being issued by the Government, and not being the standards of value, are, when much worn, at occasional periods either called in, new coins being given for them, or, which comes to the same, the Bank is authorised to select and send into the Mint the deteriorated pieces, obtaining full weight

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but, like any private individual, it procures its supplies, when wanted, from the Bank of England. No claim can therefore be made upon the Government (or upon the Bank) to reimburse whatever loss arises from the wear or ill-usage of the gold coins. Permission has been given to the Bank to receive light gold coins by weight; they are taken at 77s. 9d. per oz. standard.

pieces in exchange. The Silver Coins are worth about 80 per cent., the Bronze Coins about 25 per cent. of their nominal value.

## WEIGHTS AND MEASURES.

The Gold and Silver weight is the Troy pound of 12 ounces. The ounce is 20 dwts., of 24 grains each.\* Since 1852, the Bank of England weighs bullion in ounces divided into decimals.

For Diamonds, the ounce Troy is divided into  $151\frac{1}{2}$  carats, making 6 carats equal to 19 grains nearly. For Pearls, it is divided into 600 grains, making 5 pearl grains equal to 4 grains Troy. For standarding, the carat is divided into 4 grains.

The English Medicinal weight has for its integer the pound Troy, divided into 12 ounces = 96 drams = 288 scruples, or 5760 grains or minims.

The Commercial weight is the pound Avoirdupois, weighing 7000 Troy grains. 112 pounds make 1 cwt. ; and 20 cwt. 1 ton. The pound is divided into 16 ounces, of 16 drams each.

The dram is subdivided into 3 scruples, of 10 grains each, which make the lb. Avoirdupois 7680 Avoirdupois grains.

The Liquid measure of the Imperial pint is reckoned to be by weight equal to 20 ounces Avoirdupois, or 8750 Troy grains. It is divided into 16 fluid ounces of  $546\frac{7}{8}$  grains Troy, or  $1\frac{1}{4}$  ounce Avoirdupois each.

The Troy pound is in the proportion to the pound Avoirdupois as 14 to 17 nearly ; but the Troy ounce and the Troy grain are greater than the Avoirdupois in the proportion of 79 to 72 nearly.

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\* The basis of the Troy weight was the ancient Saxon mark of 10 ounces or 3600 grains ; or, more correctly, the Saxon pound of 15 ounces or 5400 grains, which pound, called also the moneyer's pound, was employed in the mintage of our coins until the reign of Henry VIII, by whose orders the troy pound of 16 Saxon ounces or 5760 grains was substituted for it. Troy weight was formerly in general use for the finer sorts of merchandise. According to the statements in the Report of the Commissioners for Weights and Measures, the word *troy*, as used for this weight, is derived from *Troja nova*, the name given to London by the monkish writers in their fabulous account of the English metropolis having been founded by some Trojan exiles. Hence the term Troy weight is equivalent to London weight. *Avoirdupois*, on the authority of the same report, is a corruption and compound of the low Latin word *averia*, signifying coarse or refuse goods, and the French word *poids*, weight.

Hence 144 lb. Avoirdupois = 175 lb. Troy.

192 oz. „ = 175 oz. „

MISCELLANEOUS WEIGHTS.—Foreign wool is always sold by the pound ; but in the sale of British wool to the manufacturers and wool-staplers by the growers, the clove of 7 lb., the stone of 14 lb., the tod of 2 stones, the wey of 13 stones, the sack of 26 stones, and the pack of 240 lb., are still sometimes used. A last of wool is 12 sacks ; of flax or feathers, 17 cwt. ; of gunpowder, 24 barrels of 100 lb. each. A firkin of butter is 56 lb. ; of soft soap, 64 lb. A fodder of pig lead in London is  $19\frac{1}{2}$  cwt. A faggot of steel or a seam of glass is 120 lb. A sack of flour, 280 lb. A truss of straw, 36 lb. ; of new hay, 60 lb. ; of old hay, 56 lb. ; and 36 trusses make 1 load. At Mark Lane, wheat, though nominally sold by Imperial quarter, is in reality sold by weight, the quarter being taken at 504 lb., and the bushel at 63 lb.

The measure for Liquids is the Imperial Gallon. Its contents of distilled water of the temperature of 62 degrees of Fahrenheit's thermometer, or  $13\frac{1}{3}$  degrees of Réaumur's thermometer, the barometer being at 30 inches, weigh 10 lb. Avoirdupois, or 70,000 Troy grains. The gallon is computed to measure 277·274 cubic inches. The weight of 1 cubic inch of this water is accordingly 252·458 Troy grains, making the weight of 1 cubic foot 62·321 lb. Avoirdupois. The gallon is divided into 4 quarts, or 8 pints ; the half-pint is frequently called a gill.

The measure for Seeds and Dry Goods is the Imperial Bushel of 8 Imperial gallons. Its contents are therefore 2218·192 cubic inches. 8 bushels make 1 quarter, and 10 quarters 1 last.

The Tun (which is seldom used, however, except in the measure for Oil) contains 252 old gallons = 210 Imperial gallons. It is normally divided into 2 pipes, or 3 puncheons, or 4 hogsheads (hhds.), or 6 tierces ; these divisions are seldom used, however.

For Beer, the Firkin contains 9 gallons, the Kilderkin, 18 gallons, the Barrel, 36 gallons, and the Butt, 108 gallons.

The Merchants' measures for Wine are as follows :

	Gallons.		Gallons.
Port . . . . .	pipe 115	Lisbon and Bucellas	pipe 117
Sherry . . . . .	„ 108	Hock . . . . .	hhd. 30
Madeira and Cape . . . . .	„ 92	Claret and Hermitage	„ 46
Sicilian . . . . .	„ 93	Tent . . . . .	„ 52
Teneriffe & Vidonia.	„ 100	Spanish Red . . . . .	tun 210
Malaga . . . . .	„ 105		

The Imperial gallon of Oil is estimated to weigh 9 lb. Avoirdupois ; the tun of Oil therefore weighs 20 cwt. 1 qr.

Besides Oil, the following articles are sold in this country by weight, under the denomination of measure :

Flour, by the sack of 280 lb.

American Flour, by the barrel of 196 lb.

Oatmeal, by the Scotch boll of 140 lb.

American Pitch, by the barrel of  $31\frac{1}{2}$  gallons, of 9 lb. each, making the barrel weigh  $283\frac{1}{2}$  lb.

The usual Commercial Measure of length is the Yard of 3 feet, of 12 inches each. The Inch is usually divided into either halves, quarters, and eighths, or into tenths, or twelfths. 1760 Yards make 1 Mile, called a Statute Mile, as being fixed at this length by Act of Parliament : it is also so called to distinguish it from the Geographical Mile, or 60th part of a Degree of the Meridian, which Degree in the Latitude of London, reduced to the level of the sea, is computed at  $69\cdot146$  Statute Miles. The Degree is generally reckoned at  $69\frac{1}{2}$  Statute Miles.

The Mile is also divided into 8 furlongs. 3 miles make 1 league. In the measuring of depths the fathom of 6 feet is sometimes used.

For Land, the rod, pole, or perch is also used, the legal measure of which is  $5\frac{1}{2}$  yards ; 40 poles make 1 furlong. The chain, consisting of 100 links, is 4 poles, or 66 feet, or 792 inches.

For Cloth, the yard is divided into quarters, eighths, and sixteenths ; the quarter is divided into 4 nails, of  $2\frac{1}{4}$  inches each. An ell is 5 quarters of a yard.\*

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\* The basis of the lineal, as well as of the superficial and solid, measures of this kingdom is the "Imperial Standard Yard," which was defined to be "the straight line or distance between the centres of two points in the gold studs in the straight brass rod now in the custody of the Clerk of the House of Commons." This standard, as is well known, was destroyed or rendered useless, with the other imperial standards, in the destruction of the Houses of Parliament ; but for the purpose of affording the means of restoring the same length, by reference to some invariable natural standard, it was declared that, when compared with a pendulum vibrating seconds of mean time in the latitude of London, in a vacuum at the level of the sea, it would be in the ratio of 36 inches to 39 inches and  $1393\cdot10000$ ths of an inch. Since the passing of the Act, however, it has been discovered that several elements of reduction of the pendulum experiment were doubtful or erroneous, and that the course prescribed by the

**MEASURES OF SURFACE.**—144 square inches make 1 square foot; 9 square feet 1 square yard; 100 square feet 1 square of flooring, &c.;  $272\frac{1}{2}$  square feet 1 rod of brickwork of the thickness of a brick and a half. In the measurement of Land  $30\frac{1}{4}$  square yards make 1 square perch, pole, or rod; 40 square rods 1 rood; 4 roods 1 acre; and 640 acres 1 square mile; also 16 square poles make 1 square chain, or 484 square yards; and 10 square chains make 1 acre. A hide of Land is 100 acres. The terms rood and acre are only used in Square measure, and is therefore unnecessary to say a square rood or a square acre.

**MEASURES OF SOLIDITY.**—1728 cubic inches make 1 cubic foot; 27 cubic feet 1 cubic yard. The cubic yard is sometimes called a load (meaning a cart-load) of earth, &c. 50 cubic feet make a load of timber;\* and 40 cubic feet are a

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Act would not reproduce the length of the original yard.—See the Report of the Commissioners for the Restoration of the Standards of Weights and Measures.

\* In the measurement of deals, of battens whose width does not exceed 7 inches, and of deal ends whose length does not exceed 8 feet, the value is determined by the following standards:

Deals, &c., from Onega, Archangel, St. Petersburg, Narva, Wyburg, Memel, and Danzig, and also Quebec yellow pine deals, are sold by the St. Petersburg standard hundred, containing 120 pieces, 12 feet long,  $1\frac{1}{2}$  inch thick, and 11 inches broad.

Deals from Stockholm and Gêfle are sold by the Swedish standard hundred, containing 120 pieces, 14 feet long, 3 inches thick, and 9 inches broad.

Deals from Christiania, Frederickshall, Dramen, and Gôtheborg, and also white spruce deals from Canada, are sold by the Norwegian standard hundred, containing 120 pieces, 12 feet long, 3 inches thick, and 9 inches broad.

Battens are commonly sold by the standard hundred, containing 120 pieces, 12 feet long,  $2\frac{1}{2}$  inches thick, and 7 inches broad. But they are sometimes sold by the same standard as deals.

Danzig and Memel deck deals are sold by the standard piece of 40 feet long, 3 inches thick, and 12 inches wide.

Oak planks from Danzig, Stettin, or Memel, of 3 or 4 inches thick, and 20 to 40 feet long, are sold by the load of 50 cubic feet.

Lathwood and firewood are sold by the cubic fathom.

No lower measures are used than 1 foot in length, 1 inch in width, and half an inch in thickness.

Duties on timber, deals, and all hewn and sawn wood, are taken by the cubic measurement of 50 feet to the load, and rated at per load.

regular ton of shipping. However, this varies in different trades.

The chief of the old Measures of Capacity, superseded by the Imperial System, were the Wine Gallon of 231 Cubic Inches, the Beer Gallon of 282 Cubic Inches, and the Winchester Bushel of 2150·42 Cubic Inches.

Hence 5 Imperial Gallons are nearly 6 Wine Gallons, and 31 Imperial Bushels nearly 32 Winchester Bushels, or, with greater precision.

100 Imperial Bushels = 103·1557 Winchester Bushels.

100 Winchester Bushels = 96·94472 Imperial Bushels.

The Wine Gallon and the Winchester Bushel are still in use in the United States and in some of our own Colonies, the former being also used in the sale of spirits by English importers in several foreign places.

The Standards of the weights and of the measures of length are the same as formerly; but the working Standards or Models of the Weights having become diminished by use, they were altered to the correct weights when the Imperial Standards of Capacity were adopted.

The French Metrical System is now in force in Belgium, Germany, Greece, Holland, Italy, Portugal, Spain, Switzerland, and other countries. But as the old weights and measures are still occasionally used in some of these countries, it has been thought advisable to retain them in the subjoined.

TABLES OF THE RELATION OF THE BRITISH IMPERIAL WEIGHTS AND MEASURES TO THE CHIEF WEIGHTS AND MEASURES OF THE CONTINENT..

TROY WEIGHT.

1 Grain Troy	=	0·064798949	Gramme.
1 Dwt.	„	=	1·555174776 „
1 Ounce	„	=	31·10349552 Grammes.
1 Pound	„	=	373·2419463 „



## 100 Ounces Troy are equal to, in

France and the other  
countries which have  
adopted the Metrical

System . . . .	3·11035	Kilos. of 1000 Grammes.
Cologne . . . .	13·303	Cologne Marks of 16 Loth.
Prussia, Hamburgh, Altone, &c. . . .	13·3003	Prussian " "
Austria . . . .	11·083	Vienna " "
Denmark . . . .	13·52	Marks of 8 Ounces, or 16 Lod.
Sweden . . . .	14·77	Marks of 16 Lod.
Spain . . . .	13·51	Castilian Marks of 8 Ounces.
Portugal . . . .	13·553	Marks of 8 Ounces.
Bavaria . . . .	5·5541 $\frac{2}{3}$	Pounds of 32 Loth.
Russia . . . .	7·595	Pounds of 32 Loth, or 96 Solotnik.
Naples . . . .	116·362	Neapolitan Ounces.
Turkey . . . .	9·7314	Chequees, or Tscheki, of 100 Drams.

## AVOIRDUPOIS WEIGHT.

1 Grain Avoirdupois =	0·059061198	Gramme.
1 Scruple " =	0·59061198	"
1 Dram " =	1·77183594	"
1 Ounce " =	28·34937504	Grammes.
1 lb. " =	453·59	"

## 100 lb. Avoirdupois are equal to, in

France and the other  
countries where the  
Metrical System has  
been adopted. . . .

German Empire (in-  
cluding Prussia, &c.)

. . . .	45·36	Kilogrammes.
Prussia . . . .	90·72	Zoll-Verein Pounds.
Hamburg . . . .	96·9828	Old Prussian Pounds of 32 Loth.
Austria . . . .	93·693	Pounds of 16 Ozs., or 32 Loth.
Bavaria . . . .	80·998	Pounds of 16 Ounces.
Sweden . . . .	81·	Pounds of 560 Grammes.
Denmark . . . .	106·71	Pounds Victualien Weight.
. . . .	90·72	Pounds of 16 Ounces.

100 lb. Avoirdupois are equal to, in

Russia . . .	110·764	Pounds of 32 Loth.
Spain . . .	98·577	Pounds of 16 Ounces.
Portugal . . .	98·822	Pounds of 16 Ounces.
Naples . . .	141·41	Pounds of 12 Ounces.
Leghorn . . .	133·589	Pounds of 12 Ounces.
Genoa . . .	143·19	Pounds of 12 Ounces.
Turkey . . .	35·48	Oke of 400 Drams.

112 lb. Avoirdupois are equal to, in

France, and the  
other countries  
where the Metri-  
cal System has  
been adopted .

	50·802	Kilogrammes.
Hamburg . . .	104·93616	Pounds.
Denmark . . .	101·6064	Pounds.
Prussia . . .	108·62	Pounds.
Sweden . . .	119·5152	Pounds.
Russia . . .	3·1014	Poods of 40 lb., or 124·0557 lb.
Turkey, Constant.	39·7376	Oke.
Austria and Bavaria	90·72	Pounds.
Naples . . .	0·570165	Cantaro of 100 Rottoli.
Leghorn . . .	1·4962	Quintal of 100 Pounds.
Genoa . . .	1·069152	Cantaro of 150 Pounds.
Spain . . .	4·4162	Arrobas of 25 lb.
Portugal . . .	3·45877	Arrobas of 32 lb.

### IMPERIAL MEASURE.

100 Imperial Gallons are equal to, in

France and the  
other countries  
which have  
adopted the Me-  
trical System .

	454·3389	Litres (or Kans, Kannen, &c.).
Hamburgh . . .	62·7063	Viertel, 20 to 1 Ohm or Awme.
Denmark . . .	470·3	Potter, 232½ to 1 Oxehoved.
Prussia . . .	396·798	Quarts, 60 to 1 Eimer.
Sweden . . .	173·6	Kannor.
Russia . . .	36·9417	Wedro, 18 to 1 Oxhoft.

## 100 Imperial Gallons are equal to, in

Turkey	.	.	86·96	Alme.
Austria	.	.	7·833	Eimer.
Bavaria	.	.	425·	Maaskannen.
Naples	.	.	10·977	Barili of 60 Caraffi.
Leghorn	.	.	9·97	Barili of 20 Fiaschi.
Do.	.	.	13 6612	Barili of Oil.
Genoa	.	.	6·12	Barili.
Spain	.	.	28·10	Cantaros of 8 Azumbres.
Portugal	.	.	27·47	Almudas of Lisbon.
Do.	.	.	17·916	Ditto of Oporto.

## 10 Lasts, or 100 Imperial Quarters, are equal to, in

France and the other countries where the Metri- cal System has been adopted	.	.	290·7813	Hectolitres.
Netherlands	.	.	9·69271	Lasts of 30 Mudden or Hec- tolitres.
Hamburg	.	.	9·19	Lasts of 30 Scheffel of 2 Fass or 4 Himten.
Denmark	.	.	17·42	Lasts of 12 Toenden.
Sweden	.	.	176 357	Tunnor of 36 Kappar.
Prussia	.	.	529·07	Scheffel.
Russia	.	.	138·537	Chetwerts.
Turkey	.	.	824·54	Killows of Constantinople.
Austria	.	.	472·81	Metzen.
Bavaria	.	.	130·77	Schäffel, or 78462 Metzen.
Naples	.	.	523·5	Tomoli.
Leghorn	.	.	397·89	Tuscan Sacchi.
Genoa	.	.	241·7	Mine.
Spain	.	.	525·54	Cadiz Fanegas.
Portugal	.	.	2101	Alqueires of Lisbon.
Do.	.	.	1664	Ditto of Oporto.

## 100 Yards English are equal to, in

France and the  
other countries  
where the Metri-  
cal System has  
been adopted .

	91·4378616	Metres, Ells, &c.
Hamburg . . .	159·58	Ellen.
Denmark . . .	145·67	Ells (Alen).
Sweden . . .	154·00	Ells (Alnar).
Prussia . . .	137·10	Ellen.
Russia . . .	128·57	Arschin.
Turkey . . .	133 $\frac{1}{3}$	Pik.
Austria . . .	117·35	Ellen.
Bavaria . . .	109·769	Ellen of 2 ft. 10 $\frac{1}{4}$ inch.
Naples . . .	34·564	Canne of 10 Palmi.
Leghorn . . .	153·87	Braccia.
Genoa . . .	36·7	Canne of 10 Palmi.
Spain . . .	109·507	Castilian Varas.
Portugal . . .	83·45	Portuguese Varas.

A Bill of Exchange may briefly and concisely be defined as a written order for the payment of a specified sum of money. The essential conditions of a regular and valid Bill of Exchange are that it must state the name of the Drawer, or the party giving the order; the name of the Drawee, or the party on whom the order\* is given; the name of the Payee† or Remitter, or the party in whose favour it is drawn; the sum of money for which it is drawn; the place where and the day on which it is drawn, and the time which it is intended to run, and at the expiration of which it falls due and becomes payable. When the Bill has received the Drawee's acceptance, or written agreement to pay it, the Drawee is called the Acceptor. The party in whose possession the Bill is at any time is called the Holder.

A Foreign Bill is properly one which is payable in a foreign country, in reference, in the first place, to the Drawer of the Bill, and subsequently to any holder of the same. Thus, a

\* Bills are frequently made payable to Order, that is to say, to the order of the Drawer, which order he must therefore give, by either general or special indorsement, when he parts with the Bill.

† In Bills transferred by indorsement from one party to another the last holder of the instrument becomes the Payee.

Bill upon Paris, wherever drawn, is considered in London as a Foreign Bill in all exchange transactions. But a Bill drawn in Paris upon London, though frequently here termed also a Foreign Bill, is correctly called a Bill Receivable by the Holder, and a Bill Payable by the Payer of the same.

The amount of a Foreign Bill is usually expressed in the money of the country in which it is to be paid; but sometimes it is drawn in the money of the country of the Drawer of the Bill; thus, in this kingdom, mercantile Bills for shipments, or for settlements of accounts, and especially those remitted from the country for negotiation or sale in London, are frequently drawn in Sterling money. Such Bills, however, have generally the words "payable as per indorsement" inserted in their tenor, and are, in such a case, paid abroad at the rate of exchange at which they are first negotiated, as stated in the indorsement. Bills in Sterling money on foreign countries without the above indication are generally paid abroad at the short exchange on London of the time being.

A Bill of Exchange is transferred from one party to another by indorsement, which means the signature of the Transferrer on the back of the Bill. This indorsement is of two kinds, Special or General. It is called Special when it is made payable to the order of the Transferree, which order must therefore be given by him when he parts with the Bill. A common form of such indorsement is, for instance, the following:

*Pay to the order of Messrs. Reed and Carter,  
William Jones.*

The indorsement is called General when only the signature of the Transferrer is given, as

*Reed and Carter,*

for the next indorsement to the above;\* the former or special

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\* Each indorser is liable for the payment of the Bill in case the drawee or acceptor does not pay it; but any irregularity, such as the Bill not being presented for payment on the day it is due, or neglect in giving due advice of non-payment, discharges the drawer and all the indorsers from their obligations in respect to the Bill. The omission of an indorsement where the one preceding has been made special has the same effect with respect to the parties to the Bill preceding the said omission. Irregularity of indorsement is also a reason for non-payment of even an accepted Bill, until the said irregularity has been duly remedied. On these and other

indorsement is, however, the safest practice, especially where the Bill is transmitted by post. In foreign indorsements the place and date are likewise often stated, as well as the time when the Bill has been negotiated, and whether the value has actually been received, or has only been received in account. This latter statement is commonly recorded also upon the Bill by the Drawer, together with a direction as to what account it is to be carried, and whether advice of its being drawn is given, or whether it is to be accepted "with or without Advice."

Bills of Exchange are generally drawn in sets of two or more Bills, either of which being paid discharges the debt upon the other two. They must be drawn on a Stamp, if the law of the place so requires it, in order to make them legal documents. The first of a set (when the others are intended to be put in circulation, or sold by one party to another) is commonly sent unindorsed to a correspondent in the place drawn upon, in order that he may get it accepted, and keep it until it is demanded by the holder of one of the other Bills; the address of the party holding the accepted or first Bill being put on the Bill or Bills in circulation, as in this form :

*First with Messrs. Jones and Smith, to whom in case of need.*

The endorsed Second and the accepted First, when wafered or fastened together, become one Bill and have the same validity.

This addition of "in case of need" signifies that should the Draft not be honored in acceptance or in payment, the party thus named is to be applied to for his interference for the honour of his correspondent, and for saving the latter incurring the expenses attending the return of the Bill through the intervening Indorsers.

The periods of time for which Bills are drawn vary, in some measure, according to the usages of different places; but

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legal points various writers of eminence have employed their talents in classifying and expounding the numerous decisions upon these matters in our Courts of Law; to these works on the subject the reader is referred. Among the most convenient works for reference in these matters may be mentioned, 'A Practical Treatise on the Law of Bills of Exchange, Promissory Notes, Bank Notes, &c. &c.,' by Mr. Sergeant Byles (now Mr. Justice Byles, of the Court of Common Pleas).

more commonly they are fixed according to the purposes for which the Bills are drawn.

Bills at sight, or payable on presentation, are generally drawn for reimbursement on account of returned or dishonoured Bills.

Sight Drafts are usually drawn for returns for operations in Bullion and Foreign Stocks.

The Bills between London and the Continent are generally drawn three months' date; those from India or China on London at four months' or six months' sight.

The London

### COURSE OF EXCHANGE,

or the rates of exchange at which Bills on various foreign places are negotiated, is given in the following manner:\*

#### London receives

Austria	.	3 months	Fl. 12·10	for £1 Sterling.
Belgium	}	short and 3 months	Fr. 25·25	,, £1
France				
Switzerland				
Italy, gold				
Denmark	.	3 months	Kr. 18·40	,, £1
Germany	.	,,	M. 20·55	,, £1
Holland		short and 3 months	Fl. 12·3 stivers	,, £1
Italy	.	3 months	Lire 26·20	,, £1

#### and gives

East Indies	.	sight	1s. 4d. for 1 Rupee.
Hong Kong	.	,,	2s. 10d. ,, 1 Dollar.
Shanghai	.	,,	3s. 10d. ,, 1 Tael.
New York	.	,,	48d. ,, 1 U.S. Dollar.
Portugal	.	3 months	42d. ,, 1 Milreis.
Rio de Janeiro	.	sight	15d. ,, 1 Brazilian Milreis.
Russia	.	3 months	25d. ,, 1 Silver Rouble.
Spain	.	,,	41d. ,, 1 Hard Dollar.

The Usance of Bills drawn from France, Geneva, and Malta is 30 days' date; from Germany and Holland 1 month's date; from Spain and Portugal 2 months' date; from Italy 3

\* The exchanges, as given here and in subsequent chapters of this book, vary, of course, from day to day; the prices inserted are only meant to be average prices for the guidance of the reader.

months' date; from New York it is 60 days' sight, and from South America 90 days' sight.\*

A great many Bills are drawn on London "documentary," notably so from New York, at 60 days' sight, and from India and China at 4 months' or 6 months' sight. They are bought by the Banks abroad with the shipping and insurance documents that refer to the transaction against which they are drawn, attached. If the Drawee of such Bills is a Bank, these documents are delivered up by the holder of the Bill on acceptance; in case of the Drawee being a mercantile firm they are frequently held until the Bill is paid, but then the Acceptor has the right of taking up his acceptance under discount generally at 1 per Cent. below the Bank of England rate.

Some of the Bills drawn from abroad—notably from China and India—are on Continental or American houses, but accepted in pounds Sterling and payable in London. Such bills, called *domiciled*, are not discountable at the Bank of England, and are taken in the open market only at a rate above that for ordinary Bills.

The Days of Grace in Great Britain are three. Bills are not presented for payment until the 3rd day, except this falls on a Sunday or a Christmas Day or Good Friday, when the Bill is reckoned due the day before. No grace is allowed on Bills *on demand*, nor does the Bank of England take any days of grace on the Bank Post Bills. Bills accepted as payable on a certain day are not allowed any grace.

There are four Bank Holidays in the year, viz.:

Easter Monday.	The First Monday in August.
Whit Monday.	26th December (Boxing Day).

If the 26th of December falls on a Sunday, the following Monday is to be observed as a holiday.

All Bills falling due on any of these days are payable on the following day.

Bills payable in the country are charged a commission of  $\frac{1}{16} - \frac{1}{4}$  per cent.

The days for the negotiation of Foreign Bills of Exchange

\* The term *Usance* means the customary or usual time for which Bills are drawn from the given place upon the place of payment. Double *usance* signifies double that time.

In Bills drawn from London the usual course is to specify the time; and abroad also the practice of drawing Bills at *usance* is being gradually dropped.



are Tuesdays and Thursdays. Bills thus negotiated are delivered the same, and paid for the following day.

Bills on Spain are not negotiable unless their tenor says that they are "payable in Gold or Silver," to which frequently is added, "and not in any paper."

If a Foreign Bill bears already the Bill stamp of the country on which it is drawn an allowance is generally made for same by the buyer.

If the currency of a Foreign Bill does not coincide with that for which the quotation is given in the Course of Exchange the difference of interest is charged or allowed to the seller at a rate based upon the rate of discount of the place where the Bill is payable. Thus, if a Bill on Paris having sixty days to run is sold at the three months' exchange, the seller will charge to the buyer the difference of interest between sixty days and three months, *i.e.* thirty days at the Paris market rate of discount.

Interest is always calculated by taking the exact number of days, and the year at 365 days.

The Brokerage on Bills is 1 per 1000, or 1-10th per Cent. As a general rule, the Brokerage is paid by the Seller alone; but in many cases the same is charged also to the Buyer.

Payments are generally made by cheques. They are usually cashed through the Clearing House, which is composed of the following banks and bankers:

Bank of England.	Metropolitan and Birmingham Bank, Lim.
Capital and Counties Bank, Lim.	National Bank, Lim.
City Bank, Lim.	National Provincial Bank of England, Lim.
Consolidated Bank, Lim.	Parr's Banking Company and Alliance Bank, Lim.
Glyn, Mills, Currie & Co.	Prescott, Dimsdale, Cave, Tugwell & Co., Lim.
Imperial Bank, Lim.	Union Bank of London, Lim.
Lloyds Bank, Lim.	Williams, Deacon, and Manchester and Salford Bank, Lim.
London and County Banking Co., Lim.	
London and Midland Bank, Lim.	Barclay, Bevan, Tritton, Ransom, Bouverie & Co.
London and South Western Bank, Lim.	Brown, Janson & Co.
London and Westminster Bank, Lim.	Robarts, Lubbock & Co.
Ditto (Southwark Branch).	Smith, Payne and Smiths.
London Joint Stock Bank, Lim.	

Open cheques are payable to bearer ; cheques crossed " and company " or bearing two parallel transverse lines can only be collected through a banker ; cheques bearing across their faces the name of a banker are deemed crossed " specially," and are payable only to the banker on whom they are crossed, or to his agent for collection.

If a Bill is unpaid it must be " noted " the day it falls due. The protest may be extended any time. To Foreign indorsers an unpaid Bill must be returned the day after it became due.

The charge or noting is 1s. 6d. if the Drawer resides in the City of London. On protests there is a stamp duty of 1s., if the amount of the Bill is £100 or more, and of the ordinary Bill stamp, if the amount of the Bill is less than £100.

The charges for protest, including stamps, are generally as follows :

If the bill amounts up to	£20	5s. 6d.
„ from 20 to	100	6s. 6d.
„ 100 to	500	7s. 6d.
„ 500 to	2000	10s.
„ 2000 to	3000	11s.

And then 1s. for every £1000 or part thereof.

All Bills of Exchange which are drawn, negotiated, or payable in the United Kingdom, are subject to the following Bill Stamp.

		<i>Duty</i>		
		£	s.	d.
Bills on demand . . . . .		0	0	1
Not exceeding £5 . . . . .		0	0	1
Exceeding £5 and not exceeding	£10	0	0	2
„ 10	25	0	0	3
„ 25	50	0	0	6
„ 50	75	0	0	9
„ 75	100	0	1	0
„ 100	200	0	2	0
And then for every £100, and				
also for any fractional part of £100		0	1	0

*Exemptions.*—Bills issued by the Bank of England or by the Bank of Ireland, Drafts or Orders drawn by any banker

in the United Kingdom upon any other banker in the United Kingdom not payable to bearer or to order, and only used for the purpose of settling any account between such bankers, Letters of Credit, and Bills drawn by Government departments.

Bills in Foreign money are stamped at the exchange at which they are negotiated.

Bills drawn within the United Kingdom must be drawn on paper with an impressed stamp, on Bills drawn out of the United Kingdom the "ad valorem" duties are to be denoted by adhesive stamps, to be affixed before such Bills are endorsed, negotiated, or transferred in the United Kingdom. Such Bills may, therefore, be accepted previously to being stamped. When a Bill of Exchange is drawn in a set, and one of the set is duly stamped the other or others of the set are exempt from duty, unless issued or negotiated apart from the duly stamped Bill.

NOTE.—It may be observed that the price of Bills depends upon the supply and demand, in the same manner as that of tea, cotton, or any other article of merchandise; and it must necessarily be the case that when Bills are abundant the price will be low, and when they are scarce the price will be high. The terms Better and Worse, as applied to rates of exchange, are convertible according to their application, and they must not be confounded with those of higher and lower prices. Thus, for instance, 25 francs 50 centimes per £ sterling gives a better rate for drawing, and a worse rate for remitting, than 25 francs 70 centimes, the former being the dearer and therefore the better rate for selling than the latter, which is the cheaper and therefore the better rate for buying. When the price of Bills is above par, the exchange is said to be favorable, and when below par to be unfavorable, to the place that gives the *fixed* or certain price, *i. e.* the place that *receives* the variable price.

## GIBRALTAR.

## MONEYS.

16 Quartos	=	1 Real.
12 Reals	=	1 Dollar.

The Dollar of account and exchange is the *Peso Duro*, or Spanish Hard Dollar, which by Order in Council of 14 September, 1838, was made a lawful tender in all the British Colonies in which it is used, at the rate of 50*d.* Sterling.

The Spanish Doubloon is, by the same order, valued at 64 Shillings Sterling; but in Gibraltar, as throughout Spain, it is valued at 16 Dollars = 66*s.* 8*d.* Sterling. In Gibraltar it forms the principal money of payment.

If bills are drawn in Sterling payment can be enforced in English money, but there is always an exchange loss on such bills.

## WEIGHTS AND MEASURES.

The weights and measures are those of Great Britain. The old weights and measures of Spain continue also in use. Wine is sold by the Cadiz Pipe; 5 Pipes of Cadiz are equal to 116 Old English Wine Gallons. The Wine Gallon of Gibraltar is equal to 1.094 Old English Wine Gallon; 102 Gibraltar Gallons equal 91.142 Imperial Gallons.

## COURSE OF EXCHANGE.

Gibraltar *receives* from

London 90 days' date	49 $\frac{3}{4}$ Pence	for	1 Dollar.
Genoa	„	„	1 Dollar.
Marseilles	„	„	1 Dollar.

In the exchange business between Gibraltar and Cadiz, Malaga, Madrid, or Seville, the difference of price is a percentage Premium or Discount.

## EXAMPLE.

To exchange H. D. 4400 10 r 8 q into Sterling at 49*d.*

£	s.	d.	
4400	17	6	amount at 20 <i>s.</i>
<hr/>			
880	3	6	„ 4 <i>s.</i>
18	6	9	„ 1 <i>d.</i>
<hr/>			
£898	10	3	Sterling.
<hr/>			

## M A L T A.

## MONEYS.

1 Pound	=	20 Shillings.
1 Shilling	=	12 Pence.
Formerly.		
20 Grani	=	1 Tari.
12 Tari	=	1 Scudo.
30 Tari	=	1 Pezza, Oncia, or Sicilian Dollar.
$2\frac{1}{2}$ Scudi	=	1 Pezza, Oncia, or Sicilian Dollar.

The value of the Maltese Pezza was derived from that of the old Sicilian Scudo of 12 Tari, which is  $49\frac{1}{2}d.$  Sterling, but for general purposes of business it was valued at  $50d.$  Sterling, and the Maltese Scudo at  $20d.$  Sterling. The following proportionate values were officially fixed by the British Government:

The £ Sterling	=	$12\frac{1}{2}$ Scudi.
The Shilling Sterling	=	$7\frac{1}{2}$ Tari.
The Spanish Doubloon or Quadrupel	=	40 Scudi.
The Piece of Five Francs	=	2 Scudi $5\frac{2}{3}$ Tari.

## WEIGHTS AND MEASURES.

The Cantaro of 100 Rottoli	=	175 lb. Avoirdupois.
64 Rottoli	=	1 Cwt.
The Barile of Wine	=	9.35 Imperial Gallons.
The Caffiso of Oil	=	4.375 Imperial Gallons.
The Salma of Corn	=	7.9375 Imperial Bushels.
The Piede	=	$11\frac{1}{8}$ English Inches.
The Canna of 8 Palmi	=	82.20 English Inches.
$3\frac{1}{2}$ Palmi	=	1 Yard.
$2\frac{2}{7}$ Yards	=	1 Canna (Ell).

## AUSTRIA.

## VIENNA AND TRIESTE.

## MONEYS.

100 Kreuzer or Neukreuzer = 1 Florin or Gulden Österreichische Währung or Austrian Currency.

On the 24th January, 1857, Austria concluded with Prussia and other German States a Monetary Convention, by which it was agreed that 30 North German Standard Thaler,  $52\frac{1}{2}$  South German Standard Florins or Gulden, and 45 Austrian Standard Florins or Gulden, respectively, should be coined from the Mint Pound of 500 Grammes fine Silver, and 50 Gold Crowns from the Mint Pound fine Gold. The Austrian Silver Coins under this Convention were to be made 900 fine, in pieces of 3 Austrian Gulden or Florins = 2 Thalers or  $3\frac{1}{2}$  Florins or Gulden of the South German Standard;  $1\frac{1}{2}$  Austrian Gulden = 1 Thaler or  $1\frac{3}{4}$  South German Gulden; 2 Austrian Florins =  $1\frac{1}{3}$  Thaler or  $2\frac{1}{3}$  South German Gulden, and 1 Austrian Gulden =  $\frac{2}{3}$  Thaler or  $1\frac{1}{6}$  South German Gulden. The Silver Florin thus weighed 12·34568 Grammes 900 fine, containing  $11\frac{1}{9}$  Grammes fine silver.

Previously to 1857 Austria had reckoned in the so-called *Convention* or 20-Gulden Standard, which directed one Mark of 233·8555 Grammes, or 3609 Grains Troy fine Silver, to be coined into 20 Gulden or Florins. As this gives 42·7615 Gulden to the Mint Pound, the new 45-Gulden Standard is by 5·235 per cent. lighter than the old *Convention* Standard. An Imperial decree has declared the new Standard 5 per cent. lighter than the old, and the terms of conversion of the old moneys into the new Standard are fixed at:

100 Florins <i>Convention</i> Standard equal to 105 Florins new Austrian Standard (Österreichische Währung).	
100 Florins so-called Wiener Währung (Vienna <i>Paper</i> Standard).	equal to 42 Florins ditto.
100 Florins Reichswährung (Imperial or 24-Gulden Standard — 24 Florins or Gulden to the Mark of 3609 Grains Troy fine Silver)	. „ 87 $\frac{1}{2}$ „
100 Florins Polish Standard	. „ 25 „

The old 6-Kreuzer pieces are current for 10-Neukreuzer pieces.

The Gold Crowns and Half-Crowns, weighing respectively 11.111 and 5.556 Grammes 900 fine, have a calculated value of 13 Florins 95 Kreuzer the former, and 6 Florins 97½ Kreuzer the latter. These are now no longer coined, and have almost altogether disappeared from circulation.

The Austrian Ducat is 986 1-9ths fine, and weighs 3.4906 Grammes, or 53.8684 Grains Troy. The value stands to that of the Gold Crown as 1 to 2.9052.

Since 1866 Austria has officially seceded from the Monetary Convention of 1857, and, in conjunction with Hungary, she was coining from 1870 to 1890,

8-Florin pieces, 77½ of which weigh 1 lb. 900 fine (= 20 Francs), and

4-Florin pieces of half that value (= 10 Francs).

By a decree of November 6th, 1870, the 8-Florin pieces were made legal tender for Fl. 8.10 and the 4-Florin pieces for Fl. 4.05. This introduced a theoretical "double standard" into Austria on the French basis of 15½ to 1. These Gold Coins, however, as well as the old Gold Coins—the Ducat, the Crown, and the Sovrano (= 1.0198 Crown)—were practically "commercial money." The Standard of Austria remained nominally the Silver Florin of the Convention of 1857; in reality it was a paper money, in which both the Gold and the Silver Coins were quoted, the Gold Coins per piece, the Silver Florins per Fl. 100.

Owing to the fall in the value of silver, the premium (in paper money) which had so long existed on the Silver Florin disappeared.

When silver receded still further, it actually happened that for some years the paper Florin became more valuable than the silver it represented. This was possible, because, since March, 1879, the Austrian and Hungarian Mints had ceased to coin silver for private account. This step was taken preparatory to a reorganisation of the Austrian monetary system. In 1892 this reform was finally decided upon. The new monetary unit is to be the "Krone" or Crown, equal to two Florins. This "Krone" standard is to be based on "gold," for which purpose the existing Florin was declared equal to 2 Francs 10 Centimes. The Krone is divided into 100 Heller. One Kilo fine gold will be coined into 3280 Crowns, making 24.02 Crowns equal to £1, and 100 Crowns

equal to 85·06 Marks or 105 Francs or 50·42 Dutch Florins. The ratio between the old silver and the new gold standard is 1 : 18·22.

Pieces of 20 and 10 Crowns will be issued, 900 fine, weighing 6·775 and 3·387 Grammes respectively. Silver will be fractional currency only, the old Florins passing as 2 Crowns.

The Austro-Hungarian Bank is bound to accept gold bars of a minimum weight of 2½ Kilogrammes and a minimum fineness of 900, and pays 1638 Florins or 3276 Crowns for the Kilo fine.

Furthermore, the Bank buys foreign coins at the following prices :

	Per Kilo.	Fine.
Egyptian Sovereigns	Fl. 1433·0862	<i>i. e.</i> as 874·9
Argentinos	„ 1473·381	<i>i. e.</i> „ 899½
Austrian Ducats	„ 1613·0205	<i>i. e.</i> „ 984¾
Eagles and French, Roumanian, Servian, Austrian, Hunga- rian, Monaco 20 Fr. Pieces	„ 1473·381	<i>i. e.</i> „ 899½
Dutch 10 Florin Pieces	„ 1474·0362	<i>i. e.</i> „ 899·9
Japanese Yens	„ 1474·0362	<i>i. e.</i> „ 899·9
Swedish and Danish Crowns	„ 1473·381	<i>i. e.</i> „ 899·5
Turkish Sovereigns	„ 1498·77	<i>i. e.</i> „ 915
German 20 Mark Pieces	„ 1473·38	<i>i. e.</i> „ 899·5
Russian Coins	„ 1473·8724	<i>i. e.</i> „ 899·8
Old Imperials	„ 1501·227	<i>i. e.</i> „ 916·5
Sovereigns	„ 1501·227	<i>i. e.</i> „ 916·5

Austria coins in Silver a “commercial money” called the “Levant Dollar” or “Maria Theresia Thaler,” which weighs 28·0644 Grammes, 833 1-3rd fine. This coin has a large circulation on the eastern shores of the Mediterranean and in Africa.

Bills drawn, accepted, or payable in Austria, if their currency does not exceed six months, are subject to the following Bill Stamp.

On amounts up to F .	75 =	Fl. 0·05
From Fl. 75	„ 150 =	„ 0·10
„ 150	„ 300 =	„ 0·20
„ 300	„ 450 =	„ 0·30
„ 450	„ 600 =	„ 0·40
„ 600	„ 750 =	„ 0·50
„ 750	„ 900 =	„ 0·60
„ 900	„ 1050 =	„ 0·70
„ 1050	„ 1200 =	„ 0·80
„ 1200	„ 1350 =	„ 0·90



From Fl.	1350	to Fl.	1500	=	„	1·00
„	1500	„	3000	=	„	2·00
„	3000	„	4500	=	„	3·00

and then for every Fl. 1500 or fraction, Fl. 1.

If the currency of a Bill exceeds six months, the Stamp Duty is as follows :

On amounts up to Fl.	20	=	to Fl.	0·07		
From Fl.	20	„	40	=	„	0·13
„	40	„	60	=	„	0·19
„	60	„	100	=	„	0·32
„	100	„	200	=	„	0·63
„	200	„	300	=	„	0·94
„	300	„	400	=	„	1·25
„	400	„	800	=	„	2·50
„	800	„	1200	=	„	3·75
„	1200	„	1600	=	„	5·00
„	1600	„	2000	=	„	6·25
„	2000	„	2400	=	„	7·50
„	2400	„	3200	=	„	10·00
„	3200	„	4000	=	„	12·50
„	4000	„	4800	=	„	15·00
„	4800	„	5600	=	„	17·50
„	5600	„	6400	=	„	20·00
„	6400	„	7200	=	„	22·50
„	7200	„	8000	=	„	25·00
„	8000	„	8400	=	„	26·25

and then for every Fl. 400 or fraction, Fl. 1·25.

Bills circulating in Austria by way of indorsement only, pay a stamp duty of 2 Kr. for every Fl. 100.

Cheques pay 2 Kr., delegations of less than eight days' currency, 5 Kr. Foreign money is converted as follows:—1 Fl. = 2 Marks, =  $\frac{1}{2}$  Dollar, =  $\frac{1}{10}$  Sovereign, = 1·20 Dutch Fl., 4 Fl. = 10 Francs.

If Bills are drawn in sets, every Bill in circulation is subject to the full stamp. The first, however, of a Bill drawn in Austria upon a foreign country is exempt from the duty, if the words "only for acceptance" are written upon it, and if its back is crossed so as to prevent its being indorsed.\*

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\* In Hungary the stamps for three months' Bills is  $5/60/00$ , but a Bill that bears already the Austrian stamp pays in Hungary only the difference between this and the Hungarian duty.

## WEIGHTS AND MEASURES.

By a law of 23rd July, 1871, the French Weights and Measures have been introduced into Austria since January, 1876. The names adopted are the same as in Germany, which see.

The Seamile, or Geographical Mile (the 60th part of a degree of the Equator), remains in use as a nautical measure.

The ship's Ton ("Aichungs = Tonne"), equal to the English register Ton, remains as before.

The "horse power" is fixed at 75 Kilogrammes-meter, *i. e.* 75 Kilogrammes raised 1 Meter per second.

## FORMER AUSTRIAN WEIGHTS AND MEASURES.

*Weights.*—The old Vienna Pfund has 32 Loth of 4 Quentchen of 4 Pfennige each, and is equal to 560·012 Grammes or 1·2347 lb. Avoirdupois. The Stein or Stone is 20 Pfund, the Centner 5 Stein or 100 Pfund. The Vienna Mark is equal to 280·644 Grammes or 4331·019 Grains Troy.

100 Vienna Pfund	=	123·47	lb. Avoirdupois.
100 lb. Avoirdupois	=	80·991	Vienna Pfund.
112 „ „	=	90·71	„
100 Vienna Marks	=	28·0644	Kilogrammes, or 902·29 Troy Oz.

The Ducat, as Gold weight, is divided into 60 Grains. It weighs 3·4906 Grammes, or 53·86839 Grains Troy. The Ducat Grain weighs, accordingly, 5·8177 Centigrammes, or 0·897806 Grain Troy. The Vienna Mark has 4824 Ducat Grains; the Vienna-Cologne Mark 4020. Five Vienna Marks are accordingly equal to 6 Vienna-Cologne Marks.

*Dry Measures.*—The Vienna Metzen of 16 Mühlmassel of 4 Futtermassel of 2 Becher each, contains 1·9471 Vienna Cubic Feet, equal to 61·49945 Litres. It is divided into Halves, Quarters, and Eighths.

100 Vienna Metzen	=	21·15	Imp. Quarters.
100 Imp. Quarters	=	472·81	Vienna Metzen.

*Liquid Measures.*—The Máss or Kanne has 4 Seidel, and is equal to 1·415015 Litre, or 0·311445 Imp. Gallon. The

Eimer of Wine is 41 Vienna Máss, and contains 58·0156 Litres, or 12·7693 Imp. Gallons.

100 Vienna Máss	=	31·144	Imp. Gallons.
10 Eimer	=	127·69	„
100 Imp. Gallons	=	7·83	Vienna Eimer.

*Long Measure.*—The Vienna Elle is 2·465 Vienna Feet, and is equal to 0·77919 Metre or 30·6775 English Inches; 100 Feet are equal to 31·61 Metres or 103·71 English Feet. The Klafter is 6 Feet, equal to 1·8966138 Metre. An Austrian Mile is 4000 Klafter, or 7586·46 Metres, or nearly  $4\frac{3}{4}$  English Miles (4·71412).

100 Vienna Ellen	=	85·215	English Yards.
100 English Yards	=	117·35	Vienna Ellen.

The Weights of Trieste are the same as those of Vienna; they are generally called *Funti weight*, from the German word *Pfund*.

Corn is sold by the Stajo or Staro, which contains 82·61 Litres.

100 Stari of Trieste	=	28·41	Imp. Quarters.
100 Imp. Quarters	=	351·988	Stari.

Wine is sold by the old Trieste Orna (now more commonly called Barile) of 36 old Bocali, which contains 65·66 Litres, or 14·45 Imperial Gallons; 100 Imperial Gallons equal to 6·92 Orne. Oil is commonly sold by weight. Oil of the inferior sort is sold by the Orna of 107 Funti = 60 Kilogrammes, which render about  $14\frac{3}{8}$  Imperial Gallons, making  $17\frac{1}{8}$  Orne equal to the Tun of 252 old Gallons, or about 210 Imperial Gallons. The Orna of the finer sort is only 103 Funti, which render about  $14\frac{1}{8}$  Imperial Gallons, making  $17\frac{5}{8}$  Orne equal to a Tun.

For the measurement of Woollen Goods, the Braccio is reckoned as  $\frac{3}{4}$ ths of an English Yard. 100 Braccia are equal to 67·67 Metres, or 74·01 English Yards. For Silk Goods, 100 Braccia are equal to 64·20 Metres, or 70·21 English Yards.

The Money, Weights, and Measures of Fiume are the same as those of Vienna. However, the Barile of Oil is reckoned to

weigh 110 Vienna Pounds, though it is invoiced for exportation at 107 of these Pounds, the same as the Orna of common Oil at Trieste.

The Moneys, Weights and Measures of Ragusa are the same as those of Vienna. The Turkish Occa or Oka, here reckoned to be equal to  $2\frac{1}{2}$  lbs. of Vienna, making 100 Oke equal to  $308\frac{2}{3}$  lbs. Avoirdupois, is employed in weighing Turkish goods. The Venetian Libbra, more particularly the Libbra grossa, is also used for country produce.

### COURSE OF EXCHANGE.

The quotations are in Austrian currency.

	Vienna gives to	
London, sight . . .	Fl. 119·50*	for £10 sterling.
Amsterdam, sight . . .	„ 99·05	„ Fl. 100 (Netherland.)
Brussels . . .	„ 47·50	„ Fr. 100.
Germany . . .	„ 58·70	„ M. 100.
Italy . . .	„ 45 70	„ Lire 100 ( <i>paper</i> ).
Paris . . .	„ 47·60	„ Fr. 100.
Petersburg. . .	„ 119·	„ Ro. 100.
Zurich . . .	„ 45·50	„ Fr. 100.

There are no days of grace. Bills due on a Sunday or a Holiday are payable the following day.

Protests for non-payment of a Bill of Exchange must be levied, at the latest, the second working day after the Bill is due. Notice of non-payment has to be sent to the indorser or to the drawer not later than two days after the Bill has been protested.

#### EXAMPLE.

To exchange £456 17 8 Sterling into Florins at 12·00.

$$\begin{array}{r}
 \text{£} \quad \text{s.} \quad \text{d.} \qquad \qquad \qquad \text{£} \\
 456 \quad 17 \quad 8 \quad = \quad 456\cdot8833 \\
 \text{Florins.} \\
 456\cdot8833 \\
 \qquad \qquad \qquad 12 \\
 \hline
 \end{array}$$

Flor. 5482·60 Kreuzer.

\* We refer to note on page 19.

## REVERSE.

To exchange florins 5482 60 into Sterling at 12.

Fl.	Kr.	£	Fl.	Kr.
12	—	1	—	5482·60

£  
12 ) 5482 60

£456 17 8 Sterling.

## EXERCISES.

- Ex. 1. £1000 Sterling into Florins at 10·36 $\frac{1}{4}$ .
2. £216 12 6 into Florins at 11·20.
3. Flor. 4484 20 into Sterling at 11·10.
4. Flor. 5000 into Sterling at 10·80.

## PRODUCTS.

- Ex. 1. Flor. 10362 50 Neukr.
2. Flor. 2462 20 Neukr.
3. £403 19 8.
4. £462 19 3.

## BELGIUM.

## BRUSSELS AND ANTWERP.

## MONEYS.

100 Centimes = 1 Franc.

Belgium belongs to the Latin Monetary Union, and the value of the Belgian Money in Francs is the same as that of France, and the Par of Exchange on London is consequently also the same.\* (See France.)

\* The Short Exchange on London in Antwerp and Brussels is generally 2 $\frac{1}{2}$ —5 centimes higher than that in Paris.

The Stamp Duty on Bills drawn or payable in Belgium is as follows :

On amounts up to	Fr. 200	Fr. 0·10
Beyond Fr. 200 up to	„ 500	„ 0·25
„ „ 500 „ „	1000	„ 0·50
„ „ 1000 „ „	2000	„ 1·00

and then for every Fr. 1000 or fraction thereof, Fr. 0·50.

Bills circulating in Belgium only by indorsement pay the following duty :

On amounts up to	Fr. 200	Fr. 0·10
Beyond Fr. 200 to Fr. 500	„ 500	„ 0·13
„ „ 500 „ „	1000	„ 0·25

and then for every Fr. 1000 or fraction „ 0·25

The Belgian National Bank buys gold on the same terms as the Bank of France.

#### WEIGHTS AND MEASURES.

The Standards of these are the same as those of France and the Netherlands, but with some difference in the denominations ; as, for instance, Livre for Kilogramme or Pond ; Litron for Litre or Kan, and Aune for Mètre or El.

In Antwerp a few of the old weights and measures are still occasionally used in certain transactions ; for instance, the old Commercial Pound (212·6875 Pounds=100 Kilogrammes) ; the old Apothecaries' Pound (340·5 = 100 Kilogrammes) ; the Marc, for Gold and Silver (413·625 = 100 Kilogrammes) ; the old Pot (72·75 Pots = 100 Litres) ; the old foot measure (328·09 ft. = 100 Mètres) ; the old Aune (143·875 = 100 Mètres). In the grain trade of Antwerp the Last of Corn is reckoned at 30 Hectolitres.

#### COURSE OF EXCHANGE.

Antwerp *gives* to

London, short or 3 months,	Fr. 25·20	for £1 Sterling.
Amsterdam } Rotterdam }	„ „ 211·50	„ Fl. 100 (Netherlands)
Germany	„ „ 123	„ M. 100.
Italy	„ „ 98	„ Lire 100.
Lisbon	„ „ 4·20	„ Milr. 1.
Madrid	„ „ 4·25	„ Peso 1.
Paris	„ „ 99·50	„ Fr. 100.
St. Petersburg	„ „ 250	„ Ro. 100.

Amsterdam and Rotterdam are sometimes quoted at a small percentage premium or discount on the Par of 400 Francs for 189 Florins, and Paris on the Par of 100 Francs in Belgium for 100 Francs in Paris.

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## FRANCE.

### MONEYS.

1 Franc = 100 Centimes.

The Franc, established as the monetary integer or unit in France by the law of the 6th May, 1799, is also divided into 10 decimes; but this division is not much used.

Before the adoption of the present monetary system the money of account in France was in livres (tournois), sous, and deniers. The livre was divided into 20 sous of 12 deniers each, and the legal rate for the conversion of livres into francs was for 81 livres to be equal to 80 francs; but the ancient money of France has ceased to have currency since the 1st October, 1834.

*Coins.*—The gold coins of France are pieces of 20 francs, called Napoleons, Louis, &c., and pieces of 100, 50, 10, and 5 francs each. A piece of 25 francs was also introduced a few years before the collapse of the late Empire.

The silver coins are pieces of 5 francs (often called silver Napoleons) and double franc, one franc, half franc, and fifth-franc pieces. They were formerly coined 900 fine, but under the Monetary Convention, concluded in 1865 between France, Belgium, Switzerland, and Italy, to which Greece and the late States of the Church, now incorporated in Italy, acceded afterwards, the fineness of the pieces under five francs has been reduced to 835, and as the weight of the pieces remains the same as formerly, their nominal value is about  $7\frac{1}{2}$  per cent. higher than their real value. Of the French silver coins, the 5-francs piece alone continues to be coined 900 fine.

The value of the French gold coins in sterling, according

to their full mintage weights and purities, is severally as follows:

		<i>s.</i>	<i>d.</i>	Weighing grammes.
100 Francs	900 fine	79	3·4	32·25806
50 Francs	„	39	7·8	16·12903
20 Francs	„	15	10·32	6·45161
10 Francs	„	7	11·16	3·2258
5 Francs	„	3	11·58	1·6129

155 20-francs Gold pieces, or 40 5-francs Silver pieces, weigh 1 kilogramme.

The Remedy is  $\frac{1}{10000}$ th for weight and  $\frac{2}{10000}$ ths for fineness for gold pieces of 100 francs and 50 francs;  $\frac{2}{10000}$ ths both for weight and for fineness for 20-fr. and 10-fr. pieces; for 5-fr. gold pieces,  $\frac{3}{10000}$ ths for weight and  $\frac{2}{10000}$ ths for fineness; for silver dollars of 5 francs the same; for double-francs and francs,  $\frac{5}{10000}$ ths for weight and  $\frac{3}{10000}$ ths for fineness.

The new copper or bronze coins are pieces of 10, 5, and 2 centimes and 1 centime, which weigh the corresponding number of grains.

France and the countries of the Latin Union had adopted the “Double Standard” or “Double Valuation.”

Up to the year 1867, all the silver coins of the Franc system were legal tender; since 1867, the 5-franc pieces alone continued to be legal tender in silver, but as their coinage was not restricted, the Double Standard remained still in force. Out of 1 kilogramme 900 fine, there were coined by law 3100 francs in gold and 200 francs in silver. The legal proportion of silver to gold was therefore 200:3100, or 1:15½, equal to a quotation in London of 60·83841d. per oz. standard.

The depreciation, however, of the silver, which followed the adoption of the gold standard by Germany, brought this legal relation of 1:15½ out of all proportion to the real relative value of the two precious metals, and in order to guard against the threatening mass export of gold and its replacement by silver, the French Government, in conjunction with the other States of the Latin Union, at first in 1873 limited the coinage of silver 5-franc pieces and then in 1878 suspended it entirely.



The present position of the French Monetary System is, therefore, a gold standard, conjointly with the circulation as legal tender of the existing silver five-franc pieces, an arrangement which has been styled the *étalon boiteux*, or limping standard, and which gives to the silver five-franc pieces in all the markets of the world a value much higher than that of the silver it contains (at present by about 35 per cent.). The amount of these silver five-franc pieces still existing is very large, for out of an estimated circulation in the States of the Latin Union of 8000 to 10,000 millions of francs not less than 2500 millions—according to some as much as 3500 millions—are supposed to be in silver (of which 2000 millions are in five-franc pieces, and 500 millions in subsidiary coins). Such a state of things might have produced before now a serious derangement of the Foreign Exchanges in France if the balance of trade had for a considerable time been much against her; but, as this has hitherto not been the case, the exchanges in France and in most of the States of the Latin Union have almost always adjusted themselves as if the monetary system, on which they are based, had really been the single gold valuation.

The Mint charge at Paris and Bordeaux is fr. 6·70 per kilogramme gold, 900 fine, which brings the Mint price of gold to fr. 3100—6·70=fr. 3093·30 per kilogramme, 900 fine, or fr. 3437 per kilo fine. Besides buying gold bars (900 fine) at that price, the Mint accepts also foreign gold coins on that basis, taking American eagles as 900, German twenty-mark pieces as 899½, old imperials as 916, sovereigns as 916 fine, Yens as 899½ fine, Dutch as 899 fine, Alfonsos as 897 fine, and new Turkish coins as 915 fine. Austrian gold pieces of eight florins and the new Russian coins pass the same as Napoleons.

#### WEIGHTS AND MEASURES.

The system of weights and measures now established throughout France is known by the name of the *Système Métrique*, or metrical system, being based upon the length of the *mètre*; it has the following for its principal integers, to wit:

The *Mètre*, a measure of length equal to the estimated ten-millionth part of the terrestrial meridian or distance from the North Pole to the Equator.\*

\* This length was deduced from the measurement of an arc of the

The *Are*, a measure of surface for land, equal to a square of ten mètres on each side.

The *Stère*, a measure of solidity for firewood, equal to the cube of a mètre.

The *Litre*, a measure of capacity for both liquids and dry goods, equal to the cube of the tenth part of a mètre.

The *Gramme*, which is the weight of a measure of pure water, at the temperature of melting ice, equal to the cube of the hundredth part of a mètre.

The multiples and parts of these integers are upon the decimal system, the multiples being denoted by prefixes derived from the Greek, the parts by similar prefixes derived from the Latin; thus—

deca	signifies	10 times	-	deci	the 10th part.
hecto	„	100 times	-	centi	the 100th part.
kilo	„	1000 times	-	milli	the 1000th part.
myria	„	10,000 times			

The words double and demi are permitted to be used to denote the double or the half of the several integers.

#### REDUCTIONS OF FRENCH TO ENGLISH WEIGHTS AND MEASURES.

*Weights.*—The weight of the Kilogramme (1000 grammes) has been generally reckoned at 15434 grains troy, but this is slightly above the real weight of the French standard kilogramme; for the most careful experiments made by Professor Miller have shown the weight of the English pound troy from a correct model to be equal to 373·2419465 grammes, making the kilogramme equal to 15432·349 grains troy, or 2·204621 lb. avoirdupois. Hence—

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meridian comprised between Dunkirk and Barcelona, by which, after the requisite reductions, the length of the terrestrial quadrant was estimated to be equal to 5,130,740 toises anciennes de Paris, making the mètre equal to 3 pieds 11,296 lignes, or 443,296 lignes of the measures previously in use as the French standard of length. The toise = 6 pieds du Roi = 864 lignes, is accordingly equal to 1·94903659 mètre.

100 Kilogrammes*	= 267·9227 lb. or 3215·0727 oz. troy.
	= 220·4621 lb. or 1·9684116 cwt. a.d.p.
100 oz. troy	= 3·110349552 kilogrammes.
100 lb. troy	= 37·324194624     ,,
100 lb. avoirdupois	= 45·3592643     ,,
100 cwt.     ,,	= 5080·2376016     ,,

The new tonneau métrique, or ship's ton weight, is 1000 kilogrammes = 2204·4631 lb. avoirdupois.

\* The weight of the kilogramme received in 1816 from the Paris Mint is stated to have been 15,433 grains; the weights of other models of this standard were generally found to be in excess, so as to give an average of 15,434 grains. Experience, however, has shown this to be an over-estimation. To account for this difference, it must be noticed that by the laws of France exact conformity with the standards is not required, as it is in England; a *tolérance*, remedy, or deviation, *en plus*, or in excess from the exact standards, being allowed as follows:

<i>Iron Weights of.</i>	<i>Tolérance.</i>	
50 kilogrammes	20 grammes	= 308·66 grains troy.
20     ,,	10     ,,	= 154·33     ,,
10     ,,	6     ,,	= 92·598     ,,
5     ,,	4     ,,	= 61·732     ,,
2     ,,	2     ,,	= 30·866     ,,
1     ,,	1 gramme	= 15·433     ,,
<i>Copper or Brass Weights of</i>		
20 kilogrammes	1·50     ,,	= 23·1495     ,,
10     ,,	·80     ,,	= 12·3464     ,,
5     ,,	·50     ,,	= 7·7165     ,,
2     ,,	·25     ,,	= 3·85825     ,,
1     ,,	·15     ,,	= 2·31495     ,,

The latitude for deviation thus given evidently renders it useless, for any purpose requiring much exactness of calculation, to have recourse to the models used in commerce of the standard kilogramme, some of which may be found weighing 15,435 grains troy, and yet remain still within the legal limits. For purposes, therefore, in which much precision is required, as in the weighing of bullion, particularly gold, it is best to reckon the kilogramme at 15,432 grains, or 32 oz. 3 dwts. troy, as is done at the Bank of England; although, on the other hand, in converting English into French weights, it is safest to allow 2 or 3 grains more to the kilogramme (except for weighings at the French Mint), in order to meet the difficulty of the *tolérance*.

100 kilogrammes are commonly styled 1 quintal métrique. The demi-quintal métrique of 50 kilogrammes is therefore equal to 110·23105 lb. avoirdupois.

*Medicinal Weights.*—The Gramme being adopted as the basis of these weights, the medicinal ounce is reckoned equal to 8 gros or drachmes of 80 grains or 4 grammes each. Hence—

1 ounce	=	640 grains	=	32 grammes	=	493·856 grs. troy.
1 drachme	=	80 grains	=	4 „	=	61·732 „
1 grain	=		=	0·05 „	=	0·77165 „
(1 Gramme = 15·433 grains troy.)						

The old Medicinal Weight was the Livre of 16 ounces of 8 drachmes of 3 scruples of 24 grains each = 128 drachmes, or 384 scruples, or 9216 grains.

*Measures of Capacity.*—The contents of the Litre are equal to 61·028 cubic inches, or 1·7608 imperial pint.

100 Litres	=	22·01	Imperial gallons.
100 Imp. gallons	=	454·3389	Litres.
100 Hectolitres	=	275·125	Imp. bushels, or 34·390625 Imperial quarters.
100 Imp. bushels	=	36·347115	Hectolitres.
100 Imp. quarters	=	290·77692	Hectolitres.

*Measures of Length, Surface, and Solidity.*—The exact length of the mètre in English Measure has been determined, by the Royal Society, to be equal to 39·370 English inches, which comes very near M. Pictat's estimate of 39·371 English inches, at which it is commonly reckoned with all requisite accuracy.

100 Mètres	=	328·0916 Feet, or 109·3638 Yards.
100 English inches	=	253·99406 Centimètres.
100 English feet	=	30·4792872 Mètres.
100 English yards	=	91·4378616 Mètres.

The Kilomètre (1000 mètres), which is generally used for itinerary distances, is equal to 1093·639 English yards, or 0·6213858 English mile, making on the reverse 100 English miles equal to 160·930618 kilomètres.\*

The Myriamètre of 10 kilomètres, equal to 6·213858

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\* For general estimations the kilomètre may be reckoned at 5 English furlongs, making 8 kilomètres equal to 5 English miles.

English miles, is likewise used; and so is occasionally also the lieue or league. Of the latter there are several kinds, to wit—

*La lieue commune* (the common league) of 25 to a degree, equal to  $4\cdot444\frac{1}{3}$  kilomètres or 2·761715 English miles.

*La lieue de poste légale* of 2 milles, or 2000 toises, equal to 3·8981 kilomètres or 2·4222 English miles.

*La lieue marine* (nautical mile) of 20 to a degree, equal to 5·5556 kilomètres or 3·45214 English miles.

In measures of surface the square of the mètre and that of the decimètre are to our English measures in most general use—

100 square mètres	= 1076·4414	English sq. feet, or 119·6046 English sq. yards.
100 square decimètres	= 1550·075641	English sq. inches.
100 English square yds.	= 83·60885	Square mètres.
100 English square feet	= 9·28987	Square mètres.
100 English square inches	= 6·4513	Square decimètres.

The Hectare (100 ares) is the measure commonly employed for land. It is equal to 11960·46 English square yards, or 2 acres, 1 rood, and 35 perches English statute measure, making—

100 Hectares	= 247·1169	Acres.
100 Acres	= 40·466678	Hectares.

In measures of solidity (cubic measures) the stère or cubic mètre is equal to 35·31714 English cubic feet, or 1·308042 cubic yard.

100 Cubic decimètres	= 6102·8028	Eng. cubic inches.
100 Cubic centimètres	= 6·1028	Eng. cubic inches.
100 Eng. cubic inches	= 1638·592	Cubic centimètres.

Taking the English equivalent weight of the kilogramme at 15432·349 grains troy, the corresponding English prices per lb. and per cwt. English are, at the following rates of exchange or valuations of the pound sterling, in francs and centimes—

At 1 franc per kilogramme, or 100 francs per quintal métrique—

Exchange.	Per lb. Frs. Cents.	Per lb. Pence.	Per cwt.		
			s.	s.	d.
25 00	4·36	40·641	40	7	$\frac{1}{2}$
25 10	4·34	40·479	40	5	$\frac{3}{4}$
25 20	4·32	40·318	40	3	$\frac{3}{4}$
25 30	4·30	40·159	40	2	
25 40	4·29	40·001	40	0	
25 50	4·27	39·844	39	10	
25 60	4·25	39·688	39	8	$\frac{1}{4}$
25 70	4·24	39·534	39	6	$\frac{1}{4}$
25 80	4·22	39·381	39	4	$\frac{1}{2}$
25 90	4·20	39·229	39	2	$\frac{3}{4}$
26 00	4·19	39·078	39	1	

From this table the equivalents in sterling at any other rate per kilogramme or per quintal may be found by simple multiplication.

As, for instance, at 35 centimes per kilogramme, at 25·50,  $d.4\cdot27 \times 0\cdot35 = 1\cdot495$ , or  $1\frac{1}{2}d.$  per lb.

Or at 55 francs per quintal mètrique, or 55 centimes per kilogramme, at 25·50,  $s.39\cdot844 \times 0\cdot55 = 21s. 11d.$  per cwt.

TABLE of equivalent prices in sterling per Imperial gallon and per Imperial quarter, at the following rates of exchange:

At 1 franc per litre.

1 franc per hectolitre.

Exchange.	Per Gallon. Frs. Cents.	Per Gallon. Pence.	Per Quarter.		
			s.	s.	d.
25 00	43·62	43·62	2·3262	2	3·9
25 10	43·44	43·44	2·3169	2	3·8
25 20	43·27	43·27	2·3077	2	3·7
25 30	43·10	43·10	2·2986	2	3·6
25 40	42·93	42·93	2·2896	2	3·5
25 50	42·76	42·76	2·2806	2	3·4
25 60	42·59	42·59	2·2717	2	3·3
25 70	42·43	42·43	2·2628	2	3·1
25 80	42·26	42·26	2·2541	2	3·0
25 90	42·10	42·10	2·2454	2	2·9
26 00	41·93	41·93	2·2364	2	2·8

Thus, for instance, the price of brandy at 55 francs per hectolitre, or 55 centimes per litre, at the exchange of 25·50, is equal to  $23\frac{1}{2}d.$  per Imperial gallon, for—

$$d.42\cdot76 \times 0\cdot55 = d.23\ 518 = 23\frac{1}{2}d. \text{ per gallon.}$$

So also the price of corn at 16·56 francs per hectolitre, at the same exchange, is equal to 37s. 9d. per Imperial quarter, for—

$$s.2\cdot2806 \times 16\cdot56 = s.37\cdot7667 = 37s. 9d. \text{ per quarter.}$$

These tables and calculations, though not mathematically exact, are sufficiently accurate for the requirements of commerce.

#### FORMER FRENCH WEIGHTS AND MEASURES.

The weights and measures of France were formerly in great diversity, all the principal towns throughout the kingdom having their own local standards, which, until recently, were pertinaciously persisted in, notwithstanding the various decrees against their use. So much difficulty was experienced in the introduction of the decimal system into common practice, that the Government was in a measure forced to give way to the demands for its modification, and to permit, under the name of *Système Usuel*, the following divisions :

The *livre usuelle* was formed of the demi-kilogramme or 500 grammes, and was divided into 16 ounces of 8 gros or 576 grains each.

The *boisseau usuel* was the 8th part of the hectolitre, and was divided into 4 quarts or 8 pints.

In measures of length the *toise usuelle* was equal to two mètres, and was divided into 6 pieds (feet) of 12 pouces (inches) each. The *aune usuelle* was 1½ mètre or 12 décimètres in length, and was divided into 4ths, 8ths, &c.

The ancient official weight in France was the *livre poids de marc*; it was divided into two marcs, 16 ounces, 128 gros, 384 deniers or scrupules of 24 grains each; it was equal to 489·5058 grammes or 7554½ grains troy.

The *livre à soie de Paris* (for weighing silk) was 15 onces poids de marc, and was equal to 458·912 grammes or 7082½ grains troy.

The *livre poids de table de Lyon* was equal to 428·3 grammes or 6610 grains troy.

The *livre poids de table de Marseille* was equal to 407·92 grammes or 6295 grains troy.

For corn the chief of the former measures of capacity were the *muid de Paris* and the *charge de Marseille*. The *muid de*

*Paris* contained 12 setiers, 48 minots, or 144 boisseaux, and the setier was equal to 1·561 hectolitre or 4·295 imperial bushels. The *old charge* was equal to 1·548 hectolitre or 4·259 imperial bushels. The *new charge*, which still continues in use, is equal to 1·6 hectolitre or 4·402 imperial bushels. It is often called a measure of 16 decalitres, and 16 hectolitres are equal to ten new charges or 5·5025 imperial quarters.

Of liquid measures the *chopine de Paris* contained 23·475 Paris cubic inches, and was equal to 4·657 decilitres or 0·822 pint English. The *millerole de Marseille* was one of the best known measures for fluids in the South of France. It is still in use as a measure of 64 litres, equal to about 14·08 imperial gallons.

For wine it was divided into 4 *escandaux*, for oil into 16 *quarterons* of 4 litres each. The *escandal* was equal to about 16 litres.

At the Octroi the millerole was computed at 65 litres.

For wine and brandy the measures most commonly used in the places of production and export were the *barrique* and *velte*. The *barrique* of—

Bordeaux	= 30 veltes	= 226·20 litres	= 49·78 imp. galls
Bourgogne	} = 27	" = 205·46	" = 45·22
Champagne			
Cognac			
Frontignac	} = 30	" = 228·00	" = 50·2
Sauterne			
Macon	= 28	" = 213·07	" = 46·89
Nantes	= 40	" = 240·00	" = 52·82

The Frontignac, Sauterne, and Bordeaux *barrique* is generally taken at 228 litres. The Bordeaux *barrique* holds occasionally only 29 veltes, or about 221 litres. In Nantes they sell wine also in *barriques* of 231 litres.

In measures of length the old Paris foot, called *pied du Roi*, of 12 inches or 144 lines, was equal to 324·84 millimètres, or 12·789276 English inches; hence—

The *aune de Paris* was equal to 1188·45 millimètres, or 46·79 English inches.

The *toise de Paris* was 6 *pieds de Paris*, or 1·94903659 mètre = 6·395 English feet.

1000 Paris cubic inches were equal to 1210·5556 English



cubic inches, and, accordingly, to the contents of 4·3659 imperial gallons.

### EXCHANGES.

The French laws and regulations respecting Bills of Exchange differ in no essential particulars from those of England, except that in a few respects they are more stringent.

There are no days of grace allowed either as part of the term of a Bill or as claimable for the stayment of legal proceedings.

If a Bill is not duly accepted or paid, protest of default must be made within twenty-four hours after presentation.

If the acceptor of a Bill becomes a bankrupt, protest may be made at once, and an action brought against the drawer and the indorsers, without waiting for the expiration of the term which the Bill has to run.

The holder of a Bill payable at or after sight, drawn from any foreign place upon France or the reverse, is obliged to present the same for payment or acceptance within certain specified periods after the date of the Bill, under penalty of losing all claim upon the indorsers, and even upon the drawer, if the latter can prove that the Bill would have been honored if it had been duly presented.

These periods, called *délais*, are regulated by the distance, and similar *délais* are fixed under like penalties for the suing of parties to dishonored bills.

Usance is fixed at 30 days, not including the day of the date of the Bill if after date, or the day of the presentation if after sight.

The Bill Stamp is as follows :

On Bills drawn, accepted, or payable in France—

On amounts up to	Fr. 100 . . .	Fr. 0·05
„ from Fr. 100 to	200 . . .	„ 0·10
„ „ 200 „	300 . . .	„ 0·15
„ „ 300 „	400 . . .	„ 0·20
„ „ 400 „	500 . . .	„ 0·25
„ „ 500 „	600 . . .	„ 0·30
„ „ 600 „	700 . . .	„ 0·35
„ „ 700 „	800 . . .	„ 0·40
„ „ 800 „	900 . . .	„ 0·45
„ „ 900 „	1000 . . .	„ 0·50

And then for every Fr. 1000 or fraction . . . „ 0·50

On Bills passing through France by indorsement only :

On amounts up to	Fr. 2000 . . .	Fr. 0·50
„ from Fr. 2000 to „ 4000 . . .	„	1—
And then for every Fr. 2000 or fraction . . .	„	0·50

Cheques drawn on the same place pay 10 cts. ; those drawn upon another place 20 cts. Cheques must be dated in full letters, and be “on demand.”

Bills falling due on a Sunday or a holiday are payable the previous day.

### COURSE OF EXCHANGE.

		Paris gives to	
London	short	Fr. 25·20	for 1 Pound Sterling.
Belgium	„	99·50	„ 100 Francs.
Switzerland	„	99·50	„ 100 „
Italy	„	97·	„ 100 Lire.
New York	„	515·	„ 100 Dollars.
Germany three months		122·50	„ 100 Marks.
Holland	„	211·50	„ 100 Florins.
Portugal	„	420·	„ 100 Milreis.
Spain	„	425·	„ 100 Pesos (500 pesetas).
St. Petersburg	„	250·	„ 100 Roubles.
Vienna	„	210·	„ 100 Florins.

If long Bills on places for which the sight exchanges are quoted are negotiated, the seller allows to the buyer the interest for the days the Bills have to run at the bank-rate of the place where the Bill is payable.

If Bills on places for which the exchanges are quoted at three months have less than that period to run, interest for the difference of days is charged to the buyer at 4 per cent.

Foreign Bills negotiated are paid for the following day.

Interest is always reckoned by taking the exact number of days and the year at 360 days.

The acceptances of a few first-class private bankers are called “haute banque,” and command always a better price in the discount market.\*

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\* See ‘Arbitrage de Banque,’ by Schmidt and Notthafft, Paris, 1878.

## EXAMPLE 1.

To exchange £500 into Francs at Fr. 25·42½ Cts.

£		Francs.		£
If 1	—	25·425	—	500 ?
		500		
		Francs 12712·50		
		Cents.		

42½ Centimes are here expressed as 425 Millièmes.

## EXAMPLE 2.

To exchange £454 10 6 into Francs at 25·25.

Francs.
454·525 amount at 1 Franc per £.
25·25
11363125
11363125
Francs. 11476·76
Cents.

When the shillings and pence in the sum in Sterling are valued in decimal parts of a Pound there must be as many figures rejected from the right of the Product as there are decimal figures; and if, as in Ex. 1, the rate is rendered into Millièmes an extra figure must also be struck off.

Instead of proceeding as above, we may multiply the rate by the number of the Pounds, and take parts for the shillings and pence, thus—

Francs	25·25	by	454
	11463·50	for	£454
	12·62½		10s.
	63		6d.
	Francs 11476·76		Cents.

## EXAMPLE 3.

To exchange Francs 11476·76 Cents into Sterling at 25·25.

Fr.                      £                      Fr.  
If 25·25    ——— 1    ——— 11476·76 ?

	£	£	s.	d.	
25·25)	1147676	(454	10	6	Sterling.
	13767				
	11426				
	1326				
	—————				
		) 26520	(10s.		
		1270			
		—————			
		) 15240	( 6d.		

## EXERCISES.

Exercise 1.	Exchange	£1000	into Francs at 25·17½
"   2.	"   "	£248 12 6	"   "   "   25·35
"   3.	"   "	£554 13 7	"   "   "   25·41¼
"   4.	"   "	Fr. 10,000	"   Sterling " 25·45
"   5.	"   "	Fr. 4782·50	"   "   "   25·37½
"   6.	"   "	Fr. 8897·57	"   "   "   25·51¼

## PRODUCTS.

Exercise 1.	Fr. 25175·00	Exercise 4.	£392 18 7
"   2.	Fr. 6302·64	"   5.	£188 9 5
"   3.	Fr. 14095·78	"   6.	£348 15 1

## GERMAN EMPIRE.

## MONEYS.

1 Reichsmark = 100 Pfennige.

The "Reichsmark" or "Mark" is a silver coin, and is divided into 100 Pfennige. The Mark, the unit of the new German Monetary Standard, and which was established by the law of 4th December, 1871, is, however, merely a subsidiary coin. The gold coins only are legal tender, and they are—

	Reichsmarks.		Grammes.	Grains Troy.	
Pieces of	20	weighing	7·9649542	(122·917953)	900 fine.
„ „	10	„	3·982477	(61·4589765)	900 „
„ „	5	„	1·991239	(30·72948825)	900 „

The weight of 125·55 pieces of 10 Marks, or of 62·775 pieces of 20 Marks, is therefore 1 lb. (500 grammes).

The fine gold contained in a piece of 10 Marks is 3·5842 grammes, and in a piece of 20 Marks is 7·1685 grammes.\*

Coins 5 per mille light cease to be legal tender, and are not reissued by the Treasury, which, however, receives them at full value.

The silver coins, which are legal tender up to M. 20, are pieces of five Marks, pieces of two Marks, pieces of one Mark, pieces of 50 and 20 Pfennige. They are 900 fine, and are struck at the rate of 100 Marks out of 1 lb. (500 grammes) fine silver. There are also nickel pieces of 10 Pfennige and 5 Pfennige, and copper coins for still smaller amounts.† Of these subsidiary silver coins Germany issued at first an amount equal to 10 Marks per head of the population, but by a Bill of March, 1880 (not yet passed), the amount has been increased to 12 Marks per head of population.

All the former silver coins of the different German States have now been withdrawn and demonetised, with the exception, however, of the Thaler pieces, which the Government has not yet been able to dispose of, and which, although silver, continue to be unlimited legal tender for three Marks. Until the demonetisation of these Thalers takes place, the gold standard cannot be said to be fully established in Germany; and until then the position of the German Monetary System resembles somewhat the present *étalon boiteux* of the Latin Union, with the difference, however, that the amount of the German Thalers still in circulation is estimated at something like £20,000,000, which, when compared with the estimated gold circulation of £100,000,000, gives a proportion of the gold coins to the legal tender silver coins of

\* The Mint Par between England and Germany, is therefore, £1 = M. 20·42945, or M. 20 = 19s. 6·95d.; see chapter on "Arbitration of Bullion."

† Bavaria is exceptionally authorised to divide the pfennig into two halves, called Heller.

5 : 1, whilst in the States of the Latin Union this proportion is estimated at  $2\frac{1}{2} : 1$ .\* As far as the Foreign Exchanges are concerned the £20,000,000 of legal tender silver money have not exercised any influence, and they adjust themselves as if the introduction of the single gold standard had been entirely carried through by Germany.

The Government issues M. 120,000,000 Imperial legal tender notes. The Reichsbank and a number of other banks, originally thirty-three, at present fourteen left, have the right to issue uncovered bank notes to a total of £19,250,000. This amount is divided among these banks, the Reichsbank's share being at present about £14,605,000. Any issue beyond the sum fixed for each bank has to be covered by specie. If not so covered a tax of 5 per cent. per annum is levied on the excess for every week the issue is excessive. This clause constitutes the famous "Elastic Principle" of the German Bank Act.

The German Government Mint coins gold for private account, subject to a charge of three Marks per lb. fine. The charge for assaying is three Marks per bar. The gold bars, in order to be accepted by the Mint, must be of a minimum weight of 5 lbs. and of a minimum fineness of 900.

The Imperial Bank of Germany (*Reichsbank*) at Berlin, and its branches at Dresden, Frankfort, Hamburg, and Hanover, buy bar gold at the price of M. 1392 per lb. fine, provided the bars are of a minimum fineness of 900, and of a minimum weight of 5 lbs. Sovereigns, Eagles, Napoleons, and Imperials are also bought by the Bank and its above-mentioned branches at prices which are announced from time to time, and which range between M. 1392 and M. 1393.50 per lb. fine, taking Eagles, Napoleons, Norwegian Crowns, and Argentinos as  $899\frac{1}{2}$ , Sovereigns and old Imperials as  $916\frac{1}{2}$  fine, Alfonsos (1881 and later) as 897 fine, and Turkish Sovereigns as 915 fine. Dutch gold pieces of 10 and 20 Florins are at present also bought at the price of M. 1252.6608 per lb. (500 grammes), *i. e.* = 899.9 fine.

Since 1st July, 1879, a new Bill Stamp has been introduced. Its scale is as follows :

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\* This merely indicates that the proportion of the gold in circulation to the silver in circulation is smaller in France and in the States of the Latin Union than in Germany. Taken absolutely, however, the amount of gold held in France is much larger than that held in Germany.

On amounts up to M. 200 . . . . .	M. 0·10
Beyond M. 200 „ 400 . . . . .	„ 0 20
„ 400 „ 600 . . . . .	„ 0·30
„ 600 „ 800 . . . . .	„ 0·40
„ 800 „ 1000 . . . . .	„ 0·50

And then for every M. 1000 or part thereof „ 0·50

Bills payable in foreign money are stamped at the following rates:—£1 = M. 20·40; Fr. 1 = M. 0·80; Ro. 1 = M. 2; Dol. 1 = M. 4·25; Fl. 1 = M. 1·70.

Exempt from Stamp Duty are all Bills drawn, accepted and payable out of Germany; delegations or letters of credit which bear no indorsement, and Bills ten days' date or shorter, drawn in Germany, but payable out of Germany, and indorsed direct to the foreign order.

If Bills are in sets, only the copy actually in circulation is subject to the Stamp. Bills may be accepted previous to having been stamped, but in that case they must bear the indication, "Only for acceptance" (*Nur zum Accept bestimmt*), and their back must be crossed. Bills on Germany, but payable out of Germany, must be stamped on acceptance.

There are no days of grace.

Bills due on a Sunday or a holiday are payable the following day.

Protest for non-payment of a Bill of Exchange must be made out, at the latest, on the second working day after the Bill was due. Notice of non-payment must be sent to the last indorser not later than two days after protest was levied.

Bills must be accepted without delay whenever presented.

Interest is calculated by taking the month at 30 and the year at 360 days.

## COURSE OF EXCHANGE.

Berlin gives to

London	8 days and 3 mos.	M. 20·40 for	£1 Sterling.
Amsterdam	8 days and 2 mos.	„ 169·50 „	100 Florins.
Antwerp } Brussels }	„ „	„ 81 „	100 Francs.
Paris	„ „	„ 81 „	100 „
St. Petersburg,	3 wks. and 3 mos.	„ 200 „	100 Roubles.
Warsaw	8 days	„ 216 „	100 „
Vienna	8 days and 2 mos.	„ 170 „	100 Florins.

Italy	10 days and 2 mos.	M. 78·	for	100 Lire.
Copenhagen	10 days	„ 112·	„	100 Kronas.
Madrid	14 and 60 days	„ 70·	„	100 Pesetas.
New York	sight	„ 4·	„	1 Dollar.
Scandinavia	10 days	„ 112·	„	100 Kronas.

The Exchanges on St. Petersburg, Warsaw, and Vienna are quoted every day; the other Exchanges are quoted on Tuesdays, Thursdays, and Saturdays only.

In Foreign Bills, transactions take also place for forward delivery.

If the currency of a Foreign Bill does not coincide with that for which the quotations are given, interest is charged or allowed at the Bank rate of the place where the Bill is payable. No interest is allowed on Bills shorter than 8 days.

No allowance is made for Foreign Bill Stamps.

The Brokerage for Foreign Bills is  $\frac{1}{2}$  per mille on their value payable always by the buyer, and sometimes also by the seller.

Berlin has for years past been the principal centre for the negotiation of Bills on Russia, and controls, to a great extent, the price of the Rouble (paper).

Frankfort *gives* to

London	8 days	M. 204·20	for	1 Pound Sterling.
Amsterdam	„	„ 170·	„	100 Florins.
Antwerp } Brussels }	„	„ 81·	„	100 Francs.
Paris } Switzerland }	„	„ 81·	„	100 Francs.
Italy	„	„ 78·	„	100 Lire.
Vienna	„	„ 170·	„	100 Florin.
Madrid	„	„ 70·	„	100 Pesetas.
St. Petersburg	3 weeks	„ 200·	„	100 Roubles.
New York	3 days' sight	„ 4·25	„	1 Dollar.

The Foreign Exchanges are quoted daily.

The quotations being for eight days, interest is allowed to the buyer on long paper at the Bank Rate of the place where the Bill is payable. The Brokerage is  $\frac{1}{2}$  per mille.

Hamburg *gives* to

London	short and 3 mos.	M. 20·42	for	£1 Sterling.
Paris	„	„ 81·	„	Fr. 100.
Amsterdam	„	„ 169·50	„	Fl. 100.



Belgium	}	short and 3 mos.	M.	81·	for	Fr. 100.
Switzerland						
St. Petersburg		3 months		200·		Ro. 100.
Vienna		"		170·		Fl. 100.
Italy		"		75·		L. 100.
Cadiz		"		70·		100 Pesetas.
Lisbon		"		3·50		1 Milreis.
New York		short and 60 days' sight		420·		100 Dollars.
Christiania	}	sight and 3 mos.	"	112·	"	100 Kronas.
Stockholm						
Copenhagen						

"Short" is understood to mean a currency of ten days' date or less. On Bills negotiated at the three months' rate, but of shorter currency interest is allowed at the Bank Rate of the foreign place.

Exchange days are Tuesdays and Fridays, but transactions take place every day. The Brokerage is  $\frac{4}{5}$  per mille.

## EXAMPLE 1.

To exchange £500 into Marks at M. 20·46.

£		M.		£
If 1	—	20·46	—	500 ?
		500		
		<hr/>		
		M. 10230		

## EXAMPLE 2.

To exchange £454 10 6 into Marks at M. 20·46.

M.
454·525 amount at 1 M. per £1.
20·46
<hr/>
9090500
1818100
2727150
<hr/>
M. 9299·58

## EXAMPLE 3.

To exchange M. 9299·58 into Sterling at M. 20·46.

M.		£		M.
If 20·46	—	1	—	9299·58 ?

$$20\cdot46 ) 929958 = \begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 454 \quad 10 \quad 6 \end{array}$$

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 11155
 

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 9258
 

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 1074
 

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 ) 21480 ( 10s.
 

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 1020
 

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 ) 12240 ( 6d.

## EXERCISES.

- Ex. 1. Exchange £1000 into Marks at 20·42.  
 2. Exchange £248 12 6 into Marks at 20·60.  
 3. Exchange M. 10,000 into Sterling at 20·56.  
 4. Exchange M. 8897·60 into Sterling at 20·38.

## PRODUCTS.

- |                  |                 |
|------------------|-----------------|
| Ex. 1. M. 20420· | Ex. 3. £486 7 8 |
| 2. M. 5121·67    | 4. £436 11 8    |

## FORMER GERMAN MONETARY SYSTEMS.

Before the introduction of the present Monetary System, which came into force in the whole of Germany 1st Jan., 1876, there existed in Germany a variety of standards, which may be summarised as follows :

(1) The North German Valuation, based upon the Silver Standard, with the "Thaler" as unit, 30 of which were coined out of 1 lb. (500 grammes) fine Silver. The Thaler was divided into 30 Silbergroschen of 12 Pfennige each. The fixed legal proportion of this money to the new German Currency is 1 Th. = M. 3.

(2) The South German Valuation, a Silver Standard with the "Florin" as unit, 52½ of which were coined out of 1 lb. fine Silver. The Florin was divided into 60 Kreuzer of 4 Heller each. The fixed legal proportion of this money to the new German Currency is Fl. 7 = M. 12, or M. 100 = Fl. 58½.

(3) The Hamburg Mark Valuation, based upon Silver, with the "Mark" of 16 schillinge of 12 Pfennige each as unit. There were two such moneys:

(a) The "Mark Banco," a money of account only, based upon the assumption of M. B.  $27\frac{3}{4} = 1$  Cologne Mark Weight fine Silver, or M. B.  $59\frac{1}{3} = 1$  lb. fine Silver. The law fixed M. B. 100 = M. 150 as the proportion of this money to the new German Currency.

(b) The "Mark Courant," 75 of which were coined out of 1 lb. fine Silver. The law fixed as the proportion of this Money to the new German Currency M. C. 1 = M.  $1\frac{1}{3}$ .

(4) The Bremen Gold Valuation, with the "Gold Thaler" as unit, divided into 72 Grotes of 5 Schwaren each. It was a money of account, based upon the assumption that 420 Thalers Gold are = 1 lb. fine Gold. The law fixed the proportion of this money to the new German Currency as 100 Th. G. =  $332\frac{1}{3}$  M., or M. 10 =  $3\frac{1}{3}$  Th. Gold.

(5) The old South German Valuation may here be added. It existed up to 1857, and was based upon Silver. Its unit was the "Florin,"  $24\frac{1}{2}$  of which were coined out of the Cologne Mark Weight (233.8555 grammes or 3609 grains troy) fine Silver. This gave 52.3823 Florins to the pound fine Silver, making these old Florins about  $\frac{1}{4}$  per cent. better than the Florins of the  $52\frac{1}{2}$  standard. Legally those two Florins were declared of equal value.

## WEIGHTS AND MEASURES.

Germany has adopted the French Metrical System which came into general use January 1st, 1872.

The Unit as measure of length is the "Stab" or Meter (m). It is divided into 10 decimeters or 100 centimeters (cm) of 10 millimeters (mm) each. The centimeter is also called "Neuzoll," the millimeter "Strich." 10 meters make a dekameter or "Kette," 1000 meters a kilometer (km),  $7\frac{1}{2}$  of which are equal to the "Meile."

The measure of surface is the "Quadratmeter" (qm) or "Quadratstab," equal to the square of the meter. It is divided into 100 quadratdecimeters of 100 quadratcentimeters (qcm) each. 1 quadratcentimeter = 100 quadratmillimeters (qmm). 100 quadratmeters make an "Ar" (a); 100 ar = 1 hektar (ha).

The Unit as measure of capacity is the "Liter" (l) or "Kanne" divided into 2 "Schoppen," or into 10 deciliters of 10 centiliters each. The hektoliter (hl) or "Fass" has 100 liters; the Scheffel is equal to 50 liters.

The measure of solidity for firewood is the Cubikmeter (cbm), equal to the cube of a meter. The capacity of ships is likewise stated in cubikmeters, but always with the addition of the equivalent in British register tons, 0.353 of which are taken as equal to 1 cubikmeter.

The Unit of weight is the Kilogramme (kg) of 100 deka-grammes or "Neuloth" of 10 grammes each. The Gramme (g) is subdivided into 10 decigrammes of 10 centigrammes of 10 milligrammes. The "Pfund" (pound) is a  $\frac{1}{2}$  kilogramme; the "Centner" = 50 kilogrammes; the "Tonne" = 1000 kilogrammes or 2000 pounds.

#### FORMER WEIGHTS AND MEASURES.

From July 1st, 1858, up to the introduction of the French Metrical System the Unit of weight in most of the German States was the "Zollpfund" (lb.), equal to 500 grammes (7716.1745 grains troy), divided into 30 loth of 10 quentchen of 10 cent of 10 korn each. 100 lbs. were called a Centner, 4000 lbs. a Schiffslast.

The old Commercial Pound of Prussia (up to 1858) was divided into two marks or 32 loth of 4 quentchen each, and was equal to 467.711 grammes, or 7217.88 grains troy, the Prussian or Berlin Mark weight being equal to 233.855 grammes or 3608.94 grains troy. The old Prussian Center had 110 pounds.

In Bremen the weight of the pound in use up to 1858 was 498 $\frac{1}{2}$  grammes, or 7693.026 grains troy.

In Frankfort there were in use up to 1858 two sorts of weight, the heavy pound of 505.128 grammes, or 7795.31 grains troy, and the light pound of 467.711 grammes, or 7217.88 grains troy, the difference between these two being 8 per cent.

In Hamburg the old pound up to 1858 was equal to 484.475 grammes, or 7476.587 grains troy. The old Hamburg Centner was equal to 112 old Hamburg pounds.

The former Prussian measure of length was the foot of 12

inches or 12 Linien each, and was equal to 313·8536 millimeters, or 12·35668 English inches. The Prussian Elle was  $25\frac{1}{2}$  Prussian inches, or 26·25786 English inches. The Ruthe had 12 Prussian feet, the Meile 2000 Ruthen, or 24,000 feet. The Prussian Morgen (land measure) had 180 square Ruthen, or 3053·78 English square yards.

The Bremen Elle had two feet of 12 inches, and was fixed at 0·5787 meter.

The former Frankfort foot was equal to 284·61 millimeters, or 11·205576 English inches. The Frankfort Elle was equal to 547·3 millimeters, and the Frankfort Brabant Elle to 699·2 millimeters.

The Hamburg foot of 12 inches was equal to 0·28657 meter, or 11·28254 English inches. The Elle was equal to two feet. The Hamburg Brabant Elle was equal to 0·69178 meter, or 27·237 English inches. The Hamburg Meile was equal to 25,600 Hamburg feet or 7·336192 kilometer.

The former Prussian measure of capacity was the Quart, equal to 64 Prussian cubic inches, or 1·14503 liter, or 0·252021103 imperial gallon. The Prussian Scheffel was equal to 3072 Prussian cubic inches, or 0·549614 hektolitre, or 1·51213 imperial bushel. It was divided into 16 Metzen.

In Bremen the Stübchen was equal to 3·22144 litres, or 5·6723 imperial pints. 45 Stübchen were equal to 1 Tonne or Ohm,  $1\frac{1}{2}$  ohm was equal to 1 Oxhoft. The Last contained 40 Scheffel of 16 Spint, and was equal to 29·6416 hectolitre or 10·1939 imperial quarters,

In Frankfurt the old Mass was equal to 1·792634 litre or 0·3945588 imperial gallon, and the new Mass to 1·593452 litre, or 0·3507188 imperial gallon. The Ohm was equal to 80 Mass. The Malter of 4 Simner was equal to 1·14729 hektolitre or 0·39455 imperial quarters.

In Hamburg the Viertel was equal to 7·2455 litres, or 1·594735 imperial gallon. The Eimer was equal to four Viertel. The Fuder was equal to 6 Ohm, or 24 Anker, or 30 Eimer, or 120 Viertel. The Viertel was divided into two Stübchen or four Kannen. The Oxhoft was equal to 30 Viertel or 47·84205 imperial gallons. The Last was equal to 120 Himten, or 11·3406525 imperial quarters. The Himten contained 2018 Hamburg cubic inches, equal to 27·48 litres, or 6·048348 imperial gallons. The Fass was equal to two Himten.

## GREECE.

## MONEYS.

1 Drachme = 100 Lepta.

The old Drachme was the sixth part of the Spanish silver Peso. In 1867 Greece entered the Latin Union of 1864, and the monetary system of Greece was to be assimilated to that of France. The new Drachme was to be equal to the Franc, and the proportion between the old and the new money was fixed at 112 old Drachmes = 100 new Drachmes.

Since 1st July, 1877, moreover, the two Note-issuing Banks of Greece, the National Bank and the Ionian Bank, have been authorised to increase their issue, and the Government has since also issued paper money. These notes are legal tender, but they have fallen to a discount in comparison to gold, at present about 40—45 per cent.

Foreign silver coins used to be legal tender at fixed tariff prices, but these have been abolished since April, 1876; and at present only the silver coins of the French Monetary System have currency.

The Bill Stamp is as follows:

On amounts		up to	Dr.	750	D.	1
Beyond	Dr.	750	„	1500	„	2
„		1500	„	3000	„	3
„		3000	„	4500	„	4
„		4500	„	6000	„	5
„		6000	„	9000	„	6
„		9000	„	12,000	„	7
„		12,000	„	15,000	„	8
„		15,000	„	21,000	„	10

## WEIGHTS AND MEASURES.

The French Metrical System is now in general use in Greece. The metrical weights and measures are termed Royal; the gramme is called drachme, the decigramme obolos, the centigramme gran. The common commercial weight is the mina = 1500 drachmes =  $1\frac{1}{2}$  kilogramme. The litre retains the French name, for the decilitre is called kotylos (cotylos), the centilitre mystra the millilitre kubos (cubus).

The Royal kilo is the same as the French hectolitre (corn measure). The metre is called pichi or piki (ell). The Royal stadion is = 1000 pikis, the Greek mile = 10,000 pikis or 10 kilometres.

The Royal piki is officially fixed as equal to 1.5423 small old (Constantinopolitan) piki (endash), or 1.4948 large old pikis.

### COURSE OF EXCHANGE.

Athens gives to

London	3 mos.*	Dr. 35	(paper) for	£1 Sterling.
Paris	31 days	„ 142	„	Fr. 100.
Trieste	3 mos.	„ 290	„	Fl. 100.
Amsterdam	„	„ 295	„	Fl. 100.
Hamburg	„	„ 170	„	M. 100.

In some of the Grecian islands (Syra, for instance) the monetary unit is the current drachme; in that case the quotation for Athens is about 125, *i. e.* 125 current drachmes for 100 drachmes.

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### THE IONIAN ISLANDS

Are using since August, 1876, the same currency as Greece, and the Course of Exchange at Corfu is now the same as that at Athens.

The former monetary unit was the German Species Dollar (Maria Theresia Thaler) of 100 Oboli, or the Spanish Dollar of 104 Oboli. The proportion of the new to the old currencies was fixed as follows :

1 Species Dollar	=	Dr. 5.60.
1 Spanish Dollar	=	„ 5.80.

### WEIGHTS AND MEASURES.

The Imperial weights and measures of Great Britain are employed, but with Italian denominations.

The troy pound is the libbra sottile, the avoirdupois pound

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\* Refer to note page 19.

the libbra grossa. The centinajo is 100 libbre, the migliajo 1000 libbre.

In measures of capacity the galloni is divided into 8 dicitoli; 8 galloni make 1 chilo (Imperial bushel), and 16 galloni 1 barile.

In measures of length,  $5\frac{1}{2}$  jarde make 1 carnaço, and 22 jarde 1 stadio.

## ITALY.

ROME, FLORENCE, GENOA, LEGHORN, MILAN,  
NAPLES, PALERMO, TURIN, VENICE.

### MONEYS.

100 Centesimi = 1 Lira Italiana.

The Lira Italiana is of the same value as the Franc. Italy is a party to the Latin Monetary Union of 1865. The monetary system of Italy is now the same as that of France. See *France*.

The actual money of Italy, however, was, for 16 years, a depreciated paper currency; but in 1883 specie payments were resumed. At present there is, however, a small premium on gold.

The Italian Bill Stamp is as follows:

On Cheques, which, however, must not bear any indorsements, 10 cents. On Bills—

	Up to Lire	100	.	Lire	0·15
Above Lire	100	„	200	.	„ 0·34
„	200	„	300	.	„ 0·46
„	300	„	600	.	„ 0·82
„	600	„	1000	.	„ 1·30

And then for every L. 1000 or part thereof „ 1·20

Bills having more than six months to run, pay a Stamp of  $2\frac{1}{2}$  per mille.

Copies or seconds under L. 2000 pay the ordinary stamp; above L. 2000 they pay Lira 1·20, without regard to the amount.



If a second is sent for acceptance the first has likewise to be stamped in full.

Interest is calculated as at Paris.

The law on Bills of Exchange is the same as in France.

### WEIGHTS AND MEASURES.

The French Metrical System is now uniformly adopted throughout Italy. The above remarks made in reference to moneys apply equally to weights and measures. In most towns, &c., the Italianised French denominations are used, as metro, decametro, ettometro, chilometro, miriametro, decimetro, centimetro, millimetro; synonymous with mètre, décamètre, hectomètre, kilomètre, myriamètre, décimètre, centimètre, millimètre.

Ara, ettara, centiara, are the same as are hectare, centiare.

Litro, decalitro, ettolitro, chilolitro, decilitro, the same as litre, décalitre, hectolitre, kilolitre, décilitre.

Stero, decastero, decistero, the same as stère décastère décistère.

Gramma, decagramma, ettogramma, chilogramma (libbra metrica), miriagramma; decigramma, centigramma, milligramma, the same as gramme, décagramme, hectogramme, kilogramme, myriagramme; décigramme, centigramme, milligramme.

Quintale metrico is the same as quintal métrique.

Tonnellata di mare is the same as tonneau métrique or nouveau tonneau de mer, or millier métrique.

### FORMER DENOMINATIONS.

In Milan and Lombardy in general, where the metrical system has been in force since 1803, the denominations were different.

The metro here was divided into palmi, diti, and atomi, instead of décimètres, centimètres, and millimètres. The kilomètre was called miglio.

100 Square Mètres = 1 Tavola.

100 Tavole = 1 Tornatura.

Pinta = litre; mina = décalitre; soma = hectolitre; coppo = décilitre.

Libbra (libbra metrica) = kilogramme; oncia, grosso, denaro, grano = hectogramme, décagramme, gramme, decigramme.

## COURSE OF EXCHANGE.

	Italy <i>gives to</i>	
London short and 3 mos.*	L. 26 for	£1 Sterling.
Paris	„ 104 „	Fr. 100.
Germany	„ 128 „	M. 100.
Austria	„ 220 „	Fl. 100.

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THE NETHERLANDS.  
AMSTERDAM AND ROTTERDAM.  
MONEYS.

100 Cents = 1 Florin or Guilder.

The Florin was also divided into 20 Stivers.† In the late money of exchange it was reckoned at 40 groats (Grot) Flemish, of which 12 groats made 1 Schilling Flemish, 10 Sch. Flemish being equal to 3 florins.

The Ryksdaaler, still in circulation, is 50 stivers or  $2\frac{1}{2}$  florins.

By an Act dated Nov. 26th, 1847, the Netherlands adopted the silver standard, which continued in force until 1872. The unit was the silver Florin weighing 10 grammes 945 fine. On this basis the kilogramme fine silver was Fl. 105·82.

In 1872 a Bill was passed to suspend the coinage of silver for private account. The fall in the value of silver continuing, the Mint was closed for its coinage, and for the time being Holland had really no metallic standard of value, for gold was only merchandise. The balance of indebtedness happened then to be favorable to Holland, and the Foreign Exchanges fell considerably. In order to arrest this fall, a Bill was passed in June, 1875, opening the Mint to the public for the coinage of gold.

The new standard coin is the 10 Florin piece, weighing 6·720 Wigtjes (grammes), 900 fine, containing therefore 6·048 grammes fine gold.‡ This gives a ratio of gold to silver of 1 : 15·625, being equal to a quotation for silver in London of 60·35*d.* per oz. standard.

The present standard of Holland is therefore a gold standard,

\* Refer to note page 19.

† The stiver is still used in the London rate of exchange, but not in the Amsterdam rate.

‡ The Mint Par between England and Holland is, therefore, £1 = Fl. 12·1071, or Fl. 10 = 16*s.* 6·23*d.* See the chapter on "Arbitrations of Bullion."

conjointly with the circulation, as legal tender, of the silver coins issued before 1875. The currency is in the same provisional state of the *étalon boiteux* as in France, but the balance of indebtedness having always been rather in favour of Holland no inconvenience has been felt arising out of the present arrangement, and the Foreign Exchanges have adjusted themselves as if Holland possessed the gold standard.

The former gold coins were

The Double William (nominally 20 Florins) weighing 13·458 grammes 900 fine.

The William (nom. 10 Fl.) weighing 6·774 gram. 900 fine.

„ Half-William (nom. 5 Fl.) „ 3·389 „ 900 „

„ Double Ducat (nom. 11 $\frac{1}{3}$  Fl.) „ 6·988 „ 983 „

„ Ducat (nom. 5 $\frac{3}{5}$  Fl.) „ 3·494 „ 983 „

The Netherlands Bank buys bar gold at 1648 Fl. per kilo fine, provided the bars are not heavier than 6 $\frac{1}{2}$  kilo, and of a minimum fineness of 900. French gold pieces of 20, 10 and 5 francs, American eagles and German 20 and 10 mark pieces, are taken as 899 $\frac{1}{2}$  fine; Scandinavian kronas as 899 fine, old imperials and sovereigns as 916 fine. Greek, Spanish, Servian and Roumanian gold coins have to be melted before being accepted. The Netherlands Bank sells bar gold at Fl. 1653 per kilo fine. French, American and Scandinavian coins are sold on the basis of Fl. 1658 per kilo fine, German coins on the basis of Fl. 1659.

The Bill Stamp on Bills payable in Holland is as follows:

On amounts up to Fl. 100 . Fl. 0·05

Beyond Fl. 100 to 200 . „ 0·10

„ 200 „ 300 . „ 0·15

„ 300 „ 400 . „ 0·20

„ 400 „ 500 . „ 0·25

And then for every Fl. 500 or fraction „ 0·25

On amounts beyond Fl. 10,000 the stamp is Fl. 0·50 for every Fl. 1000 or fraction thereof.

Bills 3 days' sight or shorter, or Bills payable outside of Holland, pay 5 cents.

Foreign money is converted at the following exchanges:

£1 = 12 Fl. Fr. 1 = Fl. 0·50. Ro. 1 = 2 Fl. M. 1 = Fl. 0·60. Aust. Fl. 1 = Fl. 1·20.

Seconds and Copies need not be stamped.

The Brokerage is  $\frac{3}{4}$  per mille on Bills on Germany and England;  $\frac{1}{2}$ —1 per mille on other Foreign Bills.

Interest is reckoned by taking the exact number of days and the year at 360 days.

There are no days of grace.

Bills falling due on a Sunday or Holiday are payable the next day. Protest for non-payment is made out the day after maturity of the Bill, and if this is a Sunday, on the Monday following.

### WEIGHTS AND MEASURES.

The standards are the same as those of France, but with different denominations.

The Pond corresponds with the French kilogrammes, and is composed of 10 Onsen, 100 Looden, 1000 Wigtjes (grammes), or 10,000 Korrel or grains (Greinen).

The old medicinal Pond weighs exactly 375 grammes. It was divided into 12 ounces of 8 drams of 3 scruples of 20 grains each. It had accordingly 5760 grains. The medicinal grain is therefore equal to 0.06510416 grammes and to 1.0047 grain troy.

The kop of corn is the same as the litre. The Mudde or Zak is the same as the hectolitre, and contains 10 Schepels or 100 Koppen. The Half-Mudde of 50 koppen is the legal measure for corn in the wholesale trade.

The corn last of 30 Zakken or Mudden contains 10.3172 imperial quarters.

The Netherland Kan (litre), for measuring liquids, contains 10 Maatjes, or 100 Vingerhoeden. The Vat is 100 kannen. Whale and seal oil is sold by the Kwardeel of 12 Steckannen old measure, rendering about 51 $\frac{1}{4}$  imperial gallons.

The El for cloth measure is equal to the mètre, and is divided into 10 Palm, 100 Duim, or 1000 Streep.

The measures of distance are the Roede of 10 Ellen (décamètre) and the Mijl of 1000 Ellen (kilomètre). The surface measures are the Bunder (hectare) = 2.471169 English acres; the Vierkant-Roede (are) = 119.6046 English square yards, and the Vierkant-El (centiare) = 10.764414 English square feet.

In measures of solidity the Kubiek-El (mètre cube) is equal to 35.31714 English cubic feet, the Kubiek-Palm (décimètre cube) to 61.028 English cubic inches.

In some of the Dutch colonies and settlements the former weights and measures of Amsterdam are still used.

The following are some of the former Amsterdam weights and measures still used in some of the Dutch colonies and

settlement, with their equivalents in the present English standards:

100 Amst. lb.	=	108·93 lb. Avoirdupois.
100 Mudden Corn	=	38·26 Imp. Quarters.
100 Stoops liquid	=	53·38 „ Gallons.
100 Amst. Ells	=	75·92 „ Yards.
The Leggar of 240 Stoops	=	128·11 „ Gallons.

### COURSE OF EXCHANGE.

Amsterdam gives to

London	short and 2 mos.*	Fl. 12·05 per	1 £ Sterling.
Paris	„ „	„ 47·60 „	100 Francs.
Germany	short and 3 mos.	„ 59 „	100 Marks.
St. Petersburg,	3 months	„ 126 „	100 Roubles.
Vienna	„	„ 100 „	100 Florins.
Belgium and Switzerland }	short and 3 mos.	„ 47·50 per	100 Francs.
Italy	„ „	„ 43 „	100 Lires.

#### EXAMPLE 1.

To exchange £500 Sterling into Florins, at Florins 12 2¼ Stivers.

Flor. 12 2¼ St. = Flor. 12·11¼ Cents.

Florins.

12·1125

500

—————  
Flor. 6056·25 Cents.  
—————

---

\* Refer to note page 19.

## EXAMPLE 2.

To exchange £864 17 4 Sterling into Florins, at Flor. 12 7½ Cents.

$$£864 17 4 = £864.8666.$$

Florins.

$$\frac{1}{20} \cdot \cdot \cdot 864.8666$$


---

10378.3992

$$\frac{1}{2} \cdot \cdot \cdot 43.243 \text{ for 5 Cents.}$$


---


$$21.621 \quad ,, \quad 2\frac{1}{2} \quad ,,$$

Flor. 10443.26 Cents.

---

If, instead of this method, the rate is multiplied by the number of pounds sterling, the 12 fl. 7½ cents must be expressed as flor. 12.075. In the above example this number might also be used for the multiplier; it requires, however, in the regular performance of the multiplication, a greater number of figures than the taking the parts as above.

## EXAMPLE 3.

To Exchange Flor. 6056.25 Cents into Sterling, at Flor. 12 11¼ Cents.

Flor.		£		Flor.
If 12.11¼	—	1	—	6056.25 ?
<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>				<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
48.45				24225.00

£

$$4845)2422500$$


---

£500 0 0 Sterling.

---

There being a quarter of a cent in the rate, the extreme terms are multiplied by 4 to reduce the fraction.

## EXAMPLE 4.

To exchange Flor. 10443·26 Cents into Sterling, at Flor. 12  $7\frac{1}{2}$  Cents.

Flor.		£		Flor.
If 12·07 $\frac{1}{2}$	—	1	—	10443·26?
<u>48·30</u>				<u>41773·04</u>

£  
483)417730·4

£864·866 = £864 17 4 Sterling.

In getting rid of the fraction here the extreme terms are multiplied by 4, instead of 2, in order to make fewer figures in the divisor. If the multiplier in Ex. 3 had been 8 instead of 4, it would have had the same effect.

Formerly the rate on London was quoted in Schillings and Groats Flemish. As this form of quotation may be still occasionally used, the subjoined example is given here to show the mode of calculation :

## EXAMPLE 5.

(For former quotations.)

To exchange Flor. 6056·25 Cents into Sterling at 40 Sch.  $4\frac{1}{2}$  Gr. Flemish.

Reckoning the 40 Sch. as 12 Florins and the  $4\frac{1}{2}$  Gr. as  $2\frac{1}{4}$  Stivers or  $11\frac{1}{4}$  Cents, the statement may be made as in Ex. 4, or also as follows :

Sch. Gr.		£		Flor.
If 40 $4\frac{1}{2}$	—	1	—	6056·25?
<u>12</u>				<u>40</u>
484 $\frac{1}{2}$				242250·00

£  
4845)2422500

£500 0 0 Sterling.

The principle of this form of calculation rests upon the proportion of 12 Groats to 1 Schilling Flem. and 40 Groats to 1 Florin.

## EXERCISES.

Ex. 1.	Exchange	£1000 Sterling into Florins at Fl. 11·95 Cts.
„ 2.	„	£1275 16 6 Sterling into Florins at Fl. 12 1½ Stiv.
„ 3.	„	Florins 8000 into sterling at Fl. 12·05 Cents.
„ 4.	„	Florins 475·35 Cents into Sterling at Fl. 11 18¾ Stiv.
„ 5.	„	£1000 Sterling into Florins at Fl. 12 2 Stiv.
„ 6.	„	Fl. 5574·43 into Sterling at Fl. 12 10 Cents.

## PRODUCTS.

Ex. 1.	Flor. 11950·00	Ex. 2.	Flor. 15405·59 Cents.
„ 3.	£663 18 0.	„ 4.	£39 16 5.
„ 5.	Flor. 12100.	„ 6.	£460 13 11.

## LUXEMBURG.

## MONEYS.

1 Franc = 100 Centimes.

The Bill Stamp is as follows :

	Up to Fr. 100	. . .	Fr. 0 05
Beyond Fr. 100	„ 300	. . .	„ 0 20
„ 300	„ 600	. . .	„ 0 40
„ 600	„ 1200	. . .	„ 0 80
And then for every Fr. 1200 or fraction thereof	„		0 80

## PORTUGAL.

## MONEYS.

1000 Reis = 1 Milreis.

Since 1855 Portugal has adopted the single gold standard of value. The new silver and gold coins are minted of the same fineness = 916¾; but the silver coins are about 8 per cent. under weight. Silver is accordingly no longer legal tender in Portugal for sums above 5 milreis. The gold coins are pieces of 10\$000, 5\$000, 2\$000, and 1\$000 reis, called



severally gold crowns, half-crowns, fifth-crowns, and tenth-crowns. The silver coins are pieces of 500, 200, 100, and 50 reis. The copper coins consist of 40, 20, 10, and 5 reis pieces.

For many years Portugal was besides England, and at one time the free city of Bremen, the only country possessing the gold standard. Since 1891, however, paper forms the actual money of Portugal, and both gold and silver are quoted at a premium.

The crusado of Exchange is 400 reis; a conto of reis is 1:000 milreis; a conto de contos is one million contos = 1,000,000:000 \$000 reis. The legal weight of the gold half-crown is 8·868 grammes; its fineness, as already stated, 916 $\frac{2}{3}$ . Its value is accordingly £1 2s. 2 $\frac{1}{2}$ d. sterling. The 500 reis piece in silver weighs 12·5 grammes, and is also 916 $\frac{2}{3}$  fine. Its value is about 2s. sterling. The old gold *peça*, if full weighted (14·188 grammes), is valued at 8 milreis = about £1 15s. 7d.; the English sovereign is legal tender at 4\$500 reis. The full-valued milreis is worth 53·28d. sterling.\*

The Portuguese crown (10\$000 reis) weighs 17·735 grammes, 916 $\frac{2}{3}$  fine, contains, therefore, 16·2570833 grammes fine gold.

The Bill Stamp for Bills payable in Portugal is:

Milr. 5	to	Milr. 20	. . .	20	Reis.
„ 20	„	100	. . .	100	„
„ 100	„	200	. . .	200	„

and then for every Milr. 100 or fraction thereof, 100 reis.

Bills passing through Portugal by way of indorsement only, pay half the above stamp.

Inland Bills, 8 days' date, or on demand, pay 200 reis for every 1:000 milreis.

Bills drawn in Portugal, payable out of Portugal, pay only 20 reis for every Milr. 100 or fraction.†

If Bills on foreign countries are in sets, every copy pays half the stamp.

The Brokerage on Foreign Bills is 1 per mille.

Interest is calculated by taking the exact number of days, and the year at 365 days.

The law on Bills of Exchange is the same as in France.

\* See the chapter on "Arbitrations of Bullion."

† A modification of the Stamp Act is at present under discussion in Portugal.

## WEIGHTS AND MEASURES.

Since the 1st October, 1868, the French Metrical System of weights and measures has been adopted in Portugal, see *France*.

## FORMER WEIGHTS AND MEASURES.

*Weights.*—The old arratel or pound is 16 ounces of 8 oitavas, and is equal to 458·976 grammes, or 7083 grains troy. 32 arrateis make 1 arroba, and 4 arrobas 1 quintal.

1 Arroba	=	32·384 lb. Avoirdupois.
1 Quintal	=	129·536           "
100 Arrateis	=	101·1857           "
100 lb. Avoirdupois	=	98·83   Arrateis.
112   "           "	=	110·69           "

The ton English is equal to  $17\frac{1}{4}$  Portuguese quintals.

*Liquid Measures.*—The almude or cantaro is 2 patas or alqueires, or 12 canadas, or 48 quartilhos; and is equal to 16·74 litres, or 3·6845 imperial gallons.

100 Almudes of Lisbon = 368·45 Imperial Gallons.

100 Imperial Gallons = 27·14 Almudes.

The almude of Oporto is equal to 5·5826 imperial gallons, and it takes about 21 almudes to fill the standard pipe of 115 imperial gallons. The pipe of Lisbon wine of the standard contents of 117 imperial gallons takes about 32 almudes.

A pipe of oil contains 30 almudes.

*Corn Measures.*—The fanega or fanga is 4 alqueires of 32 selamins each, and is equal to 55·365 litres, the Lisbon alqueire holding 13·841 litres or 0·3808005 imperial bushel. The alqueire of Oporto holds 17·465 litres or 0·4805058 imperial bushel, which gives a relative proportion of 100 to  $79\frac{1}{4}$ .

100 Alqueires of Lisbon = 38·08005 Imperial Bushels.

100 Imperial Bushels = 262·6   Alqueires of Lisbon.

100 Alqueires of Lisbon =  $79\frac{1}{4}$    Alqueires of Oporto.

*Long Measures.*—The covado de craveira or cubit has 3 palmos (spans) of 8 polegadas (inches). The vara or ell has 5 palmos, and is equal to 1·096 mètre. The Portuguese foot (pé) is equal to 0·3288 mètre or 1·078 English foot. 2 pés = 3 pa mos = 1 covado.

100 Covados Crev. = 71·86 English Yards.

100 Varas = 119·77           "

100 English Yards = 139·16 Covad. Crav. or 83·5 Varas.

The covado generally used in commerce contains  $24\frac{3}{4}$  polegadas, and is called the covado avantajado; it is equal to 678.15 millimètres.

32 Covados Avant.	=	33	Covados Crav.
100	"	=	74.165 English Yards.
100 English Yards	=	134.835	Covados Avant.

The Portuguese mile (milha) is 1 mile 493 yards English. The league (legoa) contains 3 miles of 8 estadios each, or 18 leagues to an equatorial degree, and is equal to 6.173 kilomètres or 6763 English yards.

The English yard is also used in Portugal, 6 English yards being commonly reckoned equal to 5 varas; 20 yards = 27 covados avant.

### COURSE OF EXCHANGE.

Lisbon and Oporto *receive* from

London	30, 60, and 90 days' date*	43 Pence for	1 Milreis.
Amsterdam,	3 months	36 Florins ,,	16 ,,

and *give* to

Paris	8 days and 3 months	650 Reis	,,	3 Francs.
Hamburg	3 months	290	,,	1 Mark.
Italy	"	220	,,	1 Lira.
Spain	8 days' sight	990	,,	5 Pesetas.

Sometimes Rio de Janeiro is quoted at 30 days' sight in Brazilian reis for 100 Portuguese reis.

### EXAMPLE.

To exchange £647 11 1 into Reis at  $52\frac{1}{2}d$ .

<i>d.</i>		Reis.		£	<i>s.</i>	<i>d.</i>
If	$52\frac{1}{2}$	—	1000	—	647	11 1?

105

310826*d.*

Reis.

105)310:826\$000

Reis . 2:960\$248

\* Refer to note page 19.

Contos of reis are usually separated from milreis by a double point, and mil from reis by either a single point or a crossed cypher ( $\$$ ).

## REVERSE.

To exchange Reis 2:960\$248 into Sterling at  $52\frac{1}{2}d$ .

		£		
	$\frac{1}{4}$	. .	2960·248	
$\frac{1}{12}$	. .	61·672	740·062	for 60 <i>d</i> .
$\frac{1}{24}$	. .	30·836	92·508	for $7\frac{1}{2}d$ .
			£647·554	= £647 11 1

This is the shortest method, but it is more common to consider the milreis as pence, and multiply by the rate.

## EXERCISES.

- EX. 1. Exchange £1000 into Reis at  $53d$ .  
 „ 2. „ £245 6 3 into Reis at  $52\frac{1}{2}d$ .  
 „ 3. „ Reis 10:000\$000 into Sterling at  $52\frac{1}{2}d$ .  
 „ 4. „ Reis 13:333\$355 into Sterling at  $53d$ .

## PRODUCTS.

- EX. 1. Reis 4:528\$300                      Ex. 3. £2187 10 0  
 „ 2. Reis 1:121\$425                      „ 4. £2944 9 0

## ROUMANIA.

BUCHAREST, BRAILA, GALACZ, AND JASSY.

## MONEYS.

100 Bans = 1 Lëu or Lei nuove.

In 1868 Roumania adopted the French Monetary System. The Lëu was a silver coin of 5 grammes weight 900 fine, and accordingly of the same value as the old French franc before 1868 (about 9*d*. sterling). The Roumanian Mint issues

also gold coins of 20, 10, and 5 lëu, equal to the French Napoleons, half Napoleons, and quarter Napoleons. Since 1890 silver has been reduced to token money, and Roumania has the gold standard, with the gold lei as unit and a silver legal tender up to 50 lei only.

Formerly the Danubian Principalities reckoned in piastres or lëu, or lee, of 40 paras or parelle each, the para being subdivided again into 3 aspres, or bari, or bans. Turkish gold and silver coins, Austrian ducats, and Austrian and Prussian silver coins, circulated largely in the principalities. The Roumanian Treasury took these coins at the so-called Vestiari-Course, which was always lower than the general market price of the coins.\*

The old Walachian piastre may be reckoned worth about  $3\frac{1}{2}d.$  sterling, the old Moldavian piastre about  $3d.$  sterling. The value of the old Galacz piastre is 20 per cent. less.

After the Russo-Turkish war of 1878 the metallic Russian silver rouble (weighing 20·7315 grammes  $868\frac{1}{8}$  fine) had been made legal tender for 4 lei, and the half-imperial for lei 20·60. Silver was thus over-valued. Almost all gold had in consequence been driven out of the country, and the actual standard of Roumania was a silver valuation. But the silver rouble was demonetised in 1880.

The Roumanian Bill Stamp is  $\frac{1}{2}$  per mille.

#### COURSE OF EXCHANGE.

London	short and 3 months†	Lei	25·10	for	£1 Sterling.
Amsterdam	„	„	210·	„	Fl. 100.
Paris	„	„	100·	„	Fr. 100.
Germany	„	„	123·	„	M. 100.
Vienna	3 months	.	212·	„	Fl. 100.

#### WEIGHTS AND MEASURES.

The French metrical system has been introduced.

The cantar (cwt.) has 44 okke or oke of 4 litres of 100

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\* The Roumanian Treasury takes at present the Napoleon at 20 lei nuove (at par), the sovereign at 25·22, the Turkish lira at 22·78, the Austrian ducat at 11·75, and the Imperial German twenty-mark piece at 24·69 lei.

† Refer to note page 19.

drams each. The oke weighs 1262·898 grammes or 2·7842 lb. avoirdupois. The weight of the cantar is accordingly 55·5675 kilogrammes or 122·505 lb. avoirdupois.

The Walachian viadra holds 12·82 litres or 2·8217 imperial gallons.

The common corn kilo has 16 dimerli. The dimerli is equal to 24·6 litres or 0·6768 imperial bushel. The kilo measures accordingly 3·936 hectolitres or 1·3536 imperial quarter—100 dimerli = 8·46 imperial quarters. The Jassy kilo measures 4·35 hectolitres = 1·496 imperial quarter. The corn kilo of Galacz and Braila is very considerably larger, 100 kilos there being reckoned equal to 231 imperial quarters. The endesé, or linen ell, measures 0·641 mètre = 25·236811 English inches.

The halibiu, or woollen and silk ell, measures 0·682 mètre = 26·851 English inches.

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## R U S S I A.

### MONEYS.

100 Copeks = 1 Ruble or Rouble.\*

By the Imperial Ukase of the 1st July, 1839, the silver currency was re-established as the lawful money of account and exchange throughout the Russian Empire. The then existing paper currency, called banco or Imperial Bank assignates, was, however, allowed to remain in circulation as an auxiliary medium of payment at the rate of 100 roubles in silver, equal to 350 roubles in banco.

In 1843 these banco roubles were officially called in, and they have since ceased to appear in quotations of merchandise or exchanges.

The monetary unit of the re-established Russian silver currency (of 1839) was the silver rouble with a legal weight of 20·7315 grammes  $868\frac{1}{8}$  fine. Since January 1st, 1886, the silver rouble weighs 19·99 grammes 900 fine, the exact equivalent of the former money.

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\* Rublj, *i.e.* a piece cut off (a silver bar).

The "Credit Notes" which were issued by the State since 1843, were at first exchangeable against silver or gold, and were quoted "par," or were at a small premium. But in 1844 the State Bank began to issue credit notes beyond the amount of actual bullion held, and thus the first step was taken to create a new kind of fiduciary paper money. Between the years 1844 and 1854 these new notes lost only a small percentage in comparison to gold (1—2 per cent.); but since 1854, when they were made inconvertible, they have fallen considerably in value, and are at present worth only about 65 per cent. of their nominal value. They form the present legal tender of Russia (Finland excepted), which is therefore an inconvertible paper money.

Russia coins in gold the half-imperial and the ducat. The former weighed legally 6·544 grammes  $916\frac{2}{3}$  fine, and the latter 3·92643 grammes  $916\frac{2}{3}$  fine. The half-imperial was legal tender for Ro. 5·15, and the ducat for Ro. 3.\* Practically these gold coins were commercial money, varying in price from day to day. According to the law of January 1st, 1886, there are coined new imperials (legal tender for Ro. 10) weighing 12·902 grammes 900 fine, and new half-imperials weighing 6·451 grammes 900 fine, making the weight of 1000 new half-imperials 207·4 ounces, and the mint par of the rouble 3s. 2·06*d*. This latter piece is therefore equal to the French 20 fr. piece. The relation of silver and gold by the new coinage is 1·15 $\frac{1}{2}$  against 1·15·45 before. The old imperials are fast disappearing, and the new imperials taking their place.

The bullion weight is pud=40 pounds of 96 zolotniks of 96 doli each. Bullion is reported in zolotniks, so that an assay 96 fine represents pure metal. The quotations for silver are given in copeks per zolotnik fine, and for gold in roubles (paper) for 1 lb. fine. Gold coins are quoted in roubles (paper) per piece.

The State Bank buys gold and silver at prices which are fixed from time to time.

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\* On that basis the Mint Par between Russia and England was £1 = Ro. 6·2865 or Ro. 1=38·177*d*.

## WEIGHTS AND MEASURES.

*Weights.*—The Russian pound is divided into 96 zolotniks of 96 doli each. The pūd or pood is 40 lb. The berkowitz is 10 pood or 400 lb. From the average of several careful trials made at the Bank of England\* the weight of the Russian pound is equal to 6319·96416 grains troy. From which estimate :

	lb.	oz.	dwt.	grs.		lb.	
1 Pood	=	43	10	13	6·5664	Troy	= 36·11408 Avoir.
1 Pound	=	1	1	3	7·96416	„	= 0·902852 „
1 Zolotnik	=			2	17·83296	„	= 0·0094047 „
1 Doli	=				0·68576		

A most careful comparison of minutely adjusted copies of the Russian and English standard weights, made lately by the Imperial Weights and Measures Commission of St. Petersburg, has found 6319·733 grains troy to be the exact English equivalent of the Russian pound. The difference is not so material, however, as to necessitate an alteration of the above estimates.

100 Pounds = 1316·6592 oz., or 109·7216 lb. Troy = 90·2852 lb. Avoirdupois, or 40·9527 Kilogrammes (1 Kilogramme = 15432·349 Grains Troy).

100 Pood = 4388·864 lb. Troy = 32·24471 cwt. English.  
1000 Zolotnik = 137·152 oz. Troy.

And

100 oz. Troy = 729·118 Zolot.  
100 lb. Troy = 91·13975 lb. Russian.  
100 lb. Avoir. = 110·7601 „ = 2·76900 Pood.  
112 lb. „ = 124·0513 „ = 3·10128 „  
2240 lb. Avoirdupois, or 1 Ton English = 62·02564 „

The standard of the Russian pound, transmitted years ago by the British Consul to this country, is stated to have weighed 6318½ grains troy; but it was unquestionably under the proper weight; and in bullion estimations it is more correctly taken at 6319¾, or 6320 grains troy.

In some portions of the Russian territories, as in Courland and Livonia, and particularly in Riga, the old local weights

\* Many years ago, by the late W. D. Haggard, Esq., F.S.A., then Principal of the Bullion Office.



and measures were formerly permitted to be used; but they have been entirely abolished since the 1st January, 1846. See *Poland and Finland*.

*Liquid Measures.*—The vedro is computed to hold exactly 30 Russian pounds pure water weighed *in vacuo* at  $10\frac{1}{3}^{\circ}$  Reaumur or  $62^{\circ}$  Fahrenheit. It is now divided decimally into 10 kruschki, or stoof. The anker is 3 vedro. The oxhoft is 6 anker, the pipe 2 oxhoft. The botchka or cask is 40 vedro.

The cubic contents of the vedro are 750·568 Russian or English cubic inches, equal to 2·7069 imperial gallons or 12·2985 litres.

100 Imperial Gallons = 36·94 Vedro.

General estimations make 100 vedro equal to 271 imperial gallons, and 1000 imperial gallons equal to 369 vedro.

*Dry Measures.*—The tschetwert, or chetwert, contains 8 tschetwerik of 8 garnez each.

The garnez is computed to hold exactly 8 Russian pounds distilled water weighed *in vacuo* at  $62^{\circ}$  Fahrenheit. The cubic contents are therefore 200·1548 cubic inches, equal to 3·2797 litres or 0·72186 imperial gallon. The cubic contents of the tschetwert are accordingly 12809·6941 cubic inches, equal to 209·9 litres or 0·72185 imperial quarter.

100 Chetwert = 72·185 Imperial Quarters.

100 Imp. Quarters = 138·533 Chetwert.

In common estimations 1 chetwert is reckoned equal to  $5\frac{3}{4}$  imperial bushels, and 100 chetwert to 72 imperial quarters, at which rate wheat is generally sold for delivery on arrival in this country.

At the exchange of banco roubles 22·4 per £ sterling or  $37\frac{1}{2}d.$  per silver rouble, 1 banco rouble per chetwert is equivalent to 15 pence per imperial quarter, or 1 silver rouble per chetwert to 4s. 4d. per imperial quarter.

*Long Measures.*—The English foot is commonly used in St. Petersburg for the measurement of timber, deals, &c.

The St. Petersburg standard of deals contains 120 pieces, each 12 feet long,  $1\frac{1}{2}$  inch thick, and 11 inches wide, equal to 165 English cubic feet.

The old or proper Russian foot is equal to 14 English inches, making the arschin of 16 werschok, or 2 Russian feet,

equal to 28 English inches, and 9 arschin equal to 7 English yards.

The fathom, sachin or sajen, is 3 arschin = 6 Russian feet = 7 English feet = 2.1336 mètres.

The werst, or Russian mile, is 500 sajen, equal to 3500 English feet = 5 furlongs  $66\frac{2}{3}$  yards = 1.06678 kilomètre, making 100 werst equal to 66.28754 English miles, or 3 werst to nearly 2 English miles.

Land is measured by the dessatine or crown dessatine of 2400 square sajen, equal to nearly 2 acres 2 roods 32 poles English, or 1.0925 hectare. The common dessatine is equal to  $1\frac{1}{2}$  crown dessatine; it is, accordingly, = 1.45667 hectare, or about  $3\frac{3}{5}$  acres English.

N B.—The standard of the old Russian foot transmitted by the British Consul to this country is stated to have measured  $13\frac{3}{4}$  inches. However, the Russian estimates are based upon a length of 14 inches.

In cases in which the Rhineland foot is employed, it is taken to be 3 per cent. longer than the English foot.

The introduction of the French Metrical System is contemplated.

### EXCHANGES.

The exchanges are quoted on Tuesdays and Fridays.

Bills are dealt in for immediate and for deferred delivery.

Bills are delivered to the buyer the day following their negotiation, with interest calculated up to the day of negotiation. The rate of interest charged or allowed is the bank rate of the foreign place, but on Bills on Germany it is the open market rate of the German place.

Interest is calculated as at Berlin.

The Brokerage is  $\frac{1}{8}$  per cent.

There are ten days of grace, of which, however, banks and a few large houses do not avail themselves.

On sight Bills the days of grace are three. No grace is allowed on unaccepted Bills.

Bills must be presented for acceptance twenty-four hours after reception.

Bills falling due on a Sunday or Holiday are payable the following day.

It is customary for Russian merchants to pay in promissory notes of six to nine months' currency.

The State Bank charges for collections on provincial centres where it has branches as follows :

$\frac{1}{8}$  per cent. on Bills of amounts below Ro. 1000.

1 „ mille „ „ „ beyond „ 1000.

In St. Petersburg the usual Bank charges for commission on provincial Bills are as follows :

$\frac{1}{8}$  per cent. for Moscow, Kiew, Odessa, Charkow, Riga.

$\frac{1}{4}$  „ „ „ Libau, Podolsk, Cherson, Kischineff, Kursk, Poltawa, Rostoff, Wilna.

$\frac{3}{8}$  „ „ „ Minsk and Berditscheff.

$\frac{1}{2}$  „ „ „ Bialystock and Kowno.

$\frac{1}{2}$ —1 „ „ „ Dunaburg and Cronstadt.

The Russian Calendar is twelve days behind the Gregorian Calendar. This has to be taken into account in transactions of Bills of Exchange with Russia.

The Bill Stamp as follows :

On amounts up to Ro. 50	.	Ro. 0·10
Beyond Ro. 50	„ 100	„ 0·15
„ 100	„ 200	„ 0·30
„ 200	„ 300	„ 0·40
„ 300	„ 400	„ 0·55
„ 400	„ 500	„ 0·70
„ 500	„ 600	„ 0·80
„ 600	„ 700	„ 0·90
„ 700	„ 800	„ 1·
„ 800	„ 900	„ 1·15
„ 900	„ 1,000	„ 1·20
„ 1,000	„ 1,500	„ 1·90
„ 1,500	„ 2,000	„ 2·50
„ 2,000	„ 3,200	„ 3·70
„ 3,200	„ 4,000	„ 5·15
„ 4,000	„ 6,400	„ 6·80
„ 6,400	„ 8,000	„ 9·
„ 8,000	„ 10,000	„ 11·40
„ 10,000	„ 12,000	„ 13·80
„ 12,000	„ 15,000	„ 15·60
„ 15,000	„ 20,000	„ 21·
„ 20,000	„ 25,000	„ 27·60
„ 25,000	„ 30,000	„ 33·60
„ 30,000	„ 40,000	„ 42·
„ 40,000	„ 50,000	„ 54·

Foreign moneys are converted into roubles at the exchanges of 1 Ro. = 38*d.* = H. Fl. 1·90 = Aust. Fl. 1·60 = Fr. 4 = M. 3·30.

This Bill stamp is also in force in Poland, but not in Finland. Inland cheques pay no stamps; cheques drawn out of Russia pay the stamp.

Money Orders drawn in Russia up to five days' sight are exempt from the stamp.

If a Bill is drawn in sets, every copy must be drawn on stamped paper; a first of exchange, however, is exempt from duty if it bears in front the inscription "for acceptance only," and if its back is crossed. A first for acceptance can only be given up against the copy in circulation, if the latter is fully stamped, irrespective of any stamp the first may already bear.

### COURSE OF EXCHANGE.

St. Petersburg gives to

London	3 mos.*	Ro. 100	for £10
Amsterdam	"	" 82	„ Fl. 100
Germany	"	" 50	„ M. 100
Paris	"	" 40	„ Frs.100

Vienna, Copenhagen, Stockholm and Christiania are mentioned in the official list, but never quoted.

### EXAMPLE.

To exchange £816 into Silver Roubles at 99·50 Ro.

£		S. R.		£
If 10	—	99·50	—	816
		816		
		—————		
		Ro. 8119·20		

\* Refer to note page 19.

## REVERSE.

To exchange S. R. 8119·20 into Sterling at Ro. 99·50.

Ro.	£	Ro.
If 99·50	10	8119·20?
99·50 )	81192 =	£816
	<hr style="width: 50px; margin: 0 auto;"/>	
	1592	
	<hr style="width: 50px; margin: 0 auto;"/>	
	5970	
	<hr style="width: 50px; margin: 0 auto;"/>	

## EXERCISES.

- Ex. 1. Exchange £1000 Sterling into Silver Roubles at 97 Ro.  
 „ 2. „ £644 10s. 5d. Sterling into Silver Roubles  
 at Ro. 96·75.  
 „ 3. „ S. Roubles 8000·00 into Sterling at Ro. 99.  
 „ 4. „ S. Roubles 4876·56 into Sterling at Ro. 96.

## PRODUCTS.

- |                  |                 |
|------------------|-----------------|
| Ex. 1. Ro. 9700  | Ex. 3. £808 1 8 |
| „ 2. Ro. 6235·72 | „ 4. £507 19 6  |

## FINLAND.

## ABO, HELSINGFORS, WIBORG.

By Imperial Ordinance of 8th November, 1865, Finland reckons in marks (Markka) =  $\frac{1}{4}$  silver rouble = 1 franc, divided into 100 penni. There are silver coins of marks and double marks, half-marks and quarter-marks; copper coins of 1, 5, and 10 penni. Silver Roubles and 50- and 25-copek pieces are also in circulation. The old Swedish Riksdaler Specie Banco of 48 Skillingar of 12 Rundstykken was formerly occasionally used as money of account and exchange.

A law of August, 1877, introduced the gold standard, the mark, which, however, is not coined in gold, being equal to a quantity of 0·2903225 gramme fine gold (= the gold franc).

Pieces of 20 and 10 marks are struck equal to the Napoleon and Half-Napoleon.

### WEIGHTS AND MEASURES.

The old Swedish weights and measures, with the old divisions, are still retained. See *Sweden*.

The bullion weight is the French gramme.

Exchanges are quoted as follows: London in marks for £1. Paris in marks for Fr. 100, Petersburg in marks for Ro. 100, and Germany in marks for M. 100.

### POLAND.

The late Russian Kingdom of Poland, at one time known as forming the Grand Duchy of Warsaw, is now completely incorporated in the Russian Empire, and has accordingly the same moneys and weights and measures as the latter. Still, some of the old weights and measures are permitted to be in use, to wit—

### WEIGHTS.

The Polish funt (pound) has 16 uncyi (ounces) = 128 dracim (drams) = 384 scrupélow (scruples) = 9216 granów (grains) of  $5\frac{1}{2}$  graników of 8 millegramów (milligrammes) each, making the pound equal to 405·504 grammes or 625·88 grains troy.

The Polish Centner (centnar) of 4 stones or kamceni = 100 lb., is therefore equal to 40·5504 kilogrammes or 89·398 lb. avoirdupois.

### MEASURES.

*Liquid Measures.*—The Polish kwarta is equal to the French litre; and the beczka (cask) of 25 garniec or 100 kwarty is equal to 100 litres or 22·01 imperial gallons.

*Dry Measures.*—The korzec, containing 4 cwierni = 32 garcy = 128 kwarty of 4 kwaterki each, is equal to 1·28 hectolitre, or 3·5216 imperial bushels, making 100 korzec equal to 44·02 imperial quarters.

*Long Measures.*—The Polish ell, or lockjéc, of 2 stopi or feet = 24 calów or inches of 24 millimetrów each, is equal to 0·576 mètre or 22·6777 English inches, making 100 Polish ells equal to 62 9936 English yards.

The Polish mile (mila) is reckoned equal to 8 Russian werst, or about  $5\frac{1}{2}$  English miles (5·303).

## SCANDINAVIA.

## DENMARK.

## MONEYS.

1 Krone = 100 Óre.

By an Act dated 23 Mai, 1873, the Danish Diet ratified the Monetary Convention between Sweden and Denmark of 18 December, 1872.

This Convention established the gold standard.

The unit of the new Scandinavian money is a silver coin called "Krone," divided into 100 Óre. It is legal tender up to 20 Kroner only.

The gold coins are pieces of 10 and 20 Kroner, and out of 1 kilogramme fine gold there are coined

248 pieces of 10 Kroner, or

124        "        20        "

The fineness is 900, so that  $223\frac{1}{2}$  pieces of 10 Kroner, or  $111\frac{3}{4}$  pieces of 20 Kroner, weigh 1 kilogramme.

Each 10-Kroner piece therefore weighs 4.480286 grammes, and contains 4.032258 grammes fine gold; each 20-Kroner piece weighs 8.960572 grammes, and contains 8.064516 grammes fine gold.\*

The former money of Denmark was the "Rigsdaler" of 96 Skillinger. It was a silver coin weighing 14.447 grammes 875 fine. The legal proportion between the old and new money is 1 Krona =  $\frac{1}{2}$  Rigsdaler, or = 48 Skillinger.

The Danish National Bank buys bar gold and German gold coins at 2480 Kroner per kilogramme fine, deducting  $\frac{1}{4}$  per cent; Sovereigns and Napoleons at 2480 Kr. per kilo fine, less 3 per mille.

## WEIGHTS AND MEASURES.

*Weights.*—The Danish or Copenhagen Mark, used in the sale of gold and silver, is divided into 8 Unser or ounces = 16 Lod or 256 Ort, and its weight is equal to 3631.139 grains troy, or 235.294 grammes.†

\* The Mint Par between England and the countries of the Scandinavian Union is, therefore, £1 = Kr. 18.1592, or Kr. 10 = 11s. 0.164*d.*; see chapter on "Arbitration of Bullion."

† The Copenhagen mark is the half-pound Danish silver weight. Seven-

100 Danish Mark = 656·6489 Oz. Troy.

The Danish pound commercial weight is divided into 16 ounces (Unser) or 32 Lod. It is equal to 500 grammes or 7716·1745 grains troy. The pound is also divided into 100 quintins of 10 Ort.

100 lb. Danish = 110 231 lb. Avoirdupois.

100 lb. Avoird. = 90 7185 lb. Danish.

112 lb. Avoird. = 101·605 lb. Danish.

The Danish Centner is 100 lb. The Skippund is 20 Lispund of 16 Pund each, and is equal to 352·7393 lb. avoirdupois.

It is usual to reckon 8 Skippund equal to 25 cwt. English. The Bismer (steelyard) pound is 12 Danish pounds. The Vog is 36 Danish pounds. The Last is 4000 Danish pounds. The Skibslast is  $16\frac{1}{4}$  Skippund = 5200 Danish pounds.

*Liquid Measures.*—The integer of Danish measures of capacity is the Potte of 4 Pægle. The Potte is equal to 0·96612 litre; 8 Potter make one Viertel. The Danish pipe is 2 Oxhoveder. The Oxhoved contains 6 Ankere of  $19\frac{3}{4}$  Kander or  $38\frac{1}{2}$  Potter each; the Anker is, however, held equal to 39 Potter. The Oxhoved contains, accordingly,  $232\frac{1}{2}$  Potter, and is equal to 49·4393 imperial gallons, or 224·623 litres.

The Oxhoved is occasionally computed, also, as equal to 240 Potter = 231·869 litres, or 51·0344 imperial gallons. Hence

100 Imp. Gallons = 470·27 Potter = 58·79 Viertel.

100 Litres = 103·507 „ = 12·94 „

The Danish cubic foot, equal to 1886·71 English cubic inches, contains exactly 32 Potter or 4 Viertel.

*Corn and Dry Measures.*—The Tönde or barrel contains 8 Skjepper of 4 Fjerdjngkar each. Its cubic contents are  $4\frac{1}{2}$  Danish cubic feet, equal to 144 Potter liquid measure, corresponding with 3·827566 imperial bushels or 1·39121 hecto-litre.

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teen pounds Danish silver weight being held equal to sixteen pounds commercial weight of 500 grammes, the silver weight pound comes to 470·588 grammes, of which 235 294 grammes is the exact half. The mint used the Danish-Cologne mark = 233·78 grammes or 3607·77455 grains troy. At present the Mint weight is the French gramme.



The Danish corn Last is 22 Tönder, equal to 10·5258 imperial quarters or 306·066 hectolitres.

The Last of lime, salt, &c., is 12 Tönder ; of coals 18 Tönder.

The commercial shipping Last is 80 cubic feet, usually reckoned equal to 2 tons English ship measure.

100 Tönder = 47·8445 Imperial Quarters.

100 Imp. Quarters = 209·01 Tönder.

*Long Measures.*—The Danish Fod or foot is the Rhineland foot of 12 Tommer or inches. It is exactly the same as the former Prussian foot. The Danish Alen or ell is 2 Fod, and is equal to 24·713 English inches, or 0·6277 mètre.

100 Danish Ells = 68·647 English Yards.

100 Engl. Yards = 145·673 Danish Ells.

The Danish mile (Mil) is 12,000 Alen, equal to 8237·82 English yards = 4·68058 English miles = 7·5325 kilomètres.

The introduction of the French Metrical System is contemplated.

#### EXCHANGES.

The new Scandinavian law on Bills of Exchange (1880) abolished the eight days of grace which hitherto existed in Denmark. Protest for non-payment must be levied the second working day after maturity of the Bill. The legal commission in re-exchange accounts is  $\frac{1}{3}$  per cent. for each indorsement, but the total of commissions must not exceed 2 per cent. of the amount of the Bill. Sight Bills must be presented for acceptance within six months when drawn in Europe, within one year when drawn out of Europe. Bills falling due on a Sunday or a holiday are payable the next day.

The Stamp is as follows :

On Bills not longer than 8 days' sight or 14 d. date, 20 oere.

On all other Bills :

	Up to Kr. 1,000	.	.	Kr. 0·20
Beyond Kr.	1,000	„	2,000	. . „ 0·35
„	2,000	„	4,000	. . „ 0·70
„	4,000	„	6,000	. . „ 1·
„	6,000	„	8,000	. . „ 1·35
„	8,000	„	10,000	. . „ 1·70
„	10,000	„	12,000	. . „ 2·

And so on.

## COURSE OF EXCHANGE.

Copenhagen gives to

London short and 3 months*	Kr. 18·10	for	£1 Sterling.
Paris	”	”	72· ” Fr. 100
Hamburg	”	”	88·70 ” M. 100
Amsterdam	”	”	150· ” Fl. 100

## EXAMPLE 1.

Exchange £930 1s. 0d. into Kroner at Kr. 18·20  
 $930·05 \times 18·20 = \text{Kr. } 16926·91.$

## EXAMPLE 2.

Exchange Kr. 16926·91 into Sterling at Kr. 18·20  
 $18·20)16926·91 = \text{£}930 \text{ 1 0}$

## NORWAY.

CHRISTIANIA, DRONTHEIM, BERGEN.

## MONEYS.

1 Krone = 100 Óre.

Norway has joined the Scandinavian Mint Convention between Denmark and Sweden, and her monetary system is the same as that of Denmark, which see.

The former money of Norway was the Species Daler of 120 Skilling; it was a silver coin equal to two Danish Rigsdaler. 5 Speciesdaler are, therefore, equal to 20 Kroner. (1 Species Daler = 4 Kroner).

## WEIGHTS AND MEASURES.

Since 1875 Norway has adopted the French Metrical System.

The former weights and measures of Norway were those of Denmark.

Deals shipped at Christiania, Drammen, Frederickshall, and Gothenborg (in Sweden), are invoiced by the Norwegian Standard hundred of 120 pieces, each 12 feet long, 3 inches thick, and 9 inches broad, English measure, the cubic contents of the Standard hundred being 270 English cubic feet.

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\* Refer to note page 19.

## EXCHANGES.

The new Scandinavian law on Bills of Exchange (see *Denmark*) abolishes the 10 days of grace which hitherto existed in Norway.

The Course of Exchange is the same as at Copenhagen.

## SWEDEN.

## STOCKHOLM AND GÖTEBORG.

## MONEYS.

1 Krona = 100 Öre.

By a Convention with Denmark of 18th December, 1872, the Gold Standard has been introduced into Sweden. The money is the same as in Denmark.

The former money of Sweden was the Riksdaler Riksmünt of 100 oere, a silver coin, 50 of which weighed 6558·9 grains troy (425·076 grammes), 750 fine.

Besides the Riksdaler Riksmünt, there existed in Sweden the *Species* and the *Banco*. The *Species* was the original currency of the land, and was taken equal to 4 *Riksdaler*.

The Banco valuation arose from the inability of the States Bank to redeem its notes in silver according to the promise on the face of them. These bank notes, which dropped to a considerable discount, were finally declared, by Royal Ordinance of 26th October, 1829, legal tender for exactly three eighths of the original amount nominally represented by them; this reduced their value from 48 Skilling *Species* to 18 Skilling *Species*.

This gave accordingly the following proportions:

1 <i>Species</i> Daler	=	2 $\frac{2}{3}$ R. dr. Banco	=	4 R. dr. Riksmünt.
1 R. dr. Banco	=	18 Skilling Sp.	=	1 $\frac{1}{2}$ R. dr. Riksmünt
1 R. dr. Riksmünt	=	12 Skill. Specie	=	1 R. dr. 32 Sk. Bco.

8 Daler Banco being thus made equal to 3 Daler *Specie* or to 12 Daler Riksmünt.

By law the new Krona was declared equivalent to the old

Riksdaler Riksmünt, which gives a proportion of silver to gold = 1 : 15·81.

## WEIGHTS AND MEASURES.

The French Metrical System has been introduced ; it has to be exclusively used from the 1st January, 1889. Since 1879 it could be used concurrently with the former system.

### FORMER WEIGHTS AND MEASURES.

In 1856 a decimal division of weights and measures was introduced into Sweden, the integer of the old system being held intact ; this system was in force from 1863 to 1875. In 1875 the French Metrical System was adopted, and (since 1883) this is in general use.

There were four different weights used in Sweden, to wit—

1. The General Commercial or Market Weight, which is called Victuali-vigt (Provision weight). It was used also for gold and silver, and in the mint. The Skålpund (Scalepound) of this weight is equal to 425·076 grammes, or 6559·922 grains troy.

100 lb. Victuali-vigt	=	93·713 lb. Avoirdupois.
100 „ Avoirdupois	=	106·709 „ Victuali-vigt.
112 „ „	=	119·514 „ „

2. The Iron Weight, called Jernvigt, Stapelstads, or Utskeppnings-vigt, which is used for the export weight of metals in those towns that have the privilege of trading with foreign parts. The pound of this weight is 4·5ths of that of the preceding weight, being equal to 340·060 grammes, or 0·7497 lb. avoirdupois.

3. The Miners' Weight, or Bergs-vigt, used at the forges and iron foundries, is 10½ per cent. heavier than the Iron Weight. The pound of this weight is equal to 375·766 grammes, or 0·82848 lb. avoirdupois.

4. The Inland Town weight, or Uppstads-vigt, used for metal received in inland towns that have not the privilege of foreign trade. The pound of this weight is 5¼ per cent. heavier than the pound Iron Weight, and is equal to 357·913 grammes, or 0·78906 lb. avoirdupois.

The Swedish Pund is divided decimally into 100 Orter of 100 Korn or grains each.

The Pund Tackjernsvigt (pig-iron weight) is equal to 488·127 grammes or 1·0761352 lb. avoirdupois.

The pound for the weighing of copper ore is equal to 376·993 grammes or 0·831126 lb. avoirdupois.

A Skeppund  $v : v$  : is 20 Lispund or 400 Pund ; but for pig iron it is 26 Lispund or 520 Pund.

A Centner is 5 Lispund or 100 Skälpund.

One hundred Centner are a last. One English ton is equal to 23 Centner 90·28 lb., but it is taken, for all practical purposes, to be exactly 24 Centner.

N.B.—The preceding estimates are based upon the corrected comparison between the French kilogramme and the Swedish Skälpund, which has shown the latter to be equal to 425·076 grammes or 6559·922 grains troy.

Of the two models of the Swedish Skälpund tried at the Mint of London, the one from Stockholm is stated to have weighed 6560 grains troy, the other from Gothenburg 6555·5 grains troy, the former agreeing to all requisite exactness with the figures here adopted.

*Liquid Measures.*—The Kanna ( $= \frac{1}{10}$  cubic foot or 100 Swedish cubic inches) is the common integer of measures of capacity. The Kanna holds 2·617188 litres, or 0·576045 imperial gallon, making

100 Kannor = 57·6045 Imperial Gallons.

100 Imperial Gallons = 173·6 Kannor.

The Ankare is 15 Kannor, the Fat or Am 60 Kannor, and the Oxhufvud 90 Kannor.

The Tunna of pitch or tar is 95 Stop =  $47\frac{1}{2}$  Kannor, equal to 27·362 imperial gallons. The Tunna of other liquids is 96 Stop or 48 Kannor.

*Dry Measures.*—The old common Tunna or barrel, dry measure, used to contain 2 Spänner, or 4 Fjerdingsar, or 32 Kappar, or 56 Kannor, but for some articles a greater number of Kappar was used, as, for instance, 34 Kappar for the Tunna of salt and lime, 36 Kappar for the Tunna of wheat and other grain, and 38 Kappar for the Tunna of malt.

	Imp. Bush.	Imp. Qrs.	Hectolitres.	
100 Common Tunnor	= 403·231	= 50·404	= 146·562	
100 Salt „	= 428·432	= 53·554	= 155·722	
100 Wheat „	= 453·633	= 56·704	= 164·882	
100 Malt „	= 578·835	= 59·854	= 174·043	
	Com. T.	Salt T.	Wheat T.	Malt T.
100 Imp. Qrs.	= 198·397	= 186·727	= 176·354	= 167·073

The Cubic Foot has now superseded the old Tunna or Barrel measure. 1 Cubic Foot is = 1000 Cubic Inches or 10 Kannor. The Kanna is = 100 Cubic Inches. One Cubic Inch is = 1000 Cubic Lines.

*Measures of Length, &c.*—The Swedish foot (Fot) of 10 decimal inches (Tum) is equal to 0·296901 mètre, or 11·6893 English inches. The Tum is divided into 10 Linier. Ten feet (Fötter) make one Stång, 10 Stänger 1 Ref.

The Swedish ell (Aln) is 2 feet. The Famn or fathom, is 3 ells or 6 feet. A Stång is 5 ells or 10 feet. A Swedish mile (Mil) is 6000 Famnar or 18,000 Alnar, and is equal to 11,689·3 English yards or 6·64165 English miles.

100 Swedish Feet	=	97·4107	English Feet.
100 „ Ells	=	64·9404	„ Yards.
100 English Feet	=	102·658	Swedish Feet.
100 „ Yards	=	153·978	„ Ells.
100 „ Miles	=	15·056	„ Miles.

*Surface Measures.*—100 Square Linier = 1 Square Tum; 100 Square Tum = 1 Square Fot; 100 Square Fötter = 1 Square Stång; and 100 Square Stänger = 100 Square Ref.

Land used to be measured by the Tunmland or by the Kappland. The Tunmland was divided into 4 Halfspannland of 8 Kappland or 14 Kannland each.

The Tunmland is 14,000 Swedish square ells. It is equal to 5904·18 English square yards, or 1·21988 English acre, and the Kappland of 437½ Swedish square ells is equal to 184·505 English square yards, or very nearly 6·1 English square rods.

N.B.—As there are some differences between the general estimates of the Swedish measures of length, surface, and capacity, and the estimates given here, after careful revision, it is proper to state that the latter are based upon the measure-

ments of the mètre made by the Swedish and the English Royal Societies; the one body making it equal to 33·681256 Swedish decimal inches, the other to very nearly 39·371 English inches.

### COURSE OF EXCHANGE.

Stockholm *gives to*

London	short and 90 days' date*	Kr. 18·10	for £1 Sterling.
Paris	„ „ „	71·20	„ Fr. 100.
Hamburg	„ „ „	88·	„ M. 100.
Amsterdam	„ „ „	150·	„ Fl. 100.
St. Petersburg	„ „ „	190·	„ Ro. 100.
Copenhagen,	8 days' date	„ 90·80	„ Kr. 100.

For the Scandinavian law on Bills of Exchange see *Denmark*.

Bills pay a Stamp of 50 oere if for 100 to 1000 Kronas, and 1 Krona if over 1000 Kronas. Inland Bills pay no Stamp. Seconds or copies are exempt from the Stamp duty.

## S E R V I A.

### MONEYS.

1 Dinar = 100 Paras.

The dinar is the equivalent of the French silver franc = 4·175 gramme fine silver. There are also pieces of  $\frac{1}{2}$  and of 2 dinars.

By a law of the 10th December, 1878, the Servia currency is to consist of 3,600,000 dinars in silver, 1,200,000 dinars in bronze (pieces of 10 and 5 paras), and 10,000,000 dinars in gold (pieces of 10 and 20 dinars). A Monetary Convention with Bulgaria and Roumania is proposed. (See p. 81.)

The former Servian money was the piastre of 40 paras, a money account, 11 $\frac{2}{5}$  piastres being reckoned equal to the Austrian silver florin

### WEIGHTS AND MEASURES.

The oka has 4 litra of 180 drams each, and is reckoned equal to 2 $\frac{1}{4}$  Vienna pounds = 3·778 lb. avoirdupois. Corn is sold by weight per 100 oke = 1 tovar.

In the sale of liquids by weight the oka is reckoned equal to  $\frac{1}{4}$  Vienna mass = 0·3893 imperial gallon.

\* Refer to note page 19.

The Turkish arschin = about 28 English inches, is used as measure of length.

The Bullion weight is the French gramme.

There is a bill stamp of about  $1\frac{1}{5}$  p. mille, being 12 dinars for 10,000 dinars; after that it rises by 2 dinars for every 1000 dinars.

## S P A I N.

### MONEYS.

100 Centesimos = 1 Peseta.

Since 1st January, 1876, Spain reckons in pesetas and centesimos. The peseta represents the French franc, the centesimo the centime. The peseta, which is token money, weighs 5 grammes 835 fine silver. The standard of Spain is the same as that of France, and of the new silver pieces those of 5 pesetas, weighing 25 grammes 900 fine, are legal tender. As these are coined freely, gold is quoted at a premium in Spain.

34 Maravedis = 1 Real

10 Reales = 1 Escudo.

2 Escudos = 20 Reales = 1 Duro or Hard Dollar.

The peseta is equal to 4 reales, 5 pesetas making 1 duro.

The Exchange on England is quoted in pence per duro, for which purpose the penny sterling is divided into 100 cents. Thus quoted, the "Mint Par" between London and Madrid, on the basis of 3100 pesetas = 1 kilogramme gold 900 fine, would be 1 duro (peso) = 47·5785*d*.

The French 5-francs piece had been admitted since 1823 as part of the currency at 19 reales. The coin is now current as 5 pesetas.

The principal gold coin formerly was the old doblon, or quadrupel, or onza de oro = 320 reales. The value given to it in our colonial estimation is 64*s*. sterling, but at its full mint-age value it is worth 64*s*. 8*d*. The other gold coins were the media onza, or half-ounce; the doblon de ochenta = 80 reales; the doblon de cuarenta = 40 reales, and the coronilla, or durillo, or gold dollar, or doblon de veinte = 20 reales.

These coins are still in circulation.

In 1854 a new gold coin was introduced—the doblon de Isabel, or centen = 100 reales, equal to £1 0*s*. 7½*d*. sterling.



The average weight of the old doblon is 26·95 grammes 894 fine; the legal weight of the doblon of Isabella is 8·3871 grammes 900 fine.

The new gold coins are pieces of 5, 10, 20, 25, 50, and 100 pesetas, by law equal in weight and fineness to the respective French gold coins.

The "Peso Duro" or "Peso Fuerte" coined before 1848 is the well-known "Spanish Dollar" or "Spanish Piastre," which has a large circulation in Africa, China, &c. Its average weight is 0·865 oz. or 26·891 grammes, about 896 fine, or 24·094 grammes fine silver. By law the peso is = 24·433 grammes fine silver. Its value in sterling, which depends upon the price of silver, has fluctuated between 3s. and 4s. 6d.

#### WEIGHTS AND MEASURES.

The law of 1st January, 1859, decreed the adoption of the French Metrical System in its entirety throughout Spain and the Spanish possessions in America. The denominations of the French system are fully retained, with the simple change of the termination to *o* (metro, litro, gramo). The are is called area.

The following are the chief Castilian weights and measures which were formerly in use throughout Spain and the Spanish possessions and colonies, &c.

#### FORMER WEIGHTS AND MEASURES.

The libra Castellana is divided into 16 onzas, and weighs 460·142 grammes or 7101 grains troy. 25 lb. Castellanas make 1 arroba, and 4 arrobas 1 quintal.

100 Castilian lb. = 101·443 lb. Avoirdupois.

100 lb. Avoirdupois = 98·577 Castilian lb.

112 „ = 110·406 „

100 Castilian lb. equal 81·89 Alicante libras mayores, or 133·33 libras menores, 131·55 lb. of Aragon, 115·01 lb. of Barcelona, 93·93 lb. of Bilbao.

*Liquid Measures.*—The cantara, or arroba mayor, is divided into 2 cuartillas of 2 azumbres of 4 cuartillos\* of 4 copas each, and contains 16·138 litres or 3·552 imperial gallons. The moyo† is 16, the pipe 27, and the bota 30 cantarar.

\* Care must be taken not to confound the cuartilla, or quarter arroba, with the cuartillo, which is exactly the eighth part of it.

† The moyo is simply an imaginary measure in Spain.

100 Cantaras = 355·20 Imperial Gallons.

100 Imperial Gallons = 28·153 Cantaras.

The arroba menor contains 12·564 litres, or 2·7653364 imperial gallons.

The pipe of oil contains  $34\frac{1}{2}$  arrobas menores.

100 Arrobas Majores =  $128\frac{2}{3}$  Arrobas Menores.

*Corn Measures.*—The Castilian fanega is divided into 4 cuartillas, or 12 celemines or almudes, and contains 55·49 litres or 1·526669 imperial bushel. 12 fanegas make 1 cahiz, which is equal to 665·88 litres or 2·29 imperial quarters.

100 Castilian Fanegas = 19·0834 Imperial Quarters.

100 Imperial Bushels = 65·502 Castilian Fanegas.

100 Castilian fanegas equal to 250·38 fanegas of Aragon, 75 of Asturia, 93·98 of Bilbao, or 102·59 of Santandar.

*Long Measures.*—The vara or Castilian ell, is 4 palmos, or 3 pies de Burgos of 12 pulgadas or inches each. The Spanish foot is equal to 0·27833 mètre or 10·95813 English inches, and is the same throughout Spain. But the vara or ell differs in the several provinces. For instance,

100 Castilian Varas = 91·318 English Yards,

100 English Yards = 109·507 Castilian Varas,

whilst in Cadiz 108 varas are held equal to 100 yards.

100 Castilian varas equal to 111·47 Alicante varas, 110·48 varas of Aragon, or 107·24 varas of Barcelona.

The Spanish league measures 6680 mètres or 4·15 English miles.

## EXCHANGES.

There are no days of grace in Spain. Bills falling due on a Sunday or Holiday are payable the previous day. Protest must be levied the day after maturity of a Bill.

The Brokerage is 1 per mille.

Interest is calculated as in France.

Bills are paid in the paper money of the place where they are payable, which is legal tender only in that particular town. On, y for Bills drawn "payable in gold or silver" can payment in specie be demanded.

The Bill Stamp is as follows :

	Up to Pes. 250	.	Pes. 0·10
Beyond Pes. 250	500	.	0·25
„ 500	1,000	.	0·75
„ 1,000	2,000	.	1·
„ 2,000	3,000	.	1·50
„ 3,000	5,000	.	3·
„ 5,000	7,000	.	4·
„ 7,000	10,000	.	6·
„ 10,000	12,000	.	7·
„ 12,000	15,000	.	9·
„ 15,000	17,000	.	10·
„ 17,000	20,000	.	12·
„ 20,000	22,000	.	15·
„ 22,000	25,000	.	18·
„ 25,000	30,000	.	20·
„ 30,000	35,000	.	25·
„ 35,000	40,000	.	30·
„ 40,000	45,000	.	35·
„ 45,000	50,000	.	40·
„ 50,000	60,000	.	45·
„ 60,000	80,000	.	50·
„ 80,000	100,000	.	75·

Cheques to order and bearing endorsements pay the full stamp ; cheques to bearer pay 10 cts.

Bills must be drawn and accepted on paper bearing the impressed Spanish Stamp.

## COURSE OF EXCHANGE.

Madrid *gives* for

	8 days' sight and 90 days' date*		29 Pes. for £1.
Paris	16 prem. <i>i.e.</i>	116	„ „ Fr. 100.
Italy	12	112	„ „ Lire 100.
Hamburg	.	160	„ „ M. 100.
Stockholm	90 days' date	175	„ „ Kr. 100.
Lisbon	demand	495	„ Milr. 100.

\* Refer to note page 19.

## EXAMPLES.

To exchange 18,000 reales into sterling at 48*d.* per duro.

	R.		d.		R.
If	20	—	48	—	18000 ?
			20)864000		
			d. 43200		
			£180 0 0		

To exchange £800 sterling into reales, at 48·50 per duro.

	d.		Reales.		£
If	48·50	—	20	—	800 ?
			192000		192000
			48 5)3840000		
			Reales 7917 18 m.		

To exchange 10,000 pesetas into sterling at 50*d.* per duro

	P.		d.		P.
If	5	—	50	—	10000 ?
			5)500000		
			d. 100000		
			£416 13s. 4d.		

## THE REVERSE.

	d.		Pesetas.		£ s. d.
If	50	—	5	—	416 13 4 ?
			100000		100000
			50)500000		
			Pesetas 10,000.		

## SWITZERLAND.

100 Centimes = 1 Franc.

The Federal Law of 7th May, 1850, decreed that the French franc should supersede the Swiss franc in all cantons of Switzerland. Switzerland subsequently became a party to the Latin Monetary Union of 23rd December, 1865. (See *France*.)

The value of the franc is, accordingly, the same as that of the French franc, or about  $9\frac{1}{2}d.$  sterling. The coins are the same as those of France, with pieces of 5, 10, and 20 cents, in nickel. Switzerland does not coin gold pieces; the French gold coins circulate instead. At present the coinage of silver is suspended.

## WEIGHTS AND MEASURES.

Since 1st Jan., 1877, the French Metrical System is in full legal force, and the old systems have been discarded.

## EXCHANGES.

The Course of Exchange is as in Paris.

The Brokerage is  $\frac{1}{2}$  per mille.

There are three days of grace in Glaris, six days of grace in St. Gall, and one day of grace in Geneva.

The following Bill Stamps are charged :

In the Canton of Basle	. . .	$\frac{1}{5}$ per mille.
„ „ Fribourg	. . .	$\frac{1}{2}$ „
„ „ Geneva	. . .	$\frac{1}{2}$ „
„ „ Vaud	. . .	$\frac{1}{4}$ „
„ „ Valais	. . .	1 „
„ „ Aarau	. . .	$\frac{1}{5}$ „
„ „ Bern	. . .	0 30 „

In Lucern the Stamp is 10 cents for each Bill, and

In Tessin the duty is as follows :

Up to Fr. 250	. . .	Fr. 0.10
Fr. 250 „ „ 500	. . .	„ 0.15
„ 500 „ „ 1000	. . .	„ 0.25
„ 1000 „ „ 2000	. . .	„ 0.50

And then Fr. 0.50 for every Fr. 1000 or fraction thereof.

In the Canton of Basle cheques pay 10 centimes. 7

## TURKEY IN EUROPE.

## CONSTANTINOPLE.

## MONEYS.

100 Aspres	=	1 Piastre.
100 Piastres	=	1 Gold Medjidié, or Turkish Lira.

For currency purposes the piastre is divided into 40 paras of 3 aspres each.

The new Turkish coinage, issued in 1844, is called Medjidié, after the late Sultan Abdul-Medjid.

The value of the gold Medjidié, or sare yuzluck (yellow piece of 100), at 77*s.* 9*d.* per oz. standard is 18*s.* 0·45*d.* It weighs 111·359 grains troy or 7·216 grammes  $\frac{1}{2}$  fine.

The other gold coins are the ellilik =  $\frac{1}{2}$  lira Turca of 50 piastres, and the tzeirek =  $\frac{1}{4}$  lira Turca of 25 piastres.

The gold pieces are not now coined.

The silver coins (830 fine) are pieces of

20 Piastres	=	Gumueh, or Silver Medjidié.
10 „	=	Onlik „ half „
5 „	=	Bechlik „ quarter „
2 „	=	Ikilik.
1 „	=	Piastre piece.

There are a great many small base silver coins, but most of them (if not all) differ much in purity, as well as in weight. Some of them, the old Bechliks, for instance (5 piastres), are only worth half their nominal value, and even less.

Every nation in Europe has contributed to the coinage of Turkey. The £ sterling commonly passes for 125 piastres, and the Napoleon for 100. The foreign silver currency consists of five-franc pieces, and of smaller Russian and Austrian coins.

Gold and silver money in Turkey commands a premium against caïmés, a paper currency issued to a large amount during the last Russo-Turkish war, and now almost out of circulation. These caïmés are accepted by the Government

under certain conditions only, and at present are worth but a small fraction of their nominal value.

### COURSE OF EXCHANGE.

Constantinople *gives to*

London, 3 months' date and 31 days' sight\*, 112 Piastres for £1 Sterling.

And *receives from*

Paris 3 months 23 Francs for 1 Turkish Pound.

Vienna " 12 Florins " 1 "

Salonica *gives to*

Paris 3 months 4 Piastres 10 Paras for Fr. 1.

The Bill Stamp is  $\frac{1}{2}$  per mille.

If Bills are drawn in sets the Stamp is paid on one copy only.

### WEIGHTS AND MEASURES.

Since 1874 the French Metrical System of weights and measures has been introduced. Since March 1st, 1882, a decree of the Sultan came into force according to which the "archine" was adopted as the length of the metre and unit of length. In weights the "ock" became divided into 100 drachmas subdivided decimally. Only for gold and silver the old weight of one oka = 400 drams of 16 carats of 4 grains each remains in force.  $\frac{1}{4}$  oka = 1 cheky = 4942·3503 grains troy = 320·259 grammes.

The former weights were:

The Rottolo of 180 Drams	=	1·27	lb. Avoirdupois.
The Oka of 400 Drams	=	2·818565	"
The Alma or Almud (Liquid Measure)	=	1·14555	Imperial Gallon.
The Killow of Corn	=	0·97	Imperial Bushel.
The Pik or Droà	=	26 $\frac{5}{8}$	English Inches. generally taken. as 27 Eng. In.
The Halebi or Arschin (for measuring land)	=	27·9	English Inches.

\* Refer to note page 19.

## A F R I C A .

### TURKISH VASSAL STATES IN AFRICA.

#### EGYPT.

##### ALEXANDRIA AND CAIRO.

1 Egyptian Pound = 100 piastres.

1 piastre = 10 Ochr el guerches.

This money has been introduced by a law of November, 1885. Previously the piastre was divided into 40 paras.

The Egyptian pound weighs 8.500 grammes gold 875 fine. This gives a Mint Par of 98.45 piastres for the £1, 78.07 piastres for the napoleon, and 96.38 piastres for 20 marks.

The old silver pieces are withdrawn and new pieces of 20, 10, 5, 2 and 1 piastres are issued, with legal tender power up to £2.

The Government takes the following gold coins at the following tariff rates :

English Sovereigns	. . .	97.50 Piastres.
Napoleons, 20 Fr.	. . .	77.15 „
Turkish Pound	. . .	87.75 „
Old Imperials	. . .	79.45 „

Half-sovereigns, half-napoleons, &c., are taken at the proportionate prices.

There is a tariff price for foreign silver coins, but it is of no practical value, for they are no longer legal tender, and in commercial transactions they pass only at the market price of the day.

Besides the above tariff money there existed in Egypt another money called "corrente," and principally used for inland transactions. It is a deteriorated currency of the tariff piastre, and stands at a considerable discount.

#### WEIGHTS AND MEASURES.

A variety of cantari and rottoli are used. The Govern-



ment cantar of 100 rottoli of 144 drams each is = 98·0461 lb., but it is generally reckoned equal to 99 lb. avoirdupois. This cantar is also divided into 36 oke, and 40 oke are generally reckoned equal to 110 lb. avoirdupois. The actual weight is 108·94 lb.

The dram or derbem, which forms the unit of the Egyptian weights, is equal to 3·0884 grammes or 47·66131 grains troy.

The ardeb of 24 Cairo rubbie is now the sole legal measure for grain; 100 ardebs are reckoned equal to 63 imperial quarters, so that 158 $\frac{2}{7}$  are equal to 100 imperial quarters.

The long measure is the Turkish pik, generally reckoned equal to 27 English inches.

The introduction of the French Metrical System has been decreed.

## COURSE OF EXCHANGE.

*Alexandria gives to*

London, 3 dys.' sight and 3 mos.' date,	*97 Piastres for	£1 Sterl.
Paris, 3 ds.' sight and 3 ms.' date	382 Piastres for	100 Francs.
Switzerland	3 months	381 „ 100 Francs.
Italy	„	380 „ 100 Lires.

## TRIPOLI.

### MONEYS.

40 Paras = 1 Piastre.

20 Piastres = 1 Mahbub.

The piastre is the Turkish piastre. See *Turkey*.

### WEIGHTS AND MEASURES.

The common market rottolo has 16 uckie (ounces) = 600 drams. It is equal to 1·8168 kilogramme or 4·005356 lb. avoirdupois. The common cantar of 100 common rottoli is equal to 181·68 kilogrammes or 400·5356 lb. avoirdupois.

The large rottolo has 720 drams = 2·1801 kilogrammes or 4·806295 lb. avoirdupois. The large cantar of 100 large

rottoli is accordingly equal to 218·01 kilogrammes or 480·6295 lb. avoirdupois.

5 Large Rottoli = 6 Common Rottoli.

5 „ Cantari = 6 „ Cantari.

The cafiso (corn measure) has 20 tiberi. There are several kinds of cafisi, of considerably varying contents. The largest holds 406 litres = 1·4 imperial quarter (1·39626). The Turkish pik is the measure of length. See *Turkey*.

## ABYSSINIA.

### ADOWAH, GONDAR, MASSOWAH.

#### MONEYS.

3 Borjookes = 1 Kibear.

10 Kibears = 1 Divani.

4 Divanis = 1 Harf.

23 Harfs = 1 Pataco.

2 $\frac{1}{4}$  Patacos = 1 Sequin.

The sequin has, accordingly, 6210 borjookes or glass-corals. It is worth about 9s. 6d. sterling. Abyssinia has no currency proper. Spanish piastres, old Venetian sequins, and Maria-Theresia Thaler form the chief circulating medium. Cotton cloth, and cakes or tablets of rock-salt, usually 1 foot long and 3 inches broad and thick, and the borjookes or glass-corals above alluded to, are used for small change. Large business accounts are settled in gold dust and gold bars, the reckoning being made by the wakea or wakih, the Abyssinian ounce = 400 grains troy, the value of which is computed according to the degree of fineness.

#### WEIGHTS AND MEASURES.

The Abyssinian rottolo has 12 wakeas (ounces) of 10 derimes (drams) each. The dram is equal to 40 grains, the wakea equal to 400 grains troy. The rottolo is accordingly equal to 4800 grains troy or 311·035 grammes.

The kuba, for liquids, honey, &c., has a capacity of 62 English cubic inches, and holds 1·016 litre = 0·2236216 imp. gallon.

The Gondar ardeb has 10 malegas = 4·4 litres or 0·121055 imp. bushel. The Massowah ardeb has 24 malegas = 10·56 litres or 0·290532 imp. bushel. The malega is computed to weigh 324·28 grammes = 5004·4 grains troy. 25 Gondar ardebs = 10 Massowah ardebs.

The Turkish pik (ell) = 27 English inches serves as measures of length in Abyssinia.

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## BRITISH POSSESSIONS AND SETTLEMENTS IN AFRICA.

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### CAPE OF GOOD HOPE AND NATAL.

(BRITISH POSSESSIONS IN SOUTH AFRICA.)

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#### CAPETOWN AND PORT NATAL.

##### MONEYS.

4 Farthings	=	1 Penny.
12 Pence	=	1 Shilling.
20 Shillings	=	1 Pound Sterling.

Accounts were formerly kept in Dutch currency, to wit, in florins of 20 stivers of 16 pfennige each, or in rix-dollars of 8 schillings of 6 stivers each. This was a paper currency, and the value of the rix-dollar, in paper, was fixed at 1s. 6d. sterling.

##### WEIGHTS AND MEASURES.

Both the English and the former Dutch weights and measures are employed.

The Centner or 100 lb. D. W.	=	108·593 lb. Avoird.
The Legger or Leaguer of 15 Anker	=	126·63 Imp. Gallons.
The Muid of 4 Schepels	=	3·06 Imp. Bushels.
The Ell of 27 Rhyland Inches	=	27·82 Inches.

See *Netherlands*.

## COURSE OF EXCHANGE.

London is quoted 30 days', 4 months' and 6 months' sight, in premium or discount per cent.

Amsterdam is quoted 30 days' sight, in pence for 1 Florin.

Paris is quoted 30 days' sight, in pence for 1 Franc.

Bombay and Calcutta are quoted as in London.

The Bill stamp in the Cape Colony is as follows :

On amounts up to £50 . . . 6*d.*

„ £50 „ £100 . . . 1*s.*

And then for every £100 or fraction . . . 1*s.*

If Bills are drawn in sets, every document pays one-third of the stamp.

There is no Bill Stamp in Natal.

## MAURITIUS.

(BRITISH POSSESSION.)

## MONEYS.

100 Cents = 1 Rupee.

The present standard is the Silver Valuation with the Rupee as unit, see *East Indies*.

Formerly mercantile retail accounts were kept in current dollars or colonial piastres, a nominal coin divided into 100 cents, but wholesale and Government accounts were kept in sterling. The old colonial livre of 20 sols was also used.

The par of valuation of the current dollar was 4*s.* 2*d.* sterling, the value also given to the Austrian (Maria-Theresia) dollar and the French five-franc piece. The Spanish dollar was rated at 4*s.* 4*d.* The current dollar, or colonial piastre, was reckoned equal to 10 colonial livres.

At present 1 Rupee is taken =  $\frac{1}{2}$  dollar.

The Exchange on London is sometimes quoted in premium per cent. on the par of 1 Rupee = 2 shillings ; generally in shillings and pence per Rupee.

Calcutta, Madras, Ceylon, are quoted in premium or discount per cent.

## WEIGHTS AND MEASURES.

The old French weights and measures are still commonly employed. Those of England are used for the import duties.

100 lb. Poids de Marc	=	107·92 lb. Avoirdupois.
100 Veltes	=	165·71 Imp. Gallons.
100 Aunes	=	130·13 Yards.

Or, in round figures, as commonly used :

100 lb. Poids de Marc	=	108 lb. Avoirdupois.
3 Veltes	=	5 Imp. Gallons.
1 Velte	=	2 Old Wine Gallons.
7 Aunes	=	9 Yards.

In 1875 the French Metrical system has been introduced.

## GUINEA.

(BRITISH SETTLEMENTS ON THE WEST COAST OF AFRICA, INCLUDING THE FORMER DANISH POSSESSIONS [CHRISTIANBORG], AND THE FORMER DUTCH POSSESSIONS [ELMINA]).

Business with the natives is transacted here chiefly by bartering European goods against native produce. The negroes, in their trading operations, base their calculations mostly upon the Danish rigsdaler, which they call *moco*. The *moco* is divided into 48 *dame* (stiver), or 96 *pah* or *tabo* (skillinge). Twenty cowries or *boss* are held worth 1 skilling; 2 rigsdalere are called a *cabes*, 8 a *gua*, 16 a *guenne*, and 32 a *bendo*. The natives reckon also in *macute* of 2000 cowries or zembis each. The *macuta* is computed worth 4·91*d.* sterling. The *macuta* silver piece or 10-cent piece, supplied by the British Mint, has the value of 4 $\frac{3}{4}$ *d.* affixed to it. The chief foreign coin in circulation is the Spanish dollar, divided into 100 cents. Besides *macuta* pieces, the British Government supplies also 20- and 50-cent and 100-cent or dollar silver pieces, and 5-cent and 1-cent copper pieces.

So-called *guineas*, meaning strips of cotton cloth 7 to 8 inches long by  $\frac{1}{2}$  ell wide, were formerly much used as a medium of exchange in the gum trade.

Gold is reckoned by ounces and *ackey*s = 16,000 cowries or 6 *ackey*s = 1 ounce = 20·396 grammes or 314·7582 grains troy.

### WEIGHTS AND MEASURES.

The *bendo* has 8 *pisos* or *usanos* (ounces), and weighs 64·114 grammes or 989·43 grains troy.

*Measures of Length.*—The *jacketan* = 12 English feet, and the *pik* (ell) = 0·578 mètre or 22·756438 English inches.

## FRENCH POSSESSIONS IN AFRICA.

### ALGERIA.

See *France*.

### TUNIS.

#### MONEYS.

1 Franc = 100 Centimes.

Since 1891 the French Monetary System has been introduced.

Formerly the money of Tunis was the Piastre of 16 Karub, 1 Karub = 3 Fels, or  $3\frac{1}{2}$  Aspers, or  $6\frac{1}{2}$  Burbens.

The Tunis piastre was reckoned equal to 62 French centimes.

The silver coins were pieces of 5 piastres, 1,  $\frac{1}{2}$ ,  $\frac{1}{8}$ , and  $\frac{1}{16}$  piastre; the copper coins, pieces of 1 karub and of 1 fels.

In introducing the French monetary system the old 100-piastre gold coin was declared equivalent to 60 fr., and the 5-fr. piece decreed legal tender for  $8\frac{1}{3}$  piastres.

### WEIGHTS AND MEASURES.

The *rottolo-attari*, the commercial pound for metals, weighs 506·88 grammes = 1·117478 lb. avoirdupois. The common *cantar* has 100, the *cantar* of raw cotton 110, and the *cantar* of iron and manufactured cotton 150 *rottoli-attari*. The *rottolo-attari* has 26 *ukie* (ounces).

The *rottolo-sucki*, the pound for meat, oil, soap, butter,

honey, wood, coals, olives, and fruits of all kinds, weighs 568·445 grammes = 1·167492 lb. avoirdupois, and is divided into 18 ukie.

The rottolo-khaddari, greengrocer's weight, weighs 639·453 grammes = 1·4097517 lb. avoirdupois, and is divided into 20 ukie.

Wine is measured in the wholesale trade by the millerole de Marseille = 64 litres or about 14·08 imperial gallons; in the retail trade, by the mettar, of which  $6\frac{1}{2}$  are reckoned to the millerole.

The oil mettar is much larger. It holds 20·15 litres = 4·435 imperial gallons. Vinegar, milk, and other liquids (except wine) are measured by the oil mettar.

The cafiso (corn measure) has 16 uëba of 12 saâ each. The saâ holds 2·583 litres = 0·0710648 imperial bushel.

There are three sorts of draâ or pik (ell) in use, to wit—

For cotton goods, the Arabian pik = 0·488 mètre or 19·213048 English inches.

For woollen wares, the pik hendash = 0·673 mètre or 26·496683 English inches.

For silks, the Turkish pik = 0·637 mètre or 25·079327 English inches.

The introduction of the French metrical system has been decreed.

## COURSE OF EXCHANGE.

Tunis *gives to*

Paris and Marseilles, 5 days' sight and 90 days' date, 99 Francs for 100 Francs.

## REUNION, OR ISLE BOURBON.

ST. DENIS AND ST. PAUL.

MONEYS.

100 Centimes = 1 Franc.

See *France*.

The commercial classes reckoned formerly in Spanish piastres of 100 cents. The old colonial *livre* had 20 colonial sous

of which 3 form a *sou marqué* = 5 centimes; 10 colonial livres were = 1 colonial silver piastre.

The Mexican and Spanish dollars which used to circulate largely have been called in by the Government, and the currency of the island is at present the same as that of France, the standard being nominally the Double Valuation, in reality gold conjointly with the circulation, as full legal tender, of the silver 5-francs pieces. The exchanges of Reunion do not, therefore, share in the fluctuations of the silver exchanges, for in case of an adverse balance of trade they are protected through those of France in the same manner as the exchanges of Netherlands India are protected through those of Holland.

### WEIGHTS AND MEASURES.

See *France*.

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## PORTUGUESE SETTLEMENTS IN AFRICA

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### EAST COAST OF AFRICA.

#### MOZAMBIQUE.

The Portuguese settlements on the East Coast of Africa reckon in milreis of 1000 reis but of very inferior value to the Portuguese milreis, the Spanish piastre or dollar being reckoned equal to 6 crusados of 400 reis = 2400 reis, which gives about 21*d.* sterling as the value of the Mozambique milreis.

### WEIGHTS AND MEASURES.

The *bahar* has 20 *frehsilis* = 12 lb. avoirdupois. The bahar is accordingly = 240 lb. avoirdupois.

At the Custom House the French Metrical Weights and Measures are used.

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## LIBERIA.

### MONROVIA.

See *United States of North America*.



## MAROCCO.

## MAROCCO AND FEZ.

## MONEYS.

4 Kirat	=	1 Flus.
6 Flus	=	1 Musuna.
4½ Musune	=	1 Uckia.
10 Uckie	=	1 Mitskal.

The Mitskal is by law of the exact value of the escudo or half-dollar Spanish (see *Spain*), but has of late greatly deteriorated in value. It is the retail trade currency of the land. Wholesale trade operations are reckoned in Spanish duros (called *rials* in Marocco), divided into 100 cents.

The French silver 5-francs pieces circulate largely; their price varies between 32½ and 60 uckies.

Foreign accounts are kept in dollars of 100 cents, or of 2 escudos of 10 reales each. 19 reales are taken = 5 francs.

## WEIGHTS AND MEASURES.

The artal, or Marocco pound, weighs 508 grammes = (very nearly) 1·12 lb. avoirdupois, which makes the kintar of 100 artal = 112 lb. avoirdupois.

Liquids, with the exception of oil, are sold by weight.

The oil-rula holds 15·155 litres = 3·3356155 imperial gallons, weighing 22 artal = 24½ lb. avoirdupois.

Corn is sold by the *sahh* of 4 muhd. The muhd used in the trading ports of the empire is = about 14 litres or 0·385175 imp. bushel.

*Measure of Length.*—The dhra'â (ell), called codo by the Christians, is divided into 8 tomin. It is equal to 0·571 mètre or 22·481 English inches.

The English yard and the French mètre are also used.

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## ASIA.

## A N A M.

HUÉ (or P'HU-THUAN-THIEN).

## MONEYS.

60 Sapeks = 1 Mas.

10 Mas = 1 Kwan.

The *sapek* is a small zinc or pewter coin, like the Chinese *cash* or *li* (see *China*; also *Cochin China*, under French Possessions in Asia). The Spanish piastre is officially rated at  $1\frac{1}{2}$  kwan; but in commercial transactions it generally passes for about 2 kwan.

## WEIGHTS AND MEASURES.

See *China*.

## BOKHARA.

## MONEYS.

50 Pulli = 1 Tanga or Tjangan.

21 Tangas = 1 Tilla.

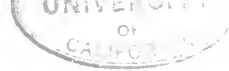
The tanga is a small silver coin, with Persian inscription. It is worth about 6*d.* sterling. The pulli is a small copper coin. The tilla is a gold coin, worth about half a guinea.

The Austrian ducat and the Russian silver rouble are the chief foreign coins in circulation; the latter is rated at 5 to 6 tangas, the former at about 16 tangas.

## WEIGHTS AND MEASURES.

The *batman* = 281·6778 lb. avoirdupois.

The *harsch*, or ell, = 1' arschin = 42 English inches. Three harsch = 1 kar.



## BRITISH POSSESSIONS IN ASIA.

## CEYLON.

## C O L O M B O.

## MONEYS.

1 Rupee = 100 Cents.

Formerly,

3 Chalies\* = 1 Stiver.

48 Stivers = 1 Rixdollar.

The Ceylon rupee is the same as the rupee of the East Indies. The rixdollar, which is now quite obsolete, used to be rated at 1s. 6d. sterling.

The Spanish piastre used to be rated at 4s. 2d. sterling.

In the internal intercourse the English pound sterling was sometimes used as a monetary unit.

The standard is the silver standard and the exchanges vary with the price of silver.

## WEIGHTS AND MEASURES.

See *Great Britain*.

The *candy* or *bahar* is reckoned equal to 500 lb. avoirdupois, though actually it weighs only a little more than 496 lb. The *garse* (garce or gahrs = 200 parrahs), when estimated by weight, is held equal to 9256½ lb. avoirdupois.

*Dry Measures.*—

4 cut Chundoor	=	1 Seer.
4½ Seers	=	1 Cooreie.
2½ Cooreies	=	1 Marcal.
2 Marcals	=	1 Parrah.
8 Parrahs	=	1 Amunam.
9⅔ Amunams	=	1 Last.

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\* 1 chaly = ½ farthing English.

The amunam or amonam holds 53·75 Old English gallons.

Thirty-four seers are equal to 1 English bushel.

A parrah coffee weighs 30 to 35 lb. ; a parrah pepper 27 to 30 lb. ; a parrah salt 52 to 55 lb. ; a parrah rice 42 to 46 lb. avoirdupois. The bale of cinnamon weighs about 92½ lb. avoirdupois.

The legger holds 75 veltes of 2 old English wine gallons each. 1 legger is therefore = 150 old gallons.

Arrack is bought by the legger of 80 veltes ; sold by the legger of 75 veltes.

### COURSE OF EXCHANGE.

Colombo *receives* from

London, 4 and 6 months' sight,\* 1s. 3½*d.* for 1 Rupee.

And *gives* to

Bombay, Calcutta, sight	Rs. 100 for	Rs. 100
China	„ „ 220 „	\$ 100
Mauritius	„ „ 95 „	Rs. 100.

### EAST INDIES.

CALCUTTA, MADRAS, BOMBAY.

#### MONEYS.

3 Pie	= 1 Pice.
4 Pice	= 1 Anna.
16 Annas	= 1 Rupee.

At Bombay formerly

100 Reas	= 1 Quarter.
4 Quarters	= 1 Rupee.

Since 1862 the Government rupee has replaced the old Company's rupee, as well as all the other rupees in circulation. The Government rupee being exactly of the same weight and fineness, however, as the old Company's rupee, the change is

\* Refer to note page 19.

simply one of name, and even as regards this the old "Co.'s rupee" still continues to figure in some courses of exchange.

The Government rupee is 180 grains troy silver  $\frac{1}{2}$  fine (165 grains fine silver to 15 grains alloy), *i. e.* = 1 tola.

The other silver coins, of the same fineness and proportionate weight, are the half-rupee, the quarter, and the eighth-rupee.

The quarter-rupee is also called the four-anna piece, the eighth rupee the two-anna piece.

The copper coins are the half-anna or double pice, weighing 200 grains troy; the pice or quarter-anna, weighing 100 grains troy; the half-pice, weighing 50 grains troy; and the pie, weighing  $33\frac{1}{3}$  grains troy.

The principal gold coin of British India is the gold mohur, which is exactly of the same weight and fineness as the silver rupee, and represents nominally the value of fifteen of the latter. A double mohur = 30 rupees; a ten-rupee piece, or  $\frac{2}{3}$  mohur; and a five-rupee piece, or  $\frac{1}{3}$  mohur, are also supplied by the mints of British India. These gold coins are, however, only struck for private account and dealt in as a commodity.

The anna and the Bombay rea have no actual existence as coins, but there are some other coins in circulation in Bombay, such as the *urdec* = 2 reas; the *doreea* = 6 reas; the *dooganey* or single pice = 4 reas; the *fuddea*, or double pice = 8 reas; the *paunchea* = 5 rupees.

Of the old Madras coins still occasionally met with may be mentioned the *star pagoda* (gold) of  $3\frac{1}{2}$  rupees, and the *fanam* of  $1\frac{1}{2}$  anna. There were also formerly small copper bits in circulation of 20, 10, 5, and 1 cash; 20 cash = 1 pie.

In the Bazaars throughout India the cowrie is also still used for small payments.

4 Cowries	=	1 Gunda.
20 Gundas	=	1 Pun.
4 Puns	=	1 Anna.
4 Annas	=	1 Kahun,

which latter is equal to  $\frac{1}{4}$  rupee. The monetary value of these cowries is variable, however, rising or falling with demand and supply.

At the British Mintage rate of £3 17s. 10 $\frac{1}{2}$ d., sterling per ounce standard gold, the gold mohur, or 15-rupee piece, is worth 29s. 2.4375 ( $2\frac{1}{8}$ )d.

Up to September, 1835, the monetary unit was the sicca

rupee, which was simultaneously used with the "current rupee," a money of account introduced by the East India Company towards the middle of last century.

The old sicca rupee and the current rupee have altogether ceased to be used now. Still, as their names may be found in the old price quotations of certain articles, it may be stated here that the old sicca rupee weighed 191·916 grains troy, and was  $\frac{1}{2}$  fine. It was equal, therefore, to 190·18 grains standard silver. By law of 17th August, 1835, the Company's (now Government) rupee was declared worth  $\frac{1}{8}$  of the sicca rupee.

The relative proportions between the Government, the sicca, and the current rupee, stand as follows:

100 Government rupees =  $93\frac{3}{4}$  sicca rupees =  $108\frac{3}{4}$  current rupees.

100 sicca rupees =  $106\frac{2}{3}$  Government rupees = 116 current rupees.

100 current rupees = 91·95 Government rupees = 86·20 sicca rupees.

100,000 rupees are called a *lac*, 100 lacs a *crore*, and 100 crores a *mas* of rupees. A crore of rupees is noted as 1,00,00,000 rupees.

The Indian standard is the silver valuation, and the exchanges of India are, therefore, closely connected with the price of bar silver in London.\* The value in sterling of the rupee has in past years fluctuated between 1s.  $2\frac{1}{2}d.$  and 1s.  $11d.$

The fineness of gold and silver is reported in millèmes. Gold is quoted in rupees for 1 tola fine; silver in rupees per 100 tola *sycee* (about 980 fine).

The Mint at Calcutta coins silver also for private account, charging a seignorage of 2 per cent., and for melting 1 per mille. The rupee being 1 tola (180 grains)  $\frac{1}{2}$  fine, the mint price of 100 tola fine is 109·09 rupees, or, deducting charges,  $106\frac{3}{4}$ — $106\frac{1}{2}$  rupees. If there is a demand for silver in the open market (*bazaar*), the price of fine silver rises in Calcutta to 107—108 rupees.

If Bills are drawn upon India "documentary," it is generally stipulated that the current rate on Government acceptances, but not exceeding 5 per cent., will be allowed on them if taken up before maturity.

The Bill Stamp is as follows:

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\* For calculations see chapter on "Arbitrations of Bullion."

Bills on demand *exceeding* R. 20 . . . 1 Anna.

Bills payable otherwise than on demand :

	Rs.	A.	If drawn in sets of			
			If drawn singly.	2 3		
				For each part of the set.		
Rs.	A.	Rs.	A.	Rs.	A.	
On amounts up to	Rs. 200	. .	0	2 . 0	1 . 0	1
„ from Rs. 200 to	400	. .	0	4 . 0	2 . 0	2
„ „ 400 „	600	. .	0	6 . 0	3 . 0	2
„ „ 600 „	1,000	. .	0	10 . 0	5 . 0	4
„ „ 1,000 „	1,200	. .	0	12 . 0	6 . 0	4
„ „ 1,200 „	1,600	. .	1	0 . 0	8 . 0	6
„ „ 1,600 „	2,500	. .	1	8 . 0	12 . 0	8
For every } Rs. 2,500 { or part thereof up to } Rs. 10,000 }			1	8 . 0	12 . 0	8
„ „ 5,000 „ „ 30,000			3	0 . 1	8 . 1	0
„ „ 10,000 „ over „ 30,000			6	0 . 3	0 . 2	0

### COURSE OF EXCHANGE.

Calcutta *receives* from

London	sight, 4 and 6 months' sight*	1s. 4d. for 1 Rupee.
Paris	„ 3 and 6 months' „	Fr. 1.75 „ 1 „
Australia	60 days' sight	1s. 4d. „ 1 „
Réunion	„ „	Fr. 1.75 „ 1 „

And *gives* to

Hongkong and Canton,	60 & 90 dys.' sight	Rs. 222 for 100 Dolls.
Shanghai†	„ „ „	310 „ 100 Taels.
Colombo,	sight and 30 days' sight,	6 Annas Prem. „ 100 Rups.
Mauritius is quoted 60 days' sight in discount per cent.		

### WEIGHTS AND MEASURES.

The *tola* = 180 grains troy is the basis of the legal ponde-

\* Refer to note page 19.

† Both China and India being countries using the Silver Valuation, a fixed "Mint Par," based upon silver (see "Arbitrations of Bullion") could be established between them if China would coin money of well-known weight and fineness. This is, however, not the case. But although an exact Mint Par cannot be established between Calcutta and Hongkong, we can find a par of exchange sufficient for all practical purposes—

rary system of British India. It is used chiefly for weighing gold and silver. It is subdivided into smaller weights, used by jewellers to weigh gold, pearls, and precious stones. These subdivisions are, the *masha* or *musha*, the *ruttee* and the *dhan*.

4 Dhans	=	1 Ruttee.
8 Ruttees	=	1 Masha.
12 Mashas	=	1 Tola.

The higher denominations of weights, from the tola upwards, are, the *chittack*, the *seer*, and the *mun*, or *bazaar maund*, or *British maund*.

taking the dollar as being 898 fine, and weighing on the average 0·867 oz.  
—by the following chain :

?	=	100 \$.
\$ 1000	=	867 oz.
Oz. 1000	=	898 oz. fine.
Oz. f. 11	=	12 oz. Rupees.
Oz. $\frac{3}{8}$	=	1 Tola.
Tola 1	=	1 Rupee.
		= Rs. 226·492.

As “Specie Points” may be taken the Short Exchanges Rs. 220 and Rs. 230; at the former silver will be sent from Hongkong to India, at the latter from India to Hongkong. The rate of exchange, however, rarely rises above the Par (Rs. 226).

The Par of Exchange between Calcutta and Shanghai would be found if we multiply 226·492 by 1·3937, and is = 315·6606 taels. The same would be obtained by the following chain :

?	=	100 Taels money.
Tael 1	=	1 Tael's weight 898 fine.
„ 1000	=	898 „ fine.
„ 1	=	580 Grains Troy.
Gr. troy 180	=	1 Tola.
Tola 11	=	12 Tolas Rupees.
„ 1	=	1 Rupee.
		= Rs. 315·6606.

At the Short Exchange of Rs. 304 silver is leaving Shanghai for India. As the other “Specie Point” may be taken the Short Exchange Rs. 326, but the rate rises rarely to the latter figure. For in consequence of the export of opium from India to China, rupees are generally in demand in China. In Hongkong the inquiry is chiefly for Bills on Calcutta and in Shanghai for Bills on Bombay.



5 Tolas	=	1 Chittack.
16 Chittacks	=	1 Seer.
40 Seers	=	1 Mun.

There is also the *pusseree* or 5-seers weight.

The bazaar maund is equal to 100 lb. English troy weight =  $82\frac{2}{7}$  lb. avoirdupois; the seer to  $2\frac{1}{2}$  lb. troy =  $2\frac{2}{3}$  lb. avoirdupois.

Another *maund* in common use in British India is the so-called *factory maund*, which weighs about  $74\frac{1}{8}$  lb. avoirdupois, and stands accordingly to the bazaar maund in the ratio of 100 : 91. Therefore 100 bazaar maund = 110 factory maunds; 3 factory maunds are held equal to 2 cwt. avoirdupois.

In *Madras*—

3 Tolas	=	1 Pollam.
40 Pollams	=	1 Viss.
8 Viss	=	1 Maund.
20 Maunds	=	1 Candy.

The candy is equal to about 493·7143 lb. avoirdupois; but it is generally reckoned equal, in the rough, to 500 lb. avoirdupois, the maund being reckoned equal to 25 lb., although actually it weighs only 24 lb. 10 ounces 15·54 drams avoirdupois.

The *Bombay* candy has 20 maunds of 40 seers each; the seer =  $\frac{7}{10}$  lb.; the maund = 28 lb.; the candy = 560 lb. avoirdupois.

Liquids are usually sold by weight in India, as also by the imperial gallon and the old English gallon.

The Calcutta *kahoon* of corn weighs 40 factory maunds =  $2986\frac{2}{3}$  lb. avoirdupois, or  $1\frac{1}{3}$  ton.

The *Madras garse* (corn measure) holds 16·906 imperial quarters. The garse is divided into 80 parahs = 400 marcals. The new marcal is = 800 cubic inches (the old Madras marcal was only = 750 cubic inches).

The *Bombay* candy (dry measure) is reckoned equal to about  $24\frac{1}{2}$  imperial bushels.

The English yard is rapidly becoming the favourite measure length in British India. 1 yard = 3 feet.

The guz, which is the original unit of linear measure in India, differs in the different provinces.

The *hanth*, or cubit, is *assumed* to be 18 English inches;

the guz =  $1\frac{1}{2}$  cubit = 27 English inches. But in Calcutta, &c., the term guz is used as equivalent to the English yard.

There is also the *ady*, or *Malabar foot* = 10·46 English inches, which is used chiefly in the parts about Madras.

24 Adies = K juli (Culi) = 20·92 English feet.

But the culi is in practical measurements generally held equal to 26 adies = 22·663 English feet.

The "Indian Weights and Measures Act" of 1870 fixes as the standard of weight the "ser," equal to the French kilogramme. This new ser is equal to 1·0716908 of the Indian ser of 1833, and equal to 80 tolas. The same act introduced the mètre, equal to 3·280899 feet, and the ser of capacity = 1·760773 pints.

It is 1 Tola	=	0·011664	New Ser.
1 Seer	=	0·9331	„ „
1 Mun	=	37·3242	„ „ (= 100 lb. Troy) and
1 gramme	=	0·08573526	Tola.

## MALABAR COAST.

### ANJENGO.

#### MONEYS.

4 Budgerooks	=	1 Pice.
12 Pice	=	1 Fanam.

The fanam is reckoned worth  $4\frac{3}{4}d.$  sterling. Nominally 6 fanams are reckoned to the Government rupee, but practically only 5.

11 fanams are reckoned equal to 1 Spanish piastre.

#### WEIGHTS AND MEASURES.

The *candy*, or *candil*, has 20 maunds, and is equal to 560 lb. voirdupois. 1 maund = 28 lb. 1 Anjengo candy = 7 maunds 20 seers Bengalee factory weight. The candy is divided also into 35 tilongs of 8 pollams each.

The covid is =  $\frac{1}{2}$  yard English measure.

## PRINCE OF WALES ISLAND, OR PULO PENANG.

(STRAIT OF MALACCA)

Accounts are kept in Spanish piastres or dollars of 20 co-pangs of 5 pice each; but mostly in piastres of 100 cents.

Exchange on London about 4s. per dollar, on Calcutta 220 Government rupees for 100 dollars.

### WEIGHTS AND MEASURES.

For the picul, cattie, &c., see *China*.

40 piculs are 1 *koyan* or *koyang*. 3 piculs = 1 bahar. The Pulo Penang bahar is reckoned occasionally by the Malay cattie, which is somewhat heavier than the Chinese, on which account the Malay picul is called the large picul. Reckoned by this weight the cwt. is  $9\frac{3}{4}$  lb. avoirdupois heavier; and the Pulo Penang bahar alluded to is equal to 428 lb. avoirdupois.

1 Picul = 100 Catties of 16 Taels each.

*Measures of Capacity.*—The *gantong* has 4 *chapahs*, and is equal to 4.513 litres = 0.97973113 imperial gallon. 800 gantongs are 1 *koyan*, equal to 35.6104 hectolitres = 12.2466264 imperial quarters. Rice, salt, and some other commodities are generally measured by the *parra*, nominally = 10 gantongs, but also fixed occasionally at 5, 15, and 20 gantongs.

The measure for piece goods is the *hasta* or ell = 18 English inches.

The Chinese retail dealers in the bazaar make use of the English yard = 2 hastas.

## RANGOON.

### MONEYS.

Now that Rangoon forms part of the British possessions in India, the Government rupee and the other British-Indian coins constitute here also the money of account and of exchange. Formerly the currency here, as throughout the

Burman Empire, consisted, for small payments, of bits of lead ; for larger payments, chiefly of bits of silver, but partially also of bits of gold, valued in the proportion of 17 gold to 1 silver. These differed greatly in fineness and weight. They had to be constantly weighed when passing from hand to hand, and occasionally also to be assayed—a most clumsy and expensive proceeding. The weights chiefly used were the *kyat* or *ticul*, and the *paiktha* or *vis*.

The fineness of the silver *ticul* or *kyat* differed from 1000, in which payments had to be made to the Imperial Treasury, down to 750, which was the usual degree in general business transactions. Taking the average fineness at  $883\frac{1}{2}$ , and the weight of the *ticul* at  $255\frac{1}{2}$  grains troy, the value of the coin may be reckoned at about 2s. 6d. sterling.

## WEIGHTS AND MEASURES.

See *East Indies*.

### OLD BURMESE WEIGHTS AND MEASURES.

2 Small *Rwés* (grains of *Abrus precatorius*) = 1 Large *Rwé*.

4 Large *Rwés* (beans of *Adenanthera pavonina*) = 1 *Bai*.

2 *Bais* = 1 *Mu*.

2 *Mus* = 1 *Mat'h*.

4 *Mat'hs* = 1 *Kyat* or *Ticul*.

100 *Kyats* = 1 *Paiktha* or *Vis*.

1 *Paiktha* equal to 3·65 lb. *avoirdupois*.

### *Measures of Capacity.*—

2 *Lamyetes* = 1 *Lamé*.

2 *Lamés* = 1 *Salé*.

4 *Salés* = 1 *Pyi*.

2 *Pyis* = 1 *Sarot*.

2 *Sarots* = 1 *Saït*.

4 *Saïts* = 1 *Ten*.

The *ten*, which is what we would call a basket, is generally reckoned  $\frac{1}{2}$  cwt. It ought to hold 58·4 lb. *avoirdupois* of clean rice. All sorts of grain and pulse are sold by measure ; so are also certain fruits, and lime, salt, and soda. Most other commodities and all liquids are sold by weight.

*Measures of Length.*—The basis of the linear measure in the Burman Empire is the *teong* or royal ell, which measures exactly 19·1 English inches, and is subdivided into 2 *thwchs* (spans), of  $1\frac{1}{2}$  *mehk* (handbreadth), of 8 *thits* (finger-breadths), of 4 *mo-jahs*, of 6 *nhons* (sesame-grains), of 10 *tschek-kheis* (hairbreadths).

The *ta*, or *teh*, or bambus, measures 7 teongs = 3·714 yards English. The *lan*, or fathom, measures 4 teongs = 2·12 yards.

## SINGAPORE.

Accounts are kept in dollars and cents, *vide* China (Hongkong, Canton, &c.). The standard is the silver valuation.

The exchange on London is generally from 1—2 per cent. over the Honkong rate on London, and the exchange on India is similar to that quoted in Honkong. The exchange on Batavia has lately been 245—250 florins per 100 dollars.

The Bill stamp is about  $\frac{1}{2}$  per mille.

## WEIGHTS AND MEASURES.

For the picul, &c., see *China*.

Salt, sago, and rice from Siam and the Indian Archipelago are sold by the *koyang* = 40 piculs. Rice and wheat from Bengal are sold by the sack = 2 Bengal Bazaar maunds = 164 $\frac{1}{2}$  lb. avoirdupois. In the sale of piece goods a *corge* means a score (twenty). In the sale of Javanese tobacco a *corge* means 40 baskets. Piece goods are measured by the English yard.

## BURMAH.

See *British Possessions*—RANGOON.

## CHINA.

SHANGHAI, HANKOW, TIENTSIN, CHEEFOO, &amp;c.

## MONEYS.

10 Cash or <i>Li</i>	=	1 Candareen.
10 Candareens or <i>Fun</i> or <i>Fen</i>	=	1 Mace.
10 Mace or <i>Tsien</i>	=	1 Tael or <i>Liang</i> .

This is the Chinese money of account. The lowest link of the chain alone, the *cash* or *li*,\* is represented by an actual coin, whereas the candareen, the mace, and the tael are simply denominations denoting certain fixed weights of silver.

The Canton tael weight is 579·84 grains troy (37·573 grammes), but is generally taken = 580 grains troy,† which would make 24 taels equal to 29 ounces troy. The multiplier for converting taels into ounces troy is, therefore, 1·208 or 1·208½ respectively. The mace weight is, accordingly, equal to 58 grains troy, the candareen weight to 5·8 grains troy, and the cash weight (in silver) to 0·58 grain troy.

But the *cash* or *li* is not a silver coin; it is made from an alloy of copper, iron, and tin. It is a circular bit of metal,  $\frac{7}{8}$  inch in diameter, with a square hole in the middle, round which are impressed, on the obverse, Chinese characters, stating the reign, &c.; on the reverse, Mantchu characters, stating the name of the mint. These cash are cast in moulds. Originally they represented one-thousandth part of a tael, and *nominally* they continue to do so to the present day; but they have long since ceased to keep up a corresponding actual metallic value. Many years ago they had already fallen from the nominal 1000 per tael to 1400. Since then their mintage depreciation has been making rapid progress. Some time ago it required from 1600 to 1800 of these coins to make up the value of a tael.

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\* Called also *Zin*, and, by the Dutch, *Ptjes*.

† When the Chinese Government in 1844 fixed the rates at which foreign coins should be received in payment of Customs' duties, the weight of 20 new rupees in Canton taels was found to be 6·203. As 20 new rupees of 180 grains troy weigh  $20 \times 180 = 3600$  grains troy, this makes the weight of the Canton tael 580·036434 grains troy. It may, then, fairly be taken at 580 grains in round numbers.

The monetary unit, the tael, is in Shanghai a quantity of silver of the fineness of the Mexican dollar (about 898), and weighing a tael, which would make 1 money tael = 1.3937 dollars, and 100 dollars = 71.7517 money taels.

At Shanghai foreign accounts are kept and the quotations are given in taels. Generally, when converting taels into dollars

$$\begin{aligned} \$100 \text{ are taken} &= 717 \text{ Taels, or} \\ 1 \text{ Tael} &= 1.395 \text{ Dollar.} \end{aligned}$$

Besides the Canton tael weight (37.573 grammes), there is the Hai-Kwan tael, or Government tael, which weighs 590.35 grains (38.246 grammes), or 2 per cent. more than the Canton tael (100 Canton taels = 98 Hai-Kwan tael).

At Shanghai there is another tael weight, about  $2\frac{1}{2}$  per cent. lighter than the Canton weight = 36.56 grammes (564.20 grains troy). It is used as weight for gold.

There are several local taels at the various ports in China differing greatly in value as compared with the Haikwan or Government tael. The following are the approximate values at the Treaty Ports:

Amoy	101.75	local Taels	=	100	Haikwan Taels.
Chefoo	106.40	„ „	=	100	„ „
Chinkiang	104.16	„ „	=	100	„ „
Foochow	110.00	„ „	=	100	„ „
Hankow	108.75	„ „	=	100	„ „
Hoihow	113.76	„ „	=	100	„ „
Ichang	109.65	„ „	=	100	„ „
Kiükiang	104.37	„ „	=	100	„ „
Newchwang	108.50	„ „	=	100	„ „
Ningpo	105.83	„ „	=	100	„ „
Pakhoi	110.57	„ „	=	100	„ „
Shanghai	111.40	„ „	=	100	„ „
Swatow	110.15	„ „	=	100	„ „
Takow	101.11	„ „	=	100	„ „
Tamsui	111.32	„ „	=	100	„ „
Tientsin	105.00	„ „	=	100	„ „
Wenchow	103.00	„ „	=	100	„ „
Wühü	104.16	„ „	=	100	„ „

100 Hankow taels are equal to 102.437 Shanghai taels.

From the above it will be seen that one uniform currency or coinage for the whole of China is a great desideratum.

In large native transactions ingots of silver form the medium of exchange. These ingots are called *shoes*, from some fancied resemblance in shape. They range in weight from  $\frac{1}{2}$  tael to 100 taels.

The Shanghai currency consists of such *shoes* of silver of about 50 taels' weight each. These ingots are rendered current by the *Hong Koo*, who assays the metal, and affixes to each ingot assayed by him a stamp recording its *touch* or degree of purity. The Hong Koo is not an official appointed by the Chinese Government, but derives his authority entirely through an arrangement among the native bankers. According to the stamp affixed by him on each *shoe* the Compradores add from nought up to 3 taels Shanghai weight per 50 taels of actual weight. This addition thus ranges from nought for silver of the Hong Koo's standard up to 6 per cent. for pure silver of 100 *toques* or *touch*.\* A further addition of 2 per cent. is made in conformity with an old custom of long standing. From these data it is easy to deduce the touch or purity of Shanghai sycee, or, more properly speaking, of sycee silver calculated in the actual weight represented by it in Shanghai taels of account.

$$\begin{array}{rcl} 100 \text{ Taels pure silver} + 6 \text{ per cent.} & = & 106 \\ 2 \text{ per cent. added} & & 2 \cdot 12 \\ \hline & & 108 \cdot 12 \end{array}$$

Representing Shanghai Tael of account 108·12

108 : 100 Shanghai Tael :: 1000 : 925 (nearly).

The so-called *Hai-Kwan* (*i. e.* Customs) sycee,† which is produced at the Customs Bank by melting and refining the Mexican, Spanish, and other foreign dollars received in pay-

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\* The Chinese report the fineness of the precious metals by dividing the weight into 100 parts, called *toques* or *touch*—98 touch means, accordingly, that the gold or silver ingot, &c., contains 98 parts of pure metal to 2 parts of alloy.

† By the Chinese this silver is called *wǎn-yin* (fine silver), but in foreign commerce it is known as *sycee*, which is the colloquial pronunciation of the Chinese words *se-sze*, meaning "silk-fine," and implying, accordingly, that the silver is so pure that it might be drawn out to the finest silken thread wire. Sycee silver means simply, therefore, the "purest silver."



ment of duties, commands a premium over the dollar currency ranging from 3 to 10 per cent., according to the supply and demand of the two commodities.

### COURSE OF EXCHANGE.

Shanghai *receives* from

London, sight and 4 months' sight*	3s. 10 <i>d.</i> for	1 Tael.
Paris	Fr. 4·90 „	1 „
Germany, 4 months' sight	M. 3·95 „	1 „
Bombay and Calcutta demand	Rs. 315 „	100 „

And *gives*

New York, 4 months' sight                    Taels 105 for \$100.

Hongkong, telegraphic transfers  
and 3 days' sight, 27 per cent.  
discount, *i. e.*                    „    73 „ \$100.

Yokohama, telegraphic transfers  
and 30 days' sight                    „    74 „ \$100.

Gold bars are quoted in taels currency per 10 taels Shanghai weight 98 touch fine (365·6 grammes).

Silver bars 17 B are quoted in taels currency per 100 taels Canton weight.

Mexican and Carolus dollars are quoted in taels per \$100.†

### HONGKONG, CANTON, FOOCHOW, AND AMOY

At the above ports accounts are kept in dollars and cents.

At Hongkong, Canton, and Foochow chopped dollars, which are simply Mexican dollars chopped or stamped by the natives, are the circulating medium, and in all payments it is the custom for them to be examined and weighed at the rate of 717 taels Canton weight per 1000 dollars.

At Foochow chopped dollars of the lowest description pass current, but at Hongkong and Canton only fairly good chopped dollars are taken at par.

At Amoy accounts are kept in currency dollars weighed at 720 taels Canton weight per 1000 dollars.

\* Refer to note, p. 19.

† The preference of the Chinese for the Carolus (Spanish) dollar procures to that coin generally a higher quotation than that for the Mexican dollar. The relation between these coins is as follows:

Full weight Carolus dollar, 413·76 grains troy, 7 W.

„ Mexican „ 416·64 „ 6½ W.

which, at 60*d.* per oz. standard, makes the Mexican dollar = 4*s.* 2·55*d.*, and the Carolus dollar = 4*s.* 2·09*d.*

Mexican Dollars are also taken at Amoy by arrangement, not weighed, but counted.

At these four ports clean or unchopped Mexican dollars usually command a small premium in the market, and when sold at a premium are counted instead of weighed.

The following are the approximate average weights of the various descriptions of dollars circulating at the Chinese ports:

Japanese Trade Dollar	420	Grains Troy.
Japanese Yen or Dollar	416	" "
Hongkong Dollar*	416	" "
Mexican Dollar, about	416½	" "
Carolus or Spanish Dollar, about	414	" "

The Mexican dollar is about 898 fine, or 6½ dwts. worse than standard silver. New Mexican dollars weigh from 867 to 869 ounces troy per 1000 dollars, according to where they have been minted, as some of the mints issue coins of fuller weight than others. The value in sterling of the above dollars depends upon the price of bar silver in London, and has ranged in past years from 3*s.* 6*d.* to 4*s.* 6*d.* The Carolus dollar is about 894 fine, or 7 dwts. worse than standard.

Sycee and bar silver (*vide* Shanghai) is dealt in at these ports at a variable premium, the par being taken at 717 taels Canton weight equal to \$1000.

## COURSE OF EXCHANGE.

Canton, Hongkong, &c., *receive*

London	Bank 4 months' sight drafts,†	2 <i>s.</i> 10 <i>d.</i> per \$1
Paris	" 4 " " "	Fr. 3·70 " \$1
Germany	4 months	M. 2·90 " \$1
New York	" American	\$70 " \$100.
Batavia	30 days' sight	Fl. 170 " \$100.
Bombay and Calcutta	Bank demand drafts,	Rs. 220 " \$100.
Shanghai	Bank demand	" Taels 75 " \$100.

Japan, demand and 30 days' sight; and Manila and Saigon demand drafts are quoted in dollars at a premium.  
Sycee silver and bar silver is quoted per cent. premium.

\* Between the years 1866 and 1868 the English were coining at Hongkong dollars weighing 416 grains troy or 26·95636 grammes silver 900 fine.

† Refer to note, page 19.

Gold leaf, 100-touch is quoted in dollars per Tael.

Gold bars, 98 " " " "

Sovereigns and United States' gold eagles are quoted in dollars per piece.

The Bill stamp in Hongkong is as follows :

On Bills on demand . . . . . 2 cents.

On Bills drawn otherwise than on demand :

	If drawn singly.	If drawn in sets.
On amounts up to \$100 . . . .	\$0·30 . . . .	\$0·15 each.
„ beyond \$100 up to 3000	\$1·00 . . . .	\$0·50 „
„ „ \$3000 . . . .	\$1·50 . . . .	\$0·75 „

## WEIGHTS AND MEASURES.

Weights in China are ascertained by the steelyard.

16 Taels = 1 Catty or Cattie.

100 Catties = 1 Picul or Pecul.

In some of the old books of the late East India Company the picul is reckoned at  $132\frac{4}{7}$  lb. avoirdupois =  $161\frac{1}{5}$  lb. troy. This makes the tael exactly 580 grains, at which the *money tael* continues to be reckoned to the present day.

But in all other weighing operations it has been found more convenient for calculation to reckon the tael at  $583\frac{1}{3}$  grains troy.

3 Taels	=	4 Ounces Avoirdupois.
1 Cattie	=	$1\frac{1}{3}$ lb. „
100 Catties	=	$13\frac{1}{3}$ lb. „
3 Piculs	=	400 lb. „
100 lb. Avoirdupois	=	75 Catties.
1 Cwt. English	=	84 „

The Pekin picul has only 97 catties.

In the wholesale tea trade and in freighting ships the English avoirdupois weight is used, but the results are at once calculated in piculs and catties upon the basis of the above proportions.

In China most articles are sold by weight, not excepting liquids, wood, silk, cloth, and grain, and live stock. Grain is, however, retailed by measure. In the foreign trade arrack is sold by the English gallon, and bottled wines, &c., by the number of bottles.

*Measures of Capacity.*—Of the thirteen divisions of the decimal scale of Chinese measures of capacity only five or six are in constant actual use, to wit, the *tsho*, *ko*, *shing* (and *half-shing*), *tow*, *hwüh*, and *shih*.

10 Tsho	= 1 Ko.
10 Ko	= 1 Shing or 2 Half-shing.
10 Shing	= 1 Tow.
5 Tow or 10 Half-shing	= 1 Hwüh or Hoh.
2 Hoh or 10 Tow	= 1 Shih.

In this scale the *shih* holds the place of the picul; it is computed to weight 120 catties.

*Measures of Length.*—The *covid* or *cobre* or *chih* (foot) is divided into 10 *tsud* or *punts*, subdivided again into 10 *fan*. The Chinese have a bewildering variety of *chih*. The one most commonly used by shopkeepers and tradesmen measures about  $14\frac{5}{8}$  English inches, the one fixed by the Pekin Board  $13\frac{1}{8}$  English inches. In the tariff the *chih* is reckoned at 14.1 English inches; 10 *chih* make 1 *chang* = 141 English inches; 12 *chang* = 47 English yards.

Piece goods are measured by the *chang*.

Silk goods are sold by weight.

In the commercial transactions between Chinese and Europeans the English yard, called *ma* by the Chinese, is generally employed. In Canton the English yard is usually taken =  $2\frac{2}{3}$  *chih*, in Shanghai =  $2\frac{1}{2}$  *chih*.

5 *Chih* = 1 *Pu*.

1 *Li* = 180 *Chang* or 1800 *Chih* (442 mètres).

## DUTCH POSSESSIONS IN ASIA.

### BATAVIA.

#### MONEYS.

100 Cents or Doits = 1 Florin.

The Dutch Monetary System was introduced into Netherlands India May, 1854. The circulation of Java and the

other islands of the Archipelago has since been the same as that of the mother country.

In 1877 a Bill was passed for the better regulation of the Dutch-Indian currency, the principal provision of which was the introduction into Netherlands India of the double standard concurrently with the suspension of the further coinage of silver which latter had already been decreed in 1875. The *étalon boiteux* is, therefore, at present in force in Netherlands India the same as in Holland.

The consequence has been that the Java exchange on London has not undergone the extraordinary fluctuations of the silver exchanges of British India and China; for whenever the balance of trade became unfavorable, and made the export of specie unavoidable, the silver florins (guilders) were used as a remittance to Holland, where Sterling Bills could be bought with them on the basis of the Gold Par.

In Batavia the exchange with Holland (6 months' bank bills) stands at Fl. 101—103; that with London (4 months' bank bills) Fl. 11.90—12.10; Bombay and Calcutta are quoted 103, *i. e.* 103 florins for 100 rupees; and Hongkong and Singapore 240, *i. e.* 240 florins for \$100.

In Sourabaya the exchange with Holland stands at par; with London, 12 florins per £ sterling. The English sovereign fetches 12.50 to 13 florins.

In Padang (Sumatra) 100 Java guilders are reckoned equal to 95 Netherland florins. The pound sterling is reckoned equal to about  $12\frac{1}{2}$  Java guilders.

In Amboyna they reckoned formerly in dollars of 48 stivers or 192 doits Indian currency. The gold mohur fetched 480 stivers; the star pagoda 99 stivers; the Spanish dollar or piastre 64 stivers; the Mar. Ther. Th. 60 stivers; the rupee 30 stivers.

## WEIGHTS AND MEASURES.

The Chinese picul of 100 catties of 16 taels each. See *China*.

3 piculs = 1 small bahar;  $4\frac{1}{2}$  piculs = 1 large bahar; 1 picul = 125 lb. Dutch troy or 61.521 kilogrammes or 135.6305 lb. avoirdupois. 1 catty = 615.21 grammes or 1.3563 lb. avoirdupois. The small bahar is generally reckoned equal to 400 lb. avoirdupois.

The kan has a capacity of 91 English cubic inches = 0·3282 imperial gallon. 33 kannen are reckoned equal to 13 old English wine gallons.

The legger of arrack = 388 kannen = 588 litres is computed roughly at 160 old wine gallons. At the rate of 33 kannen to 13 wine gallons, it can only hold 152·8 wine gallons; whilst 588 litres are equal to 155½ wine gallons.

The measure for large quantities of corn and rice is the *koyang*, weighing 27 piculs = 3662 lb. avoirdupois. For smaller quantities the *kimbang* of ten sacks, weighing 5 piculs, the *kulack* of 7¼ catties = 9·833175 lb. avoirdupois, and the *amat* of 2 piculs = 271·261 lb. avoirdupois, are used.

The old Amsterdam Rhineland foot = 0·313946 mètre or 12·360368 English inches, and the old Amsterdam ell = 9·68784 mètre or 27·081 English inches, are the chief measures of length. The Brabant ell = 0·695 mètre or 27·362845 English inches, and the English yard, are used for manufactured goods and at the Custom House. The Java cobido (ell) measures 0·503 mètre or 19·803913 English inches.

The *djong* = 2000 Rhineland square rods of 12 Rhineland square feet is equal to about 7 acres English.

In Amboyna the Dutch troy and the Chinese weight are used. The bahar of cloves weighs 50 barotti = 550 lb. Dutch troy or 596·774 lb. avoirdupois.

The Amboyna covid measures about  $18\frac{2}{5}$  English inches.

In Macassar (Celebes) rice is measured by the Company's *gantang* = 12·476 lb. avoirdupois or 5·659 kilogrammes.

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## FRENCH POSSESSIONS IN ASIA.

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### PONDICHERRY AND COCHIN CHINA, &c.

#### MONEYS.

*Pondicherry* reckons in gold pagodas of 24 fanams of 60 cash each, and in silver rupees of 8 fanams each.

The pagoda = 8 francs, the rupee = 2 francs 40 centimes. East Indian coin and Spanish piastres form the circulating

medium. 100 Spanish piastres are reckoned equal to 210—215 rupees.

*Cochin China* reckons in *kwan* of 10 *mas* of 60 *sapeks* each.

The *sapek* is a small zinc coin similar to the Chinese cash, with a hole punched through it. 600 *sapeks* strung together form the *kwan*. Gold and silver bars and Spanish piastres constitute the chief mediums of exchange.  $1\frac{1}{2}$  *kwan* are usually reckoned equal to 1 Spanish piastre, which would give the *kwan* a nominal value of a little more than 2s. 9d. sterling. It seems, however, to be considered worth only 2s. 2d.

The *sapek* currency is rapidly disappearing from circulation, the French franc and the Spanish piastre of 100 cents getting more and more in favour with the native merchants.

Foreign accounts are kept in dollars (Spanish and Mexican) of 100 cents.

#### WEIGHTS AND MEASURES.

Copper, lead, fat, and all sorts of cereals are sold in Pondicherry by the *serra* of 8 *palmos*. The *serra* is equal to 271·94 grammes or 4196·673 grains troy. In the wholesale provision trade the *candy*, or *barre*, is used, which has 20 *mahnds*, and is equal to 234·96297 kilogrammes, or about 518 lb. avoirdupois. The *mahnd*, or *taulan*, = 11·74814 kilogrammes or  $25\frac{9}{10}$  lb. avoirdupois, is used to weigh sugar and spices. Spices and saffron are also weighed by the *touque* of 50 *palmos*, which is equal to 1·69967 kilogramme or 3·74713 lb. avoirdupois.

The *pakka* (corn measure) is equal to 1·4956 litre or 0·32918156 imp. gallon. 2 *pakka* = 1 *markal*; 12 *markals* = 1 gallon (equal to about 7·9 imp. gallons) = 35·895 litres or 0·98754468 imp. bushel. 125 gallons make 1 *garce* = 64 sacks of corn = 44·869 hectolitres or about 15·43 imp. quarters.

The span measures 0·15897 mètre = 6·29424177 English inches.

2 Spans	=	1 Coudée or Ell or <i>Hâth</i> .
2 Coudées	=	1 <i>Astame</i> or <i>Guez</i> .
2 Astames	=	1 <i>Vilcadé</i> .

For weights and measures of Cochin China, see *China*.

The *covid* is = 15 English inches.

French and English measures are also much used.

## J A P A N.

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### YOKOHAMA, HIOGO, NAGASAKI.

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#### MONEYS

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1 Yen = 100 Sen.

1 Sen = 10 Rin.

The real currency of Japan, before the admission of foreigners into the country, consisted of gold, silver, and copper coins. The gold coin was called *Koban*. It weighed about 200 grains. It differed greatly in fineness, it would appear. Some *kobans* were found 650 fine, which would make them worth about 23s. sterling. We have, however, the report of an assay, made at the British Mint, giving the composition of the *koban*, in 1000 parts, as 565.1 gold, 420.8 silver, and 14.1 copper, which, upon the assumed weight of 200 grains troy, would make the assayed coin worth, in gold and silver, very nearly one guinea. As it is stated, however, to have been intrinsically worth only about 18s., the strong presumption is that its weight cannot have exceeded 172 grains troy. The silver coin was called ~~bu~~<sup>bu</sup> or *Ichibu*, *i. e.* 1 ~~bu~~<sup>bu</sup>. Its weight is variously stated at from 135 to 145 grains troy, its fineness varying from 875 to 915, its average value being computed at 1s. 5¼d. to 1s. 5¾d. The *ichibu* assayed at the British Mint is said to have been found to contain, in 1000 parts, 1.5 gold, 874 silver, and 125.5 copper. The copper coin assayed at the British Mint was found to contain, in 100 parts, 81 copper, 9 tin, and 10 lead.

The silver ~~bu~~<sup>bu</sup> piece or *ichibu* was reckoned worth one fourth part of the *koban*, making the proportionate value of gold to silver in Japan about 4 to 1, instead of from 15 to 16 to 1, as in nearly every other part of the world. The Japanese soon became aware of this monstrous mistake in the valuation of the precious metals, and speedily reformed their currency, reducing the *koban* to something equivalent to 5s. 6d. sterling, or about the one fourth part of its former



value. The ichibu was left untouched. Iron cash were issued at the rate of 1500 to the ichibu.

Since 1871 the legal money has been the Yen of 100 sen. The basis of the new monetary system was to be the Mexican Dollar, whose equivalent, the new silver yen, weighed 416 grains troy (26·9563 grammes), 900 fine. But as at the same time gold yens were coined of 900 fineness, and containing  $1\frac{1}{2}$  grammes fine gold, the Double Valuation was established in Japan with a proportion of gold to silver as 1 : 16·173818. As this relation gave to gold a higher value than its market value for the time being, the Government found it more advantageous to coin gold, and in 1872 ceased altogether to coin silver. The gold yens are pieces of 20, 10, 5, 2 and 1 yen, the piece of 20 yens weighing  $33\frac{1}{2}$  grammes, or 514·41 grains troy, 900 fine, *i. e.* 30 grammes or 462·97 grains troy, fine. Since 1872 gold has considerably risen in its value towards silver. In consequence, gold yens have been largely exported to Europe, and the actual Standard of Japan is now the Silver Valuation. )<sup>x</sup>

In 1875 the Japanese Government resumed the coinage of silver, this time in the shape of a "Trade Dollar," weighing 420 grains troy, 900 fine, the exact equivalent of the American trade dollar. They afterwards tried to introduce this coin as a monetary basis instead of the Mexican dollar, and for that purpose they made it in 1878 a legal tender in all public and private transactions, and reduced the mint charge for its coinage to 3 per cent., and the minimum amount of silver received by the mint to 500 oz., but they did not succeed in driving out the Mexican dollar, which, although weighing only about 416 grains, circulated on a par with the Japanese trade dollar.

In September, 1879, the Japanese Silver Yen of 416 grains, 900 fineness, was declared by the Government to be a legal tender, and is to be received and paid on a par with the Mexican Dollar. The yen will also be accepted at the Government offices in payment of Customs dues, Land rents, &c. The Foreign Banks and the mercantile community have recognised this action on the part of the Government, and this silver yen of 416 grains is the present monetary unit, and has virtually supplanted the Mexican Dollar.

Trade among the Japanese is carried on to a large extent in a Government paper money which is inconvertible, but used

to be on a par with gold. Afterwards it stood at a heavy discount, owing to the Government not having kept any exact record of the issue, and being unable to redeem it in specie. This Government paper was styled Kinsatsu. At present paper yens are in circulation, and they stand at par.

### COURSE OF EXCHANGE.

Yokohama receives from

London, sight and 4 and 6 months' sight*	3s. for 1 Yen or Dol.
Paris „ 4 months' sight	Fr. 4.50 „ 1 „ „
New York, sight and 30 ds.' sight	90 U.S.\$0.70 „ 1 „ „
Shanghai „ 10 „	74 Taels „ 100 „ „

Hongkong is quoted sight and 10 days' sight at a discount or premium per cent., dollars (yens) for dollars.†

Gold yens are generally quoted per 400 dollars, for instance, 380, *i. e.* 380 gold yens for 400 dollars (yens). Sometimes they are also quoted in dollars (yens) per 100 yens.

### WEIGHTS AND MEASURES.

The Japanese *jumomme*, *i. e.* 10 momme, which is the equivalent of the Chinese liang or tael, is reckoned equal to 2400 *shu* or millet-seeds. The millet-seed would thus appear to form the basis of the Japanese system of weights, just as the barleycorn is the original basis of the English long measure.

The *momme* or *monme*, however, is taken as the unit of the Japanese weights. The momme is reckoned about equal to 58.24 grains troy. The *king* or *kin* is the Japanese pound, corresponding with the Chinese catty. It has 160 momme, and is reckoned equal to 1½ lb. avoirdupois. 100 *kins* or catties are equal to 1 *tan* or picul = 133½ lb. avoirdupois.

*Measures of Capacity.*—The Japanese measures of capacity, although almost entirely derived from the Chinese, differ from their prototypes in the ratio of 10 to 6, the smallest Japanese

\* Refer to note page 19.

† Between Japan and India a fixed "Mint Par" can be established, both countries using the silver standard.

$$? = 100\$.$$

$$\$1 = 374.40 \text{ grains fine.}$$

$$\text{gr. f. } 165 = 1 \text{ Rs.}$$

$$\text{or } \$100 = \text{Rs. } 226.91.$$

measure holding 1000 grains of millet to 600 grains held by the corresponding smallest Chinese measure. This smallest measure, which forms the unit of the scale, is the *sai* or *chok* = 1.107277458 cubic inch.

10 Sai	=	1 Shiyaku.
10 Shiyaku	=	1 <del>Ngōd</del>
10 <del>Ngōd</del>	=	1 Shōd.
10 Shōd	=	1 To.
10 To	=	1 Koku.

The cubic contents of the koku are = 6 4078557 cubic feet, and the measure holds accordingly 4.99918017 imperial bushels.

*Measures of Length.*—The *keng* or *inck* measures about 6 feet English (Kelly gives it as 74.9 English inches, whilst in M'Culloch it is given as 5.9772 feet or 71.7264 English inches).

Cloth and textile fabrics are measured by the *tsune sasi* = 1½ English foot.

## KHIVA.

### MONEYS.

40 Puls	=	1 Tenga.
2 Tengas	=	1 Abassee.
14 Abassees	=	1 Tilla or Tela.

The tilla, or tela, is a gold coin computed worth 4 Russian silver roubles = 12s. 6d. Sterling. Dutch ducats pass current for 10 abassees. The tenga is a silver coin, the puls are copper or brass bits.

### WEIGHTS AND MEASURES.

The *batman* = 40 *seers* is equal to 1½ Russian pood = 43.3369 lb. avoirdupois.

## PERSIA.

## TEHERAN—BUSHIRE.

## MONEYS.

10 Shabis	=	1 Penebat.
2 Penebats	=	1 Sahibghiran or Kran.
10 Krans	=	1 Toman,
		or
200 Shahis	=	1 Toman.

The principal coin is the Kran, a silver piece of 71·065 grains 900 fine. The krans which circulate vary, however, greatly, as the mints of the country are not reliable, being farmed out for a yearly sum. The fineness of the coins oscillates between 760 and 900. In larger transactions the toman is taken as the unit, reckoned equal to 10 krans. There are some gold tomans and half-tomans in existence, but they are not the standard; they circulate only as commercial money, and are taken by weight. The standard is silver.

There is a large amount of foreign coins in circulation, principally Russian and Turkish, and also Austrian ducats.

## COURSE OF EXCHANGE.

London demand, and 3 months' date 39½ Krans for £1.

Bombay „ „ 35 days' sight 250 „ „ Rs. 100.

## WEIGHTS AND MEASURES.

The *miskal* (gold and silver weight) is equal to 47·7 grains troy.

The *mahnd* or maund tabree (Tauris or *Tabris maund*), which is used in Bushire, is equal to 6·4 lb. avoirdupois. The *mahnd* of *Shiras* is said to be only one half of this. The *mahnd-reï* is said to weigh 30 Russian pounds.

Liquids are also sold by weight.

The *artaba* (corn measure) holds 65·238 litres = 1·79486 imperial bushel. Corn is also generally sold by weight.

7 horsehair-breadths = 1 barleycorn; 7 barleycorns = 1 finger-breadth; 24 finger-breadths = 1 foot, and 2 feet = 1 guz or ell.

There are five kinds of guz:—

1. The *Shah guz*, or royal ell, for woollen wares = 40 English inches.
2. The *guz Mokösar*, for Persian manufactured goods, and used in the retail trade =  $36\frac{1}{2}$  English inches.
3. The *guz Tabree*, or Tauris ell = 40·4 English inches.
4. The *guz* of Aberbeidshan = 44 English inches.
5. The *guz* of Adschemi-Teheran = 42 English inches.

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## PORTUGUESE POSSESSIONS IN ASIA.

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### GOA, MACAO, &c.

#### MONEYS.

1000 Reis            =            1 Milreis.

See *Portugal*.

In Inland trade operations Goa reckons in pardos or pardaos, the former money of Goa.

The pardo, which is worth very nearly 13*d.* sterling, is divided into 4 good or 5 common tangas, or into 16 good or 20 common vintems, or into 240 good or 300 common reis, or, finally, into 300 good or 375 common bazarucas. The bazaruca is a small coin of copper and zinc, called *budgerook* by the English. 1400 bazarucas = 1 Spanish piastre (called pardo real in Goa); 718 bazarucas = 1 rupee East Indian money.

Formerly, pardos xerafins of 5 good tangas were coined. They were worth about 16*d.* sterling.

#### WEIGHTS AND MEASURES.

See *Portugal*.

The English East Indian weights and measures are also used.

For corn and rice the *candy* is also used = 14 Winchester bushels.

For moneys, weights and measures of Macao, see *China*.

Besides the Chinese picul (of  $133\frac{1}{2}$  lb. avoirdupois) there is in use at Macao the picul seda =  $148\frac{1}{2}$  lb. avoirdupois, and the picul chapa = 200 lb. avoirdupois.

There are also several varieties of *chih* (foot) in use, and the most common *chih* is = 0·373 mètre or 14·684 English inches

## S I A M.

## BANGKOK.

## MONEYS.

800 Cowries	=	1 Fuang.
2 Fuango	=	1 Salung.
4 Salungo	=	1 Bat or Tical.
4 Bats	=	1 Tämling.
20 Tämling	=	1 Chäng.
50 Chäng	=	1 Häp.
100 Häp	=	1 Tära.

Cowries (also called *bia* in Siam) are the well-known shells used in many parts of Asia and Africa as a medium of exchange for small values. In Siam about 219—220 are reckoned equal to 1*d.* sterling, which corresponds pretty closely with the general rating of the bat or tical at 2*s.* 6*d.* sterling; this is, however, more than the actual average value of the coin, which is 0.60 Dollar.

Small pewter and copper coins have of late been introduced as a substitute for the cowrie shell. The pewter coins are called *lot* and *at*; they are small flat bits of pewter. 2 *lots* = 1 *at*.

The copper coin = 2 *ats*, and about the same size as the English halfpenny, only a little thicker, is called *song péis*.

2 Song Péis	=	1 Fuang.
2 Fuango	=	1 Salung.
4 Salungo	=	1 Bat or Tical.

The fuang and the salung are flat pieces of silver. They represent simply a certain weight of the metal.\* It is the same with the bat.

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\* The gold and silver weight in Siam is 32 sagas (red beans) = 1 p'hai-nung; 2 p'hai-nungo = 1 sing-p'hai; 2 sing-p'hais = 1 fuang; 2 fuango = 1 salung; 4 salungo = 1 bat; 30 bats = 1 catty or cattie; 100 catties = 1 picul.

The coin called bat or tical is a small bit of a silver bar bent and with the ends beaten together. It has two or three small stamps impressed upon it. The weight of the bat or tical would appear to range between 212 and 236 grains troy, and is generally taken at 236 grains (15.292 grammes).

The fineness of the tical, as well as that of the fuang and salung, averages 906.25, it is said. Taking the average weight of the tical or bat at 224 grains, the average fineness of the coin at 906.25, the metallic value may be computed at 2s. 3.4325*d.* sterling (at 60*d.* per ounce British standard silver). This corresponds pretty closely with the rating of the tical by the merchants in the Siamese ports, where 7 ticals are reckoned equal to four Spanish piastres or dollars.

The Mint at Bangkok is lately exchanging Mexican dollars against ticals, at the rate of 60 cents, which would make 5 ticals = 3 Mexican dollars. American silver dollars are also taken by the Mint; they are weighed against Mexican dollars, and then paid for at the above rate of 5 piculs = 3 Mexican dollars.

Hongkong and Singapore are quoted in per cent. premium or discount. If those quotations fall to 1 per cent. or more discount, Mexican dollars are being sent from China to Siam.

London is quoted in shillings and pence per 1 Mexican dollar.

If payments are made in ticals, it is at the exchange 5 ticals = 3 dollars.

## WEIGHTS AND MEASURES.

The *cally*, or Siamese cattie, is = 2 Chinese cattles, and accordingly equal to 2 $\frac{2}{3}$  lb. avoirdupois. The Siamese picul, having only 50 cattles instead of 100, is exactly the same as the Chinese picul. At Bangkok goods are bought and sold by both the Chinese and the Siamese standards.

4 Bats	=	1 Tael.
20 Taels	=	1 Cattie.

The Siamese rice measure holds 22 piculs by weight, the salt measure 25 piculs. The rice measure is commonly divided into 100 baskets. The dry measure is the Tānan (=1 $\frac{1}{2}$  pints); 20 tānan = 1 tang, 25 tānan = 1 sat, 80 sat = 1 kean or 20 piculs.

As regards the long measures in Siam, 12 finger-breadths are = 1 span; 2 spans = 1 cubit; 4 cubits = 1 fathom; 20 fathoms = 1 *sen*; and 400 sens = 1 *yuta* or *yut*. The fathom, or pole, is equal to about  $6\frac{1}{2}$  feet English. The *yut* is =  $9\frac{7}{8}$  English statute miles.

## SPANISH POSSESSIONS IN ASIA.

### MANILA.

#### MONEYS.

100 centavos = 1 Piastre, Peso, Dollar, or Duro.

Manila reckons also the peso to be of 8 reals of 12 granos or 20 cuartos each. See *Spain*. Gold, however, has virtually disappeared from circulation, and the Spanish Possessions must be classed as possessing *de facto* the silver standard.

The coinage minted in Manila consists of gold pieces of 1, 2, and 4 Pesos each and of subsidiary silver coins of 4 reals ( $\frac{1}{2}$  peso), pesetas (20 cents), and  $\frac{1}{2}$  pesetas (10 cents). Carolus dollars are also current in Manila.

The weight of the Manila gold piece of 4 pesos is about 0·2169 oz. 873 fine or 0·206 oz. standard. Its value is about 16 shillings.

London is quoted 4 and 6 months' sight in shillings and pence for 1 duro, and is usually 3 to 4 per cent. higher than the Hongkong quotation.

Spain is quoted 3 months' sight and demand in per cent. premium or discount on the fixed par of 100 Spanish piastres = 100 duros.

Calcutta 3 months' sight is quoted in rupees for 100 duros.

#### WEIGHTS AND MEASURES.

See *Spain*.

The old English wine gallon is much used for measuring liquids, the English yard for piece goods. *Still in use*

The pico or pical of 100 catties of 10 taels each is the principal market weight used in wholesale business. But it is heavier than the Chinese picul, being reckoned equal to 139·4853 lb. avoirdupois. 16 picos = 1 English ton.



The Mexican piastre is used as an ounce weight. It weighs, however, only 0·9365 ounce.

16	Piastre-Ounces	=	1 Spanish Libra.
8	”	”	= 1 Marco Silver.
9	”	”	= 1 Punto Gold- or Silver-Thread.
10	”	”	= 1 Tael Gold Weight.
11	”	”	= 1 Tael Silk.
22	”	”	= 1 Catty.

For the Custom House the French Metrical Weights and Measures are used.

## TURKISH EMPIRE IN ASIA.

See *Turkey*.

### MONEYS.

1 Piastre	=	40 Para.
1 Para	=	2 Aspres.

The basis of the money in Asiatic Turkey is the Turkish piastre (see *Constantinople*), but with many provincial modifications.

In Aleppo the piastre is also divided into 120 current aspres, or 24 siani.

In Smyrna there are several kinds of piastres; legally 100 piastres are equal to 1 Turkish lira, but the exchanges are quoted in a depreciated piastre, about 110 of which are equal to 1 Turkish lira. The Course of Exchange in Smyrna is as follows:

London, 3 months' date	*130 Piastres for	£1 Sterling.
Paris 3 ms.' date and 3 ds.' sight	205 Paras	„ Fr. 1.
Trieste 3 months' date	415 „	„ Fl. 1.

Bassorah, or Basra, reckons in mamudis of 10 danimes of 10 flush each. 100 mamudis = 1 toman (see *Persia*). The full-valued toman is reckoned worth about 9¼s. sterling. It is rated in the rough at 50 Turkish piastres. Spanish and Austrian dollars and Indian coins circulate largely.

The Turkish piastre is also used in Basra, and about 105 are taken as equal to 1 Turkish pound.

\* Refer to note page 19.

## WEIGHTS AND MEASURES.

See *Turkey*.

In *Acre* the rottolo for raw cotton is equal to 2.207 kilogrammes = 4.8656 lb. avoirdupois, for cotton yarn to 2.037 = 4.490813 lb. avoirdupois. The ardeb of rice weighs about  $254\frac{2}{3}$  kilogrammes = 561.444 lb. avoirdupois. The pik is =  $26\frac{2}{3}$  English inches.

In *Aleppo* four different sorts of rottolo are used, to wit—(1) the rottolo of 720 drams = 5.027 lb. avoirdupois, which is used for galls, tobacco, cotton, figs, and most of the coarser export goods; (2) the rottolo of 700 drams = 4.8873 lb. avoirdupois, for weighing Syrian silk; (3) the rottolo of 680 drams = 4.748 lb. avoirdupois, for weighing Persian silk; and (4) the rottolo of Damascus = 600 drams = 4.1892 lb. avoirdupois, for weighing Mecca balsam, amber, camphor, benzoe, and other drugs; also copper wire and brass.

There is also the oka of 400 drams = 2.79286 lb. avoirdupois. A weight of 5 rottoli = 3600 drams = 25.1357 lb. avoirdupois is called a vesno; 7 vesnos = 1 kola.

The zurlo is a weight of  $27\frac{1}{2}$  rottoli of 720 drams = 138.255 lb. avoirdupois.

The so-called large cantaro of Tripolis has 175 rottoli of 720 drams, and is equal to 879.725 lb. avoirdupois.

The metikal for weighing pearls and ambergris is equal to  $1\frac{1}{2}$  dram = 73.3125 grains troy.

In all these different weights the dram is the same, viz. = 48.875 grains troy.

The principal general standard weight of *Bassorah* is the *vakia taree* or *attaree* = 19 ounces avoirdupois. The *Bagdad oka* has  $2\frac{1}{2}$  vakias attaree, and is consequently equal to about 3 lb. avoirdupois (2.968744). The *mahnd*, *maund*, *attaree* has generally 24 vakias attaree =  $28\frac{1}{2}$  lb. avoirdupois. This is used for weighing sugar and metals. The mahnd for sugarcandy, cardamoms, and benzoe, has 25 vakias =  $29\frac{1}{6}$  lb. avoirdupois; the mahnd for coffee, pepper and ginger, has 26 vakias =  $30\frac{2}{3}$  lb. avoirdupois. The *vakia sofy*, or vakia of Bassorah, is equal to  $3\frac{1}{2}$  vakias attaree, and weighs accordingly a little more than  $3\frac{3}{4}$  lb. avoirdupois (60.1667 ounces). The *mahnd*

*sofy*, or mahnd of Bassorah, has 24 vakias *sofy* = 76 vakias attaree =  $90\frac{1}{2}$  lb. avoirdupois.

The mahnd *sofy* of rice is equal to  $78\frac{1}{2}$  vakias attaree = 93·21875 lb. avoirdupois. The *cutra* of indigo weighs 117 vakias attaree =  $138\frac{1}{8}$  lb. avoirdupois.

The precious metals (gold and silver) are weighed by the *cheki* or *tscheki* of 100 miskals or mitskals = 150 drams. The miskal is equal to  $1\frac{1}{2}$  dram = 73·3125 grains troy.

The *Damascus rottolo* has 600 pesi or 400 metekalli, and weighs  $31\frac{5}{8}$  lb. avoirdupois. 1 metekal or metikal =  $1\frac{1}{2}$  pesi. Gold and silver and musk and oil of roses are weighed by the ounce of 10 pesi or  $6\frac{3}{8}$  metekalli = 9·3 derhem or drams = 459 grains troy.

The Damascus ell measures 22·92 English inches.

The *Smyrna oka* is a little heavier than the common Turkish oka, being 2·83287 lb. avoirdupois against 2·818564 lb. avoirdupois. The retail trade oka is  $1\frac{1}{2}$  dram heavier still = 2·8435 lb. avoirdupois.

In the City of Smyrna the cantar has 45 oke. The common Turkish cantar, which is used in the country parts about Smyrna, has only 44 oke.

The *batman*, which is chiefly used for Persian silk, has 6 oke.

The steelyard is used for heavy goods, the scales for costly articles.

As a general rule, the *tscheki* is =  $\frac{1}{4}$  oke or 100 drams. However, a *tscheki* of opium is = 280 drams; a *tscheki* of camel's hair = 800 drams.

A *tessesh* of Broussa silk is = 610 drams. In the City of Broussa silk is sold by the oka.

A *metical* of oil of roses is =  $1\frac{1}{2}$  derhem = 72 to 74 grains troy.

1 Smyrna kilò or killow of corn, rice, &c., is =  $1\frac{1}{2}$  killow of Constantinople, holding 52·899 litres = 1·4553837 imperial bushel.

Since 1874 the French Metrical system of weights and measures has been introduced into Asiatic as well as into European Turkey.

## ARABIA.

## MOCHA AND BEIT-EL-FAKIH.

## MONEYS.

80 Cabirs = 1 Piastre or Mocha Dollar.

This is simply a money of account, of which 1215 are reckoned equal to 1000 Spanish piastres, making the Mocha dollar worth about 40*d.* sterling (taking silver at 60*d.* per oz. stand.).

## WEIGHTS AND MEASURES.

The *Mocha behaar* has 15 *frehsils* (frazils or färsels) of 10 maunds of 40 *wakeias* each. The maund is = 2·93 lb. avoirdupois; the behaar = 439·5 lb. avoirdupois. As 460 Mocha pounds are reckoned to the behaar, the Mocha pound is = 0·9554348 lb. avoirdupois.

The *Beit-el-Fakih bahar* has 40 frazils of 10 *mahnds* of 2 *rottoli* of 15 *vakias* each. The mahnd = 2·0390625 lb. avoirdupois. The bahar = 815·625 lb. avoirdupois. 10 frazils of Beit-el-Fakih are reckoned equal to 7 of Mocha.

The rottolo of coffee has 14½ ounces (*vakias*); of dates candles, and iron, 16 ounces; of all other goods, 15 ounces.

A bale of coffee has 14 frazils = 280 rottoli = 197·1094 lb. avoirdupois.

The *tomand* of rice weighs 187·2 lb. avoirdupois. The *koddi* (liquid measure) is equal to 2 old English wine gallons.

The *Mocha covid* = 19 English inches; the *goss* or *guz* = 25 English inches.

The Beit-el-Fakih covid = 18 English inches; the *gutz* (*guz* or *goss*) = 25, and the large iron covid = 27 English inches.

The liquid measure is the *cuddi* of 8 *nusfiäs* of 16 *vakias* each. 1 *cuddi* = 7·57 litres.

The gold and silver weight is the beak of 1½ *wakeias* of 16 *coffelas* of 16 carats. 1 *wakeia* = 31·03 grammes or 0·998 oz. troy.

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# AMERICA.

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## NORTH AMERICA.

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### BRITISH PROVINCES IN NORTH AMERICA.

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#### DOMINION OF CANADA.

#### MONEYS.

100 Cents = 1 Dollar.

The so-called Dominion of Canada comprises the United Canadas, New Brunswick, Nova Scotia and Cape Breton, Prince Edward's Island, Newfoundland and British Columbia, with Vancouver's Island.

The money of the Dominion of Canada is a gold standard based upon the legal value of the £1 sterling = \$4.80. This gives \$108 = £22 10s. or 1 dollar = 4s. 2d. There are no Canadian dollars coined, but according to the above proportion each dollar would have to contain 23.542001 grains troy fine gold.

Formerly there was in use the English £ sterling, and the so-called Halifax currency, a money of account, based upon the valuation of the Spanish or American dollar at a higher rate than its actual value in sterling, viz. at 5 shillings or 60 pence currency. This gives an agio or premium on sterling, equal to 20 per cent. Till lately there was still another money of account used in British America, viz. the Canadian sterling, based upon the valuation of the dollar at 4s. 6d. or 54 pence. The relation between this Canadian sterling and the Halifax currency was as 9 to 10, making £90 in Canadian sterling (in dollars rated at 4s. 6d.) equal to £100 in Halifax currency. Canadian sterling was to English sterling as 108 to 100.

The Dominion has no coinage of its own (except pieces of 20 cents, 10 cents, and 5 cents in silver, and a few copper tokens); but English and American coins circulate freely.

## WEIGHTS AND MEASURES.

The weights and measures are those of Great Britain, but generally with the old measures of capacity in wine gallons and Winchester bushels.

In Lower Canada wheat is measured by the minot, an old French measure = 39.025 litres or 0.13421 imperial quarter. Grain is, however, commonly sold by weight. Land is measured by the arpent, an old French surface measure, which is reckoned to cover about  $15\frac{1}{4}$  per cent. less extent than the English acre, 100 acres being valued at 118 arpents.

## EXCHANGES.

London is quoted at 60 days' sight, and on demand, at a premium on the fixed exchange \$100 = £22 10s. or \$40 = £9. (As this exchange makes \$1 = 4s. 6d. whilst its legal value is only 4s. 2d. the "Par of Exchange" between Canada and England is 8.)

New York is quoted at a premium or discount per \$100.

There are three days of grace.

The Bill Stamp is as follows :

Up to \$25	. . . .	1	Cent.
Beyond \$25	„ 50	. . . .	2 „
„ 50	„ 100	. . . .	3 „
And then for every 100 or fraction		3	„

## EXAMPLE.

To find the amount in sterling to be remitted from Montreal for 1000 dollars at the exchange of 8 per cent.

?	=	1000	Dollars
\$4	=	1	£ Currency.
£10	=	9	£ Nominal Sterling.
£108	=	100	£ Sterling.
		£	
108		10000	
4		9	
432	)	90000	
		£ 208	6s. 8d.

## THE UNITED STATES.

100 Cents = 1 Dollar.

Prior to the War of Independence the money circulating in the New England colonies was of foreign origin, principally the Spanish milled dollar. During that war coins got so scarce that tobacco and similar articles were used as money. By the Act of April, 1792, Congress established a mint, and adopted as unity the dollar, either of silver or of gold. The silver dollars weighed 416 grains, 371.25 grains fine silver and 44.75 grains alloy; the gold dollar was  $\frac{11}{12}$  fine, and weighed 27 grains, containing 24.75 grains pure gold. Gold and silver enjoyed unlimited free coinage, and were unlimited legal tender, the ratio established by the coins being 1:15. In 1837 the weight of the ten-dollar piece or eagle was reduced from  $247\frac{1}{2}$  grains to 232 grains pure gold, which altered the legal proportion of silver to gold to 1:16. In 1837 the standard for both gold and silver was altered to  $\frac{9}{10}$ , and the gold dollar was again slightly altered to 25.8 grains  $\frac{9}{10}$ , or 23.22 grains fine, the silver dollar being 412 $\frac{1}{4}$  grains  $\frac{9}{10}$ , or 371.25 grains fine. The silver dollar thus remained without change. While the rate of 1:15 had given too high a value to silver, the rate of 1:16 undervalued the white metal in comparison to the French rate of 1:15 $\frac{1}{2}$ , and consequently silver was exported to Europe, and the metallic circulation of the U.S. became practically gold.

In 1853 the whole matter had to be reconsidered in consequence of the difficulties experienced by the expulsion even of the small silver coins from the channels of circulation, and it was decided to reduce the weight of the silver coins of less denomination than one dollar, so as to ensure their retention in circulation, limiting their legal quality at the same time to the sum of \$5.

The free coinage of silver was stopped by the Acts of February, 1873, and June, 1874, adopting the "revised statutes," and legal tender was taken away from any standard silver dollars then in existence. At that time neither gold nor silver circulated in the country, and the

money consisted of inconvertible paper (green-backs) issued during the civil war. Little attention was, therefore, paid to the measure, and neither the President nor the Speaker of the House seem to have been aware that silver was being demonetised. Specie payments were resumed on 1st January, 1879; and meanwhile the fact that silver was no longer legal tender was becoming known. The Act was declared to be a fraud on the people, and active steps were taken to get it repealed.

The first attempt to remonetise silver was made in 1876. Silver dollars weighing 412·80 grains troy 900 fine were issued against the fractional currency to be legal tender up to \$20. In 1878 the so-called "Bland Bill" followed, which reintroduced the silver dollar of 412½ grains troy 900 fine\* as legal tender, giving, however, the right of coinage to the Government only, and fixing the amount to be coined at the minimum value of \$2,000,000, and the maximum of \$4,000,000 per month.† Against these coins, which remain to a large extent in the Treasury, the Government has issued "Silver Certificates," which, although not legal tender, are receivable for taxes, and circulate freely.

This "Bland Bill" was superseded by the Silver Bill of 14th July, 1890. By that Act the United States Government is directed to purchase at the market price 4½ million ounces of silver bullion per month, and to issue *Treasury Notes* in payment for these purchases. These Treasury notes, which are legal tender to any amount, are in form promises to pay coin on demand, and are issued in denominations of not less than one dollar nor more than one thousand dollars. They are redeemable in gold or silver at the option of the Secretary of the Treasury; this discretion, however, has to be guided by a declaration expressly made in the Act "that it is the established policy of the United

\* The value in pence of the U.S. silver dollars is as follows:

*Bar Silver in London per oz. standard.*

Grains troy.	40d.	45d.	50d.	54d.	54½d.	55d.	55½d.	56d.	56½d.	57d.
412½	33·45	37·62	41·80	45·15	45·57	45·99	46·41	46·82	47·24	47·66
420	34·01	38·32	42·57	45·97	46·40	46·82	47·25	47·68	48·10	48·53

† This bill directs "to purchase from time to time silver bullion at the market price thereof, not less than \$2,000,000 and not more than \$4,000,000 per month."



States to maintain the two metals on a parity with each other upon the present legal ratio or such ratio as may be provided by law." As this policy would under present conditions be defeated by a redemption of the notes in silver, they have so far been paid in gold when presented.

It is noteworthy that the price of silver affects the volume of the issues under the law of 1890 differently from the issues under the Bland Bill. The lower the price of silver the greater was the creation of silver dollars under the Bland Bill; the lower the price of silver the smaller is the issue of Treasury notes at present. (Sherman Act.)

The issues under these Acts amount to about \$400,000,000 coined silver dollars, and, so far, about \$110,000,000 Treasury notes.

A law of 1891 authorises the Treasury to order a charge equal at least to cost of manufacture upon gold bars intended for export. Thereupon 40 cents per \$1000 bar was charged in March, 1891, and after that bars have been entirely refused for export.

The principal gold coins are the eagle of \$10 and the half eagle of \$5. The weight of the former is 0.5375 oz. or 258 gr. troy 900 fine. This makes the Mint price of gold \$20.67183 per oz. fine, and the gold dollar = 4s. 1.316*d.* sterling.\*

Besides the silver legal tender dollar the United States coined between 1873 and 1886 the "Trade Dollar," a commercial money, intended to enter into competition with the Mexican and Spanish dollars in the Eastern trade, principally in China. This trade dollar weighed 420 grains 900 fine (about 4 grains more than the Mexican dollar), but as it did not answer expectations it has been withdrawn.

Silver is quoted in cents per oz. fine. If we multiply the London quotation of silver by 2.19211 we obtain the New York quotation. Thus if silver is quoted 50*d.* in London, the equivalent New York price is 109.6055.

#### WEIGHTS AND MEASURES.

The same as those of Great Britain, but with the late measures of capacity. The State of New York has a standard

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\* The "Mint Par" between London and New York is; therefore, £1 = 4.866564; see chapter on "Arbitrations of Bullion." The U. S. Mint price of silver is \$1.2929 per oz. fine, or 59*d.* per oz. standard (London).

yard of its own, accurately adjusted on 4th July, 1826, which is kept in the custody of the Secretary of State. This yard has three feet, divided duodecimally. The pound is exactly equal to the lb. avoirdupois.

## EXCHANGES.

New York gives to

London, Cable Transfers,	}	*\$4.86 for £1 Sterling.	
sight and 60 days' sight			
Hamburg	"	\$95	" M. 400.
Amsterdam	"	\$41	" Fl. 100.

And receives from

Paris, sight and 60 days' sight Fr. 5.18 for \$1.

St. Louis, New Orleans, Savannah, &c., are quoted in premium or discount per \$100.

There are three days of grace. Bills on demand carry no grace.

Bills falling due on a Sunday or holiday are payable the previous day.

There is a Stamp duty of 2 cents on all Cheques and Bills drawn upon the United States.

## EXAMPLES.

1. To exchange \$10,000 into sterling at 4.85.

$$\begin{array}{rcccc}
 \$ & & £ & & \$ \\
 \text{If } 4.85 & \text{---} & 1 & \text{---} & 10,000 \\
 & & 4.85 & \times & 10,000 \\
 & & & & = £2061 \text{ } 17s. \text{ } 1d.
 \end{array}$$

2. To exchange £1000 into dollars at 4.90.

$$\begin{array}{rcccc}
 £ & & \$ & & £ \\
 \text{If } 1 & \text{---} & 4.90 & \text{---} & 1000 \text{ ?} \\
 & & 4.90 & \times & 1000 \\
 & & & & = \$4900.
 \end{array}$$

3. To exchange £312 10s. into dollars at 4.86.

$$\begin{array}{rcccc}
 £ & & \$ & & £ \text{ } s. \\
 \text{If } 1 & \text{---} & 4.86 & \text{---} & 312.5 \text{ ?} \\
 & & 312.5 & \times & 4.86 \\
 & & \text{-----} & & = \$1518.75.
 \end{array}$$

## CENTRAL AMERICA AND WEST INDIES.

## MEXICO.

## MONEYS.

100 Cents = 1 Dollar.

The decimal division of the dollar has been adopted since 1867.

The coinage consists of gold pieces of 1 dollar,  $2\frac{1}{2}$ , 5, 10, and 20 dollars; and silver pieces of 5, 10, 25, and 50 cents, and of the silver dollar or peso.

The standard is the silver valuation; the gold coins are but little in circulation and stand at a premium.

Gold onzas or doblones of 8 escudos or 16 pesos, with subdivisions of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{16}$ , are also in circulation.

The old reckoning in pesos of 8 reales of 4 cuartillos of 3 grains each is also still in use.

Copper cuartillos and tlacos ( $\frac{1}{4}$  and  $\frac{1}{8}$  real) are circulating very largely. Their actual metallic value is about 25 per cent. of their nominal value.

The gold onzas or doblones average 418 grains troy weight and 875 fineness, which makes the doblon worth about 64s. 9d. sterling (at £3 17s. 10 $\frac{1}{2}$ d. per ounce British standard gold).

The dollar or peso averages 416 $\frac{1}{2}$  grains troy, 898 fine ( $6\frac{1}{2}$  W.). It is legally the exact equivalent of the old Spanish silver dollar, as coined 1772—1848 (containing 24.433039 grammes fine silver). This coin forms the principal article of export of Mexico, and has, under the name of Mexican dollar, made its way into, and obtained a market in, all quarters of the globe. In many parts of the East it is the principal medium of exchange, and has quite displaced the old Spanish (Carolus) dollar.

The value in sterling of the Mexican dollar depends on the price of silver; it has fluctuated between 2s. 9d. and 4s. 6d.

The gold dollar weighs 1.692 grammes and was 875 fine, but since 1890 is 900 fine, so that the ratio of gold to silver is 1 : 16, instead of 1 : 16 $\frac{1}{2}$ , as before.

## WEIGHTS AND MEASURES.

See *Spain*.

The quintal has 100 lb. libras Castellanas. At the Customs it is reckoned equal to 104 lb. avoirdupois.

The carga, or last, of corn contains 12 fanegas of 12 almudras each. Cacao is generally sold per fanega of 110 lb., but Maracaibo cacao per fanega of 96 lb.

Wine and brandy are sold chiefly by the baril of 19—20 old English wine gallons.

The French Metrical System of Weights and Measures has been introduced since 1867.

## COURSE OF EXCHANGE.

Mexico receives from

London, 60 and 90 days' sight,	33 Pence for 1 Dollar.
France, 60 days' sight	Fr. 3.40 „ „
Germany „ „	M. 2.75 „ „

And gives to

New York, sight	1.54 Dollar for 100 Dollar, gold.
Spain „ „	1.30 „ 500 Pesetas.
Havana „ „	1.50 „ 1 Peso.
Vienna „ „	0.65 „ 1 Florin.

The Bill Stamp is 3 cents for every \$100.

There are 24 hours of grace.

GUATEMALA, HONDURAS, SAN SALVADOR,  
NICARAGUA, COSTA RICA.

## MONEYS.

100 Cents = 1 Dollar.

The Central American States reckon, like all Spanish settlements, in dollars or pesos.

The dollar is divided into 100 centavos, or, according to the former manner, into 8 reales of 4 cuartillos each. Since 1870 Guatemala and San Salvador have accepted a new peso, which is the exact equivalent of the French gold 5-franc piece. (1.4516129 grammes fine gold.) Guatemala coins also silver pesos, equal to the French silver 5-franc piece.

The exchanges are quoted 90 days' sight in premium per cent. on the fixed par of £1 = 5 pesos, M. 4 = 1 peso, and U.S. \$1 = 1 peso.

## WEIGHTS AND MEASURES.

The French metrical system has been introduced, but the old Spanish weights are still often used.

## WEST INDIES.

## BRITISH POSSESSIONS.

100 Cents = 1 Dollar.

Accounts are kept either in pounds, shillings, and pence, or in dollars and cents, rating the silver dollar at the Government par of 4*s.* 2*d.* and the doubloon at 64*s.* sterling.

The standard is a silver valuation, the pound being = 4 $\frac{2}{3}$  Mexican dollars.

Exchange is made with London either by rating the dollar at a variable number of pence, or by placing a percentage premium on sterling; thus, with the premium at 2 per cent., £102 in money or in account will be the value of a Bill for £100 sterling.

New York is quoted in premium per cent. on the par of 100 West Indies dollars = U.S. \$100.

The late currencies have been abolished in all the West Indian islands, both in accounts and in exchanges; but as they are still occasionally referred to, the following statement of them may be found useful:

In the old Jamaica currency the

Dollar was valued at	.	.	6 <i>s.</i> 8 <i>d.</i> currency.
„ Barbadoes currency	.	.	6 <i>s.</i> 3 <i>d.</i> „
„ Leeward Islands currency	.	.	9 <i>s.</i> 0 <i>d.</i> „
„ Bahamas currency	.	.	10 <i>s.</i> 0 <i>d.</i> „

In most of these islands a fixed valuation was made of the currency against a nominal sterling, the variations in the exchange being then marked by a percentage upon the actual sterling, the same as used to be done with the Halifax currency; in some of the islands, however, the nominal sterling or currency par was not taken into account, the exchange being made direct with sterling; in others, again, the exchange was made, as is frequently done now, by rating the dollar at a variable number of pence, or the £100 sterling at a variable number of dollars.

## WEIGHTS AND MEASURES.

The weights and measures are generally the same as those of Great Britain, but with the old measures of capacity (the old wine gallon, of which 5 are equal to 6 imperial gallons).

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 FRENCH POSSESSIONS.

## MARTINIÈQUE, GUADELOUPE, &amp;c.

*See South America.*

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 HAYTI AND SAN DOMINGO.

## PORT-AU-PRINCE AND PORTO PLATA

Reckon in gourdes of 100 centimes. The gold gourde weighs 1·6129 grammes 900 fine, the silver gourde 25 grammes 900 fine, equal therefore to the gold and silver 5-franc pieces. Formerly the money was the silver dollar of 100 cents.

## WEIGHTS AND MEASURES.

The old Paris weights and measures are chiefly used. The old English wine gallon is also used.

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 SPANISH POSSESSIONS IN AMERICA.

## CUBA AND PORTO RICO.

(HAVANA AND MAYAGUEZ.)

Cuba (Havana) reckons in pesos (piastres or dollars) of 8 reals or 100 centavos each. In the retail trade the real is also divided into 4 cuartillos. See *Spain*. Porto Rico (Mayaguez) reckons in pesos of 8 reals of 12 dineros or 16 cuartos each. In wholesale business the real is divided also into 100 centesimos. See *Spain*. The old Macaquina\* currency of Porto Rico, which consisted of metal plates or lumps of irregular shape, has been completely withdrawn from cir-

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\* *I. e.* coin without raised or milled edge.

ulation. 9 pesos or dollars Macuquina used to be reckoned equal to 8 silver piastres.

The actual circulating medium of Cuba and Porto Rico consists chiefly of Spanish and American coins. The Spanish doubloon is rated at 17 pesos, the Alfonsos at 5·30 pesos.

Cuba has a depreciated paper currency, in which gold is quoted in premium per cent. ; at present about 130, *i. e.* 230 paper pesos for 100 gold pesos.

### WEIGHTS AND MEASURES.

See *Spain* for the old Castilian weights and measures.

The quintal of 4 arrobas or 100 libras is equal to 46·05 kilogrammes or 101·5228 lb. avoirdupois.

The corn fanega of 200 libras is equal to 3 old English bushels = 105·71 litres. It contains, accordingly, nearly the double of the Castilian fanega (= 54·8 litres).

For *Liquid Measures* see *Spain*. The old English gallon is also used ;  $4\frac{1}{10}$  old gallons = 1 arroba.

108 varas are reckoned equal to 100 English yards.

The cordele has 24 varas or 72 feet.

The caballeria is 18 cordeles square = 324 square cordeles, computed to be equal to about 13 hectares = about 155,500 square yards, or  $32\frac{1}{3}$  English acres.

The French Metrical System of weights and measures has been introduced.

### COURSE OF EXCHANGE.

#### Havana quotes

London, 60 days' sight in premium per cent. on the fixed Par of 444 pesos = £100.

Paris, 60 days' sight in premium per cent. on the fixed Par of Fr. 500 = 100 pesos.

New York, 3 and 60 days' sight in premium per cent. on the fixed Par of \$100 = 100 pesos.

The quotations are generally in gold.

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## SOUTH AMERICA.

## ARGENTINE REPUBLIC.

## BUENOS AYRES.

## MONEYS.

10 Centavos = 1 Real.

10 Reals = 1 Peso.

Formerly,

8 Reals = 1 Piastre or Dollar.

The real was divided into medios and cuartillos.

In 1875 a law established the gold standard, making the peso (called *peso fuerte*) equal to  $1\frac{2}{3}$  gramme gold 900 fine or  $1\frac{1}{2}$  gramme fine.

A new monetary system was introduced by the law of 8th November, 1881. The unit is the peso, gold or silver, the former weighing 1.6129 grammes 900 fine, the latter 25 grammes 900 fine. The gold and silver pesos are, therefore, the exact equivalent of the French 5-fr. gold and silver coins. But while formally adopting the double standard, the law of 1881 restricted the coinage and use of silver as legal tender, and thus the metallic standard may be said to be gold. The Mint Par in gold is £1 = \$5.04, or \$1 = 3s. 11.58*d.*

The actual money, however, is a depreciated paper, fluctuating greatly in value. Gold is quoted at so much premium, f. i. 180 premium, *i. e.* 280 dollars paper = 100 dollars gold. We find the sterling value of the paper dollar as follows :

? = \$1 paper.

280 = \$100 gold.

5.04 = 240*d.* = 17*d.*

Gold is also quoted in pesos paper per ounce, and indirectly through the price of the sovereign in pesos paper. Thus if sovereigns are given at 16.48 the gold dollar is  $\frac{1648}{5.04} = 326.98$  pesos, *i. e.* gold is 227 premium.

The old South American gold onza of 16 piastres weighs 27 grammes 875 fine, and is worth 64.528 shillings.

## WEIGHTS AND MEASURES.

The French Metrical System has been introduced.

The American and English merchants established in Buenos Ayres use the old English weights and measures.



## COURSE OF EXCHANGE.

Buenos Ayres *receives* from

London	90 days' sight	*14½	Pence for 1	Peso paper.
Paris	„ „	Fr. 1·50	„ 1	„ „
Hamburg	„ „	M. 1·25	„ 1	„ „

Sometimes these exchanges are quoted for 1 peso gold.

## B O L I V I A.

## SUCRE (OR CHUQUISACA).

1 Boliviano = 100 Centavos.

The Boliviano is a silver money, by law of 25 grammes weight 900 fine, but which does not circulate, and is represented by five 2-real (20 centavos) silver pieces. It is a money of uncertain value. The Bank of Bolivia issues paper money, redeemable on demand, and generally at par with silver. In the country the old peso is still used in transactions equal to 80 centavos or 4 pesitas.

## COURSE OF EXCHANGE.

London,	90 days' sight,	27 pence per 1	boliviano.
Paris	„ „	Fr. 2·90	„ 1 „

## WEIGHTS AND MEASURES.

The French metrical system of weights and measures has been introduced.

## B R A Z I L.

1000 Reis = 1 Milreis.

In 1849 the gold valuation was adopted, and the new coinage consists of pieces of 20, 10, and 5 milreis in gold, and 2, 1,  $\frac{1}{2}$ ,  $\frac{1}{5}$ ,  $\frac{1}{10}$ , milreis in silver.

The 20-milreis piece in gold weighs 5 oitavas, or 17·929 grammes, or 276 $\frac{2}{3}$ , grains troy. It is 916 $\frac{2}{3}$  fine. This gives a "Mint Par" between Brazil and England of 1 milreis = 26·93 pence, and makes the pieces of 20 milreis = £2 4s. 10·6d. The other gold pieces in proportion.

English sovereigns are valued at 8890 reis gold (or 1 milreis = 27d.).

The silver money is not legal tender beyond 20 milreis.

The present money is, however, inconvertible paper, fluctuating in its value. In 1867 this paper was at a discount of 50 per cent. ; in 1868, 80 per cent. discount ; in 1875 it stood nearly at par with gold, but then fell to a discount of 25 per cent. In 1889 it rose to par again, and efforts were made to sustain it there, but they had to be abandoned. The Republic sanctioned large issues of paper money by banks, in consequence of which the milreis fell in 1892 to 10*d.*, from which quotation it has, however, risen again to 15*d.*

1000 milreis are called a "conto," 1000 contos a "conto de contos."

### WEIGHTS AND MEASURES.

The Brazilian weights and measures of length are the same as those of Portugal.\*

100 Arreteis or Pounds	=	101·1857 lb. Avoirdupois.
1 Arroba of 32 Pounds	=	32·384       "       "
100 Covados	=	74·165 Yards.
100 Varas	=	119·77       "       "
100 Medidas	=	59·54 Imperial Gallons.
100 Alqueires	=	13·87       "       Quarters.
The Mark is = 8 Ounces	=	64 Oitavas = 192 Escrupulos
= 4608 Grãos = 3541½ Grains	Troy.	
1000 Marks	=	7378½ oz. Troy.

Since 1st January, 1874, the French Metrical System of weights and measures has been introduced.

### COURSE OF EXCHANGE.

Rio de Janeiro *receives* from

London, 90 and 60 days' sight, †13½ Pence for 1 Milreis (paper)

And *gives* to

Paris, 90 days' sight, 710 Reis (paper) for Fr. 1.

Hamburg       "       "       880       "       "       "       M. 1.

Lisbon       "       "       290       "       "       "       100 Reis (Ptgse.).

New York, sight       3·700       "       "       "       \$1.

\* Various provincial measures are used in parts of the empire, but they are not legal. English measures are also occasionally used. 100 Brazilian pounds are sometimes reckoned at 101¼ or 101½ lb. avoirdupois. The covado of Brazil is the covado avantejado of Portugal, of 24¾ instead of 24 polegadas. Five varas are commonly reckoned as 6 yards, 27 covados as 20 yards. In Custom House measure 6 varas are reckoned as 7 yards; 140 medidas are reckoned equal to 100 old wine gallons, and 10 alqueires = 11 imperial bushels.

† Refer to note, p. 19.

The Bill Stamp is as follows :

On amounts up to Milr.	200	. . .	200	reis.
Beyond Milr.	200	„ „	400	. . . 400 „
„	400	„ „	600	. . . 600 „
„	600	„ „	800	. . . 800 „
„	800	„ „	1000	. . . 1\$000 „
And then for every conto or fraction		. . .	1	Milreis.

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## BRITISH GUIANA.

### MONEYS.

Demerara reckons in dollars or gurd of 100 cents = about 50 pence sterling, in English money (see *Great Britain*), and, in inland trade, in guilders of 20 stivers of 16 pfennige each. Great Britain supplies the colony with silver pieces of 3 and 2 guilders, and 1,  $\frac{1}{2}$ , and  $\frac{1}{4}$  guilder, and copper pieces of 1 stiver and  $\frac{1}{2}$  stiver. English money is becoming more and more the principal medium of account and exchange.

The Demerara dollar is equal to 294 grains troy fine silver.

London is quoted 90 days' sight in Spanish dollars for £100.

### WEIGHTS AND MEASURES.

In the inland trade the old Amsterdam weights and measures are used, in wholesale business the English weights and measures.

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## CHILI.

### SANTIAGO DE CHILÉ AND VALPARAISO.

#### MONEYS.

100 Centavos = 1 Peso corriente.

The peso is, by law of 9th January, 1851 = 5 francs, weighing 25 grammes 900 fine silver. The new coinage consists of—

*Gold.*

Condor = 10 Pesos,	15·253 grammes	900 fine.
Doblon = 5    ,,	7·626        ,,	,,
Escudo = 2    ,,	3·051        ,,	,,

*Silver.*

Peso . . . . .	= 25 grammes,	900 fine.
$\frac{1}{2}$ or piece of 50 Centavos	= 12 $\frac{1}{2}$ ,,	,,
$\frac{1}{3}$ ,,    20        ,,	= 5        ,,	,,
$\frac{1}{10}$ ,,    10        ,,	= 2 $\frac{1}{2}$ ,,	,,
$\frac{1}{20}$ ,,    5         ,,	= 1 $\frac{1}{4}$ ,,	,,

The gold condor, or piece of 10 pesos, weighing 235·38962 grains troy, is worth very nearly £1 17s. 6d. sterling; whereas if it were the full weight of the 50-francs piece = 16·129 grammes, corresponding to the 25-grammes weight of the silver peso, it would be worth £1 19s. 8d. sterling, which makes a difference of very nearly 6 per cent. in favour of silver in Chili, in comparison with France, making the Chilian rate 1 : 16·39.

Although nominally the double valuation still prevails in Chili, the fall in the value of silver below the Chilian Mint proportion of 1 : 16 $\frac{2}{3}$  $\frac{1}{4}$  has caused the export of gold from Chili, whose metallic standard may now be looked upon as the silver valuation. Gold coins are no longer struck. Of late even silver has been at a premium in comparison to a depreciated paper money, which has been made legal tender.

For the customs duties payable in gold sovereigns are taken as equal to 6·31 pesos gold.

## WEIGHTS AND MEASURES.

Since 1863 the French Metrical System has been introduced at the Custom House.

## COURSE OF EXCHANGE.

Valparaiso receives from

London, 90 days' sight,*	20 pence for 1 peso paper.
Paris        ,,        ,,	Fr. 2·10    ,, 1    ,,
Hamburg    ,,        ,,	M. 1·70    ,, 1    ,,

\* Refer to note, page 19.

## COLOMBIA.

## BOGOTA (SANTA FÉ DE).

## MONEYS.

1 Peso = 100 Centavos.

Since 1857 the French Franc System has been introduced. The new peso is equal to 5 francs. The old pesos, or pesos Macuquina, which are 20 per cent. less in value (equal to 20·7 grammes fine silver), and were divided into 8 reales, are rapidly disappearing from circulation. The old real is called decimo de peso.

The gold condor, or piece of 10 gold piastres, weighs 16·129 grammes or 248·907357 grains troy, and is 900 fine. At £3 17s. 10½*d.* per ounce British standard gold, it is worth £1 19s. 7½*d.* sterling. The other gold coins (the gold piastre, double piastre, half condor, and double condor) are of proportionate weight, and 900 fine. All these, as well as French gold coins, were taken at their full nominal value at the public receiving offices. The old gold ounces or doubloons, which were generally rated at 16 dollars, have been found to be worth only from 15 dollars 30 cents to 15⅔ dollars. Against the so-called Macuquina currency, they receive an agio of 16 to 18 per cent.

All kinds of foreign gold ounces and silver piastres were in circulation, including 5-franc pieces, which pass as piastres.

The Brazilian patacao or patacon = 960 reis is rated equal to the silver piastre.

The standard is a double valuation with the French proportion of silver to gold of 1 : 15½. The Mint Par, on the gold basis, is therefore £1 = 5·045 pesos.

The actual money in circulation is paper, at present depreciated by about 50 per cent.

## COURSE OF EXCHANGE.

Bogota gives to

London 90 days' sight\* 7 Pesos for £1 Sterling.

And receives from

Paris 90 days' sight 3·40 Francs for 1 Peso.

Hamburg „ „ 2·70 Marks „ 1 „

\* Refer to note, page 19.

## WEIGHTS AND MEASURES.

The French Metrical System has been introduced.

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## DUTCH POSSESSIONS IN AMERICA.

## SURINAM, CURAÇAO, &amp;c.

## MONEYS.

See *Netherlands*.

## WEIGHTS AND MEASURES.

In the inland trade the old Dutch weights and measures ; in business transactions with the Netherlands the Metrical System.

In Curaçao the old English wine gallon is chiefly used for measuring liquids.

*Measures of Length.*—The Rhineland foot, the old Amsterdam ell, and the Spanish vara.

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## ECUADOR.

## QUITO, GUAYAQUIL.

Up to 1884 the circulation consisted of the coins of the neighbouring countries. Since 1884 a national money has been introduced, the sucre or peso of 25 grammes silver 900 fine. Like the Chilian peso and the Peruvian sol, this coin is therefore equal to the French 5-franc piece. There is, however, a paper currency, at present depreciated by over 50 per cent.

*Guayaquil* quotes

London 90 days' sight	63 per cent.,	<i>i. e.</i>	163 sucres	for	£20.
Paris	62½	„	<i>i. e.</i>	162½	„ fr. 500.

## FRENCH POSSESSIONS IN AMERICA.

### CAYENNE, MARTINIQUE, GUADELOUPE, &c.

#### MONEYS.

Cayenne reckons, in inland trade, in livres of 20 sous of 12 deniers each; in foreign trade in West Indian francs of 100 centimes; 185 West Indian francs = 100 francs French money. The same applies to Guadeloupe.

Martinique reckons in French francs of 100 centimes; in inland trade also in colonial livres of 20 sous of 12 deniers each 180 colonial livres = 100 francs French money; 36 colonial livres of Martinique = 37 colonial livres of Guadeloupe.

#### WEIGHTS AND MEASURES.

The Metrical System. See *France*. In the inland trade in Cayenne the old Parisian weights and measures are still in use.

In Martinique the baril of pulse has four frequins = 102.445 litres or 2.818518 imperial bushels.

The barrique of wine, &c., holds 100 pots of 2 pintes each = 186.26 litres or nearly 41 imperial gallons (40 995826).

The barrique of sugar weighs 1000 old Paris market pounds = 489.5 kilogrammes or 1079.16212 lb. avoirdupois.

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## P A R A G U A Y.

### ASUNCION.

#### MONEYS.

1 Peso = 100 Centavos

or

1 Peso = 8 Reales.

1 Reale = 4 Cuartillos.

The gold doubloon of Mexico is rated at  $17\frac{1}{2}$  piastres (paper), making the peso (paper) equal to 1.36174 grammes fine gold.

Exchanges are effected through the medium of Buenos Ayres.

A depreciated paper currency exists, and the gold doubloon is quoted at 20 (and more) pesos.

## WEIGHTS AND MEASURES.

The French Metrical System has been introduced.

The libra is equal to 1.015 lb. avoirdupois. The peseda, for weighing hides, is equal to 35.525 lb. avoirdupois. The arroba is equal to 25.375 lb. avoirdupois.

The Pipe =	195 Frascos =	105	English Gallons.
The Frasco	=	0.5385	„ Gallon.
The Fanega	=	1.526	Imperial Bushel.
The Vara	=	33½	English Inches.

## P E R U.

## LIMA.

## MONEYS.

1 Sol = 100 Centesimos.

The unit, the silver sol, weighs 25 grammes 900 fine. It is therefore equal to the French 5-franc piece. Gold coins exist also of 2, 5, 10, and 20 sols. Their fineness is 900, and the 20-sol piece weighs 32.258 gr. This gives a ratio of silver to gold of 1 : 15½.

For a long time the country had an inconvertible paper money, but since the war this paper has become almost worthless, and, in consequence, only hard sols are now in circulation, valued according to the price of silver, at present about 32*d.*

The exchanges are quoted as follows :

London	3 and 90 days' sight	30 <i>d.</i>	for 1 sol.
Paris	„ „ „	3.20 Fr.	„ 1 „
Germany	„ „ „	2.50 m.	„ 1 „
New York	„ „ „	75	premium per cent. for 100 dollars.

Sovereigns are quoted 8¼ sols each.

## WEIGHTS AND MEASURES.

See *Spain*.

100 Libras = 101½ lb. Avoirdupois.

100 Varas = 101.4 Varas Castellanas.



## U R U G U A Y.

## MONTEVIDEO.

## MONEYS.

1 Peso = 100 Centesimos.

The peso was originally a silver coin, 23·36516 grammes fine. In 1876 the gold standard was introduced into Uruguay, 10 pesos weighing 16·970 grammes gold  $\frac{1}{2}$  fine; and although paper money circulates, it is convertible, and Uruguay has maintained specie payments better than other South American States. Foreign gold coins are taken at tariff prices, the sovereign at 4·70 pesos, the napoleon at 3·75 pesos, the 20-mark piece at 4·60 pesos, the argentino at 4·66 pesos, the eagle at 9·66 pesos. The real mint par between London and Montevideo is 1 peso = 50·99*d.*, or 4·707 pesos = £1.

The exchanges are quoted as follows :

London	3 months,	51 pence for 1 peso.
Paris	„	fr. 5·35 „ 1 „
Germany	„	m. 4·35 „ 1 „

## WEIGHTS AND MEASURES.

The French Metrical System has been introduced.

## V E N E Z U E L A.

## CARACAS.

The monetary unit is the Venezolano or peso, divided into 100 centavos, a silver coin weighing 25 grammes 900 fine, or equal to the French silver 5-franc piece. There exists also gold coins equal to the French gold pieces, so that the system is a double standard at the ratio of 1 : 15 $\frac{1}{2}$ . The coin  $\frac{1}{5}$  Venezolano is called the "Bolivar," equal to 1 franc.

The sovereign is rated at \$ 5·05, the napoleon at \$ 4, the eagle at \$ 10·40, the 20-mark piece at \$ 4·95.

Caracas quotes exchange on London 90 days' sight \$ 5·08 per £1. Berlin and Paris are sometimes quoted in marks and francs for 1 peso.

## A U S T R A L I A.

## MONEYS.

1 Pound	=	20 Shillings.
1 Shilling	=	12 Pence.
1 Penny	=	4 Farthings.

The money is the same as that of Great Britain.

The old Australian currency, which was reckoned at 20 per cent. less than sterling (£5 sterling = £6 Australian currency), is no longer used.

The sovereigns and half-sovereigns supplied by the Australian Mints of Melbourne and Sydney are legal tender in England.

The course of exchange with London stands occasionally *at par*, but there is generally a premium on London ranging between 1 and 5 per cent.; £100 in London = £101 to £105 in Australia.

The exchange with the East Indies is quoted in so many pence sterling per Government rupee; for instance, 20—20½*d.* on Bombay.

The exchange with China, &c., is quoted in so many shillings or pence per dollar; for instance, 48*d.* or 4*s.* on Hongkong.

The exchange with the United States is quoted in so many dollars per £ sterling; for instance, 4 dollars 80 cents on San Francisco.

There is a Bill Stamp of

1 Shilling	per every	£50	or fraction	in	Queensland.
1	„	50	„	„	New Zealand.
1	„	50	„	„	Victoria.
6 Pence	„	50	„	„	Tasmania.

## WEIGHTS AND MEASURES.

The weights and measures are the same as those of Great Britain.

The section (measure of surface) is = 80 acres.

In Victoria a ton of flour is reckoned = 2000 lb. avoirdupois.

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## SANDWICH ISLANDS.

## HONOLULU.

Honolulu reckons in Spanish piastres of 8 reales or 100 cents; but Spanish and American piastres, dollars, and five-francs pieces are taken indiscriminately at the same rate. 1 piastre is reckoned equal to 2 rupees.

Exchange on London about 48*d.* per Piastre.  
 „ New York 10 to 20 per cent. premium.

## WEIGHTS AND MEASURES.

The same as those of the United States of North America (see these and *Great Britain*), with this difference only, that the cwt. is divided into 100 lb. instead of 112. The ton has, accordingly, 2000 lb.

## SOCIETY ISLANDS.

## TAHITI.

Tahiti reckons in piastres and cents; but it is difficult to fix the exact value of the piastre, as all sorts of Spanish and Mexican piastres, American dollars, and even French five-francs pieces, are taken indiscriminately at the same rate.

## WEIGHTS AND MEASURES.

In their dealings with the natives the French use French, the English English weights and measures.

## CROSS EXCHANGES.

The direct exchanges between two foreign places are termed cross exchanges in regard to English places. Thus, for instance, the direct exchanges between Paris and Hamburg, Paris and Amsterdam, &c., are cross exchanges in regard to London.

## EXAMPLES.

## PARIS.\*

To exchange 10,000 Francs with

*BERLIN*, at 122.

Fr.		M.		Fr.
If 122	—	100	—	10,000 ?
<hr style="width: 50%; margin: auto;"/>				
M. 8196·72.				
<hr style="width: 50%; margin: auto;"/>				

*AMSTERDAM*, at 209¼.

Fr.		Fl.		Fr.
If 209¼	—	100	—	10,000 ?
<hr style="width: 50%; margin: auto;"/>				
Florins 4778·97 Cents.				
<hr style="width: 50%; margin: auto;"/>				

*ST. PETERSBURG*, at 270.

Fr.		Ro.		Fr.
If 270	—	100	—	10,000 ?
<hr style="width: 50%; margin: auto;"/>				
Ro. 3703·70.				
<hr style="width: 50%; margin: auto;"/>				

## AMSTERDAM.

To exchange 10,000 Florins with

*PARIS*, at 48.

Fl.		Fr.		Fl.
If 48	—	100	—	10,000 ?
<hr style="width: 50%; margin: auto;"/>				
Fr. 20833·33				
<hr style="width: 50%; margin: auto;"/>				

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\* For an explanation of the rates employed in cross exchanges, the course of exchange of the places making the operation as given in the previous chapters is to be consulted.

*BERLIN*, at 59.

Fl.	M.	Fl.
If 59	100	10,000 ?
	<u>M. 16949·15</u>	

*ST. PETERSBURG*, at 125.

Fl.	Ro.	Fl.
If 125	100	10,000 ?
	<u>Ro. 8000</u>	

## BERLIN.

To exchange M. 10,000 with

*PARIS*, at 81.

M.	Fr.	M.
If 81	100	10,000 ?
	<u>Fr. 12345·69</u>	

*AMSTERDAM*, at 170.

M.	Fl.	M.
If 170	100	10,000 ?
	<u>Fl. 5882·35</u>	

*ST. PETERSBURG*, at 215.

M.	Ro.	M.
If 215	100	10,000 ?
	<u>Ro. 4651·15</u>	

## ST. PETERSBURGH.

To exchange Ro. 10,000 with

<i>PARIS</i> , at 40.		
Fr.	Ro.	Ro.
If 100	40	10,000 ?
	<hr style="width: 50%; margin: 0 auto;"/>	
	Fr. 25,000	
	<hr style="width: 50%; margin: 0 auto;"/>	

<i>AMSTERDAM</i> , at 82.		
Fl.	Ro.	Ro.
If 100	82	10,000 ?
	<hr style="width: 50%; margin: 0 auto;"/>	
	Fl. 12,195·12	
	<hr style="width: 50%; margin: 0 auto;"/>	

<i>BERLIN</i> , at 50.		
M.	Ro.	Ro.
If 100	50	10,000 ?
	<hr style="width: 50%; margin: 0 auto;"/>	
	M. 20,000	
	<hr style="width: 50%; margin: 0 auto;"/>	

## EXERCISES ON CROSS EXCHANGES.

Ex. 1. Exchange Francs 14172·84 at PARIS  
with

<p><i>AMSTERDAM</i>, at 209<math>\frac{1}{4}</math>. If 209<math>\frac{1}{4}</math> Francs — 100 Flor. — Francs 14172·84 ?</p>	<p><i>ST. PETERSBURG</i>, at 270. If 270 Francs — 100 Ro. — Francs 14172·84 ?</p>
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<p><i>BERLIN</i>, at 122. If 122 Francs — M. 100 — Francs 14172·84 ?</p>	<p><i>VIENNA</i>, at 210. If 210 Francs — 100 Flor. — Francs 14172·84 ?</p>
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Ex. 2. Exchange Fl. 4769·50 at *AMSTERDAM*  
with

<p><i>PARIS</i>, at 48. If Flor. 48 — 100 Francs — Flor. 4769·50 ?</p>	<p><i>ST. PETERSBURG</i>, at 125. If Flor. 125 — Ro. 100 — Flor. 4769·50 ?</p>
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<p><i>BERLIN</i>, at 59. If Flor. 59 — M. 100 — Flor. 4769·50 ?</p>	<p><i>VIENNA</i>, at 101. If Flor. 101 — Aust. Fl. 100 — Flor. 4769·50 ?</p>
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## Ex. 3. Exchange M, 5486·12 at HAMBURG

with

PARIS, at 81.  
If M. 81 — 100 Francs  
— M. 5486·12 ?

ST. PETERSBURGH, at 215.  
If M. 215 — 100 Ro.  
— M. 5486·12 ?

AMSTERDAM, at 170.  
If M. 170 — 100 Flor.  
— M. 5486·12 ?

LISBON, at 450.  
If M. 4·50 — Milr. 1  
— M. 5486·12 ?

## Ex. 4. Exchange Ro. 8500 at ST. PETERSBURGH

with

PARIS, at 39.  
If Francs 100 — Ro. 39  
— Ro. 8500 ?

BERLIN, at 49.  
If M. 100 — Ro. 49  
— Ro. 8500 ?

AMSTERDAM, at 80.  
If Flor. 100 — Ro. 80  
— Ro. 8500 ?

VIENNA, at 85.  
If Flor. 100 — Ro. 85  
— Ro. 8500 ?

## Ex. 5. Exchange Fl. 20200·50 at VIENNA

with

PARIS, at 46·50.  
If Flor. 46·50 — Francs 100  
— Flor. 20200·50 ?

BERLIN, at 57.  
If Flor. 57 — M. 100  
— Flor. 20200·50 ?

AMSTERDAM, at 97·50.  
If Fl. 97·50 — Dutch Fl. 100  
— Flor. 20200·50 ?

ST. PETERSBURGH, at 118.  
If Flor. 118 — Ro. 100  
— Flor. 20200·50 ?

## PRODUCTS.

Ex. 1. Fl. 6773·16      Ro. 5249·20  
          M. 11617·08      Fl. 6748·97

Ex. 2. Fr. 9936·46      Ro. 3815·60  
          M. 8083·90      Fl. 4722·28

Ex. 3. Fr. 6772·99      Ro. 2551·68  
          Fl. 3227·13      Milr. 1219·14

Ex. 4. Fr. 21794·87      M. 17346·94  
          Fl. 10625·      Fl. 10000·

Ex. 5. Fr. 43441·94      M. 35439·47  
          Fl. 20718·46      Ro. 17119·07

## INDIRECT EXCHANGES,

OR

## ARBITRATIONS OF EXCHANGE.

Operations of exchange between two countries through the medium either of one or several other countries are termed *indirect exchanges* ; and the rates therefrom resulting are called *arbitrated rates of exchange*.

Arbitrations of exchange are therefore either simple or compound, according to whether they are based upon either one or several cross exchanges, or, expressed in other terms, according to whether either one or several places are interposed between the two ends of the chain of operations.

## SIMPLE ARBITRATIONS.

The rate of exchange produced by drafts or remittances between two places is called a simple arbitrated rate when there is only one intermediate place employed in the operation ; thus, the rate of exchange between London and Paris obtained by the purchase in London of Bills upon Amsterdam, and by the sale of these bills in Paris, is a simple arbitrated rate.

The object of an operation in indirect exchange is to obtain a better rate, for either remitting or drawing, than is afforded by the direct exchange ; and the object of the calculation and comparison of several arbitrated rates is to find which is the most profitable of them all.

In all direct exchange operations the first two questions for consideration are—

1st. Whether the operation is to be a remittance, or to be a draft or return.

2ndly. Whether the rate of exchange is in foreign money or in sterling.

These questions settled, there are the following rules to guide the operator, to wit—

*For remittances to a foreign place—*

With a foreign rate, any arbitrated rate is better than the direct rate if it is greater than the latter.

With a sterling rate, any arbitrated rate is better than the direct rate if it is less than the latter.

Because, in either case, a given sum in sterling will produce



a greater sum in foreign money, or a given sum in foreign money will cost a less sum in sterling.

*For drafts upon a foreign place or returns—*

With a foreign rate, any arbitrated rate is better than the direct rate if it is less than the direct rate.

With a sterling rate, any arbitrated rate is better than the direct rate if it is greater than the direct rate.

Because, in either case, a greater sum in sterling will be obtained from a given sum drawn for in foreign money, or a given sum in sterling will be realized from a smaller sum in foreign money.

Another question for consideration is which of the two places chiefly concerned should either remit or draw. This requires a study and comparison of the direct rates of the two places. Upon the result of such comparison, taken in connection with the considerations stated above regarding the questions of remittance or draft, and sterling rates or foreign rates, it will depend, for instance, in the case of a remittance to be made, or a fund to be created, in Paris, whether London should remit to Paris or Paris draw upon London; and so *vice versâ*, always selecting that mode which, for remittances abroad, costs the least sum in sterling, or gives the greatest sum in foreign money; or which, for remittances to this country, costs the least sum in foreign money, or yields the largest sum in sterling.

In all exchange operations, direct or indirect, the direct rates have to be discounted or reduced to short prices,\* because, in the case of direct operations, the interest for the time which the bill has to run affects the price, operating contrary ways upon the rates in the two countries; and, in indirect operations, the arbitrated rates are necessarily calculated for present money, as bills are never sold on what may be termed credit. It is necessary here also to observe that, in making remittances of indirect paper upon speculation, bills at a long date are preferable to those at a short date, because they afford more time, in the event that it should be judged proper to wait for an improvement in the rate of exchange.

Bills at short dates are very seldom employed for other purposes than direct remittance.

In order, therefore, to admit of a proper comparison between

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\* Short prices are the prices of bills at sight, or at short sight, which is generally 3 days' sight.

the different sorts of paper, the direct rates also at the two places of operation should be taken at a long date, say three months, and then discounted or reduced, either according to the rate charged by the two houses of business concerned in the operation, or at the market rate of discount.

To show how to work this reduction properly, we will take the example given on page 169. There—

London on Paris at 3 months is quoted Fr. 25 55 Cents.

Paris on London           "           "           Fr. 25 10   "

The discount for 3 months is there stated to be taken at 1 per cent., or 25 cents,\* which is deducted from the London rate, and added to the Paris rate, to make the two short or cash rates; thus reducing the former to frs. 25 30 cents., and raising the latter to frs. 25 35 cents.

The interest is taken from the London rate, because, if the Bill is sent to Paris, and discounted there, the interest will be deducted; and it is added to the Paris rate, because, if a Bill is wanted at Paris upon London at sight, more French money will have to be paid for it than for a Bill at 3 months.

It is evident that if the variable price is in sterling, as in the case of the rate with Madrid, the allowance for interest has to be reversed, *i. e.* to be added to the London price, and subtracted from the price abroad.

It now remains to show the usual method of stating and working by the chain rule, or rule of equations, the arithmetical questions of arbitrated rates. The requisite data in these operations are—1st. The fixed price of the rate between the two places, of which fixed price the arbitrated variable price is required. 2ndly. The buying price at the place where the operation commences. 3rdly. The selling price at the other place concerned; and, occasionally, there are intermediate or auxiliary rates required, to connect the prices either with each other or with the fixed price, or to bring out the result in the proper money of the variable price.

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\* To be very accurate, the time which the post takes between the two places should be deducted from the time which the bill has to run.

The interest is here reckoned at 4 per cent. per annum.

For the contractions that may be practised in these calculations, and for the method of finding and employing fixed numbers, see Tate's 'Counting-House Guide;' also for arbitrations of merchandise, with *pro formâ* invoices and account sales.

## EXAMPLE 1.

From the following rates of Bills in London and Paris, it is required to find—

1st.—Whether, having money to transmit from London to Paris, it will be better for me to remit direct Bills to Paris, or for my correspondents in Paris to draw upon me in London, allowing interest, at 4 per cent. per annum, for the time the Bills have to run.

2ndly.—Whether, having money to draw from Paris, it will be better for my correspondents there to make me remittances, or for me to draw upon them.

3rdly.—If I have to make remittances to Paris, whether any indirect rate will answer better than the rates of direct Bills.

4thly.—If I have to obtain returns from Paris, whether any indirect rate will answer better than either of the direct rates.

## RATES OF EXCHANGE.

LONDON.		PARIS.	
25·55	. . . Paris	3 months	
12 3	. . . Amsterdam	„ . . .	207½
20 60	. . . Hamburg	„ . . .	123½
28·50	. . . Milan	„ . . .	11½ per ct. loss.
	London	„ . . .	25·35 and 4p.c.*
			= 25·10

## REDUCTION OF THE DIRECT RATES.

The direct paper being at 3 months, the interest upon it, at 4 per cent. per annum, is 1 per cent., or to either rate about 25 cents. (to be deducted from London on Paris, and added to Paris on London).

London on Paris . Fr. 25·25 at 3 mo. . Fr. 25·30 short.

Paris on London . Fr. 25·10 „ . Fr. 25·35 „

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\* London is quoted for sight paper (see page 46), and on long bills the discount at the London bank rate is deducted; 4 per cent. per annum for 3 months, or 25·35 = 0·25, making London 3 months equal to 25·10.

## METHOD OF WORKING THE EQUATIONS.\*

## AMSTERDAM.

$$\begin{aligned} ? &= 1 \text{ £} \\ 1 &= \dagger 12 \text{ 3 Flor. and Stiv.} \\ 100 &= 207\frac{1}{2} \text{ Francs.} \end{aligned}$$

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$$\text{Francs } 2\cdot07\frac{1}{2} \times 12\cdot15 = 25\cdot21 \text{ Francs.}$$

## HAMBURG.

$$\begin{aligned} ? &= 1 \text{ £} \\ 1 &= 20\cdot60 \text{ M.} \\ 100 &= 123\frac{1}{2} \text{ Francs.} \end{aligned}$$

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$$\text{Francs } 1\cdot23\frac{1}{2} \times 20\cdot60 = 25\cdot44 \text{ Francs.}$$

## MILAN.

$$\begin{aligned} ? &= 1 \text{ £} \\ 1 &= 28\cdot50 \text{ Lire.} \\ 100 &= 88\frac{1}{2} \text{ Francs.} \end{aligned}$$

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$$\text{Franc } 0\cdot89 \times 28\cdot50 = 25\cdot22 \text{ Francs.}$$

## COMPARISON OF THE ARBITRATED RATES.

	PRICES.		PARS.
	London.	Paris.	
London 3 mons.	25·55	—	25·30
Amsterdam „	12 3	207 $\frac{1}{2}$	25·21
Hamburg „	20·60	123 $\frac{1}{2}$	25·44
Milan „	28·50	88 $\frac{1}{2}$	25·22
Paris „	—	25·10	25·35

\* For complete tables of all *Arbitrage* Operations in Foreign Exchanges see *Foreign Banking Arbitration*, by Hermann Schmidt. London, Eflingham Wilson.

† The variable terms are printed black.

*FOR DIRECT PAPER.*

It appears from the direct rates between London and Paris, at 25·30 and 25·35, that

1st.—To remit or transfer money from London to Paris, it is better for Paris to draw upon London at 25·35 short than for London to remit to Paris at 25·30 short, because by the former operation there will be made 5 cents. per £, or about  $\frac{1}{3}$  per cent. more than by the latter.

2ndly.—To have returns from Paris, or to remit or transfer money from Paris to London, it is better, by the same 5 cents., for London to draw upon Paris than for Paris to remit to London, because the bills will cost so much less French money, or produce so much more in sterling.

*FOR INDIRECT PAPER.*

For remittances to Paris, or to create a fund in Paris, it appears from the arbitrated results that 3 months' Bills upon Hamburg bought in London at M. 20·60 per £1, and sold in Paris at 123 $\frac{1}{2}$  Fr. per M. 100, will produce 14 centimes per £1, or over  $\frac{1}{2}$  per cent. more than direct remittances from London to Paris, or that they will produce 9 centimes, or about  $\frac{3}{8}$  per cent. more than is yielded by direct drafts of Paris upon London.\*

For returns from Paris, or to create a fund in London, it appears, from the arbitrated results, that 3 months' Bills on Amsterdam bought in Paris at 207 $\frac{1}{2}$  Fr. per Fl. 100, and sold in London at Fl. 12 3 St. per £1, will cost 14 centimes, or nearly  $\frac{9}{100}$  per cent. less than direct remittances from Paris, and give a profit of 9 centimes, or about  $\frac{3}{8}$  per cent. more than will be obtained by drafts from London on Paris.

In this manner the various exchanges are calculated to ascertain which will answer best for a transaction in Bills through intermediate places.† The chance of changes in the

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\* If 1 per mille be deducted for extra brokerage, these differences will be reduced to about  $\frac{7}{100}$  per cent. and  $\frac{1}{4}$  per cent.

† It is to be noticed that, in speaking of operations with indirect paper of any place, it is common to say that the operation is made through that place; thus, operations between London and Paris with Amsterdam paper are said to be made through Amsterdam. However, to make this term perfectly applicable to the operation, the fund to be created in Paris must be supposed to be formed by remittance of direct paper to Amsterdam, either with instructions to the Amsterdam house to forward the proceeds to Paris, or to the Paris correspondent to draw for them upon the Amster-

rates has to be taken into account of course. But there is besides another important item for consideration, in determining upon the propriety or otherwise of making the operation—to wit, the charges attendant upon the transaction.

The regular charges are  $\frac{1}{8}$ — $\frac{1}{10}$  per cent. for brokerage upon each purchase or sale;  $\frac{1}{10}$ — $\frac{1}{20}$  per cent. stamp duties upon drafts;\* and, if the business is conducted through an agent, one quarter, one third, or one eighth per cent., according to agreement, for commission. It is not often the case, however, that business of this sort is done to any important extent, except between branches of the same house, or on joint account, as the charge for commission would too much diminish the small rate of profit which such operations commonly afford, even under the most favorable conditions. The interest of the money laid out has also to be taken into account, but the amount of this necessarily depends upon the promptness of the return.

To illustrate and elucidate the preceding calculations and remarks, we will suppose here four different cases, and consider them severally.

#### DIRECT REMITTANCES AND DRAFTS.

£1000 remitted to Paris in direct Bills		
at 25·55 will produce . . . . .		Francs 25550·00
If turned into cash on arrival, there will be		
to deduct 3 months' interest, which		
at 4 per cent. is . . . . .		„ 255·50
	Leaving Net .	<u>Francs 25294·50</u>
£1000 upon London sold in Paris at		
25·10 will produce . . . . .		Fr. 25100·00
Add 3 months' interest at 4 per cent. .		„ 251·00
	Total . . .	<u>Fr. 25351·00</u>
(as above)	Net Proceeds	„ 25294·50
	Difference .	<u>Fr. 56·50</u>

dam house. Both ways produce the same arbitrated rate, but the latter operation, being less complicated, is by far the more common, and it is also attended with fewer charges.

\* For details, see the chapters on France, Germany, Netherlands, &c.

Which difference upon 25,000 francs is about 9-40ths per cent.

If, therefore, I wish to create a fund in Paris, I shall obtain more by Paris drawing than by my remitting.

On the other hand, if I wish to draw money from Paris, it will cost me less to procure £1000 by my drawing than by Paris remitting.

The charges for brokerage, &c., being the same either way, are not taken into account here.

### INDIRECT REMITTANCES.

£1000 laid out in London in Bills of 3 months' currency upon Hamburg at M. 20·60 per £1 sterling, which are sold in Paris at 123½ francs per M. 100, will produce an exchange of 25·44 or . . . . .	Frans 25440·00
Deduct 1 per mille brokerage . . . . .	„ 25·44
	<hr/>
	Fr. 25414·56
Direct Bills, as before, will yield . . . . .	„ 25294·50
	<hr/>
Difference . . . . .	<u>Fr. 120·06</u>

This difference is nearly  $\frac{1}{2}$  per cent., after allowing 1 per mille for extra brokerage, which charge will be incurred on the sale of the Hamburg Bills at Paris.

### INDIRECT RETURNS.

£1000 to be realised in London by the sale, at Fl. 12 3 st. per £1 sterling, of 3 months' Bills upon Amsterdam, bought in Paris at Fr. 207½ per Fl. 100, will give an exchange of 25·21, and require . . . . .	Frans 25210·00
Add 1 per mille extra brokerage . . . . .	„ 25·21
	<hr/>
	Fr. 25235·21
Direct Bills, as before, will cost . . . . .	„ 25351·00
	<hr/>
Difference . . . . .	<u>Fr. 115·79</u>

Which upon 25,000 francs is about  $\frac{7}{8}$  per cent. profit.

## INDIRECT REMITTANCES AND RETURNS.

£1000 laid out in London in 3 months'		
Bills upon Hamburg will produce in Paris, as before, in cash . . . . .		Francs 25414·56
Deducting a further 1 per mille brokerage in Paris for buying returns . . . . .		„ 25·41
	Net . . . . .	<u>Fr. 25389·15</u>

This amount invested in Paris in the purchase of 3 months' Bills on Amsterdam at the preceding rates, or the arbitrated of 25·21, will produce . . . . .		£1007 3 2
Deduct 1 per mille brokerage in London . . . . .	£1 0 2	
5 days' interest at 5 per cent. . . . .	0 13 8	
Postage, &c. . . . .	0 9 4	
		<u>2 3 2</u>
	Net . . . . .	<u>£1005 0 0</u>

Or  $\frac{1}{2}$  per mille profit.

These examples form specimens of the most common operations with arbitrated rates, but they admit of several variations where the mercantile house has correspondents in different foreign places, by whom the negotiations can be conducted.

## EXERCISES.

Ex. 1. London on Paris at 3 months is 25·65; Paris on London at 3 months is 25·15.—If 28 cents. be allowed for interest, what will be the net rates and the percentage difference?

2. London on Amsterdam at 3 months is 12 2; Amsterdam on London 2 months is 11·97 $\frac{1}{2}$ .—If the rate of interest in London is 5 per cent., and in Amsterdam 2 $\frac{1}{2}$  per cent., what will be the net rates and the percentage difference?

3. London on Hamburg at 3 months is 20·60; Hamburg on London at 3 months is 20·22.—If the rate of interest in



London is 5 per cent., and in Hamburg 3 per cent., what will be the net rates and the percentage difference?

4. Find the arbitrated rates of exchange between London and Paris from the following formulæ of Bills on—

*AMSTERDAM.*

?	=	1 £
1	=	*12 1 Flor. and
100	=	210 $\frac{1}{4}$ Francs.

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*MADRID.*

?	=	240 Pence.
49 $\frac{1}{2}$	=	1 Duro.
1	=	5·15 Francs.

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*FRANKFORT.*

?	=	1 £
1	=	20·60 M.
100	=	123 Francs.

---

*VIENNA.*

?	=	1 £
1	=	12 Flor.
100	=	212 Francs.

---

The rates for direct Bills at 3 months being at London 25·60, and at Paris 25·12 $\frac{1}{2}$ ; and the rate of discount being 4 per cent. both at London and Paris,

It is required to find,

(a.) For direct paper, whether it is better for London to remit to Paris, or for Paris to draw on London.

(b.) For indirect paper, whether it affords a better rate than direct paper both for remittances to Paris and for returns from Paris, and what is the percentage difference.

5. Find the arbitrated rates of exchange between London and Amsterdam, from the following formulæ of Bills on—

*PARIS.*

?	=	1 £
1	=	25·60 Fr.
100	=	47·75 Flor.

---

*MADRID.*

?	=	240 Pence.
49 $\frac{3}{4}$	=	1 Duro.
1	=	2·44 Flor.

---

*HAMBURG.*

?	=	1 £
1	=	20·50 M.
100	=	58 $\frac{1}{2}$ Flor.

---

*VIENNA.*

?	=	1 £
1	=	12 Aust. Flor.
100	=	101 Flor.

---

\* The variable terms are printed black.

The rates being at London for direct Bills at 3 months  $12\frac{1}{4}$ , at Amsterdam for direct bills at 2 months  $11\cdot94$ ; and the discount being 4 per cent. both in London and Amsterdam,

It is required to find,

(a.) For direct paper, whether it is better for London to remit to Amsterdam, or for Amsterdam to draw on London.

(b.) For indirect paper, whether it affords a better rate than direct paper, both for remittances to Amsterdam and for returns from Amsterdam, and what is the percentage difference.

6. If I buy a Bill in London on Rotterdam for florins 5000 at  $12\frac{1}{2}$ , and sending it to Paris negotiate it there at 209, what net credit shall I receive, allowing brokerage 1-10th per cent., and commission 1-3rd per cent.; and what rate of exchange will be established between London and Paris, allowing a brokerage upon the purchase here of 1-10th per cent.?

7. If I buy a Bill for francs 10,000 in London at  $25\cdot50$ , and get it negotiated at Amsterdam at 48, what net credit shall I receive, and what rate of exchange will be established, supposing the rate of the charges to be the same as before?

8. If I invest £1000 in Bills upon Hamburg at  $20\cdot50$ , and I send them to Amsterdam to be sold there, what will be the net proceeds, supposing the selling price to be  $59\frac{1}{2}$ , and the whole charges on the sale to be  $\frac{1}{2}$  per cent.? And what profit or loss per cent. shall I make by this operation if I have Bills in return at two months' date at  $11\cdot90$ , deducting charges on the purchase at Amsterdam  $\frac{1}{2}$  per cent., and allowing for brokerage in London 1 per mille, besides interest for 67 days at 5 per cent. per annum?

9. In New York, sight Bills on London are \$4·85 per £1, and on Paris Fr. 5·25 per \$1; which is the most advantageous remittance to England, supposing demand Bills on Paris to sell in London at  $25\cdot25$ ?

10. London 3 months is quoted at Lisbon 53; Lisbon 3 months in London is  $52\frac{1}{4}$ ; the discount is 5 per cent. in Lisbon and 3 per cent. in London. Is it better for London to remit to Lisbon or for Lisbon to draw on London?

Ex. 1.	London Net	25·37	Paris Net	25·43	—Diff.	$\frac{1}{4}$	per ct.
„ 2.	London „	11·19	Amsterdam „	12·02 $\frac{1}{2}$	— „	$\frac{5}{8}$	„
„ 3.	London „	20·45	Hamburg „	20·47	— „	$\frac{1}{8}$	„
„ 4.	Net direct rates,	London	25·34·4	—Paris	25·37·6		
	Indirect rates,	Amsterdam	23·33·5	Francs and Cts.			
	„	Frankfort	25·33·8	„			
	„	Vienna	25·44	„			
	„	Madrid	24·96·9	„			

For direct Bills, Paris should draw.—Difference, 1-8th per ct.  
 „ indirect remittances, Vienna is 10 Cts. or  $\frac{4}{5}$  per ct. better.  
 „ „ returns, Madrid „ 37·5 „  $1\frac{1}{2}$  „

Ex. 5.	Net direct rates,	London	11·96·6	Amsterdam	12·01·9
	Indirect rates,	Paris	12·22·4	Flor. and Cents.	
	„	Hamburg	11·99·2	„	
	„	Vienna	12·12·	„	
	„	Madrid	11·77·0	„	

For direct Bills, Amsterdam should draw.—Difference 7-16ths per cent.  
 „ indirect remittances, Paris is 25·8 Cts., or 2 per ct. better.  
 „ „ returns, Madrid „ 24·9 „ „

Ex. 6.	Cost in London	£414 0 10	—net proceeds in Paris.
	Francs	10404·72	—rate of exchange Francs 25·10·2
„ 7.	Cost in London	£392 3 2	—net proceeds in Amsterdam.
	Florins	4779·20	—rate of exchange Florins 12 17 Cents.
„ 8.	Amount of the Bill	M.	20500·
	Proceeds in Amsterdam	Florins	12197·50 Cents.
	Net amount of returns	„	12136·52 „
	Net amount in Sterling	£1014 15 9	
	Interest and brokerage		10 6 0

Profit—£4 9 9 or about  $\frac{7}{16}$  per cent.

- „ 9. Remittances on Paris are more advantageous than direct remittances, as the arbitrated rate is 25·46, leaving in comparison to 25·25 a profit of about  $\frac{4}{5}$  per cent.  
 „ 10. It is better for Lisbon to draw by about  $\frac{1}{4}$  per cent.

## COMPOUND ARBITRATIONS.

The rate of exchange between two places produced by remittances through an intermediate place, in any other than direct paper of that place, is called a compound arbitrated rate.

Thus, as has been stated before, if Bills upon Amsterdam are sent from London to Amsterdam, and the proceeds are sent to Paris in direct Bills, the rate thus effected between London and Paris is called a simple arbitrated rate; but in such remittances through Amsterdam, if Hamburg Bills are sent either from London to Amsterdam, or from Amsterdam to Paris, the rate thus produced between London and Paris is called a compound arbitrated rate.

Compound arbitrations of this nature are also called circuitous when either more than three places are concerned, or, more properly, when the proceeds of the Bills, after having passed through two or more other places, return to the original place; but the houses capable of thus extending their operations are so few, and the liability to unfavorable changes becomes so much increased, that in the practice of exchanges such arbitrations are of very limited occurrence.

The calculations of compound rates are, like those of simple arbitrations, usually performed by the chain rule; for remittances, the first of the principal rates is the buying price at the place where the operation commences; the next the selling price at the intermediate place if direct Bills are not used; the next rate is the buying price of either direct or indirect Bills; and the last the selling price at the place where the operation terminates if indirect Bills are remitted.

## EXAMPLE 1.

## LONDON AND PARIS.

(SIMPLE ARBITRATION.)

Direct Bills from London. Direct from Amsterdam.

If I buy a demand Bill upon Amsterdam at 12 flor. 2 stiv. per £ sterling, and send it to Amsterdam, and the proceeds are forwarded in cheques to Paris at 48 florins per 100 francs, what rate does this remittance establish for demand Bills between London and Paris?

?	=	1	£
£1	=	*12·10	Florins.
Florins 48	=	100	Francs.

---

Francs 25·21

This example of a simple arbitration is introduced here merely to show the way of working the calculation with direct Bills; the three following examples will show how it is done with indirect Bills.

Instead of forwarding the proceeds from Amsterdam to Paris, the same result, irrespective of charges, will come out by Paris drawing upon Amsterdam on the credit of the fund created there.

## EXAMPLE 2.

## LONDON AND PARIS.

## (COMPOUND ARBITRATION.)

Indirect from London.      Direct from Amsterdam.

If I buy a 3 months' Bill upon Hamburg at M. 20·50, sending it to Amsterdam, and it is sold there at Florins 58·95 per M. 100, the proceeds being remitted to Paris in cheques at Florins 47·75 per Fr. 100, what price does this establish for sight paper between London and Paris?

?	=	1	£
£1	=	20·50	M. (3 months.)
M. 100	=	58·95	Florins.
Florins 47·75	=	100	
<hr style="width: 20%; margin: 0 auto;"/>			
20½	×	58·95	
<hr style="width: 20%; margin: 0 auto;"/>			
= Francs 25·31			
47·75			

The first rate here is the buying price in London, the second is the selling price at Amsterdam, and the third and last is the buying price of French Bills at the same place, the remittance thence being made to Paris in direct Bills.

---

\* The variable numbers are printed black.

## EXAMPLE 3.

## LONDON AND PARIS.

Direct from London.      Indirect from Amsterdam.

If I buy a sight Bill upon Amsterdam at 12 2, sending it to Amsterdam, where the proceeds are laid out in 3 months' Bills upon Hamburg at 58·75, which are forwarded to Paris and sold there at 123 francs per M. 100, what rate does this operation establish for demand Bills between London and Paris ?

$$\begin{array}{rcl}
 ? & = & 1 \text{ £} \\
 \text{£1} & = & *12\cdot10 \text{ Florins (short).} \\
 \text{Florins } 58\cdot75 & = & 100 \text{ M. (3 months.)} \\
 \text{M. 100} & = & 123 \text{ Francs.} \\
 \hline
 12\cdot10 \times 123 & & \\
 \hline
 58\cdot75 & = & \text{Francs } 25\cdot33
 \end{array}$$

The buying price in London is the first rate, the buying price at Amsterdam the second rate, and the selling price at Paris the third rate.

## EXAMPLE 4.

## LONDON AND PARIS.

Indirect from London.      Indirect from Amsterdam.

If I buy a three months' Bill upon Hamburg at 20·50, and it is sold in Amsterdam at 58·75, if the proceeds thereof are there laid out in the purchase of 3 days' sight Bills upon Genoa at Florins 42·25 per Lire 100, and these Bills are sold in Paris at 11 per cent. discount, what rate does this operation establish for demand Bills between London and Paris ?

$$\begin{array}{rcl}
 ? & = & 1 \text{ £} \\
 \text{£1} & = & 20\cdot50 \text{ M. (3 months.)} \\
 \text{M. 100} & = & 58\cdot75 \text{ Florins.} \\
 \text{Florins } 42\cdot25 & = & 100 \text{ Lire (short).} \\
 \text{Lire 100} & = & 89 \text{ Francs.} \\
 \hline
 20\cdot50 \times 58\cdot75 \times 89 & & \\
 \hline
 42 \times 100 & = & \text{Francs } 25\cdot37
 \end{array}$$

---

\* The variable numbers are printed black.

## EXAMPLE 5.

(CIRCUITOUS ARBITRATION.)

## LONDON, PARIS, AND MADRID.

If I buy 3 months' Bills upon Hamburg at 20·50, selling them again in Amsterdam at 58·75, and have the proceeds invested in 3 days' sight Bills upon Genoa at 42, to be transmitted to Paris and sold at 11 per cent. discount, the proceeds to be laid out in the purchase of 3 months' Bills upon Madrid at Frs. 5·00 per dollar, which Bills are transmitted to me in London and sold here at 48*d.* per dollar. What profit or loss per cent. would this circuitous exchange produce, irrespective of charges?

?	=	100 £
1	=	*20·50 M. (3 months.)
M. 100	=	58·75 Florins.
Florins 42	=	100 Lire (short).
Lire 100	=	89 Francs.
Francs 500	=	100 \$ (3 months).
\$1	=	48 <i>d.</i>
Pence 240	=	1 £

$$\frac{20\cdot50 \times 58\cdot75 \times 89 \times 48 \times 100}{42 \times 500 \times 240} = \frac{\text{£}102 \quad 1 \quad 8}{\text{Profit } \text{£}2 \quad 1 \quad 8 \text{ per cent.}}$$

## CHARGES.

To form a proper estimate of the profit or loss upon these exchange transactions, the charges have to be taken into account. These charges, brokerages, Bill stamps, &c., have been stated in the previous chapters.

In the above example, we have to deduct from the rates found—

---

\* The variable numbers are printed black.

From the first rate . . . . .	Fr. 25·21
Double Brokerage* — 2 per mille . .	Cts. 5
One Commission — say $\frac{1}{3}$ per cent. . .	„ 3
Dutch Stamp on Bill	
on Amsterdam† . . $\frac{7}{10}$ per mille . .	„ 2 „ 0·10
	<hr/>
Net . .	Fr. 25·11

From the second rate . . . . .	Fr. 25·31
3 Brokerages — 3 per mille . .	Cts. 7 $\frac{1}{2}$
Double Commission — $\frac{1}{4}$ per cent. . .	„ 6
Dutch Stamp on Bill	
on Hamburg . . . $\frac{7}{20}$ per mille . .	„ 1 „ 0·14 $\frac{1}{2}$
	<hr/>
Net . .	Fr. 25·16 $\frac{1}{2}$

From the third rate . . . . .	Fr. 25·33
3 Brokerages and Double Commission . .	Cts. 14
Dutch Stamp on Bill on Amsterdam,	
$\frac{7}{10}$ per mille . . . . .	„ 2
French Stamp on Bill on Hamburg,	
$\frac{1}{4}$ per mille . . . . .	„ $\frac{1}{2}$ „ 0·16 $\frac{1}{2}$
	<hr/>
Net . .	Fr. 25·16 $\frac{1}{2}$

From the fourth rate . . . . .	Fr. 25·37
4 Brokerages — 4 per mille . .	Cts. 10
4 Commissions — $\frac{1}{2}$ per cent. . .	„ 12 $\frac{1}{2}$
Dutch Stamp on Bill	
on Hamburg . . . $\frac{7}{20}$ per mille . .	„ 1
French Stamp on Bill	
on Genoa . . . . $\frac{1}{4}$ per mille . .	„ $\frac{1}{2}$ „ 0·24
	<hr/>
Net . .	Fr. 25·13

\* The charge for brokerage has been taken throughout at 1 per mille. It must be borne in mind, however, that the brokerage in Paris is  $\frac{1}{3}$  per cent.; still the difference is so very trifling that it may safely be disregarded in these calculations.

† Inasmuch as the transaction is based upon sight Bills (cheques), there will be no charge for French Bill Stamps to be taken into account. In Holland sight Bills are subject to the full Stamp.



The result of the circuitous arbitration calculation in the fifth and last example has to be corrected as follows:

Arbitrated Profit per cent. . . . .	£2 1 8
6 Brokerages — 2 at each place . . . . .	£0 12 0
4 Commissions . . . . at $\frac{1}{3}$ p. ct. each . . . . .	0 10 0
Interest, 3 weeks at 4 p. ct., postage, &c. . . . .	0 7 3
English Stamp on Bill	} 0 2 3
on Madrid . . . . $\frac{1}{2}$ per mille . . . . .	
French Stamp on Bill	
on Genoa . . . . $\frac{1}{4}$ per mille . . . . .	
Dutch Stamp on Bill	} _____
on Hamburg . . . . $\frac{7}{10}$ per mille . . . . .	
	1 11 6
Net Profit per cent. . . . .	£0 10 2
Equal to about $\frac{1}{2}$ per cent.	

In each arbitration there is one brokerage to be deducted on each purchase, and one on each sale. There is also a commission, here reckoned at  $\frac{1}{3}$  per cent. upon each sale and upon each purchase, at Amsterdam and Paris. Lastly, there are the Bill stamps.

If the houses abroad are connected with the London house, the commissions will be saved, or rather divided, and the transaction will be so much the more advantageous; but it is seldom that any great percentage profit can be realised by such operations.

#### REMARKS ON THE APPLICATION OF PERCENTAGE CHARGES.

In the calculation of the charges on exchange operations distinctions are sometimes made as to whether these charges are to be reckoned upon the given amount, or upon the sum produced by the addition or subtraction of them to or from that amount.

Thus, supposing the charges to be 3 per cent., and the given amount £1000, a distinction is made as to whether the proportional statement should be put in this form:

If £100 produce £  $\left\{ \begin{array}{l} 103 \\ \text{or} \\ 97 \end{array} \right\}$  what will £1000 produce?

To which the product will be £1030 or £970.

Or in this form :

If £  $\left\{ \begin{array}{c} 97 \\ \text{or} \\ 103 \end{array} \right\}$  produce £100, what will £1000 produce ?

To which the product will be severally nearly £1030 18 7 and £970 17 6. The two products of the former statement making the difference of £30 each way = 3 per cent. on the given amount of £1000 ; whilst the two products of the latter statement make it severally £30 18 7 and £29 2 6, which is 3 per cent. upon the respective amounts of £1030 18 7 and £970 17 6.

But in the finding of an arbitrated rate of exchange, it is only very rarely that these distinctions are necessary, since the amounts both of the rates and charges are too small to make the difference of any consequence. Where it is required, however, there is no need of working the proportion, as the correction may be made upon the first percentage amount, by adding or subtracting the same percentage upon that amount.

Thus, applying even the comparatively high charge of 3 per cent. to one of the London rates, that with France, at say 25·60—

3 per cent. upon 25·60 is . . .	76·80 Cents.
Correction—3 per cent. upon 76 Cents. is . . .	2·20
Making by addition . . .	79·00
or by subtraction . . .	74·60

If, therefore, the charge of 3 per cent. is calculated upon the total, as in the 1st form, 97 to 100, the result will stand thus :

Net rate . . .	25·60
Added . . .	79
Full rate . . .	26·39

Which is the same as is produced by working the proportion ; for 97 is to 100 as 25·60 to 26·39 ; or, in other terms, 3 per cent. on 26·39 is 79 cents.

On the other hand, 3 per cent. in the 2nd form, 103 to 100, is found by subtraction, thus :

Full rate . . .	.	.	.	25·60
Subtracted . . .	.	.	.	74 $\frac{6}{10}$
				—————
Net rate . . .	.	.	.	24·85 $\frac{4}{10}$
				—————

Which is the same as is produced by working the proportion; for 103 is to 100 as 25·60 to 24·85 $\frac{4}{10}$ ; or 3 per cent. on 24·85 is very nearly 74 $\frac{6}{10}$  cents.

Where the charges upon the operation are less, the correction becomes, of course, of less consequence, and may even usually be disregarded altogether.

In the practice of exchange operations the charges are calculated at each step, but there is no need of such precision in the finding of an arbitrated rate.

To conclude this part of the subject, it remains now to show the routine of the

#### CIRCUITOUS EXCHANGE OPERATIONS IN EXAMPLE 5.

£1000 laid out in London in 3 months'

Bills upon Hamburg at 20·50 produce . . . . .	M. 20500·00
	—————

These bills transmitted to Amsterdam and sold at Fl. 58·75 per M. 100 produce . . . . . Florins 12043·75

Deduct brokerages for selling Hamburg and buying Genoa Bills (2 per mille) . . . . Flor. 24·09

Two commissions,  $\frac{1}{8}$  per cent. each . . . . „ 30·11

Dutch Stamp on Bill on Hamburg  $\frac{7}{10}$  per mille . . „ 4·50

58·70

Net proceeds	Flor. 11985·05
--------------	----------------

This amount laid out in sight Bills on  
Genoa at Fl. 42 per Lire 100 pro-  
duces . . . . . Lire 28535·85

These Bills sold in Paris at 11 per cent.  
discount produce . . . . . Francs 25396·92

Deduct brokerages for selling Genoa  
and buying Madrid Bills (2 per  
mille) . . . . . Fr. 50·78

Two commissions  $\frac{1}{2}$  per cent.  
each . . . . . „ 63·49

French Stamp on Bill on Genoa  
 $\frac{1}{4}$  per mille . . . . . „ 6·50

— „ 120·77

Francs 25276·15

This amount laid out in 3 months' Bills  
on Madrid at Fr. 5 per \$1 produces \$ 5055·20

These Bills sold in London at 48*d.* per \$1  
produce . . . . . £1011 0 9

Deduct brokerages for buying Ham-  
burg and selling Madrid Bills  
(2 per mille) . . . . . £2 0 0

Stamp on Bill on Madrid ( $\frac{1}{2}$  per  
mille) . . . . . 0 11 0

Interest, 3 weeks on £1000 at  
4 per cent. . . . . 2 6 2

Postage, &c. . . . . 1 1 7

5 18 9

Net proceeds £1005 2 0

Or about  $\frac{1}{2}$  per cent. net profit, as on page 186.

#### EXERCISES ON COMPOUND ARBITRATIONS.

What rate of exchange it established (irrespective of charges)  
between—

Exercise 1. London and Paris, by Bills upon Amsterdam,  
bought in London at 12  $1\frac{1}{2}$ ; the proceeds being forwarded

from Amsterdam to Paris in direct Bills at 48 florins per 100 francs ?

2. London and Paris, by Bills upon Hamburg, bought in London at 20·60, and sold in Amsterdam at 59 florins per 100 marks, the proceeds being forwarded to Paris in direct Bills at 48 florins per 100 francs ?

3. London and Paris, by Bills upon Amsterdam, bought in London at 12  $1\frac{1}{2}$ ; the amount being forwarded from Amsterdam to Paris in Bills upon Hamburg, bought in Amsterdam at 59 flor. per M. 100, and sold in Paris at 122 $\frac{1}{2}$  francs per 100 marks ?

4. London and Paris, by Bills upon Hamburg, bought in London at 20·56, and sold in Amsterdam at 58 $\frac{1}{2}$  florins; the proceeds being invested in Bills upon Genoa, bought at the rate of 43 flor. per 100 lire, and sold in Paris at 10 per cent. discount ?

5. London and Hamburg, by Bills upon Amsterdam, bought in London at 12·3, remitted to Paris, and sold there at 207 francs per 100 florins; the proceeds being forwarded to Hamburg in direct Bills at 123 francs per 100 marks ?

6. London and Amsterdam, by Bills upon Vienna, bought in London at Fl. 12 per £1, and remitted to Paris, and sold there at 210 francs per 100 florins; the proceeds being remitted to Amsterdam in Bills upon Frankfort, bought in Paris at 122 francs per 100 marks, and sold in Amsterdam at 58 $\frac{1}{2}$  florins per M. 100 ?\*

#### PRODUCTS.

Exercise 1. Fr. 25·16.	Exercise 4. Fr. 25·17.
„ 2. Fr. 25·32.	„ 5. M. 20·46.
„ 3. Fr. 25·07.	„ 6. Fl. 12·08.

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\* For further calculations of Compound Arbitrations of Foreign Exchanges see 'Foreign Banking Arbitration,' by Hermann Schmidt. London, Effingham Wilson.

## BANKING OPERATIONS,

### OR COMPARISONS OF RATES OF EXCHANGE ON DIFFERENT PLACES

In giving orders for remittances or drafts, it is customary to limit the prices of Bills on different places, so as to guide the correspondent in the choice of the paper which he should purchase or sell for his principal; and if, as is very common, the limits of the orders and the present prices of the Bills do not agree, it becomes necessary to compare the given rates with the present prices, in order to determine whether the order should be executed, or which, amongst several rates, should be preferred.

The principles upon which these comparisons are founded are the same as those before explained; viz. that,

For remittances, that rate is the best of which the variable price is the highest in foreign money, or the lowest in the money of the place making the operation; and that,

For drafts, that rate is the best of which the variable price is the lowest in foreign money, or the highest in the money of the place making the operation.

The comparisons being made here, however, between rates on different places, and not between arbitrated rates upon the same place, different formulæ are required to be employed, the application of which is facilitated by the use of the following letters or symbols.

Fixing the place of operation at London, the money of which is sterling, we use—

S to signify a sterling rate, as that on Madrid, for instance.  
 F    "    a foreign rate,        "    Paris,        "  
 g    "    the given price or limit of the order.  
 p    "    the present price, or that at which the order  
 can be executed.

To compare rates in different moneys, and with different prices, they have to be expressed in fractions, to find the relative proportion in which they severally stand to the unit or integer. Here the well-known arithmetical rule comes into play that, with one or the other term of a fraction remaining

fixed, the fraction increases with the increase of the numerator or the decrease of the denominator, and decreases *vice versa* with the decrease of the numerator or the increase of the denominator.

Applying the symbols here given to the principles laid down for making the comparisons, viz. that—

For remittances, with foreign rates (F), the greater  $p$  becomes with respect to  $g$ , or, with sterling rates (S), the less  $p$  becomes with respect to  $g$ , the more the rate improves; and, on the other hand,

For drafts, with foreign rates (F), the less  $p$  becomes in comparison with  $g$ , or, with sterling rates (S), the greater  $p$  becomes in comparison with  $g$ , the more the rate improves.

And using also the fractional forms, we get these formulæ:

#### FOR REMITTANCES.

With  $\left\{ \begin{array}{c} \text{F} \\ \\ \text{S} \end{array} \right\}$  Rates, the rate improves as  $\left\{ \begin{array}{c} \frac{p}{g} \\ \frac{g}{p} \end{array} \right\}$  increases.

#### FOR DRAFTS.

With  $\left\{ \begin{array}{c} \text{F} \\ \\ \text{S} \end{array} \right\}$  Rates, the rate improves as  $\left\{ \begin{array}{c} \frac{g}{p} \\ \frac{p}{g} \end{array} \right\}$  increases.

Reducing the fractions into decimals facilitates the comparison of the results of these formulæ. In comparing the fractions for remittances with those of drafts, to find whether a gain in the one will compensate for a loss in the other, it is generally sufficient to see whether the excess in the one above the unit or integer is equal or superior to the deficiency in the other below the unit, though perfect accuracy would require the product of the fractions multiplied together to be compared with the unit.

We will now proceed to show the application of these formulæ to the most usual banking operations; dividing them into two portions, viz. 1st, the comparison of the given prices with the present rates for remittances and drafts, both separately and jointly, with sterling and foreign rates; and 2ndly,

the finding of the corresponding second present rate, where only one of the present rates is given.

N.B.—In the practical working of these comparisons, it is usual to employ the terms cash and Bills, instead of remittances and drafts; thus, as the rate on Paris increases, it is said to be better for cash, or the laying out of money, and worse for Bills, or for drawing; while, on the reverse, as this rate decreases, it is said to be worse for cash and better for Bills.

On the Continent corresponding or similar terms are used in the course of exchange, to wit, *Argent, Papier, or Geld, Briefe*; or *Denaro, Lettera, &c.*, the cash rates being the rates at which Bills have been bought of the bankers, and the Bill rates those at which they have been sold by the same parties. The same terms are employed also to denote the state of the Bill market when the rates are expressed in only one or the other column; cash then signifies that Bills are in demand, and paper that the supply is greater than the demand.

#### EXAMPLE 1.

#### ORDER FOR REMITTANCES.

I have an order from Vienna for 3 months' Bills either upon Hamburg at 20·60, or upon Amsterdam at 12  $3\frac{1}{2}$ , or upon Paris at 25·45, or upon Lisbon at 53, or in the paper that best agrees with these prices. On the present exchange-day the prices of these Bills are, Hamburg 20·58, Amsterdam 12 4, Paris 25·40, and Lisbon 53 $\frac{1}{4}$ . Which paper is the best for me to remit?

F. Hamburg	$\frac{p}{g}$	$\frac{20\cdot58}{20\cdot60}$	=	0·999
F. Amsterdam	$\frac{p}{g}$	$\frac{12\cdot20}{12\ 175}$	=	1·002
F. Paris	$\frac{p}{g}$	$\frac{25\cdot40}{25\cdot45}$	=	0·998
S. Lisbon	$\frac{g}{p}$	$\frac{53}{53\frac{1}{4}}$	=	0·995

The best of these papers is that upon Amsterdam, which is



2 per mille cheaper than the limit given. Paris paper is the next in value, and the worst is that upon Lisbon, which is  $\frac{1}{2}$  per cent. above the limit.

## EXAMPLE 2.

## ORDER FOR DRAFTS.

I have an order from Vienna to draw cheques upon either of the following places at the following rates, or the best that the exchanges may allow, viz. Hamburg at 20·35, Paris at 25·15, Amsterdam at 12, or Lisbon at 53. The present prices of sight Bills in London are, on Hamburg 20·39, on Paris 25·17 $\frac{1}{2}$ , on Amsterdam 12 1, and on Lisbon 52 $\frac{3}{4}$ . Upon which place should I draw in conformity with my instructions ?

F. Hamburg	$\frac{g}{\quad}$	$\frac{20\cdot35}{\quad}$	=	0·998
	$\frac{p}{\quad}$	20·39		
F. Paris	$\frac{g}{\quad}$	$\frac{25\cdot15}{\quad}$	=	0·999
	$\frac{p}{\quad}$	25·175		
F. Amsterdam	$\frac{g}{\quad}$	$\frac{12\cdot}{\quad}$	=	0·996
	$\frac{p}{\quad}$	12·05		
S. Lisbon	$\frac{p}{\quad}$	$\frac{52\cdot75}{\quad}$	=	0·995
	$\frac{g}{\quad}$	53·		

In this example all the rates are less favorable for drawing than the limit given ; Paris being the least unfavorable, we shall draw on that place.

It is self-evident that, if in this or in the first example the resulting fractions were more than equal to the unit or integer, this would show an improvement of the rate beyond the limited price given, both for remittances and for drafts. It is also clear that, where there is an improvement in more than one rate, that rate is the most profitable which shows the greatest improvement.

## EXAMPLE 3.

## ORDER FOR REMITTANCES AND DRAFTS.

I have an order from Hamburg to remit Bills on Amsterdam at 12 2, and to draw upon Paris at 25·45, or at equivalent rates. The present rates are 12 2½ on Amsterdam, and 25·50 on Paris. Should I execute the order?

F. Amsterdam Remit	$\frac{p}{g}$	$\frac{12\frac{5}{10}}{12\frac{1}{10}}$	=	$\frac{485}{484}$	=	1·002
F. Paris	Draw	$\frac{25\cdot45}{25\cdot50}$	=	$\frac{509}{510}$	=	0·998

It here appears that the betterness of the fraction for the remittance is equal to the worseness of that for the draft, and therefore the order may be executed.

Where greater exactness is required, the decimals may be extended one or several places, in the case here before us, for instance, to 1·00206 and 0·99804,\* when they will show that the divergencies from the limited prices given, taken jointly, are in favour of the operation.

In the instance here before us, however, there is no need to go into decimals, as the simple fractions showing for the remittance a difference of 1·484th, for the draft a difference of 1·510th, and the former being greater than the latter, the remittance and draft may be executed with advantage.

## EXAMPLE 4.

## ORDER FOR REMITTANCES AND DRAFTS.

I am ordered by my correspondent in Paris to remit him paper on Hamburg at 20·60, and to reimburse myself by drawing on Lisbon at 53. The rates here being on Hamburg 20·58, and on Lisbon 53½, should I execute the order?

\* It has been stated already that absolute precision may require the fractions or their equivalents in decimals to be multiplied together, as—

$$1\cdot00206 \times 0\cdot99804 = 1\cdot000095, \text{ \&c.}$$

In the example here before us, however, the product is very nearly the same as the sum of the two fractions.

F. Hamburg	Remit	$\frac{p}{g}$	$\frac{20\cdot58}{20\cdot60}$	=	0·999
S. Lisbon	Draw	$\frac{p}{g}$	$\frac{53\frac{1}{2}}{53}$	=	1·0047

The rate for drafts here has improved more than the rate for remittances has deteriorated, and I therefore have to execute the order.

The same result is obtained by percentaging the difference in the rates; thus, the Hamburg difference of 2 pf. is 1 per mille worse, and the Lisbon difference  $\frac{1}{4}d.$  is  $\frac{1}{2}$  per cent. better; consequently the improvement is greater than the deterioration.

It is self-evident, in all cases, that, where the improvement is less than the deterioration, the order should not be executed.

#### TO FIND EQUIVALENT RATES.

In compound orders for remittances and drafts, with limitations of prices, where only one of the present rates is given, the equivalent present rate required may be deduced from the present rate supplied and the correspondent limited price given, by the following method:

Arrange the fractional form of the two sets of prices in the usual way, leaving the term required blank, marking it  $x$ , in the usual way in algebra.

#### EXAMPLE 1.

I have orders to remit upon Paris at 25·60, and to draw upon Amsterdam at 12 2. The rate upon Paris has fallen to 25·50: at what equivalent price must be the rate upon Amsterdam to prevent loss?

The rates for both places are foreign.

F. Paris	Remit	$\frac{p}{g}$	$\frac{25\cdot50}{25\cdot60}$		
F. Amsterdam	Draw	$\frac{g}{p}$	$\frac{12\cdot10}{x}$	=	12·05 Answer
			$\frac{12\cdot10 \times 25\cdot50}{25\cdot60}$		

The course of exchange upon Paris having, by falling, become unfavorable here for remitting, the course upon Amsterdam must be improved by a proportionate fall, viz. to 12 flor. 1 st.

## EXAMPLE 2.

I have orders to remit upon Paris at 25·60, and to draw upon Amsterdam at 12 2. If the Amsterdam rate improves for drawing to 12 1, to which Paris rate shall I be limited?

Rates as in Ex. 1.

F. Paris	Remit	$\frac{p}{g}$	$\frac{x}{25\cdot60}$
		$\frac{g}{p}$	$\frac{12\cdot10}{12\cdot05}$
F. Amsterdam	Draw	$\frac{g}{p}$	$\frac{12\cdot05}{25\cdot60 \times 12\cdot05}$
		$\frac{p}{g}$	$\frac{12\cdot05}{25\cdot10}$
		$= 25\cdot494$ Answer.	

The remittance may therefore be executed down to 25·49½, without departing from the given limits.

## EXAMPLE 3.

I have to remit upon Madrid at 49¾, and to draw upon Lisbon at 53. The Madrid rate having risen to 50, to what rate shall I be limited for Lisbon?

The rates for both these places are sterling.

S. Madrid	Remit	$\frac{g}{p}$	$\frac{49\frac{3}{4}}{50}$
		$\frac{p}{g}$	$\frac{x}{53}$
S. Lisbon	Draw	$\frac{p}{g}$	$\frac{53}{49\frac{3}{4}}$
		$\frac{g}{p}$	$\frac{53}{49\frac{3}{4}}$
		$= 53\frac{1}{4}$ Answer.	

The Madrid rate having got worse here for remitting, I must not execute the order unless the Lisbon rate rises above 53¼d., as otherwise I shall not obtain enough for the Bills on Lisbon to cover the proportionate advance of the Bills on Madrid.

## EXAMPLE 4.

I have to remit on Madrid at 50, and draw upon Lisbon at

53. If the Lisbon rate improves for drawing to  $53\frac{1}{4}$ , to what extent may I go with Madrid?

Both rates are sterling.

S. Madrid	Remit	$\frac{g}{p}$	$\frac{50}{x}$
			$53\frac{1}{4}$
			$53$

$$\frac{50 \times 53\frac{1}{4}}{53} = 50\frac{1}{4} \text{ Answer.}$$

The Lisbon rate having improved, I shall get more for my drafts, and can therefore afford to give more for the Bills upon Madrid, should this rate also have risen.

#### EXAMPLE 5.

I have to remit upon Lisbon at 53, and draw upon Paris at 25.60. If the Paris rate improves to 25.50, to what rate shall I be limited upon Lisbon?

London upon Lisbon — Sterling rate.  
London upon Paris — Foreign rate.

S. Lisbon	Remit	$\frac{g}{p}$	$\frac{53}{x}$
			$25.60$
			$25.50$

$$\frac{25.60 \times 53}{25.50} = 53\frac{3}{16} \text{ Answer.}$$

#### EXAMPLE 6.

I have to remit upon Lisbon at 53, and to draw upon Paris at 25.60. If the Lisbon rate is  $53\frac{1}{4}$ , at what rate may I draw upon Paris?

S. Lisbon	Remit	$\frac{g}{p}$	$\frac{53}{x}$
			$25.60$
			$x$

$$\frac{25.60 \times 53}{53\frac{1}{4}} = 25.48 \text{ Answer.}$$

## EXAMPLE 7.

If I have to remit upon Paris at 25·60, and to draw upon Lisbon at 53, and Paris Bills are now 25·50, at what least rate must I be able to draw upon Lisbon to execute this order?

F. Paris	Remit	$\frac{p}{g}$	$\frac{25\cdot50}{25\cdot60}$
			$\frac{x}{53}$
S. Lisbon	Draw	$\frac{p}{g}$	$\frac{x}{53}$
			$\frac{25\cdot60 \times 53}{25\cdot50} = 53\frac{3}{16}$ Answer.

## EXAMPLE 8.

If I have to remit upon Paris at 25·60, and to draw upon Lisbon at 53, and the Lisbon rate is now  $53\frac{1}{4}$ , to what extent may I limit the Paris rate?

F. Paris	Remit	$\frac{p}{g}$	$\frac{x}{25\cdot60}$
			$\frac{53\frac{1}{4}}{53}$
S. Lisbon	Draw	$\frac{p}{g}$	$\frac{53\frac{1}{4}}{53}$
			$\frac{25\cdot60 \times 53}{53\frac{1}{4}} = 25\cdot48$ Answer.

## EXERCISES.

Exercise 1. I have an order from Leghorn to remit Bills upon either Paris at 25·60, Amsterdam at 12 2, Hamburg at 20·60, or the rate coming nearest to these prices. The present rates are:—Paris 25·50, Amsterdam 12  $0\frac{1}{2}$ , and Hamburg 20·58. Which paper should I select?

2. I have an order from Paris to remit Bills upon either Amsterdam at 12  $1\frac{1}{2}$ , Frankfort at 20·58, or Madrid at  $48\frac{1}{2}$ . The present rates are:—Amsterdam 12 2, Frankfort 20·56, and Madrid  $48\frac{1}{4}$ .

3. I have orders from Hamburg to draw upon either of the following places, choosing the best that the variations from the the following rates may allow, viz. upon Paris at 25·40, Amsterdam at 12 1, Cadiz at  $49\frac{5}{8}$ , or Lisbon at  $51\frac{1}{4}$ . Which place should I select, the present rates being as follows:—On Paris 25·50, Amsterdam 12  $2\frac{3}{4}$ , Cadiz  $49\frac{1}{2}$ , and Lisbon  $50\frac{1}{2}$ ?

4. I have an order to remit Bills upon Amsterdam at 12 4, and to draw upon Hamburg at 20·40, or at equivalent rates. The present rates being 12 3½ on Amsterdam, and 20·42 on Hamburg, should I execute this order ?

5. I have an order to remit Bills upon Cadiz at 49½, and to draw upon Lisbon at 53, or at equivalent rates. The present Cadiz rate being 49¾, and Lisbon 53¾, ought I to execute the order ?

6. My orders being to remit upon Paris at 25·50, and to draw upon Amsterdam at 12 2; the price on Paris being 25·40, at what equivalent price should be the rate upon Amsterdam, to enable me to act without loss to my correspondent ?

7. I have orders to remit upon Paris at 25·55, and to draw upon Hamburg at 20·40. The Hamburg rate having improved to 20·36, to which Paris rate am I limited ?

8. I have to remit upon Lisbon at 56, and to draw upon Madrid at 49¾. If the Madrid rate improves for drawing to 50, to which Lisbon rate am I limited ?

9. I have to remit upon Lisbon at 56, and to draw upon Paris at 25·50. If the Paris rate improves to 25·37½, to what limit am I restrained upon Lisbon ?

10. If I have to remit upon Paris at 25·65, and to draw upon Lisbon at 56, at what rate may I draw upon Lisbon, if the Paris rate falls to 25·55 ?

## ANSWERS.

- Exercise 1. Hamburg — Difference 1 per mille (worse).  
 2. Madrid — „ ½ per cent. (better).  
 3. Paris — „ 4 per mille (worse).  
 4. Rates unfavorable.  
 5. Rates favorable.  
 6. 12 florins 1·04 stivers.  
 7. Fr. 25·50  
 8. 56·71 pence.  
 9. 56·27 „  
 10. 56·20 „
-

## BULLION OPERATIONS.

Bullion operations are the import and export of gold and silver, both coined and uncoined, to create funds for exchange operations.

The chief object of the calculations connected with foreign bullion operations is to find either from the prices in the two countries concerned what rate or par of exchange they yield, or to find from the price and rate of exchange at one of the places the arbitrated equivalent price at the other place.

The valuation of gold and silver in this country is based upon the standard or degree of purity of the two precious metals. This standard is determined by the assay of the metals.\*

We shall here, under the headings of "Valuations of Bullion" and "Reports," first show the way of determining the standard weight and the fine weight of gold and silver, and of reporting the same, as it is done in this country and in France, Germany, Austria, Holland, Spain, and the United States; and then proceed to the consideration of Arbitrations of Bullion.

Bullion, meaning, in the more restricted sense, gold and silver in bars or ingots, may be considered as the chief regulator of exchanges; since, when the arbitrated rate produced from the prices in this and any other country differs from the rate of exchange for Bills between the same by an amount exceeding the charges of purchase, transport, and sale, bullion immediately begins to flow into that country in which it yields the best comparative price. Gold bars or ingots, being the easier to transport, are generally selected in preference to coin, except to places where there are no facilities for mintage.

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\* For modes of assay, &c., see Tate's 'Counting-House Guide.'



## VALUATION OF BULLION.

## BRITISH REPORTS.

## THE STANDARDING OF GOLD AND SILVER.

The standarding of gold and silver is the determination of the quantity of standard gold or silver contained in, or producible from, the full weight of the metal given, according to the assay report of its fineness.

The British standard purity of gold is  $\frac{11}{12}$ , or  $0.916\frac{2}{3}$ . The fineness of gold is reported by thousandths (millimes) and the tenths thereof. The thousand (1000) is taken as the unit representing "pure gold." An assay given, therefore, as 900 means that of 1000 parts in weight 900 contain pure gold and 100 alloy.

Formerly gold was reported by the "carat," 24 of which were assumed to represent pure gold.

This nominal gold carat weight was divided into 4 grains, each of which was subdivided into eighths, and assays were reported as so many carats and grains "better" (B) or "worse" (W) than standard ( $\frac{11}{12}$  or 22 carats). Pure gold was therefore described as B 20, and gold 900 fine would have been called W  $0.1\frac{5}{8}$  (which exactly is = 899.739 fine).

The British standard purity of silver is 11 oz. 2 dwts. of fine silver out of 12 oz. gross weight of metal, or  $\frac{37}{40}$ . The ounce is 20 pennyweights, and in assays of silver the pennyweight is divided into half-pennyweights.

The fineness of silver is reported by its difference from standard purity, as so many pennyweights "better" or "worse." Pure silver, or silver 12 oz. or 240 dwts. fine, is, therefore, B 18, and silver 900 fine as "W 6." Silver is not assayed closer than by half-pennyweights, difference 2 per mille.

N.B.—The British standards are the mintage purities of the gold and silver coins of the realm.

## TO REDUCE THE FULL WEIGHT OF GOLD TO THE FINE WEIGHT.

Multiply the full weight by the fineness, and divide by 1000.

## EXAMPLE.

To find fine weight of 48 lbs. 11 oz. 7 dwts. 12 grs. of gold reported 836 fine.\*

$$\begin{array}{r} 48 \text{ lb. } 11 \text{ oz. } 7 \text{ dwts. } 12 \text{ gr.} = \text{Oz. } 587\cdot375. \\ 587\cdot375 \times 836 \\ \hline 1000 \end{array} = \text{Oz. } 491\cdot046 \text{ fine.}$$

## TO FIND THE STANDARD WEIGHT OF GOLD.

Multiply the full weight by the number millèmes, divide by 1000, multiply the result by 12, and divide by 11.

## EXAMPLE.

To find the standard weight of 587·375 oz. of gold reported 836 fine.†

$$\frac{587\cdot375 \times 836 \times 12}{1000 \times 11} = \text{Oz. } 535\cdot686 \text{ standard.}$$

## TO FIND THE VALUE OF GOLD.

Gold is valued either from the full weight, the price varying according to the degree of the purity of the metal, or from the proportion of standard gold in it, at the market price per ounce standard. The latter is the usual method for bar gold.

## EXAMPLE 1.

To find the value of 171·575 oz. of doubloon gold, at 76s. per oz.

Doubloon gold is quoted per oz.; we have, therefore, in this example simply to multiply the weight by the price, as follows:

$$\begin{array}{r} 171\cdot575 \times 76 \\ = 1303\cdot97s. \\ = \text{£}651 \text{ } 19s. \text{ } 8d. \end{array}$$

\* It is customary to report the weight of gold by the ounce and its decimals.

† The standard weight is also called the pay-weight.

## EXAMPLE 2.

To find the value of 140·375 oz. of gold, 896 fine, at 77*s.* 6*d.* per oz. standard—

$$140\cdot375 \text{ oz. } 896 \text{ fine} = \frac{140\cdot375 \times 896 \times 12}{1000 \times 11} \text{ oz. standard.}$$

Or = 137·210 oz. standard

at 77½*s.* = £531 13 9.

## EXAMPLE 3.

To find the fine and standard weights and the value at 77*s.* 10*d.* per oz. standard of an old Prussian double Frederick d'or weighing 8 dwts. 14 grs., and reported 897 fine.

8 dw. 14 gr. = 206 grains, 897 fine, or 184·782 grains fine,

$$\text{or } \frac{184\cdot782 \times 12}{11} = 201\cdot580 \text{ grains standard,}$$

$$\text{or } 8 \text{ dwts. } 9\cdot580 \text{ grains}$$

at 77*s.* 10½*d.* per oz. = 32*s.* 8·45*d.*

## EXERCISES.

Ex. 1.—Find the weight of fine gold contained in 343·700 oz. 895 fine.

Ex. 2.—Find the weight of fine gold contained in 1520·100 oz. 920 fine.

Ex. 3.—Find the weight of standard gold contained in 3216 oz. 820 fine.

Ex. 4.—What is the weight of fine gold contained in a coin weighing 5 dwts. 8½ grains and reported 915 fine.

Ex. 5.—What is the value of 55·225 oz. at 74*s.* per oz.

Ex. 6.—What are the fine and standard weights of the following coins and what are their values at 77*s.* 10½*d.* per oz. standard.

Country.	Names.	dwts.	gr.	Fineness
French	Napoleon	Weight	4 3½	900
German	20 Marks	„	5 2½	„ 900
Dutch	10 Florins (new)	„	4 7	„ 900
Russian	Old ½ Imperial	„	4 3½	„ Stndrd.
American	½ Eagle	„	5 9	„ 900
Spanish	Doubleon	„	17 8½	„ 870

## PRODUCTS.

- Ex. 1. 307·612 oz. fine.  
 „ 2. 1398·492 oz. fine.  
 „ 3. 2876·858 oz. standard.  
 „ 4. 4 dwts. 21·58 grains fine.  
 „ 5. £204 6 8.

Ex. 6.	Fine weight.	Standard weight.	Value.
Napoleon	89·55 grains	97·69 grains	15s. 10·19 <i>d.</i>
20 Mark piece	110·25 „	120·27 „	19s. 6·15 <i>d.</i>
10 Florin piece	92·70 „	101·17 „	16s. 4·88 <i>d.</i>
Old $\frac{1}{2}$ Imperial	91·21 „	99·50 „	16s. 1·71 <i>d.</i>
$\frac{1}{2}$ Eagle	116·10 „	126·65 „	20s. 6·58 <i>d.</i>
Doubloon	362·36 „	395·30 „	64s. 1·60 <i>d.</i>

## TO FIND THE STANDARD WEIGHT OF SILVER.

Multiply the full weight by the number of pennyweights in the report, and divide the product by 222 for the betterness or worseness; then add the betterness or subtract the worseness to or from the full weight.

( Or, )

Add the betterness or deduct the worseness to or from 222, multiply the full weight by the number thus found, and divide the product by 222.

## EXAMPLES.

To reduce 214·75 oz. of silver reported worse  $8\frac{1}{2}$  dwts. to standard weight.\*

$$\begin{array}{r}
 214\cdot75 \times 8\frac{1}{2} = \\
 \quad 222 \ ) \ 1825\cdot375 \\
 \qquad \qquad \qquad = 8\cdot22 \\
 \text{full weight } 214\cdot75 \\
 \text{less worseness } \quad 8\cdot22 \\
 \hline
 \text{oz. standard } 206\cdot53
 \end{array}$$

\* It is customary to report the weight of silver in ounces and their decimal.

( Or, )

$$\begin{array}{r}
 222 \\
 \text{less worseness } 8\frac{1}{2} \\
 \hline
 213.5 \times 214.75 \\
 \hline
 222
 \end{array}
 = 206.53 \text{ oz. standard.}$$

### TO REDUCE THE GROSS WEIGHT OF SILVER TO THE FINE WEIGHT.

Multiply the full weight by the number of pennyweights fine taken from the report, and divide the product by 240.

( Or, )

Take parts for the pennyweights of alloy out of 240 dwts., and subtract the amount.

( Or, )

Having found the standard weight, multiply it by 37, and divide the product by 40.

#### EXAMPLE.

To find the quantity of fine silver in 39 oz. 10 dwts. of silver reported worse 6 dwts.

$$\begin{array}{r}
 222 \text{ dwts. Fine, less } 6 \text{ dwts. Worse} = 216 \text{ dwts. Fine.} \\
 \text{Hence the Alloy} = 24 \text{ dwts.}
 \end{array}$$

$$\begin{array}{r}
 \text{oz. dw.} \\
 \frac{1}{10} \cdot \cdot 39 \ 10 \ \text{Gross weight.} \\
 \quad \quad 3 \ 19 \ \text{Alloy for 24 dwts.} \\
 \hline
 \text{Oz. } 35 \ 11 \ \text{Fine Weight.} \\
 \hline
 \end{array}$$

The alloy being here 24 dwts., or the 10th part of 240 dwts., one tenth of the full weight is taken off, and the remainder is the fine weigh

( Or, )

	oz. dw.		
$3\frac{1}{7}$	. . . 39 10	at 6 dwts.	Worse.
	1 1	Worseness.	
	<hr style="width: 50px; margin: 0 auto;"/>		
$2\frac{1}{10}$	. . . 38 9	Standard Weight.	
	<hr style="width: 50px; margin: 0 auto;"/>		
$\frac{1}{2}$	. . . 1 18 $\frac{1}{2}$	for 2-40ths.	
	19 $\frac{1}{4}$	1-40th.	
	<hr style="width: 50px; margin: 0 auto;"/>		

Oz. 35 11 Fine Weight.

## TO FIND THE VALUE OF SILVER.

Bar silver is usually sold per oz. standard.\* Silver coins are generally quoted per oz. weight.

## EXAMPLE 1.

What is the value of 14,000 oz. Mexican dollars at  $52\frac{1}{8}d.$  per oz. ?

$$14000 \times 52\frac{1}{8}d. = 729,750d. \text{ or } \text{£}3040 \text{ 12s. 6d.}$$

## EXAMPLE 2.

What is the value of 214.75 oz. bar silver reported  $8\frac{1}{2}$  dwts. worse at  $55d.$  per oz. standard ?

$$214.75 \text{ oz. } 8\frac{1}{2} \text{ dwts. worse} = \text{oz. standard } \underline{206.53}$$

$\text{at } 55d. \text{ } \underline{\underline{\text{£}47 \text{ 6 } 7}}$

## EXAMPLE 3.

To find the standard and fine weights, and the value at  $5s.$  per oz. standard of a Dollar weighing 17 dwts. 8 grs. reported worse 8 dwts.

\* "Cake" silver is generally sold per oz. fine, which is  $4d.$ — $5d.$  above the price for standard silver.

17 dwts. 8 grs. = 416 grains.

gr.

$\frac{1}{8}$  416 for 6 dwts.

138·666 „ 2 „

37 ) 554·666 ( 14 990  
           36 Remainder.

grs.

416 Gross Weight,

14·990 Worseness.

$\frac{1}{20}$  401·010 Standard.

$\frac{1}{2}$  20·050

10·025

Grains 370·935 Fine.

*d.*

8 ) 401·01

Pence 50 $\frac{1}{8}$  Value.

Products—Standard Weight, grs. 401·01 = 16 dwts. 17·01 grs.

Fine Weight—370·93 grains—Value 50 $\frac{1}{8}$ *d.*

### EXERCISES.

Ex. 1. Find the standard weight in oz. of a bar of silver weighing lb. 61 4 15, reported better 6 $\frac{1}{2}$  dwts.

Ex. 2. Find the standard weight in oz. of a bar of silver weighing lb. 27 10 10, reported worse 1 oz. 17 dwts.

Ex. 3. Find the fine weight of oz. 87 5 dwts. of silver, reported worse 7 $\frac{1}{2}$  dwts.

Ex 4. Find the average full, standard, and fine weights of a Spanish dollar, from the estimate of 1000 dollars weighing 866 oz., the assay report being worse 8 dwts.; also find the value at 59 $\frac{1}{4}$ *d.* per oz. standard.

Ex. 5. Find the standard and fine weights, and the value at 5*s.* per oz. standard, of each of the following coins :

Country.	Names.	dwts. grs.	oz. dw.
French	5 Francs	Weight 16 1 $\frac{3}{4}$	Report 0 6 Worse.
Dutch	Guilder or Fl.	„ 6 22	„ 0 8 „
Prussian	Thaler	„ 11 20	„ 0 6 „
Russian	Silver Rouble	„ 13 8	„ 0 14 „
Austrian	Speciesthaler	„ 18 1	„ 1 2 „
Spanish	Pillar Dollar	„ 17 8	„ 0 7 „
Mexican	Dollar, 1833	„ 17 11	„ 0 6 $\frac{1}{2}$ „
Peruvian	„ „	„ 17 7 $\frac{1}{2}$	„ 0 6 $\frac{1}{2}$ „
United States	„ 1792	„ 17 8	„ 0 8 „
Calcutta	Sicca Rupee	„ 8 0	„ 0 2 „
Madras	Rupee (N. Gov.),	„ 7 12	„ 0 2 „

### PRODUCTS.

- Ex. 1.—758·30 oz. standard.  
 „ 2.—478·75 oz. standard.  
 „ 3.—Fine Weight, 77 9797 oz.  
 „ 4.—Average Weight, dwts. 17 7·68 grs.  
 Standard Weight, dwts. 16 16·69 grs.  
 Fine Weight, 370·64 grs. — Value, 49·87 pence.

	Fine Weight.	Standard Weight.	Value.
5 Francs	347·17 grains	375·32 grains	3s. 10·91 <i>d.</i>
Guilder	148·01 „	160·01 „	1s. 8·00 <i>d.</i>
Prussian Thaler	255·50 „	276·22 „	2s. 10·53 <i>d.</i>
Silver Rouble	277·33 „	299·82 „	3s. 1·47 <i>d.</i>
Speciesthaler	360·83 „	390·09 „	4s. 0·76 <i>d.</i>
Pillar Dollar	372·66 „	402·88 „	4s. 2·36 <i>d.</i>
Mexican Dollar	376·22 „	406·73 „	4s. 2·84 <i>d.</i>
Peruvian Dollar	373·08 „	403·32 „	4s. 2·41 <i>d.</i>
U. S. Dollar	370·93 „	401·01 „	4s. 2·12 <i>d.</i>
Sicca Rupee	176·00 „	190·27 „	1s. 11·78 <i>d.</i>
Madras Rupee	165·00 „	178·37 „	1s. 10·29 <i>d.</i>

### TO FIND THE VALUE OF GOLD AND SILVER PARTINGS.

Mixtures of gold and silver, no matter whether with or without alloy, are called *partings*, gold partings, to wit, when the mixture contains more gold than silver, silver partings when the reverse is the case.



In a gold parting, the gold and silver contained therein is reported in millièmes and half-millièmes.

In a silver parting, the silver contained therein is reported in pennyweights, and the gold in grains fine per 12 oz. of metal.

The charges for "assaying" fine gold and silver in London are as follows :

3*s.* per bar of Gold, and  
1*s.* 6*d.* per bar of Silver.\*

The charges for "refining" bullion in London are as follows :

For gold containing silver they are 20 dwts. of fine silver for every 12 oz. of bullion, or, differently expressed,  $83\frac{1}{3}$  oz. fine silver out of every 1000 oz. of bullion.

For silver containing gold they are 5 grains fine gold for every 12 oz. of bullion.

This charge is rather high in comparison to the charges for refining in Paris, Hamburg, &c., but it is subject to the following deductions :

Refinable gold is always quoted in the market  $\frac{1}{2}$ *d.* per oz. above standard gold. The charge of 20 dwts. fine silver per 12 oz. refinable gold—at the present price of 38*d.* per oz. fine silver, equal to 3·16*d.* per oz. refinable gold—is therefore reduced to 2·66*d.* per oz. The refiner has, moreover, to pay  $\frac{1}{2}$  per cent. brokerage on the purchase of the refinable gold, so that he receives only about 1·50*d.* per oz., or 1·60*d.* per mille. It therefore pays sometimes to refine even Australian gold 965 fine, provided that 030 out of the 035 millièmes are silver.

Refinable silver is always quoted in the market  $\frac{2}{3}$ *d.* per oz. above standard silver. The charge of 5 grains gold per 12 oz. refinable silver, or 10·5745*d.* per 12 oz., or 0·875*d.* per oz., is therefore reduced to 0·875—0·375= $\frac{1}{2}$ *d.* per oz. or 9 per mille.

\* The charges for assaying parting gold are 4*s.* per bar, and for assaying parting silver are 3*s.* 6*d.* per bar.

Parting gold on basis of 77*s.* 9*d.*

Dwts. per 12 oz.	Mill.	Price.	Brokerage.
20	83·3	77·9 $\frac{1}{2}$	$\frac{1}{8}\%$
19	79·2	77·9 $\frac{5}{16}$	"
18	75	77·9 $\frac{1}{4}$	"
17—13	70·8—54·1	77·9	"
12—10	50—41·2	"	$\frac{1}{16}\%$
9—7	37·5—29·2	"	free
Under 7	Under 29·2	Not refinable.	"

The refiner, who pays a brokerage of  $\frac{1}{8}$  per cent. when purchasing refinable silver, receives therefore only 0·5—0·070*d.* = 0·43*d.* or 8 per mille (on brittle only about 6 per mille).

If parting gold contains iridium a charge is usually made of  $\frac{1}{4}$ *d.* per oz.; if it contains platina or palladium, 2*d.* per oz. is charged.

If parting silver contains more than 5 grains fine gold per lb. 84*s.* 7 $\frac{1}{4}$ *d.* are allowed for every ounce of gold thus contained.

If parting silver contains less than 5 grains fine gold per 12 oz., it is not rated at  $\frac{3}{8}$ *d.* per oz. above standard silver, but as follows :

If the parting silver contains 4 grains of fine gold per 12 oz., its price is  $\frac{3}{16}$ *d.* above standard silver.

If it contains 3 or 2 grains only, its price is the same as standard silver; if it contains less than 2 grains, or brittle (“ unfit for coinage ”), its price is  $\frac{3}{8}$ *d.* below standard silver.

### PARTING GOLD.

An account of “ parting gold ” would be as follows :

#### 10 Bars Gold.

No.	oz.	Report.	Fine Silver.			
			oz.	Fine.	Report.	oz.
1.	54·300	892	48·435	102	5·54	
2.	108·025	842	90·957	133	14·36	containing platina.
3.	296·375	851	252·215	108	32·00	” ”
4.	32·050	850	27·242	48	1·54	
5.	551·350	818	451·004	177	97·59	
6.	551·400	821	452·699	174	95·94	
7.	551·550	825	909·439	170	93·76	
8.	550·800	825		170	93·63	
9.	551·000	823	453·473	171	94·22	
10.	72·025	864	62·229	130	9·36	
<hr/>			<hr/>			
3318·875			2747·693		537·94	
<hr/>			<hr/>			

= oz. 2997·483 standard, at 77*s.* 9 $\frac{1}{2}$ *d.* p. oz. £11,658 19 2

Fine silver . . . . . oz. 537·94

Allowance for parting,

1 oz. per lb. . . . . „ 276·57

oz. 261·37 at 42*d.* p. oz. fine

45 14 10

Allowance for platinum, 2*d.* p. oz. on oz. 404·400 „

£11,704 14 0

3 7 5

£11,701 6 7

The price of standard gold being at the time 77s. 9¼d., the refinable gold in the above account is calculated at 77s. 10¼d. No brokerage is charged on the above account.

## PARTING SILVER.

An account of parting silver would be as follows :

## 21 Bars Silver.

No.	oz.	dwts.	oz. Standard.	
1.	1944	B. 8	} . . . .	Unfit for coinage.
2.	2029	„ 8		
3.	2071·5	„ 8		
4.	1914	„ 8		
5.	2137	„ 8		
6.	2152	„ 8		

## Grains of Fine Gold.

			per lb.		per Bar.
7.	2648	„ 6	2719·56	4	
8.	2646	„ 7	} 5449·58	{ 4	
9.	2637	„ 7		{ 4	
10.	2487	„ 7	2565·42	3	
11.	2435	„ 6½	2506·29	4	
12.	2222	„ 7	2292·06	2	
13.	2138	„ 6	} 4414·16	{ 4	
14.	2160	„ 6		{ 4	
15.	2016	„ 6½	2075·02	4	
16.	2555	„ 6½	} 4340·98	{ 3	
17.	1662·5	„ 6½		{ 3	
18.	1766	„ 1½	1777·93	44	39
19.	1803	„ 2½	1823·30	44	39
20.	1809·5	W. 1	1801·35	38	33
21.	1909	B. 2	1926·20	42	37
<hr/>					
	45141·5 oz.		46380·70 oz. std.		22460

Of the above 21 bars only the last four constitute parting silver, *i. e.* contain more than 5 grains fine gold per lb. The account of these bars would now be as follows :

Parting silver (No. 18, 19, 20, 21) . . . oz. std. 7328·78 at 40 <i>d.</i> per oz.	£1221	9	3
Silver contain- ing 4 grs. gold (No. 7, 8, 9, 11, 13, 14, 15) . . „ 17164·61 „ 39 $\frac{1}{8}$ <i>d.</i> „		2847	7 3
Silver contain- ing 3 and 2 grs. gold (No. 10, 12, 16, 17) . . „ 9198·46 „ 39 $\frac{1}{8}$ <i>d.</i> „		1518	14 2
Unfit for coin- age (no gold) (No. 1, 2, 3, 4, 5, 6) . . . . „ 12688·85 „ 39 $\frac{1}{4}$ <i>d.</i> „		2075	3 2
		<hr/>	
		oz. std. 46380·70	
		<hr/>	
22,460 grains gold=oz. 46·791 „ 84 <i>s.</i> 7 $\frac{1}{4}$ <i>d.</i>		197	18 9
		<hr/>	
		£7860	12 7
		<hr/>	

The price of silver being at the time 39 $\frac{1}{8}$ *d.* per oz. standard, the parting silver (containing 5 grains and more gold per lb.) is calculated in the above account at 40*d.* per oz., or  $\frac{3}{8}$ *d.* per oz. more than standard, whilst the silver containing 4 grains gold per lb. is calculated at 39 $\frac{1}{8}$ *d.*, or  $\frac{3}{16}$ *d.* more than standard, and the silver containing 3 and 2 grains gold per lb. is taken the same as standard.

The silver which contains brittle is taken at 39 $\frac{1}{4}$ *d.* or  $\frac{3}{8}$ *d.* below standard.

All the fine gold contained in the silver which amounts to more than 5 grains per lb. is reckoned at 84*s.* 7 $\frac{1}{4}$ *d.* per oz., which is customary.

In the above account no allowance is made for brokerage.

This brokerage is generally paid by the buyer of parting bullion, (the refiner), sometimes also by the seller.

## FRENCH REPORTS.

The French mode of reporting gold and silver assays is to report the whole of the fine metal found in millièmes and tenths of millièmes, or 1000 and 10,000ths parts of the metal assayed.

English assays of gold being reported only by thirds of millièmes the French reports are more minutely accurate than the English.

Practical experience teaches that there is never a loss in sending bar gold with English assay to Paris; on the contrary, one may always expect a small profit on the assay.

In French reports it is customary to mark the report *raide*, if the fineness comes barely up to the report, and *franc* or *bien franc*, if the fineness is fully up to the report.

The reduction of the decimal reports for silver to the British standard is made as follows.

### EXAMPLE. 1.

To reduce a French report of 938 of silver to the equivalent English report in ounces and dwts.

.938			
12			
-----			
Oz. 11.256	Report	11	5 Fine.
20	Standard	11	2
-----			
Dwts. 5.120	Better .	3	Dwts.

The number of dwts. fine answering to the silver report in millièmes may be found also by dividing the latter by 4, and subtracting from the quotient 1 dwt. out of every 25, or 4 out of 100. Thus 938 divided by 4 gives  $234\frac{1}{2}$ , from which taking  $9\frac{1}{2}$  (8 for 200 and  $1\frac{1}{2}$  for 34) there remains 225 dwts. fine, which is the same result as that obtained by the multiplication method.

### EXAMPLE 2.

To reduce the English report of silver worse 7 dwts. into millièmes.

Worse 7 dwts. is Fine 10 oz. 15 dwts. = 10·75 oz

12)10·750

Millièmes 896 *raide.*

### EXAMPLE 3.

To reduce the English report for silver of standard fineness into millièmes.

Standard is 11 oz. 2 dwts. Fine.

12)11·100

Millièmes 925

## PRESENT FRENCH MINTAGE VALUATIONS OF GOLD AND SILVER.

The *retenue* or charge made to the importers of gold into the French Mints, for defraying the expense of coinage, is, by decree of 22nd March, 1854, fixed at 6 francs 70 centimes, making the Mint price of gold 3093·30 francs per kilogramme 900 fine, and for silver 1 franc 50 centimes, making the mint price of silver 198·50 francs per kilogramme 900 fine.

Silver, however, is no longer accepted by the Mint, its coinage having been entirely suspended.

According to this Mint Tariff the rate for gold is Fr. 3437 per kilogramme fine and for silver Fr. 220·55 per kilogramme fine.

From the time of the establishment of the present French monetary system up to the 30th June, 1835, the *retenue* was 9 francs for gold and 3 francs for silver per kilogramme, and from that time up to the 22nd March, 1854, it was 6 francs for gold and 2 francs for silver per kilogramme.

This makes Fr. 3434·44 per kilogramme fine gold and Fr. 218·89 per kilogramme fine silver, according to the old tariff of before 1835, known as the Commercial Tariff, and Fr. 3437·77 per kilogramme fine gold and Fr. 220 per kilogramme fine silver, according to the tariff in use 1835 to 1854.



## METHOD OF FORMING THE TARIFF RATES.

Gold and silver in bars are negotiated at a premium or discount of the basis of—

Fr. 3437· per kilogramme fine gold.  
Fr. 218·89 „ „ fine silver.

The basis for the transactions in gold is, therefore, the rate of the new Tariff, but that for transactions in silver continues to be the rate of the old (Commercial) Tariff.

To find the tariff rate for any other fineness than 1000, we have simply to multiply the above rate by that fineness and then divide by 1000 ; it is therefore the tariff rate—

For gold 916 $\frac{2}{3}$  fine (standard) :

$$\frac{\text{Fr. } 3437 \times 916\frac{2}{3}}{1000} = \text{Fr. } 3150 \cdot 58$$

For silver 925 fine (standard) :

$$\frac{\text{Fr. } 218 \cdot 89 \times 925}{1000} = \text{Fr. } 202 \cdot 47$$

The following set of tables will be found useful for comparing foreign reports in millièmes with British standard ; for the sake of completeness we have added for the gold the former British reports in carats and grains.

The Tariff Rates given in these tables are, for gold, those of the present Mint Tariff, and for silver, on page 219, those of the old commercial tariff, which still forms the basis of the quotations (Fr. 218·89 per kilogramme fine), and on pages 220 and 221 those of the new Mint Tariff (Fr. 220·55 per kilogramme fine).

At present the quotation for gold is about “par,” but that for silver is at a considerable discount in comparison to the following Tariff Rates.

TARIFF RATES AND BRITISH REPORTS FOR MILLIÈMES  
OF GOLD.

Mill.	Fr.	C.	C.	gr.	Mill.	Fr.	C.	C.	gr.
1000	3437	00	B 2	0	953	3275	46	B 0	32
999	3433	56	1	37	952	3272	02	0	32
998	3430	13	1	34	951	3268	59	0	31
997	3426	69	1	32	950	3265	15	0	31
996	3423	25	1	31	949	3261	71	0	3
995	3419	82	1	31	948	3258	28	0	3
994	3416	38	1	30	947	3254	84	0	27
993	3412	94	1	30	946	3251	40	0	24
992	3409	50	1	31	945	3247	96	0	23
991	3406	08	1	31	944	3244	53	0	23
990	3402	63	1	3	943	3241	09	0	23
989	3399	19	1	27	942	3237	65	0	23
988	3395	76	1	24	941	3234	22	0	21
987	3392	32	1	23	940	3230	78	0	21
986	3388	88	1	25	939	3227	34	0	21
985	3385	45	1	21	938	3223	91	0	2
984	3382	01	1	22	937	3220	47	0	17
983	3378	57	1	24	936	3217	03	0	14
982	3375	13	1	21	935	3213	60	0	13
981	3371	70	1	21	934	3210	16	0	15
980	3368	26	1	2	933	3206	72	0	11
979	3364	82	1	17	932	3203	28	0	10
978	3361	39	1	17	931	3199	85	0	10
977	3357	95	1	14	930	3196	41	0	11
976	3354	51	1	15	929	3192	97	0	10
975	3351	08	1	12	928	3189	54	0	1
974	3347	64	1	11	927	3186	10	0	07
973	3344	20	1	10	926	3182	66	0	07
972	3340	76	1	11	925	3179	23	0	03
971	3337	33	1	10	924	3175	79	0	05
970	3333	89	1	1	923	3172	31	0	01
969	3330	45	1	1	922	3168	91	0	01
968	3327	02	1	07	921	3165	48	0	03
967	3323	58	1	03	920	3162	04	0	01
966	3320	14	1	02	919	3158	60	0	01
965	3316	71	1	02	918	3155	17	0	01
964	3313	27	1	03	917	3151	73	St. 0	0
963	3309	83	1	02	916	3148	26	W 0	01
962	3306	39	1	04	915	3144	86	0	01
961	3302	96	1	04	914	3141	42	0	02
960	3299	52	1	01	913	3137	99	0	00
959	3296	08	1	0	912	3134	55	0	00
958	3292	65	0	37	911	3131	11	0	00
957	3289	21	0	33	910	3127	67	0	00
956	3285	77	0	34	909	3124	23	0	00
955	3282	34	0	34	908	3120	80	0	07
954	3278	90	0	31	907	3117	36	0	1



TARIFF RATES AND BRITISH REPORTS FOR MILLIÈMES  
OF GOLD.

Mill.	F.	C.	C.	gr.	Mill.	F.	C.	C.	gr.
906	3113	92	W 0	11	859	2952	38	1	1
905	3110	49	0	11	858	2948	95	1	1
904	3107	05	0	11	857	2945	51	1	1
903	3103	61	0	11	856	2942	07	1	1
902	3100	18	0	11	855	2938	64	1	2
901	3096	74	0	11	854	2935	20	1	2
900	3093	30	0	11	853	2931	76	1	2
899	3089	87	0	11	852	2928	32	1	2
898	3086	43	0	11	851	2924	89	1	2
897	3082	99	0	2	850	2921	45	1	2
896	3079	55	0	2	849	2918	01	1	2
895	3076	12	0	2	848	2914	58	1	2
894	3072	68	0	2	847	2911	14	1	2
893	3069	24	0	2	846	2907	70	1	2
892	3065	81	0	2	845	2904	27	1	3
891	3062	37	0	2	844	2900	83	1	3
890	3058	93	0	2	843	2897	39	1	3
889	3055	50	0	2	842	2893	95	1	3
888	3052	06	0	2	841	2890	52	1	3
887	3048	62	0	2	840	2887	08	1	3
886	3045	18	0	3	839	2883	64	1	3
885	3041	75	0	3	838	2880	21	1	3
884	3038	31	0	3	837	2876	77	1	3
883	3034	87	0	3	836	2873	33	1	3
882	3031	44	0	3	835	2869	90	1	3
881	3028	00	0	3	834	2866	46	2	0
880	3024	56	0	3	833	2863	02	2	0
879	3021	13	0	3	832	2859	58	2	0
878	3017	69	0	3	831	2856	15	2	0
877	3014	25	0	3	830	2852	71	2	0
876	3010	81	1	0	829	2849	27	2	0
875	3007	38	1	0	828	2845	84	2	0
874	3003	94	1	0	827	2842	40	2	0
873	3000	50	1	0	826	2838	96	2	0
872	2997	07	1	0	825	2835	53	2	0
871	2993	63	1	0	824	2832	09	2	1
870	2990	19	1	0	823	2828	65	2	1
869	2986	76	1	0	822	2825	21	2	1
868	2983	32	1	0	821	2821	78	2	1
867	2979	88	1	0	820	2818	34	2	1
866	2976	44	1	0	819	2814	90	2	1
865	2973	01	1	1	818	2811	47	2	1
864	2969	57	1	1	817	2808	03	2	1
863	2966	13	1	1	816	2804	56	2	1
862	2962	70	1	1	815	2801	16	2	1
861	2959	26	1	1	814	2797	72	2	1
860	2955	82	1	1	813	2794	28	2	2

TARIFF RATES AND BRITISH REPORTS FOR MILLIEMES  
OF SILVER.

Mill.	Fr. C.	dwts.	Mill.	Fr. C.	dwts.
1000	218 89	B. 18	953	208 60	6 $\frac{1}{2}$
999	218 67	17 $\frac{3}{4}$	952	208 38	6 $\frac{1}{4}$
998	218 45	17 $\frac{1}{2}$	951	208 16	6
997	218 23	17 $\frac{1}{4}$	950	207 94	6
996	218 01	17	949	207 72	5 $\frac{3}{4}$
995	217 80	16 $\frac{3}{4}$	948	207 50	5 $\frac{1}{2}$
994	217 58	16 $\frac{1}{2}$	947	207 29	5 $\frac{1}{4}$
993	217 36	16 $\frac{1}{4}$	946	207 07	5
992	217 14	16	945	206 85	4 $\frac{3}{4}$
991	216 92	15 $\frac{3}{4}$	944	206 63	4 $\frac{1}{2}$
990	216 70	15 $\frac{1}{2}$	943	206 41	4 $\frac{1}{4}$
989	216 48	15 $\frac{1}{4}$	942	206 19	4
988	216 27	15	941	205 98	3 $\frac{3}{4}$
987	216 05	14 $\frac{3}{4}$	940	205 76	3 $\frac{1}{2}$
986	215 83	14 $\frac{1}{2}$	939	205 54	3 $\frac{1}{4}$
985	215 61	14 $\frac{1}{4}$	938	205 32	3
984	215 39	14	937	205 10	2 $\frac{3}{4}$
983	215 17	13 $\frac{3}{4}$	936	204 88	2 $\frac{1}{2}$
982	214 95	13 $\frac{1}{2}$	935	204 66	2 $\frac{1}{4}$
981	214 73	13 $\frac{1}{4}$	934	204 44	2
980	214 51	13	933	204 23	1 $\frac{3}{4}$
979	214 29	12 $\frac{3}{4}$	932	204 01	1 $\frac{1}{2}$
978	214 07	12 $\frac{1}{2}$	931	203 79	1 $\frac{1}{4}$
977	213 86	12 $\frac{1}{4}$	930	203 57	1
976	213 64	12	929	203 35	0 $\frac{3}{4}$
975	213 42	12	928	203 13	0 $\frac{1}{2}$
974	213 20	11 $\frac{3}{4}$	927	202 91	0 $\frac{1}{4}$
973	212 98	11 $\frac{1}{2}$	926	202 69	St. 0
972	212 76	11 $\frac{1}{4}$	925	202 47	St. 0
971	212 54	11	924	202 25	W. 0 $\frac{1}{4}$
970	212 32	10 $\frac{3}{4}$	923	202 04	0 $\frac{1}{2}$
969	212 10	10 $\frac{1}{2}$	922	201 82	0 $\frac{3}{4}$
968	211 88	10 $\frac{1}{4}$	921	201 60	1
967	211 67	10	920	201 38	1 $\frac{1}{4}$
966	211 45	9 $\frac{3}{4}$	919	201 16	1 $\frac{1}{2}$
965	211 23	9 $\frac{1}{2}$	918	200 94	1 $\frac{3}{4}$
964	211 01	9 $\frac{1}{4}$	917	200 72	2
963	210 79	9	916	200 50	2 $\frac{1}{4}$
962	210 57	8 $\frac{3}{4}$	915	200 28	2 $\frac{1}{2}$
961	210 35	8 $\frac{1}{2}$	914	200 07	2 $\frac{3}{4}$
960	210 13	8 $\frac{1}{4}$	913	199 85	3
959	209 91	8	912	199 63	3 $\frac{1}{4}$
958	209 69	7 $\frac{3}{4}$	911	199 41	3 $\frac{1}{2}$
957	209 48	7 $\frac{1}{2}$	910	199 19	3 $\frac{3}{4}$
956	209 26	7 $\frac{1}{4}$	909	198 97	4
955	209 04	7	908	198 75	4 $\frac{1}{4}$
954	208 82	6 $\frac{3}{4}$	900	197 00	6

TARIFF RATES AND BRITISH REPORTS FOR MILLIEMES  
OF SILVER.

Mill.	Fr. C.	Dwt.	Mill.	Fr. C.	Dwt.
1000	220 55	B 18	953	210 18	6 $\frac{1}{2}$
999	220 33	17 $\frac{3}{4}$	952	209 96	6 $\frac{1}{4}$
998	220 11	17 $\frac{1}{2}$	951	209 74	6
997	219 89	17 $\frac{1}{4}$	950	209 52	6
996	219 67	17	949	209 30	5 $\frac{3}{4}$
995	219 45	16 $\frac{3}{4}$	948	209 08	5 $\frac{1}{2}$
994	219 23	16 $\frac{1}{2}$	947	208 86	5 $\frac{1}{4}$
993	219 01	16 $\frac{1}{4}$	946	208 64	5
992	218 79	16	945	208 42	4 $\frac{3}{4}$
991	218 57	15 $\frac{3}{4}$	944	208 20	4 $\frac{1}{2}$
990	218 34	15 $\frac{1}{2}$	943	207 98	4 $\frac{1}{4}$
989	218 12	15 $\frac{1}{4}$	942	207 76	4
988	217 90	15	941	207 54	3 $\frac{3}{4}$
987	217 68	14 $\frac{3}{4}$	940	207 32	3 $\frac{1}{4}$
986	217 46	14 $\frac{1}{2}$	939	207 09	3 $\frac{1}{4}$
985	217 24	14 $\frac{1}{4}$	938	206 87	3
984	217 02	14	937	206 65	2 $\frac{3}{4}$
983	216 80	13 $\frac{3}{4}$	936	206 43	2 $\frac{1}{2}$
982	216 58	13 $\frac{1}{2}$	935	206 21	2 $\frac{1}{4}$
981	216 36	13 $\frac{1}{4}$	934	205 99	2
980	216 14	13	933	205 77	1 $\frac{3}{4}$
979	215 92	12 $\frac{3}{4}$	932	205 55	1 $\frac{1}{2}$
978	215 70	12 $\frac{1}{2}$	931	205 33	1 $\frac{1}{4}$
977	215 48	12 $\frac{1}{4}$	930	205 11	1
976	215 26	12	929	204 89	0 $\frac{3}{4}$
975	215 04	12	928	204 67	0 $\frac{1}{2}$
974	214 82	11 $\frac{3}{4}$	927	204 45	0 $\frac{1}{4}$
973	214 60	11 $\frac{1}{2}$	926	204 23	St. 0
972	214 38	11 $\frac{1}{4}$	925	204 01	St. 0
971	214 16	11	924	203 79	W. 0 $\frac{1}{4}$
970	213 94	10 $\frac{3}{4}$	923	203 57	0 $\frac{1}{2}$
969	213 71	10 $\frac{1}{2}$	922	203 35	0 $\frac{3}{4}$
968	213 49	10 $\frac{1}{4}$	921	203 13	1
967	213 27	10	920	202 91	1 $\frac{1}{4}$
966	213 05	9 $\frac{3}{4}$	919	202 69	1 $\frac{1}{2}$
965	212 83	9 $\frac{1}{2}$	918	202 47	1 $\frac{3}{4}$
964	212 61	9 $\frac{1}{4}$	917	202 25	2
963	212 39	9	916	202 02	2 $\frac{1}{4}$
962	212 17	8 $\frac{3}{4}$	915	201 80	2 $\frac{1}{2}$
961	211 95	8 $\frac{1}{2}$	914	201 58	2 $\frac{3}{4}$
960	211 73	8 $\frac{1}{4}$	913	201 36	3
959	211 51	8	912	201 14	3 $\frac{1}{4}$
958	211 29	7 $\frac{3}{4}$	911	200 92	3 $\frac{1}{2}$
957	211 07	7 $\frac{1}{2}$	910	200 70	3 $\frac{3}{4}$
956	210 85	7 $\frac{1}{4}$	909	200 58	4
955	210 63	7	908	200 36	4 $\frac{1}{4}$
954	210 40	6 $\frac{3}{4}$	907	200 14	4 $\frac{1}{2}$

TARIFF RATES AND BRITISH REPORTS FOR MILLIÈMES  
OF SILVER.

Mill.	Fr. C.	Dwts.	Mill.	Fr. C.	Dwts.
906	199 82	W 4 $\frac{3}{4}$	859	189 45	16
905	199 60	5	858	189 23	16 $\frac{1}{4}$
904	199 38	5 $\frac{1}{4}$	857	189 01	16 $\frac{1}{2}$
903	199 16	5 $\frac{1}{2}$	856	188 79	16 $\frac{3}{4}$
902	198 94	5 $\frac{3}{4}$	855	188 57	17
901	198 72	6	854	188 35	17 $\frac{1}{4}$
900	198 50	6	853	188 13	17 $\frac{1}{2}$
899	198 28	6 $\frac{1}{4}$	852	187 91	17 $\frac{3}{4}$
898	198 06	6 $\frac{1}{2}$	851	187 69	18
897	197 83	6 $\frac{3}{4}$	850	187 47	18
896	197 61	7	849	187 25	18 $\frac{1}{4}$
895	197 39	7 $\frac{1}{4}$	848	187 03	18 $\frac{1}{2}$
894	197 17	7 $\frac{1}{2}$	847	186 81	18 $\frac{3}{4}$
893	196 95	7 $\frac{3}{4}$	846	186 59	19
892	196 73	8	845	186 36	19 $\frac{1}{4}$
891	196 51	8 $\frac{1}{4}$	844	186 14	19 $\frac{1}{2}$
890	196 29	8 $\frac{1}{2}$	843	185 92	19 $\frac{3}{4}$
889	196 07	8 $\frac{3}{4}$	842	185 70	1 0
888	195 85	9	841	185 48	1 0 $\frac{1}{4}$
887	195 63	9 $\frac{1}{4}$	840	185 26	1 0 $\frac{1}{2}$
886	195 41	9 $\frac{1}{2}$	839	185 04	1 0 $\frac{3}{4}$
885	195 19	9 $\frac{3}{4}$	838	184 82	1 1
884	194 96	10	837	184 60	1 1 $\frac{1}{4}$
883	194 74	10 $\frac{1}{4}$	836	184 38	1 1 $\frac{1}{2}$
882	194 52	10 $\frac{1}{2}$	835	184 16	1 1 $\frac{3}{4}$
881	194 30	10 $\frac{3}{4}$	834	183 94	1 2
880	194 08	11	833	183 72	1 2 $\frac{1}{4}$
879	193 86	11 $\frac{1}{4}$	832	183 50	1 2 $\frac{1}{2}$
878	193 64	11 $\frac{1}{2}$	831	183 28	1 2 $\frac{3}{4}$
877	193 42	11 $\frac{3}{4}$	830	183 06	1 3
876	193 20	12	829	182 84	1 3 $\frac{1}{4}$
875	192 98	12	828	182 62	1 3 $\frac{1}{2}$
874	192 76	12 $\frac{1}{4}$	827	182 40	1 3 $\frac{3}{4}$
873	192 54	12 $\frac{1}{2}$	826	182 18	1 4
872	192 32	12 $\frac{3}{4}$	825	181 95	1 4
871	192 10	13	824	181 73	1 4 $\frac{1}{4}$
870	191 88	13 $\frac{1}{4}$	823	181 51	1 4 $\frac{1}{2}$
869	191 66	13 $\frac{1}{2}$	822	181 29	1 4 $\frac{3}{4}$
868	191 44	13 $\frac{3}{4}$	821	181 07	1 5
867	191 22	14	820	180 85	1 5 $\frac{1}{4}$
866	191 00	14 $\frac{1}{4}$	819	180 63	1 5 $\frac{1}{2}$
865	190 78	14 $\frac{1}{2}$	818	180 41	1 5 $\frac{3}{4}$
864	190 56	14 $\frac{3}{4}$	817	180 19	1 6
863	190 33	15	816	179 97	1 6 $\frac{1}{4}$
862	190 11	15 $\frac{1}{4}$	815	179 75	1 6 $\frac{1}{2}$
861	189 89	15 $\frac{1}{2}$	814	179 53	1 6 $\frac{3}{4}$
860	189 67	15 $\frac{3}{4}$	813	179 31	1 7

## EXAMPLE OF THE VALUATION OF GOLD AND SILVER.

To find the value of 3·071 kilogrammes gold 917 fine at a premium of 2 per mille, and of 42·117 kilogrammes silver 925 fine at a discount of 10 per cent.

According to the preceding table the tariff rate for gold 917 fine is Fr. 3151·73 ; therefore,

$$\begin{array}{r}
 3151\cdot73 \times 3\cdot071 = 9678\cdot96 \text{ Tariff Value.} \\
 2 \text{ per mille Premium} \quad 19\cdot36 \\
 \hline
 \text{Francs } 9698\cdot32 \text{ Value of the Gold.} \\
 \hline
 \hline
 \end{array}$$

According to the preceding table page the tariff rate for silver 925 fine is 202·47 ; therefore,

$$\begin{array}{r}
 202\cdot47 \times 42\cdot117 = 8527\cdot43 \text{ Tariff Value.} \\
 10 \text{ per cent. Discount} \quad 852\cdot74 \\
 \hline
 \text{Francs } 7674\cdot69 \text{ Value of the Silver.} \\
 \hline
 \hline
 \end{array}$$

The premium of so much per mille is calculated upon the tariff value, and added to it.

The valuations are generally stated in the following form :

	GOLD.	Fr. c.	Fr. c.
Kilogr.	3·071 — 917 — 3151·73 ...	9678·96	
	Premium 2 per mille ...	19·36	
		<u>          </u>	9698·32
	 SILVER.		
Kilogr.	42·117 — 925 — 202·47 ...	8527·43	
	10 per cent. discount ...	852·74	
		<u>          </u>	7674·69
			<u>          </u>
			Francs <u>17373·01</u>

### EXERCISES.

Exercise 1. Compare the following decimal reports with British Standard :

Silver	788	900	930
" "	892	925	986

2. Reduce the following English reports to millièmes fine:

Silver	22 dwts.	Worse.
"	8	" "
"	14	" Better.
"	16	" "
"	18	" "

3. Find the tariff rates and the values of the following quantities of gold, at 2 per mille premium:

Kilogrammes	14·846	Report	996	fine.
"	11·338	"	944	"
"	16·725	"	915	"

4. Find the commercial tariff rates and the values of the following quantities of silver, at 5 per cent. discount:

Kilogrammes	22·894	Report	988	fine.
"	23·679	"	960	"
"	17·500	"	990	"
"	45·000	"	995	"

PRODUCTS.

Ex. 1.—33 dwts. W.      6 dwts. W.      1 dwt. B.  
                   8 " W.      Standard.      14½ " B.

Ex. 2.—833·3.

891·6.

983·9.

991·7.

1000·0.

Ex. 3.—Rate	Fr. 3423·25	Value at par	Fr. 50821·57
"	3244·53	"	36786·48
"	3144·86	"	52597·78

Total Value at par      Fr. 140205·83

Total Value adding premium          140486·24

Ex. 4.—Rate	Fr. 216·27	Value at par	Fr. 4951·29
"	210·13	"	4975·67
"	216·70	"	3792·25
"	217·80	"	9801·00

Total value at par      Fr. 23520·21

Total value, deducting discount          22344·20

## AUSTRIAN REPORTS.

The Austrian reports of gold and silver are made in millièmes, and bear, therefore, the same relation to the British standards as those of France.

The price of bar gold is 1395 florins in Austrian gold coins, taking the ducat at Fl. 4·80 and the 8-florin piece at Fl. 8·10. This is the buying price of the Austrian Mint, which, however, deducts  $\frac{1}{2}$  per mille for coinage, and if necessary Fl. 2 per kilo for refining. Assaying Fl. 0·50 per bar.

The ducats, the pieces of 8 and 4 florins, and foreign gold coins, are quoted in Florins (paper) per piece.

When sold at the Vienna Bourse the following weights are fixed for the gold coins :

500 German 20-mark pieces	3975 grammes.
500 Russian Old $\frac{1}{2}$ imperials	3267     ,,
500 Sovereigns	3987     ,,
500 Napoleons	3220     ,,

For every  $\frac{1}{2}$  gramme short of this weight the seller has to allow to the buyer of the German coins  $1\frac{1}{2}$  mark, of the Russian coin  $\frac{1}{2}$  imperial ( $\frac{1}{13}$   $\frac{1}{2}$  imperial), of the English coin  $\frac{1}{16}$  sovereign, and of the French coin  $\frac{3}{40}$  Napoleon.

Silver is quoted in florins paper per 100 florins silver, at present "Par." Before the suspension of the coinage on private account of silver Florins (1879), the Mint coined pieces of 1 and 2 florins for the public, charging 1 per cent. for mintage.

The Mint still coins on private account Maria Theresia Thalers, at the rate of 42·7586 pieces out of 1 kilogramme fine, deducting  $1\frac{1}{2}$  per cent. for mintage.

1 Maria Theresia Thaler = 28·0644 grammes 833 $\frac{1}{2}$  fine.

## GERMAN REPORTS.

In Germany the fineness of gold and silver is reported in millièmes, as in France.

The quotations for gold and silver are in Marks per kilogramme fine at Berlin and Hamburg, and per lb. (500 grammes) fine at Frankfort.

Foreign gold coins are quoted per piece; sometimes Napoleons and imperials are dealt in per lb. weight or per lb. fine. In the latter case the fineness of the French coin is taken at 900, and that of the Russian at 916.

In Frankfort ducats are also quoted "al marco," in that case 1 old Cologne mark (233·8555 grammes) of coin is reckoned as being 67 ducats.

#### NETHERLAND REPORTS.

The Netherland reports of gold and silver are made in millièmes, as in France.

Gold and silver are quoted in Florins per kilogramme fine; foreign gold coins either per piece or per kilogramme fine.

#### SPANISH REPORTS.

The reports of both gold and silver are made in millièmes fine, and bear the same relation to British standards as those of France.

The Spanish Mint takes gold for coinage on private account, and pays 3444·44 pesetas per kilogramme fine in *bons de monnaie*, having generally 50 days to run, which are discountable at about 5 per cent.

The present weight for gold and silver is the kilogramme; formerly it was the Spanish mark.

The Spanish mark, which weighs 3550½ grains troy was divided into 8 ounces of 8 ochavas of 6 tomines of 12 grains each, so that the mark had 4608 grains.

The assay mark was divided into 24 quilates of 4 grains each for gold, and into 12 dineros of 24 grains each for silver.

#### UNITED STATES REPORTS.

The reports of both gold and silver are made in millièmes, as in France.

The millième is divided into halves.

Gold, if quoted, is quoted on the basis of 43 oz. 900 fine = \$800; since the resumption of specie payments in 1879, this quotation has been "Par."

Silver is quoted in dollars and cents gold per 1 oz. silver 999 fine.

To find the New York price by the London price multiply the latter by 2·19211.

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## ARBITRATIONS OF BULLION.

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### ARBITRATED PARS OF EXCHANGE.

The calculations of Arbitrated Pars of Exchange from operations in bullion are made in a similar manner to those of arbitrated rates from Bills of Exchange, simply requiring the additional data of the relations between the gold and silver weights respectively used in the two places concerned in the operation, and the degree of fineness at which the prices are severally rated.

In England the price of bullion is rated at standard fineness for both gold and silver, but doubloons, dollars, and some other coins, when dealt in in large quantities, are usually valued at variable prices per oz., corresponding with their estimated fineness.

In other countries gold and silver bars are generally quoted per weight fine, and coins per piece. To compare the latter quotation with that per oz. in London, we must know the average weight of the coins. This is for the principal coins as follows :

Sovereigns	weight of 1000 pieces	oz. 256·50	kilogr. 7·978
Napoleons	"	" 207·	" 6·438
German 20-Marks	"	" 256·	" 7·962
Old Half Imperials	"	" 210·40	" 6·544
Half Eagles	"	" 268·56	" 8·353
Spanish Doubloons	"	" 867·	" 26·967
Dutch 10-Florins	"	" 216·05	" 6·946
Turkish Sovereigns	"	" 231·75	" 7·451

	weight of 1000 pieces	oz.	259·	kilogr.	8·327
Alfonso					
Argentine 5-\$ Gold	„	„	259·2	„	8·333
Swedish 10-Kronas	„	„	144·	„	4·662
Venezuela 4-\$	„	„	207·	„	6·438
Russian New $\frac{1}{2}$ -Im- perials	„	„	207·400	„	6·668
Mexican Dollars	„	„	868·	„	26·998
Spanish Pillar Dollars	„	„	866·	„	26·936
Austrian Florins	„	„	396·50	„	12·333
Maria Theresa Thales	„	„	900·	„	28·936
Rupees	„	„	374·	„	12·024
Peruvian Sols	„	„	800·	„	25·721
Paraguay $\frac{1}{2}$ -\$	„	„	802·	„	25·785
Japanese Yens	„	„	845 $\frac{1}{2}$	„	27·183
Dutch $2\frac{1}{2}$ -Florins	„	„	802·	„	25·785

The relations between the gold and silver weight of this country and those of the chief countries of Europe have been given in the table on pages 12 and 13, and the methods of valuation and the matters relating to the standards of fineness have been treated of in the preceding part. The places selected for our illustrative operations are—

Paris, in bar gold and silver, doubloons and dollars.

Amsterdam, in bar gold and silver, Napoleons and dollars.

Berlin, in bar gold and silver.

New York, in bar gold.

Calcutta, in bar silver.

Hongkong and Shanghai, in bar silver and dollars.

The subject is divided into two parts, to wit (1), arbitrated rates or pairs of exchange, and (2) arbitrated prices.

To each of the formulæ a fixed number\* is first found irre-

\* The fixed number is formed, the same as in the arbitrations of exchanges, by multiplying the numbers of the fixed terms on each side of the equation together, and dividing the product of the consequences (the right-hand terms) by the product of the antecedents (the left-hand terms).

The variable terms are printed black, as in the examples of arbitration of exchanges.

spective of either price, which number, remaining unchanged, can be made use of for calculating the arbitrated rates at the different prices.

No account is taken in the following examples of the charges involved in the transaction, such as freight, insurance, loss of interest, &c.

Besides the Arbitrated Pars of Exchange which result between different countries from the prices of gold and silver therein, there exists between this country and those which completely or virtually possess the gold standard, a Par of Exchange which is based upon the quantities of pure gold contained in coins of full weight and fineness. This par, viz. the numbers of units of the foreign coins which contain the same quantity of pure gold as the sovereign, is called the "Mint Par"\* or "Theoretical Par"; it is fixed by law, and, therefore, as long as the law remains the same, unalterable.

Inasmuch as in a country with the gold standard the price of bar gold cannot differ very much from its Mint price (*i. e.* cannot be at a considerable premium or discount), the "Mint Par" between two countries of the gold valuation and the par which results between them from the prices of bar gold will always be almost identical, but to be exact a distinction is to be made between these two pars, and in the following chapter they will be stated separately.

The Mint Pars, or rather the pars resulting from the prices of bar gold, govern the short exchanges between England and the countries of the Gold Valuation. The two limits between which these short exchanges can fluctuate are found the one by adding to, and the other by subtracting from, the above Par of Exchange the cost of the transshipment of gold from one place to the other. These two limits are called the "Specie Points" or "Bullion Points." They are of great importance to the mercantile community, for if the short exchanges rise or fall to their level gold will be exported or imported, a movement which, if it takes place to a considerable extent, cannot fail to affect the rate of discount, and thus com-

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\* See 'Foreign Banking Arbitration,' by Hermann Schmidt, London, Effingham Wilson, page 25.

mercial transactions in general. These exchanges, at which the transmission of gold becomes profitable, vary a little according to the facilities possessed by different establishments for transacting such business, but within a small fraction they exist for everybody, and as such we have stated them in this chapter.

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## P A R I S.

The gold and silver weight is the kilogramme of 1000 grammes; it is equal to 15432·349 grains English troy weight, making the ounce troy of 480 grains equal to 31·10349552 grammes. Hence,

1000 oz. British Standard Gold = kilogr. 28·5115 Fine Gold.  
 1000 „ „ „ „ Silv. = „ 28·7707 Fine Silv.

The Bank of France receives bar bullion at the Mint Tariff price of 3437 francs per kilogramme fine, provided the bars are of about 200 oz. weight each, and not worse than 994 fine. At present the Bank pays for such bars cash, but when the import of gold is proceeding on a large scale it deducts a commission of 12 days' interest at 3 per cent. p. a. on the value of the gold, equal to about 1 per mille.

Bars of less fineness than 994 must be sent into the Mint, where they are paid for, on the basis of 3437 francs per kilogramme fine, by a *bon de monnaie*, the currency of which depends upon the total amount of gold sent in for coinage; generally it has about 40 days to run. Such *bons* are discountable in the open market as *papier haute banque*.\*

Foreign gold coins are generally quoted per piece. The Bank of France buys them by weight on the basis of Fr. 3437 per kilogramme fine, and at the following rates as to their fineness:

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\* See page 46.

Sovereigns	916	fine, or	3148·29	per kilogr. weight.
Old Imperials	916	„	3148·29	„ „
American Eagles	900	„	3093·30	„ „
German 20-Marks	899½	„	3091·58	„ „

At present the Bank pays these prices cash, but a few months ago it deducted 12 days' interest at 3 per cent. (about 1 per mille) on the value of the foreign gold coins, the same as on bars.

The Bank of France sells these coins at the above rates and prices *plus* a premium per mille (at present 4—5 per mille), varying according to the stock on hand and to the demand.

The charge for assaying is Fr. 3·90 per bar; for refining Fr. 5 per kilogramme.

## MINT PAR.

?	=	1 £
£1869	=	480 oz. troy ¼ (standard).
oz. st. 1	=	31·10349552 grammes ½.
gr. standard 12	=	11 grammes fine.
gr. fine 900	=	1000 grammes French coin.
gr. 1000	=	3100 Francs.

$$= \text{Fr. } 25\cdot22\frac{3}{5}.$$

This makes the pieces of Fr. 20 = £0 15s. 10·3d. each.  
and „ „ „ 10 = £0 7s. 11·15d. each.

As “Specie Points” may be taken the Short Exchanges Fr. 25·11 and Fr. 25·33; at the former gold would be shipped from London to Paris; at the latter from Paris to London.\*

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\* Gold being always obtainable in London against bank notes, it will invariably leave England if the exchange touches the specie point for shipping bullion from here. On the other hand, however, it is possible that the specie points for shipping gold from the Continent to England are touched, and that yet for some time no gold is coming. The explanation of this circumstance is that, as has been stated on pages 37, 50, 63, &c., the gold standard does not in its entirety prevail on the Continent, and that some of the banks there have the right of paying their notes in legal tender silver coins. Gold bars and gold coins are therefore, at times, at a small premium on the Continent, and under such circumstances the exchanges abroad may rise to the specie points for sending gold here, and yet no gold may be shipped to London. (On June 5th, 1880, for instance, the short exchange on London stood in Paris at 25·36, without any gold shipments taking place).

Bar gold in London is 77*s.* 9*d.* per oz. standard, in Paris 4½ per mille premium. Required the arbitrated rate or par of exchange.

The British standard gold may be rated at  $\frac{1}{2} \times 3437$ , or Fr. 3150·58. We have, then, the chain as follows :

?	=	20 Shillings.
*77¾	=	1 oz. Standard.
1	=	31·1035 grammes.
1000	=	3150·58 Francs and Cents.
1000	=	1004½ Fr. (with Premium.)
<hr/>		
77¾ )		1959·881 Fixed number.
		<hr/>
		25·207 do. for 77 <i>s.</i> 6 <i>d.</i>
2521 × 4	=	·101 Premium 4 per mille.
		·013     "     ½     "     "
		<hr/>
		Francs 25 32·1 Centimes.

Dobloons in London are 75*s.* 3*d.* per oz.; in Paris Fr. 82 35 cents. each. Required the arbitrated rate of exchange.

?	=	20 Shillings.
75¼	=	1 ounce.
868	=	1000 Dobloons.
1	=	82·35 Francs.
<hr/>		
75¼ )		230414 Fixed number.
		<hr/>
		30620 ditto for 75 <i>s.</i> 3 <i>d.</i>
Multiply by		82·35
		<hr/>
		Francs 25 21·5 Cents.

Bar silver in London is 55*d.* per oz. standard; in Paris 8 per cent. discount. Required the arbitrated rate of exchange.

The tariff rate for British standard (925) is 202·47; the chain, therefore, is as follows :

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\* The variable numbers are printed black.

?	=	240 Pence.
*55	=	1 oz. Standard.
1	=	31.1035 grammes.
1000	=	202.47 Francs.
1000	=	920 Fr. (less discount).

---

55 ) 1511.406 Fixed number.

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27.480

0.2748 × 8 = 2.198 for 8 per cent. discount.

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Francs 25.282 Centimes.

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Spanish dollars in London are  $57\frac{1}{2}d.$  per oz.; in Paris Fr. 5.30 each. Required the arbitrated rate of exchange.

?	=	240 Pence.
$57\frac{1}{2}$	=	1 ounce.
866	=	1000 Dollars.
1	=	5.30 Francs.

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$57\frac{1}{2}$ ) 277136 Fixed Number.

---

48198 do. for  $57\frac{1}{2}d.$

530

---

14459

24099

---

Francs 25 54.5 Cents.

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## AMSTERDAM.

The Netherland pond is of the same weight as the French kilogramme, viz. 15432.349 grains, or 2 lb. 8 oz. 3 dwt. 0.349 gr. troy, and it is similarly divided into 1000 equal parts, called wigtjes or grammes; hence the same relation exists between the British and Netherland weights of standard and fine gold and silver, as between the British and French.

The Netherland Bank buys gold in bars of a minimum fine-

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\* The variable numbers are printed black.

ness of 900, and of a maximum weight of 7 kilo. or 225 oz. per bar, at a price fixed from time to time, at present Fl. 1647 per kilogramme fine. Such bars must be remelted in Holland, unless they bear the stamp of an English refiner, or of the "Norddeutsche Affinerie" at Hamburg. The bank accepts also pieces of 10 and 20 francs, 10 and 20 reichmarks, 10 and 20 Scandinavian kronas and American eagles, as 899, and sovereigns and imperials as 916 fine. The selling price of foreign coins is at present Fl. 1658, and of gold bars Fl. 1653 per kilo. fine.

The Mint at Utrecht, when not engaged by the State, coins 10 florin pieces for private account, subject to a charge of 5 florins per kilogramme 900 fine. The minimum quantity of gold received by the Mint is 100 kilogrammes. Inasmuch as Fl. 1653·44 are coined out of 1 kilogramme fine, the Mint price of the kilogramme fine is therefore Fl. 1648·44. The Mint pays for gold about one month after receiving it.

## MINT PAR.

?	=	1 £
£1869	=	480 oz. troy standard.
oz. st. 12	=	11 oz. fine.
oz. f. 1	=	31·10349552 grammes fine.
gr. f. 1000	=	1653·439 Florins.

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= Fl. 12·1071

This makes pieces of Fl. 20 = £1 13s. 0·46*d.* each.

„ „ „ 10 = £0 16s. 6·23*d.* each.

As "Specie Points" may be taken the Short Exchanges Fl. 12·02 and Fl. 12·17; at the former gold will be shipped from London to Amsterdam, at the latter from Amsterdam to London.

N.B.—The florin in the Netherlands rate being divided into 100 cents, and in the London rate into 20 stivers, the cents in the arbitrated rates must be divided by 5 if it is required to express them in stivers.



Bar gold in London is 77*s.* 9*d.* per oz. standard ; in Amsterdam Fl. 1645 per kilo. fine. Required the arbitrated rate of exchange.

?	=	20 Shillings.
*77 $\frac{3}{4}$	=	1 oz. standard.
12	=	11 oz. fine.
1	=	31·1035 Wigtjes.
1000	=	1645 Florins.

77 $\frac{3}{4}$ ) 5702308 fixed number.

73342

Multiply by 1645

Florins 12 06·5 Cents.

Napoleons in London are 76*s.* 6*d.* per oz., in Amsterdam Fl. 9·60 each. Required the arbitrated rate of exchange.

?	=	20 Shillings.
76 $\frac{1}{2}$	=	1 oz. Napoleon.
207	=	1000 Napoleons.
1	=	9·60 Florins.

76 $\frac{1}{2}$ ) 966183 fixed number.

126298

Multiply by 9·60

Florins 12 12·5 Cents.

Bar silver in London is 59 $\frac{1}{2}$ *d.* per oz. standard, in Amsterdam 103 $\frac{3}{4}$  florins per pond fine. Required the arbitrated rate of exchange.

?	=	240 Pence.
59 $\frac{1}{2}$	=	1 oz. standard.
40	=	37 fine.
1	=	31·1035 Wigtjes.
1000	=	103 $\frac{3}{4}$ Florins.

\* The variable numbers are printed black.

59½) 690·498 fixed number.

$$\begin{array}{r} \hline 116 \times 3 = 11\cdot605 \text{ ditto for } 59\frac{1}{2}d. \\ 1-4\text{th} = \cdot348 \text{ for 3 Florins.} \\ \phantom{1-4\text{th}} = \cdot087 \text{ ,, } \frac{3}{4} \text{ ,,} \end{array}$$

Florins 12 04·0 Cents.

Spanish Dollars in London are 57½*d.* per oz., in Amsterdam 2·50 florins each. Required the arbitrated rate of exchange.

$$? = 240 \text{ Pence.}$$

$$*57\frac{1}{2} = 1 \text{ oz.}$$

$$866 = 1000 \text{ Dollars.}$$

$$1 = 2\cdot50 \text{ Florins.}$$

57½) 277136 fixed number.

48198 do. for 57½*d.*

$$\text{Multiply by } 2\cdot50$$

Florins 12 04·9 Cents.

## BERLIN.

The gold and silver weight is the kilogramme of 1000 grammes, sometimes the pound of 500 grammes.

The Imperial Bank buys gold in bars of a minimum weight of 5 lb., and a minimum fineness of 900, at the price of 1392 marks per lb. fine (500 grammes). English, Russian, French, and American gold coins are likewise bought at prices varying from time to time between M. 1392 and M. 1393·50 per lb. fine, the fineness of the first two coins being taken at 916½, and of the last two at 899½.

### MINT PAR.

$$? = 1 \text{ £}$$

$$£1869 = 480 \text{ oz. standard.}$$

$$\text{oz. st. 12} = 11 \text{ oz. fine.}$$

$$\text{oz. f. 1} = 31\cdot10349552 \text{ grammes fine.}$$

$$\text{gr. f. 500} = 1395 \text{ Marks.}$$

$$= \text{M. } 20\cdot42945.$$

• The variable numbers are printed black.



## NEW YORK.

The Bullion weight is the English troy pound, with its divisions.

The United States Mint receives no deposit of coins or bars except at actual weight, and according to the purity of the metal. Almost all gold arriving in America, with the exception of Eagles, is sent into the mint, which takes it at the rate of 43 oz. 900 fine = 800\$ gold.

The mint charge for bars is 1 per mille for gold 900 fine,  $\frac{4}{10}$  per cent. for fine gold.

The U. S. mint generally pays for gold deposits a few days after receipt.

The mint charge for melting foreign coins into bars is very trifling.

## MINT PAR.

?	=	1 £
£1869	=	480 oz. standard.
oz. st. 12	=	11 oz. fine.
oz. fine 9	=	10 oz. American coin.
oz. 1	=	18·60465 \$

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= \$4·866564.

This makes the pieces of \$10 = £2 1s. 1·16*d.* each.

and       "       "       "       \$5 = £1 0s. 6·58*d.*       "

As "Specie Points" may be taken the Short Exchanges \$4·83 and \$4·90; at the former, gold will be sent from London to New York; at the latter, from New York to London.

Bar gold in London is 77*s.* 9*d.* per oz. standard. It is required the arbitrated rate of exchange, produced by its export to the United States for coinage there at the mintage rate of 0·5375 oz. 900 fine to \$10 (or 43 oz. 900 fine = \$800).

?	=	20 Shillings.
*77 $\frac{3}{4}$	=	1 oz. standard.
12	=	11 oz. fine.
9	=	10 oz. $\frac{9}{10}$
0·5375	=	10 \$
<hr/>		
77 $\frac{3}{4}$ )	3789836 fixed number.	
	<hr/>	
	\$ 4·8744	

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\* The variable numbers are printed black.

## CALCUTTA.

Bar silver is quoted in London 54*d.* per oz. standard. Required the arbitrated rate of exchange resulting from bars being sent from London to Calcutta for coinage at the mint there, including charges.

As stated on page 114, the Mint in Calcutta is open to the public for the coinage of silver at the rate of 1 tola  $\frac{1}{2}$  fine = 1 rupee, subject to a charge of  $2\frac{1}{10}$  per cent. The calculation is now as follows :

?	=	1 Rupee.
Rs. 1	=	$\frac{3}{8}$ oz. Silver $\frac{1}{2}$ fine.
oz. 12	=	11 oz. fine.
oz. f. 37	=	40 oz. standard.
oz. st. 1	=	*54 <i>d.</i>

= 20·07*d.*

Add charges for freight, insurance,  
interest, seignorage, &c.,  $3\frac{1}{2}$  p. ct. 0·70*d.*

= 20·77*d.*

Equal to a quotation in London of Calcutta, sight,  
Rs. 1 = 1*s.* 8 $\frac{3}{4}$ *d.*

This calculation shows the connection between the Indian Exchanges and the price of bar silver in London. On the above basis we find the following Pars :

Bar Silver in London. per oz. stand.	Calcutta sight in London.	Bar Silver in London. per oz. stand.	Calcutta sight in London.
38	1 <i>s.</i> 2 $\frac{5}{8}$ <i>d.</i>	54	1 <i>s.</i> 8 $\frac{3}{4}$ <i>d.</i>
40	1 <i>s.</i> 3 $\frac{3}{8}$ <i>d.</i>	54 $\frac{1}{2}$	1 <i>s.</i> 8 $\frac{1}{6}$ $\frac{5}{6}$ <i>d.</i>
42	1 <i>s.</i> 4 $\frac{1}{8}$ <i>d.</i>	55	1 <i>s.</i> 9 $\frac{1}{8}$ <i>d.</i>
44	1 <i>s.</i> 4 $\frac{7}{8}$ <i>d.</i>	55 $\frac{1}{2}$	1 <i>s.</i> 9 $\frac{5}{16}$ <i>d.</i>
46	1 <i>s.</i> 5 $\frac{3}{4}$ <i>d.</i>	56	1 <i>s.</i> 9 $\frac{1}{2}$ <i>d.</i>
48	1 <i>s.</i> 6 $\frac{7}{16}$ <i>d.</i>	56 $\frac{1}{2}$	1 <i>s.</i> 9 $\frac{1}{16}$ $\frac{1}{6}$ <i>d.</i>
50	1 <i>s.</i> 7 $\frac{1}{4}$ <i>d.</i>	57	1 <i>s.</i> 9 $\frac{7}{8}$ <i>d.</i>
51	1 <i>s.</i> 7 $\frac{5}{8}$ <i>d.</i>	57 $\frac{1}{2}$	1 <i>s.</i> 10 $\frac{1}{8}$ <i>d.</i>
52	1 <i>s.</i> 8 <i>d.</i>	58	1 <i>s.</i> 10 $\frac{5}{16}$ <i>d.</i>
53	1 <i>s.</i> 8 $\frac{3}{8}$ <i>d.</i>	59	1 <i>s.</i> 10 $\frac{1}{16}$ $\frac{1}{6}$ <i>d.</i>
53 $\frac{1}{2}$	1 <i>s.</i> 8 $\frac{1}{2}$ <i>d.</i>	60	1 <i>s.</i> 11 $\frac{1}{16}$ <i>d.</i>

\* The variable numbers are printed black.

## HONGKONG.

Bar silver, 17 B., is quoted in London 58*d.* per oz. standard, in Honkong, 6 per cent. premium. Required the arbitrated rate of exchange, including  $1\frac{3}{4}$  per cent. charges.

As stated on page 126, bar silver is quoted in Hongkong at a premium on the par of \$ 1000 = 717 taels Canton weight.

?	=	1 \$
\$106*	=	71·7 Taels, C. W.
Tael 1	=	580 grains.
grains 480	=	1 oz. 17 B.
oz. 240	=	239 oz. fine.
oz. fine 222	=	240 oz. standard.
oz. stand. 1	=	58 <i>d.</i>

	=	51·036 <i>d.</i>
Add charges for freight, &c., $1\frac{3}{4}$ p. ct.		0·894 <i>d.</i>
		51·930 <i>d.</i>
Short exchange	=	51·930 <i>d.</i>

Equal to a quotation in London of Hongkong, demand,  
\$1 = 4*s.* 3·93*d.*

Mexican dollars are quoted in London 60*d.* per oz., in Hongkong 102. Required the arbitrated rate of exchange, including  $1\frac{3}{4}$  per cent. charges.

?	=	1 \$
\$102	=	100 Mexican Dollars.
M. D. 1000	=	868 oz.
1	=	60 <i>d.</i>

	=	51·058 <i>d.</i>
Add $1\frac{3}{4}$ per cent. charges		0·894 <i>d.</i>
		51·952 <i>d.</i>
Short exchange	=	51·952 <i>d.</i>

Equal to a quotation in London of Hongkong, demand,  
\$1 = 4*s.* 3·95*d.*

---

\* The variable numbers are printed black.

## SHANGHAI.

Bar silver, 17 B., is quoted in London *59d.* per oz. standard, in Shanghai, 110. Required the arbitrated rate of exchange, including  $1\frac{3}{4}$  per cent. charges.

As stated on page 125 bar silver is quoted in Shanghai in taels currency per 100 taels Canton weight. The calculation is now as follows:

?	=	1 Tael (money).
Tael 110*	=	100 Taels C. W.
,, 1	=	580 grains troy.
grains 480	=	1 oz. 17 B.
oz. 240	=	239 oz. fine.
oz. fine 222	=	240 oz. standard.
oz. stand. 1	=	<i>59d.</i>

---

= *5s. 9.77d.*

Add  $1\frac{3}{4}$  per cent. charges      *1.23d.*

---

Short exchange = *5s. 11d.*

Equal to a quotation in London of Shanghai, demand,  
1 Tael = *5s. 11d.*

---

Mexican dollars are quoted in London *55d.* per oz., in Shanghai 75. Required the arbitrated rate of exchange, including  $1\frac{3}{4}$  per cent. charges.

The quotation for Mexican Dollars in Shanghai is in Taels currency per \$ 100.

?	=	1 Tael (money).
Tael 75	=	100 Mexican Dollars.
Dols. 1000	=	868 oz.
oz. 1	=	<i>55d.</i>

---

= *5s. 3.65d.*

Add  $1\frac{3}{4}$  per cent. charges      *1.11d.*

---

Short exchange = *5s. 4.76d.*

Equal to a quotation in London of Shanghai, demand,  
1 Tael = *5s. 4.76d.*

---

\* The variable numbers are printed black.

## MINT PARS.

Besides the countries for which examples have already been given, Austria, Portugal, and the Scandinavian kingdoms have also adopted the gold standard. A fixed Mint Par can, therefore, be established between them and England, for which the formulæ are as follows :

## AUSTRIA.

---

?	=	1 £
£1869	=	480 oz. Troy stand.
oz. standard 12	=	11 oz. fine.
oz. fine 1	=	31·10349552 grammes fine.
oz. fine 1000	=	1640 Fl.

---

			=	Fl. 12·009.		
This makes the pieces of 20 Crowns			=	16s. 7·93 <i>d.</i>		
and	„	„	10	„	=	8s. 3·97 <i>d.</i>

---

## LISBON.

?	=	1 Milreis.
Milreis 10	=	17·735 grammes.
gr. 31·10349552	=	1 oz. troy.
oz. 480	=	1869 £
£1	=	240 <i>d.</i>

---

= 53·285*d.*

This makes the pieces of 10 Milreis = £2 4s. 5*d.* each.

As "Specie Points" may be taken the Short Exchanges 52½*d.* and 53½*d.*; at the former, gold will be sent from Lisbon to London; at the latter, from London to Lisbon.

On the basis of the £1 = 4\$500 reis, the legal value of the sovereign in Portugal, the "Mint Par" between Lisbon and London is 1 Milreis = 53½*d.*

As at present there is a paper currency in Portugal, the Mint Par has no practical value.



## COPENHAGEN.

?	=	£1
£1869	=	480 oz. standard.
oz. standard 12	=	11 oz. fine.
oz. fine 1	=	31·10349552 grammes fine.
gr. fine 1000	=	2480 Kronas.

---

= Kr. 18·15982.

This makes the pieces of Kr. 20 = £1 2s. 0·328*d.* each.  
 and        "        "        "        10 = £0 11s. 0·164*d.*

As "Specie Points" may be taken the Short Exchanges 18·06 and 18·26; at the former, gold will be sent from London to Copenhagen; at the latter, from Copenhagen to London.

Turkey, Brazil, and the Argentine Confederation, have also adopted the gold standards, and the Mint Pars between England and these countries are as follows:

## TURKEY.

£1 = 110·700 Turkish Piastres,  
 or 1 Turkish Pound = 18s. 0·8*d.*

## BRAZIL.

£1 = 8·912 Reis,  
 or, 1 Milreis = 26·93 Pence.

## ARGENTINE CONFEDERATION.

£1 = 5·04 Pesos,  
 or 1 Peso = 47·58*d.*

These Mint Pars are, however, of no practical utility, for the currencies of Brazil and of the Argentine Confederation are at present an inconvertible paper money, and, for the time being, the coinage of gold in Turkey is discontinued.

The Mint Pars for Egypt and Uruguay are superseded by the tariffs of those countries.

Of the remaining countries Russia ought to be mentioned. Its money is inconvertible paper, but theoretically silver as well as gold is legal tender. On the silver basis no Mint Par can be established, but on the gold basis the Par can be calculated as follows:

## RUSSIA.

Pence ?	=	1 Ro.
Ro. 10	=	12·902 gr. $\frac{9}{10}$ fine.
gr. $\frac{9}{10}$ 100	=	90 gr. fine.
gr. fine 11	=	12 gr. st.
gr. st. 31·10349552	=	1 oz. st.
oz. st. 480	=	1869 £
£1	=	240 <i>d.</i>

---

= 38·06*d.*

This makes the new Half Imperial = £0 15*s.* 10·3*d.*  
 and the Sovereign = Ro. 6·305 gold.

## EXERCISES ON ARBITRATED PARS OF EXCHANGE.

Ex. 1. Bar gold is in London 77*s.* 10½*d.* per oz. standard, in Paris 2 per mille premium. What is the arbitrated rate of exchange ?

2. Doubloons are 76*s.* 6*d.* in London and Fr. 83·50 in Paris. What is the arbitrated rate of exchange ?

3. Napoleons are 76*s.* 4*d.* per oz. in London, in Amsterdam Fl. 9·50. What is the arbitrated rate of exchange ?

4. Imperials are 77*s.* 6*d.* per oz. in London, M. 1394 per lb. fine at Berlin. What is the arbitrated rate of exchange ?

5. Bar silver is 56*d.* per oz. standard in London, at Calcutta 107 rupees per 1 tola fine. What is the arbitrated rate of exchange ?

6. Bar silver is 58*d.* per oz. standard in London, at Hong-kong 5 per cent. premium. What is the arbitrated rate of exchange ?

## PRODUCTS.

1. Fr. 25·217
2. „ 25·150
3. Fl. 12·025
4. M. 20·499
5. 1*s.* 9·22*d.*
6. 4*s.* 3·5*d.*

## ARBITRATED PRICES OF BULLION.

An arbitrated price of bullion is the rate or price of gold or silver in one country as deduced from its price in another country.

The requisite data for calculations of arbitrated prices are the same as for arbitrated pars of exchange, only that the rate of exchange is substituted for that price which is in the money of the country making the operation for arbitrated prices. The data required are, accordingly, the price abroad and the rate of exchange at which either the cost is drawn for or the proceeds of the sale are remitted for, with the relations between the weights and the degrees of fineness at which the prices are reckoned.

For these latter particulars we refer to the explanatory introductions given under the headings of Paris, Amsterdam, &c., in the chapter on arbitrations of bullion.

It is evident that with the same given data the result obtained from a calculation of the arbitrated prices of bullion will show the same differences of profit or loss as that obtained from a calculation of the arbitrated pars of exchange, based upon the prices of bullion.\* The difference between the two methods is simply one of expressing the result, and we may here remark that it is more usual to express the profit or loss of such operations as one of Exchange.

The places selected for our illustrative operations are :

Paris—in bar gold and silver, doubloons and dollars.

Amsterdam—in bar gold and silver.

Berlin—in bar gold and silver.

No account is taken in the following examples of the charges involved in the transaction.

---

\* See 'Foreign Banking Arbitration,' by Hermann Schmidt, London, Effingham Wilson, page 4.

## PARIS.

*BAR GOLD.*

Premium . . . 2 per Mille.  
Short Exchange . Fr. 25·20

—  
? = 1 oz. standard.  
1 = 31·1035 gram.  
1000 = 3150·58 Fr.  
1000 = **1002\***Fr. (prem. incl.)  
25·20 = 20 Shillings.

25·20 ) 1959·881 fixed numbr.

—  
77·773

156 2 p. Mil. pm.

—  
77·929

Result, 77s. 11d. p. oz. stand.

*DOUBLOONS.*

Price . . . . Fr. 82·40  
Short Exchange . „ 25·20

—  
? = 1 oz.  
868 = 1000 Doubloons.  
1 = **82·40** Fr.  
25·20 = 20 Shillings.

25·20 ) 23·041475 fixed  
— numbr.

0·914344

Multiply by 82·40

—  
Result 75s. 4d. per oz.

*BAR SILVER.*

Discount . . . 10 per cent.  
Short Exchange Fr. 25·20

—  
? = 1 oz. standard.  
1 = 31·1035 gram.  
1000 = 202·47 Francs.  
1000 = **900** Fr. (dis. deduct.)  
25·20 = 240 Pence.

25·20 ) 1511·406 fixed numbr.

—  
59 976

5·997 10 p. c. disc.

—  
Result 53·979d. p. oz. stand.

*MEXICAN DOLLARS.*

Price . . . . Fr. 5  
Short Exchange . „ 25·20

—  
? = 1 oz.  
868 = 1000 Dollars.  
1 = 5 Francs.  
25·20 = 240 Pence.

25·20 ) 276·4977 fixed  
— numbr.

10·972

Multiply by 5·

—  
Result 54·86d. per oz.

\* The variable numbers are printed black.

## AMSTERDAM.

*BAR GOLD.*

Price . . . . . Fl. 1647  
 Short Exchange . . „ 12·10

—  
 ? = 1 oz. standard.  
 12 = 11 oz. fine.  
 1 = 31·1035 Wigtjes.  
 1000 = 1647\* Florins.  
 12·10 = 20 Shillings.

12·10 ) 570231 fixed numbr.

471265

Multiply by 1647

Result 77s. 7·4d. p. oz. stand.

*BAR SILVER.*

Price . . . . . Fl. 95  
 Short Exchange . . „ 12·10

—  
 ? = 1 oz. standard.  
 40 = 37 oz. fine.  
 1 = 31·1035 Wigtjes.  
 1000 = 95 Florins.  
 12·10 = 240 Pence.

12·10 ) 690498 fixed numbr.

57066

Multiply by 95

Result 54·21d. p. oz. stand.

## BERLIN.

*BAR GOLD.*

Price . . . . . M. 2785  
 Short Exchange . . „ 20·40

—  
 ? = 1 oz. standard.  
 12 = 11 oz. fine.  
 1 = 31·1035 gram.  
 1000 = 2785 M.  
 20·40 = 20 Shillings.

20·40 ) 570231 fixed numbr.

27952

Multiply by 2785

Result 77s. 10d. p. oz. stand.

*BAR SILVER.*

Price . . . . . M. 163  
 Short Exchange . . „ 20·40

—  
 ? = 1 oz. standard.  
 40 = 37 oz. fine.  
 1 = 31·1035 gram.  
 1000 = 163 M.  
 20·40 = 240 Pence.

20·40 ) 690498 fixed numbr.

338475

Multiply by 163

Result 55·17d. p. oz. stand.

\* The variable numbers are printed black.

100

100

100

# TATE'S CAMBIST.

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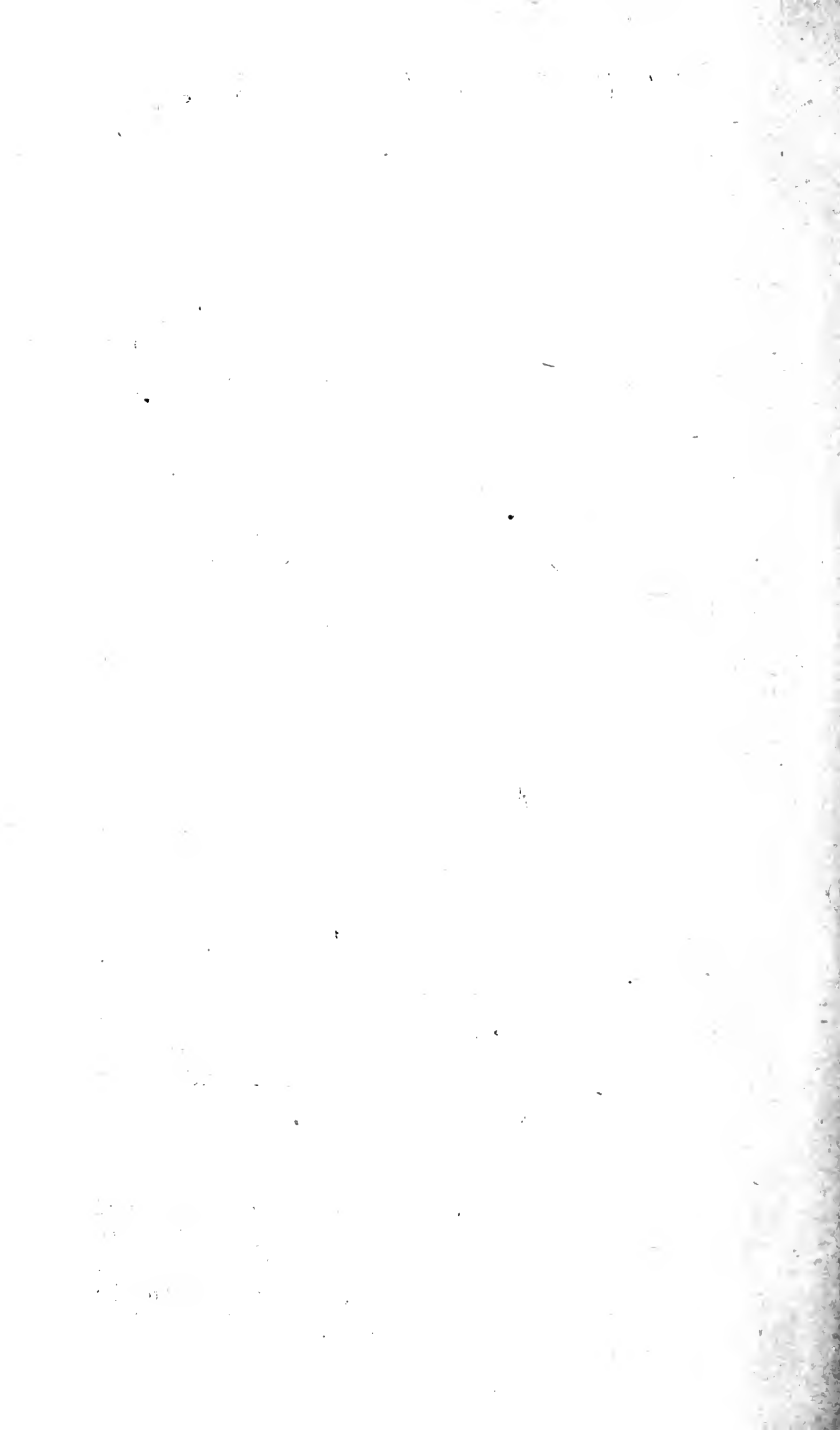
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