



## HAMBURG.

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Doubloons in London are 74 s 6 d per Oz. ; in Hamburg, as Bar Gold, 438 Bco Mks per fine Mark ; required the arbitrated Rate of Exchange.

		20	Shillings ?
	74½ *	—	1 Oz.
	451	—	60 Cologne Marks.
Carats	24	—	20 9¼ Fine. (See page 184.)
	1	—	* 438 Banco Marks.
	74½ )	2.307372	Fixed Number.
		0.030972	Do. for 74 s 6 d
		438	
		247776	
		92916	
		123888	
		Bco Mks 13.5656	= Bco Mks 13 9.06

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### Fixed Numbers for Prices per Oz.

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| s  | d |       | s  | d |       |
|----|---|-------|----|---|-------|
| 73 | - | 31608 | 76 | - | 30360 |
| -  | 3 | 31501 | -  | 3 | 30261 |
| -  | 6 | 31395 | -  | 6 | 30163 |
| -  | 9 | 31288 | -  | 9 | 30064 |
| 74 | - | 31181 | 77 | - | 29967 |
| -  | 3 | 31076 | -  | 3 | 29870 |
| -  | 6 | 30972 | -  | 6 | 29774 |
| -  | 9 | 30868 | -  | 9 | 29678 |
| 75 | - | 30765 | 78 | - | 29583 |
| -  | 3 | 30663 | -  | 3 | 29488 |
| -  | 6 | 30562 | -  | 6 | 29394 |
| -  | 9 | 30461 | -  | 9 | 29301 |

Table of parts from 20 Carats 7 Grs to 21 Carats.

| Subt.<br>for | 73 s | 74 s | 75 s | 76 s | 77 s | 78 s |     |
|--------------|------|------|------|------|------|------|-----|
| 7½ Grs       | 284  | 281  | 277  | 274  | 270  | 267  | 12- |
| -¾           | 253  | 250  | 246  | 243  | 240  | 237  | 11¾ |
| 8-           | 222  | 218  | 215  | 212  | 210  | 207  | - ½ |
| -¼           | 190  | 187  | 185  | 182  | 180  | 178  | - ¼ |
| -½           | 158  | 156  | 154  | 152  | 150  | 148  | - - |
| -¾           | 127  | 125  | 123  | 122  | 120  | 119  | 10¾ |
| 9-           | 95   | 94   | 92   | 92   | 90   | 89   | - ½ |
| -¼           | 63   | 62   | 62   | 61   | 60   | 59   | - ¼ |
| -½           | 32   | 31   | 31   | 31   | 30   | 30   | - - |

## EXAMPLE

Of the Application of this Table.

Columbian Doubloons, reported 20 Carats 8¾ Grs Fine.

London, 73 s 10 d.—Hamburgh, 438 Bco Marks.

By the preceding Table of Fixed Numbers

73 s 10 d . . . Carats 20 9¾ Grs . . . 31252

By the above Subt. for . . . 8¾ Grs . . . 125

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31127

438

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249016

93381

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124508

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Bco Mks 13 10.13 Sch. = Bco Mks 13.633

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The Equation for the above gives the same result.

|                                                |   |                 |
|------------------------------------------------|---|-----------------|
|                                                |   | 20 Shillings ?  |
| 73 s 10 d                                      | — | 1 Oz. St.       |
| 451                                            | — | 60 Cologne Mks. |
| 24                                             | — | 20 8½ Fine.     |
| Col. Mk 1                                      | — | 438 Bco Mks.    |
| Result, Bco Mks 13.633 = Bco Mks 13 10.13 Sch. |   |                 |

## HAMBURG.

Dollar Silver in London is  $57\frac{1}{2}$  d per Oz. ; in Hamburg, 27 Mks  $11\frac{1}{2}$  Sch. per Hamburg or Cologne Mark Fine ; required the arbitrated Rate of Exchange.

|                   |   |                      |                           |                    |
|-------------------|---|----------------------|---------------------------|--------------------|
|                   |   | 240                  | Pence ?                   |                    |
| $57\frac{1}{2}$ * | — | 1                    | Oz.                       |                    |
| 451               | — | 60                   | Cologne Marks.            |                    |
| 16                | — | 14 5                 | Loths and Grains.         |                    |
| 1                 | — | * 27 $11\frac{1}{2}$ | Mks and Sch.              |                    |
| $57\frac{1}{2}$   | ) | 2849224              | Fixed Number.             |                    |
| <hr/>             |   |                      |                           |                    |
|                   |   | 495517               | Do. for $57\frac{1}{2}$ d |                    |
|                   |   | $27\frac{1}{2}$      |                           |                    |
| <hr/>             |   |                      |                           |                    |
|                   |   | 13 10.03             | Do. for 27 Mks 8 Sch.     |                    |
|                   |   | 1.49                 | —                         | 3 Sch.             |
|                   |   | .25                  | —                         | $\frac{1}{2}$ Sch. |
| <hr/>             |   |                      |                           |                    |
| Mks               |   | 13 11.77             | Sch.                      |                    |

Fixed Numbers or Rates of Exchange, for Prices per Oz. ; for 14 Loths 5 Grs ; and for 27 Mks 8 Sch.

| d               | Mk | Sc    | d               | Mk | Sc   |
|-----------------|----|-------|-----------------|----|------|
| $56\frac{1}{2}$ | 13 | 13.88 | $57\frac{3}{4}$ | 13 | 9.08 |
| - $\frac{5}{8}$ | -  | 13.40 | - $\frac{7}{8}$ | -  | 8.61 |
| - $\frac{3}{4}$ | -  | 12.91 | 58 -            | -  | 8.15 |
| - $\frac{7}{8}$ | -  | 12.42 | - $\frac{1}{8}$ | -  | 7.68 |
| 57 -            | -  | 11.94 | - $\frac{1}{4}$ | -  | 7.22 |
| - $\frac{1}{8}$ | -  | 11.46 | - $\frac{3}{8}$ | -  | 6.76 |
| - $\frac{1}{4}$ | -  | 10.98 | - $\frac{1}{2}$ | -  | 6.30 |
| - $\frac{3}{8}$ | -  | 10.50 | - $\frac{5}{8}$ | -  | 5.84 |
| - $\frac{1}{2}$ | -  | 10.03 | - $\frac{3}{4}$ | -  | 5.39 |
| - $\frac{7}{8}$ | -  | 9.55  | - $\frac{7}{8}$ | -  | 4.94 |

### Average Parts for

| d               | 4 Sc.  | 3 Sc.  | 2 Sc.  | 1 Sc.  |
|-----------------|--------|--------|--------|--------|
| $56\frac{1}{2}$ | - 4.02 | - 1.51 | - 1.01 | - 0.50 |
| 57-             | - 2.00 | - 1.50 | - 1.00 | - 0.50 |
| $57\frac{1}{2}$ | - 1.98 | - 1.49 | - 0.99 | - 0.49 |
| 58-             | - 1.96 | - 1.47 | - 0.98 | - 0.49 |
| $58\frac{1}{2}$ | - 1.94 | - 1.46 | - 0.98 | - 0.49 |

## DOLLAR SILVER AT HAMBURG.

Table of Parts for Purities from 14 Loths 3 Grs to 7 Grs.

| Subt.<br>for | d<br>56½ | d<br>57 | d<br>57½ | d<br>58 | d<br>58½ | Add<br>for |
|--------------|----------|---------|----------|---------|----------|------------|
| 3 Grs        | 1.73     | 1.71    | 1.70     | 1.68    | 1.67     | Grs. 7     |
| 3½           | 1.29     | 1.29    | 1.27     | 1.26    | 1.25     | 6½         |
| 4            | 0.86     | 0.86    | 0.85     | 0.84    | 0.83     | 6          |
| 4½           | 0.43     | 0.43    | 0.42     | 0.42    | 0.42     | 5½         |

## EXAMPLE

Of the application of this Table.

Dollar Silver, reported 14 Loths 3½ Grains Fine.

Price in London, 57⅞ d — Hamburg, Mks 27 11 Sch.

By the preceding Table

14 Loths 5 Grs and 57⅞ d . . . Mks 13 10.50 Sch.  
 3½ Grs as above . . . . . 1.27 subt.

For 27 Mks 8 Sch. . . 13 9.23  
 Do. . (page 188) . 3 Sch. . . 1.49 add.

Marks 13 10.72 Sch.

The Equation for the above gives the following result :

240 Pence ?  
 57⅞ \* — 1 Oz. Dollar Silver.  
 451 — 60 Cologne Marks.  
 Loths 16 — \* 14 3½ Loths and Grs fine.  
 Col. Mk. 1 — \* 27 11 Mks and Sch.

Result, Mks 13 10.71 Sch.

## HAMBURG.

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Bar Silver in London is  $59\frac{1}{2}$  d per Oz. Standard ; in Hamburg, 27 Mks 11 Sch. per Hamburg or Cologne Mark Fine ; required the arbitrated Rate of Exchange.

|                              |   |                                   |                                |
|------------------------------|---|-----------------------------------|--------------------------------|
|                              |   | 210                               | Pence ?                        |
| $59\frac{1}{2}$ <sup>8</sup> | — | 1                                 | Oz. Standard.                  |
| $65\frac{1}{11}$             | — | 8                                 | Cologne Marks Fine.            |
| 8                            | — | 27 11                             | Mks and Sch.                   |
|                              |   | 295343                            | Fixed Number.                  |
|                              |   | <u>27<math>\frac{1}{2}</math></u> |                                |
| $59\frac{1}{2}$              | ) | <u>812195</u>                     | Do. for $27\frac{1}{2}$ Marks. |
|                              |   | 13 10.41                          | — 59 $\frac{1}{2}$ d           |
|                              |   | 1.49                              | — 3 Sch.                       |
|                              |   | <u>13 11.90</u>                   | Mks 13 11.90 Sch.              |

Fixed Numbers or Rates of Exchange,  
for Prices per Oz. and for 27 Mks 8 Sch.

| d                    | Mks | Sc.   | d                   | Mks | Sc.  |
|----------------------|-----|-------|---------------------|-----|------|
| 59 - . .             | 13  | 12.26 | 60 - . .            | 13  | 8.59 |
| - $\frac{1}{16}$ . . | -   | 11.79 | - $\frac{1}{8}$ . . | -   | 8.14 |
| - $\frac{1}{8}$ . .  | -   | 11.33 | - $\frac{1}{4}$ . . | -   | 7.69 |
| - $\frac{3}{16}$ . . | -   | 10.87 | - $\frac{3}{8}$ . . | -   | 7.24 |
| - $\frac{1}{2}$ . .  | -   | 10.41 | - $\frac{1}{2}$ . . | -   | 6.79 |
| - $\frac{5}{8}$ . .  | -   | 9.95  | - $\frac{5}{8}$ . . | -   | 6.35 |
| - $\frac{3}{4}$ . .  | -   | 9.49  | - $\frac{3}{4}$ . . | -   | 5.91 |
| - $\frac{7}{8}$ . .  | -   | 9.04  | - $\frac{7}{8}$ . . | -   | 5.47 |

Average Parts for

| at                 | 4 Sc. | 3 Sc. | 2 Sc. | 1 Sc. | $\frac{1}{2}$ Sc. | $\frac{1}{4}$ Sc. |
|--------------------|-------|-------|-------|-------|-------------------|-------------------|
| 59 d —             | 2.00  | 1.50  | 1.00  | 0.50  | 0.25              | 0.12              |
| 59 $\frac{1}{2}$ — | 1.99  | 1.49  | 0.99  | 0.50  | 0.25              | 0.12              |
| 60 —               | 1.97  | 1.48  | 0.98  | 0.49  | 0.25              | 0.12              |
| 60 $\frac{1}{2}$ — | 1.95  | 1.46  | 0.97  | 0.48  | 0.24              | 0.12              |

## FRANKFORT.

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The Frankfort Standard of the Cologne Mark Weight is reckoned to weigh 3611 Grains Troy,  $159\frac{1}{2}$  Marks being considered equal to 100 lb English Troy.

The Prices of Bar Gold and Silver per Cologne or Frankfort Mark, are reckoned in Wechselzahlung or Exchange-Reckoning; and those of Dollars and other Coins in Reichsgeld or 24 Guldenfuss, the relative values of these monies being estimated, by reckoning 46 Rixdollars in W. Z. equal to 55 Rixdollars in 24 G. F.

The Rate of Exchange with London is in Batzen W. Z.—15 Batzen or 60 Kreuzers make 1 Florin, and 90 Batzen, 4 Rixdollars.

The variation of  $1\frac{1}{2}$  Batzen in the rate, is reckoned 1 per Cent; 75-100 ths of a Batzen  $\frac{1}{2}$  per Cent, &c.—10 ths of a Batzen are therefore to be reckoned as 15 ths per Cent; but when the number is small they may be reckoned as 16 ths per Cent, allowing for the excess according to the 100 ths; thus the difference between 150 and 150.92 would be called 10-16 ths or 5-8 ths per Cent; because 75 out of 92-100 ths give 8-16 ths, and the remainder 17-100 ths would be called, in general, 2-16 ths. The difference per Cent may also be valued by the following Table.

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At  $1\frac{1}{2}$  Batzen as 1 per Cent.

| Batz. | 1.41-100 ths are $\frac{1}{16}$ per Ct. | 75-100 ths are $\frac{1}{2}$ per Ct. |
|-------|-----------------------------------------|--------------------------------------|
| 1.31  | - . $\frac{7}{8}$ -                     | 66 - . $\frac{7}{16}$ -              |
| 1.22  | - . $\frac{13}{16}$ -                   | 56 - . $\frac{5}{8}$ -               |
| 1.12  | - . $\frac{3}{4}$ -                     | 47 - . $\frac{5}{16}$ -              |
| 1.03  | - . $\frac{11}{16}$ -                   | 37 - . $\frac{1}{4}$ -               |
| 0.94  | - . $\frac{5}{8}$ -                     | 28 - . $\frac{3}{16}$ -              |
| 0.84  | - . $\frac{9}{16}$ -                    | 19 - . $\frac{1}{8}$ -               |

9-100 ths are  $\frac{1}{16}$  per Cent.

## FRANKFORT.

Bar Gold in London is 77 s 6 d per Oz. Standard; in Frankfort, 320 Florins W. Z. per Mark Fine; required the arbitrated Rate of Exchange.

|             |   |        |                  |
|-------------|---|--------|------------------|
|             |   | 20     | Shillings ?      |
| 77½ *       | — | 1      | Oz. Standard     |
| 12          | — | 11     | Fine             |
| 1200        | — | 159½   | Marks            |
| 1           | — | * 320  | Florins          |
| 1           | — | 15     | Batzen           |
|             |   |        |                  |
| 77½         | ) | 365521 | Fixed Number     |
|             |   | 47164  | do. for 77 s 6 d |
| Multiply by |   | 320    |                  |
| Batzen      |   | 150.92 |                  |

## Fixed Numbers for Prices per Oz.

|    |     |   |   |   |       |
|----|-----|---|---|---|-------|
| s  | d   |   |   |   |       |
| 77 | 6   | . | . | . | 47164 |
| -  | 9   | . | . | . | - 012 |
| -  | 10½ | . | . | . | 46937 |
| 78 | -   | . | . | . | - 862 |
| -  | 3   | . | . | . | - 712 |
| -  | 6   | . | . | . | - 563 |
| -  | 9   | . | . | . | - 415 |



## FRANKFORT.

Bar Silver in London is  $59\frac{1}{2}$  d per Oz. Standard ; in Frankfort Florins 20 25 Kr. W. Z. per Mark Fine ; required the arbitrated Rate of Exchange.

|                   |        |                                             |                           |
|-------------------|--------|---------------------------------------------|---------------------------|
|                   |        | 240                                         | Pence ?                   |
| $59\frac{1}{2}$ * | —      | 1                                           | Oz. Standard.             |
| 40                | —      | 37                                          | Fine.                     |
| 1200              | —      | $159\frac{1}{2}$                            | Marks.                    |
| 1                 | —      | * 20 25                                     | Flor. and Kreuz.          |
| 1                 | —      | 15                                          | Batzen.                   |
| <br>              |        |                                             |                           |
| $59\frac{1}{2}$   | )      | 442613                                      | Fixed Number.             |
|                   |        | <hr style="width: 100px; margin: 0 auto;"/> |                           |
|                   |        | 74389                                       | Do. for $59\frac{1}{2}$ d |
|                   |        | 20                                          |                           |
|                   |        | <hr style="width: 100px; margin: 0 auto;"/> |                           |
| $\frac{1}{60}$    | - -    | 148.78                                      | for 20 Florins.           |
| $\frac{1}{4}$     | - -    | 2.48                                        | — 20 Kreuz.               |
|                   |        | .62                                         | — 5 Kreuz.                |
|                   |        | <hr style="width: 100px; margin: 0 auto;"/> |                           |
|                   | Batzen | 151.88                                      |                           |
|                   |        | <hr style="width: 100px; margin: 0 auto;"/> |                           |

## Fixed Numbers for Prices per Oz.

|                     |                            |                     |       |  |  |
|---------------------|----------------------------|---------------------|-------|--|--|
|                     | <hr style="width: 100%;"/> |                     |       |  |  |
| d                   |                            | d                   |       |  |  |
| 59 - . .            | 75019                      | 60 - . .            | 73769 |  |  |
| - $\frac{1}{8}$ . . | 74861                      | - $\frac{1}{8}$ . . | - 616 |  |  |
| - $\frac{1}{4}$ . . | - 703                      | - $\frac{1}{4}$ . . | - 463 |  |  |
| - $\frac{3}{8}$ . . | - 545                      | - $\frac{3}{8}$ . . | - 311 |  |  |
| - $\frac{1}{2}$ . . | - 389                      | - $\frac{1}{2}$ . . | - 159 |  |  |
| - $\frac{5}{8}$ . . | - 233                      | - $\frac{5}{8}$ . . | - 008 |  |  |
| - $\frac{3}{4}$ . . | - 078                      | - $\frac{3}{4}$ . . | 72858 |  |  |
| - $\frac{7}{8}$ . . | 73923                      | - $\frac{7}{8}$ . . | - 709 |  |  |

## FRANKFORT.

Dollars in London are  $57\frac{1}{2}$  d per Oz.; in Frankfort, Flor. 2  $28\frac{1}{2}$  Kr. in 24 G. F. each; required the arbitrated Rate of Exchange.

|             |                              |        |                                             |
|-------------|------------------------------|--------|---------------------------------------------|
|             |                              | 240    | Pence ?                                     |
|             | $57\frac{1}{2}$ <sup>≠</sup> | —      | 1 Oz.                                       |
|             | 866                          | —      | 1000 Dollars.                               |
|             | 1                            | —      | * 2 $28\frac{1}{2}$ Fl. and Kr. in 24 G. F. |
| in 24 G. F. | 55                           | —      | 46 Flor. in W. Z.                           |
|             | 1                            | —      | 15 Batzen.                                  |
|             | $57\frac{1}{2}$              | )      | 34768 Fixed Number.                         |
|             |                              | <hr/>  |                                             |
|             |                              | 60466  | Do. for $57\frac{1}{2}$ d                   |
|             |                              | 2      |                                             |
|             |                              | <hr/>  |                                             |
|             | $\frac{1}{3}$                | -      | - 120.932 for 2 Florins.                    |
|             | $\frac{1}{6}$                | -      | - 24.186 — 24 Kreuz.                        |
|             | $\frac{1}{3}$                | -      | - 4.031 — 4 —                               |
|             |                              | .504   | — $\frac{1}{2}$ —                           |
|             |                              | <hr/>  |                                             |
|             | Batzen                       | 149.65 |                                             |
|             |                              | <hr/>  |                                             |

## Fixed Numbers for Prices per Oz.

|                  |   |       |                  |   |       |
|------------------|---|-------|------------------|---|-------|
| d                |   |       | d                |   |       |
| 56 $\frac{1}{2}$ | . | .     | 57 $\frac{3}{4}$ | . | .     |
| -                | . | 61536 | -                | . | 60204 |
| -                | . | - 400 | -                | . | - 074 |
| -                | . | - 265 | 58 -             | . | 59945 |
| -                | . | - 130 | -                | . | - 816 |
| 57 -             | . | 60996 | -                | . | - 688 |
| -                | . | - 863 | -                | . | - 560 |
| -                | . | - 730 | -                | . | - 433 |
| -                | . | - 598 | -                | . | - 306 |
| -                | . | - 466 | -                | . | - 180 |
| -                | . | - 335 | -                | . | - 054 |

## BERLIN, ST. PETERSBURG, NAPLES, AND LISBON.

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**BERLIN.**—The fineness of Gold is expressed in Carats and Grains, and of Silver in Loths and Grains, as at Hamburg.

The Prices of both Metals are in Prussian Dollars per Mark Fine.

The weight of the New Prussian Mark is  $3608\frac{3}{4}$  Grains Troy.

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**PETERSBURG.**—The fineness of Gold and Silver is expressed in Solotnicks and Dolis.—96 Solotnicks make 1 Pound, and 96 Dolis, 1 Solotnick.

The Price of fine Gold is fixed at 355 Silver Rubles per Solotnick, and of fine Silver at  $22\frac{3}{4}$  Silver Rubles per Pound; the variations in the Price of each, are made by the rate of exchange for the Banco Ruble against the Silver Ruble;—as at  $372\frac{1}{2}$  Copecs in Paper for 1 Silver Ruble.

The Weight of the Russian Pound is  $6318\frac{1}{2}$  Grains Troy.

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**NAPLES.**—The fineness of Gold and Silver is decimally expressed.

The Price of fine Gold is expressed either in Ducats and Grani per Oz. or in Grani per Denaro, reckoning 24 Denari to 1 Oz.

The Price of Silver of the Standard of 10-12 ths fine, is usually in Ducats and Grani per lb of 12 Oz.

The Weight of the Neapolitan Ounce of 30 Trapesi, or 600 Acini, is  $412\frac{1}{2}$  Grains Troy, and the Weight of the Neapolitan Pound of 12 Oz. is 4950 Grains Troy, hence for Gold,

|                   |   |                             |
|-------------------|---|-----------------------------|
| 16 Neap. Oz. Fine | = | 15 Oz. of British Standard, |
| or 1000 — —       | = | $937\frac{1}{2}$ — — —      |

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**LISBON.**—The assay Mark is divided into 24 Quilates or Carats, each of 4 Grains for Gold; or into 12 Dinheiros, each of 24 Grains for Silver.

The fixed price of Gold 22 Carats fine, is 96 Milreis in Metal per Mark, and of Silver 11 Dinheiros fine, 6 Milreis in Metal per Mark, the variations upon each being made by a premium per Cent.

FORMULÆ FOR ARBITRATED RATES OF EXCHANGE  
FROM PRICES OF BAR GOLD.

BERLIN.

London — 77 s 6 d  
 Berlin — 218½ Dollars

20 Shill. ?

77½ \* — 1 Oz. St.  
 12 — 11 Fine  
 1 — 480 Grains  
 3608½ — 1 Mark  
 1 — \* 218½ Dollars

Fixed Number 243851

Result, Doll. 6 26.4 S. G  
 per £ Sterling.

NAPLES.

London — 77 s 6 d  
 Naples — 91 Grani

20 Shill. ?

77½ \* — 1 Oz.  
 937½ — 1000 Oz. N. St.  
 1 — 24 Denari  
 1 — \* 91 Grani

Fixed Number 512

Result, Ducats 6 01.1 Gr.  
 per £ Sterling.

PETERSBURG.

London — 77 s 6 d  
 Petersb. — 372½ Copecs

1 Bo. R. ?

3.72½ \* — 1 Sil. R.  
 355 — 100 Sol. F.  
 96 — 1 lb. R.  
 1 — 6318½ Grs.  
 11 — 12 Stand.  
 480 — 1 Oz.  
 1 — \* 930 Pence

Fixed Number 421368

Result, 10.52 Pence  
 per Ruble.

LISBON.

London — 77 s 6 d  
 Lisbon { 24 per Ct Prem.  
           { 22 per Ct Agio

1000 R. Legal ?

100 — \* 89 Metal  
 124 \* — 100 With Pr.  
 96000 — 1 Mark St.  
 1 — 3541½ Grains  
 480 — 1 Oz.  
 1 — \* 930 Pence

Fixed Number 768555

Result, 51.3 Pence  
 per Milreis.

FORMULÆ FOR ARBITRATED RATES OF EXCHANGE  
FROM PRICES OF BAR SILVER.

BERLIN.

|                           |   |                           |         |
|---------------------------|---|---------------------------|---------|
| London                    | — | 59½ d                     |         |
| Berlin                    | — | 14 $\frac{3}{10}$ Dollars |         |
|                           |   | 240                       | Pence ? |
| 59½ *                     | — | 1                         | Oz. St. |
| 40                        | — | 37                        | Fine    |
| 1                         | — | 480                       | Grains  |
| 3608 $\frac{3}{4}$        | — | 1                         | Mark    |
| 1                         | — | * 14.3                    | Dollars |
| Fixed Number 295282       |   |                           |         |
| Result, Doll. 7 2.9 S. G. |   |                           |         |
| per £ Sterling.           |   |                           |         |

NAPLES.

|                           |   |               |         |
|---------------------------|---|---------------|---------|
| London                    | — | 59½ d         |         |
| Naples                    | — | 13.87 Ducats. |         |
|                           |   | 240           | Pence ? |
| 59½ *                     | — | 1             | Oz. St. |
| 40                        | — | 37            | Fine    |
| 10                        | — | 12            | N. St.  |
| 1                         | — | 480           | Grains  |
| 4950                      | — | 1             | lb. N.  |
| 1                         | — | * 13.87       | Ducats. |
| Fixed Number 258327       |   |               |         |
| Result, Ducats 6 02.1 Gr. |   |               |         |
| per £ Sterling.           |   |               |         |

PETERSBURG.

|                            |   |              |            |
|----------------------------|---|--------------|------------|
| London                     | — | 59½ d        |            |
| Petersb.                   | — | 372½ Copecs. |            |
|                            |   | 1            | Bo Rub. ?  |
| 3.72½ *                    | — | 1            | Silv. Rub. |
| 22 $\frac{3}{4}$           | — | 1            | lb. fine.  |
| 1                          | — | 6318½        | Grains     |
| 37                         | — | 40           | Stand.     |
| 480                        | — | 1            | Oz.        |
| 1                          | — | * 59½        | Pence      |
| Fixed Number 625532        |   |              |            |
| Result, 10 Pence per Ruble |   |              |            |
| less 1 per Mil.            |   |              |            |

LISBON.

|                         |   |                  |          |
|-------------------------|---|------------------|----------|
| London                  | — | 59½ d            |          |
| Lisbon                  | { | 20 per Ct. Prem. |          |
|                         | { | 22 per Ct. Agio. |          |
|                         |   | 1000             | Reis L ? |
| 100                     | — | * 89             | Reis M.  |
| 120 *                   | — | 100              | With Pr. |
| 6000                    | — | 1                | Mark St. |
| 12                      | — | 11               | Fine     |
| 37                      | — | 40               | Stand.   |
| 1                       | — | 3541½            | Grains   |
| 480                     | — | 1                | Oz.      |
| 1                       | — | * 59½            | Pence    |
| Fixed Number 12186      |   |                  |          |
| Result, Pence 53.77 per |   |                  |          |
| Milreis.                |   |                  |          |

## EXAMPLES

Of finding an arbitrated par of Exchange by the preceding Tables.

## EXAMPLE 1.

## BAR GOLD FROM LONDON TO PARIS.

The price of Bar Gold in London being 77 9, and in Paris 7 $\frac{3}{4}$  Premium, it is required to find the net arbitrated Par of Exchange, allowing  $\frac{5}{8}$  per Cent for extra charges; and the rate of Exchange for Bills in return being 25 12 $\frac{1}{2}$ , it is required to find the Profit or Loss per Cent, allowing  $\frac{1}{10}$  per Cent for Brokerage and  $\frac{1}{8}$  per Cent for loss of Interest.

The fixed Number page 172

|                        |           |        |
|------------------------|-----------|--------|
| for 77 s 9 d is        | - - - -   | 25.186 |
| 7 per Mille            | - - - -   | .176   |
| $\frac{1}{2}$ — —      | - - - -   | 12     |
| $\frac{1}{4}$ — —      | - - - -   | 6      |
| Full Rate              | - - - -   | 25.380 |
| $\frac{5}{8}$ per Cent | - - - -   | .158   |
| Net Rate               | - - - -   | 25.222 |
| $\frac{1}{10}$ — —     | - - - -   | 25     |
| $\frac{1}{8}$ — —      | - - - -   | 31     |
| Net Proceeds           | - - - -   | 25.166 |
| Rate of the Bill       | - - - -   | 25.125 |
| Profit                 | - - - -   | 41     |
|                        | Millièmes |        |

41 Millièmes on 25.125 Francs are nearly 1-6 th per Cent.

## EXAMPLE 2.

## BAR GOLD FROM PARIS TO LONDON.

The price of Bar Gold in London being  $77\ 10\frac{1}{2}$  per Oz., and in Paris 7 per Mille Premium, it is required to find the net arbitrated Rate of Exchange, charging  $\frac{5}{8}$  per Cent for extra expenses; and if the amount is drawn for from Paris in short Bills at 25.50 Francs, what is the Profit or Loss per Cent, charging  $\frac{1}{10}$  and  $\frac{1}{8}$  per Cent for Brokerages on Bills in Paris and Sales in London.

|                                                   |   |   |           |
|---------------------------------------------------|---|---|-----------|
| Fixed No. page 172, for $77\ s\ 10\frac{1}{2}\ d$ | - | - | 25.146    |
| 7 per Mille                                       | - | - | .176      |
|                                                   |   |   | 25.322    |
| $\frac{5}{8}$ per Cent                            | - | - | .158      |
|                                                   |   |   | 25.480    |
| $\frac{1}{10}$ per Cent                           | - | - | 25        |
| $\frac{1}{8}$ — —                                 | - | - | 31        |
|                                                   |   |   | 25.536    |
| Rate of Exchange                                  | - | - | 25.50     |
|                                                   |   |   | 36        |
| Loss                                              | - | - | Millièmes |

36 Millièmes on 25.50 Francs are nearly  $\frac{3}{20}$  per Cent.

N. B. When the Rate of Exchange is in Sterling, as with Petersburg, the application of the charges is the reverse of what it is with the rate in Foreign money; they are then added for the export and deducted for the import.

With respect to the Interest it is to be observed, that when the Bills are drawn from abroad, for Bullion imported into this Country, at a distant date, as 2 or 3 months, there will be a profit to allow for, or to deduct from the full amount, equal to the interest for the estimated time between the sale of the Bullion, and the day of the Bills becoming due; thus sometimes when the result would be, as above, a loss, the advantage that is made of the money during this time repays it and leaves a profit.



## EXERCISES

### ON ARBITRATED PARS OF EXCHANGE,

AND THE

### PROFIT AND LOSS ON BULLION OPERATIONS.

**Ex. 1.** From the following prices of Gold and Silver in London and Paris, it is required to find the net arbitrated Pars of Exchange, allowing all the extra charges to be  $\frac{1}{2}$  per Cent upon Gold, and  $\frac{5}{8}$  per Cent upon Silver; and the price of short Bills in return being Francs 25.10, it is required to find the Profit or Loss per Cent, allowing  $\frac{1}{10}$  per Cent for Brokerage, and  $\frac{1}{8}$  per Cent for loss of interest.

#### PRICES.

|            | LONDON.                             | PARIS.                              |
|------------|-------------------------------------|-------------------------------------|
| Bar Gold   | 77 s 10 $\frac{1}{2}$ d per Oz. St. | 8 $\frac{1}{2}$ per Mille pr.       |
| Bar Silver | 59 $\frac{7}{8}$ d per Oz. St.      | 5 per Mille pr.                     |
| Doubloons  | 75 s 6 d per Oz.                    | Fr. 83.20 each.                     |
| Dollars    | 57 $\frac{3}{4}$ d per Oz.          | 895 Fine—5 $\frac{1}{2}$ per M. pr. |

**Ex. 2.** From the following prices of Gold and Silver in London and Amsterdam, it is required to find the net arbitrated Pars of Exchange; and the Rate of Exchange for short Bills in return being Flor. 11.95, it is required to find the Profit or Loss per Cent, allowing the extra charges to be as before; viz.  $\frac{1}{2}$  per Cent upon Gold,  $\frac{5}{8}$  per Cent upon Silver, and  $\frac{1}{10}$  for Brokerage, and  $\frac{1}{8}$  per Cent for loss of interest upon the Bills.



## PRICES.

|            | LONDON.                | AMSTERDAM.               |
|------------|------------------------|--------------------------|
| Bar Gold   | 77 s 10½ d per Oz. St. | 14½ per Ct. prem.        |
| Bar Silver | 59¾ d per Oz. St.      | Fl. 104.10 per Pond.     |
| Doubloons  | 75 s 6 d per Oz.       | 865 Fine—14½ per Ct. pr. |
| Dollars    | 57¾ d per Oz.          | Flor. 2.55 each.         |

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Ex. 3. From the following prices of Gold and Silver at Hamburg, it is required to find the net arbitrated Par of Exchange, allowing for all extra charges  $\frac{1}{2}$  per Cent upon Gold, and  $\frac{5}{8}$  per Cent upon Silver; and the Rate of Exchange for Bills in return being Mks 13 8¾ Sc. it is required to find the Profit or Loss per Cent, allowing  $\frac{1}{10}$  per Cent for Brokerage and  $\frac{1}{8}$  per Cent for loss of interest.

## PRICES.

|            | LONDON.                | HAMBURG.                    |
|------------|------------------------|-----------------------------|
| Bar Gold   | 77 s 10½ d per Oz. St. | 103½ Sch. per Ducat.        |
| Bar Silver | 59¾ d per Oz. St.      | Mks 27 11¾ Sc. per Mk.      |
| Doubloons  | 75 s 6 d per Oz.       | 20 C. 9¼ Gr.—442 per f. Mk. |
| Dollars    | 57¾ d per Oz.          | 14 L. 5½ Gr.—27 12 per Mk.  |

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Ex. 4. From the following prices of Gold and Silver at Frankfort, it is required to find the net arbitrated Pars of Exchange, allowing for extra charges on Gold  $\frac{5}{8}$  per Cent, and on Silver  $\frac{3}{4}$  per Cent; and the Rate of Exchange for Bills in return being 148½ Batzen per £ Sterling, it is required to find the Profit or Loss per Cent, allowing  $\frac{1}{10}$  per Cent for Brokerage and  $\frac{3}{4}$  per Cent for loss of interest.

## PRICES.

|            | LONDON.                | FRANKFORT.                     |
|------------|------------------------|--------------------------------|
| Bar Gold   | 77 s 10½ d per Oz. St. | 325 Flor. W. Z. per Mk.        |
| Bar Silver | 59¾ d per Oz. St.      | Flor. 20 32½ K. W. Z. per Mk.  |
| Dollars    | 57¾ d per Oz.          | Flor. 2 31 K. in 24 G.F. each. |

Ex. 5. When in London Bar Gold is 77 s 10½ per Oz. Standard, and Bar Silver is 59⅞ d per Oz. Standard, and in Berlin Fine Gold is 217 $\frac{1}{10}$  Prussian Dollars per Mark, and fine Silver is Dollars 14 5 S. G. per Mark, it is required to find the arbitrated Pars of Exchange and the Profit or Loss per Cent, the Rate of Exchange for Bills in return being Dollars 6 21½ per £ Sterling, and 2 per Cent being allowed for Charges, Interest, &c.

6. When Bar Gold is 77 s 10½ d per Oz. Standard, and Bar Silver is 59⅞ d per Oz. Standard, in London, and the price of the Silver Ruble is 371 Copecs in St. Petersburg, it is required to find the arbitrated Pars of Exchange and the Profit or Loss per Cent, the Rate of Exchange for Bills in return being 11 $\frac{1}{16}$  Pence per Banco Ruble, and 2½ per Cent being allowed for Charges, Interest, &c.

7. When in London Bar Gold is 77 s 10½ d per Oz. Standard, and Bar Silver is 59⅞ d per Oz. Standard, and in Naples fine Gold is 89½ Grani per Dinaro, and Silver 5-6 ths fine is Ducats 14 10 Grani per Neapolitan Pound, it is required to find the arbitrated Pars of Exchange and the Profit or Loss per Cent, the Rate of Exchange for Bills in return being 570 Grani per £ Sterling, and 2½ per Cent being allowed for Charges, Interest, &c.

8. When Bar Gold in London is 77 s 10½ d per Oz. Standard, and Bar Silver is 59⅞ d per Oz., also when Bar Gold in Lisbon bears a premium of 28 per Cent, and Bar Silver a premium of 26 per Cent, the Agio on Paper being 22½ per Cent, it is required to find the arbitrated Pars of Exchange and the Profit or Loss per Cent, the Rate of Exchange for Bills in return being 49¾ Pence per Milreis, and 1¾ per Cent being allowed for Charges, Interest, &c.

PRODUCTS.

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| Ex. 1.          | Bar Gold            | Bar Silver           | Dobloons            | Dollars           |
|-----------------|---------------------|----------------------|---------------------|-------------------|
| Full Rate Frs.  | 25 35.9             | 25 36.6              | 25 39.0             | 25 45.2           |
| Net Rate —      | 25 23.3             | 25 20.9              | 25 26.4             | 25 29.4           |
| Difference      | 7.7                 | 5.3                  | 10.8                | 13.8              |
| Per Centage     | $\frac{3}{10}$ Pr   | $\frac{1}{5}$ Pr     | $\frac{2}{5}$ Pr    | $\frac{1}{2}$ Pr  |
| 2.              |                     |                      |                     |                   |
| Full Rate Flor. | 12 09.2             | 12 00.3              | 11 77.0             | 12 23.7           |
| Net Rate —      | 12 03.2             | 11 92.8              | 11 71.2             | 12 16.1           |
| Difference      | 5.5                 | 04.7                 | 26.3                | 18.4              |
| Per Centage     | $\frac{11}{24}$ Pr  | $\frac{3}{8}$ Loss   | $2\frac{1}{6}$ Loss | $1\frac{1}{2}$ Pr |
| 3.              |                     |                      |                     |                   |
| Full Rate Mks   | 13 13.49            | 13 10.89             | 13 7.69             | 13 11.47          |
| Net Rate —      | 13 12.38            | 13 9.54              | 13 6.61             | 13 10.12          |
| Difference      | 3.15                | 0.31                 | 2.62                | 0.89              |
| Per Centage     | $1\frac{3}{8}$ Pr   | $\frac{1}{7}$ Pr     | $1\frac{1}{4}$ Loss | $\frac{3}{8}$ Pr  |
| 4.              |                     |                      |                     |                   |
| Full Rate Batz. | 152.54              | 151.85               | —                   | 151.51            |
| Net Rate —      | 151.59              | 150.71               | —                   | 150.38            |
| Difference      | 1.81                | .93                  | —                   | .60               |
| Per Centage     | $1\frac{1}{2}$ Pr   | $\frac{5}{8}$ Pr     | —                   | $\frac{2}{3}$ Pr  |
| 5.              |                     |                      |                     |                   |
| Full Rate Doll. | 6 23.9              | 6 29.5               | —                   | —                 |
| Difference      | 1.3                 | 4.2                  | —                   | —                 |
| Per Centage     | $\frac{7}{10}$ Loss | $2\frac{1}{10}$ Pr   | —                   | —                 |
| 6.              |                     |                      |                     |                   |
| Net Rate Pence  | 10.613              | 10.095               | —                   | —                 |
| Difference      | .184                | .715                 | —                   | —                 |
| Per Centage     | $1\frac{7}{10}$ Pr  | $6\frac{9}{10}$ Pr   | —                   | —                 |
| 7.              |                     |                      |                     |                   |
| Full Rate Duc.  | 5 88.4              | 6 08.3               | —                   | —                 |
| Difference      | 3.7                 | 23.1                 | —                   | —                 |
| Per Centage     | $\frac{13}{20}$ Pr  | 4 Pr                 | —                   | —                 |
| 8.              |                     |                      |                     |                   |
| Net Rate Pence  | 49.79               | 51.39                | —                   | —                 |
| Difference      | .91                 | 2.54                 | —                   | —                 |
| Per Centage     | $1\frac{4}{5}$ Loss | $5\frac{1}{10}$ Loss | —                   | —                 |

## ARBITRATED COMPOUND

## PARS OF EXCHANGE.

Compound Bullion Operations are classed under two heads— Those between two places on account of a third place, as between Paris and Amsterdam on account of London; and those between a first place of operation and a second place, through the medium of a third place; as between London and Hamburg through Amsterdam.

The first class of operations requires the buying price at the place from which the Bullion is sent, and the selling price at the place to which it is sent, besides the Rate of Exchange at which it is drawn for from the first place; as for Gold sent from Hamburg to Petersburg, and either drawn for upon London from Hamburg, or what produces the same effect, remitted for from London to Hamburg, in which it is requisite to have the buying price at Hamburg, the selling price at St. Petersburg, and the Rate of Exchange between Hamburg and London. The Pars of Exchange produced by these operations, which are of very frequent occurrence, may for distinction sake be called *Cross Pars*, although the calculations are not precisely similar to those which are styled Cross Exchanges.

The second class of operations is limited to the export of Bullion from one place, to be coined at another place, and thence sent for sale to a third place.—In these operations there are required, the buying price at the first place, as London; the mintage returns at the second place, as Amsterdam, or rather Utrecht; and the selling price at the third place, as Hamburg. To distinguish the Pars produced by these transactions we may term them *Compound Pars*.

For our elucidation of these Calculations we have taken only Bar Gold and Ducats into consideration ; and the places concerned in the Operations we have limited to London, as the place on account of which the Operations are made, and Paris, Amsterdam, Hamburg, Frankfort, and Petersburg, as the places through or by which they are made.

Thus for Cross Pars we have taken,

- 1 London and Amsterdam through Paris in Bar Gold
- 2 London and Hamburg through Amsterdam in Ducats
- 3 London and Petersburg through Hamburg in Bar Gold
- 4 London and Petersburg through Hamburg in Ducats

For Compound Pars we have taken,

- 5 London and Paris through Amsterdam in Ducats
- 6 London and Hamburg Ditto Ditto
- 7 London and Frankfort Ditto Ditto
- 8 London and Petersburg Ditto Ditto

Any explanation that may be required of the rates employed in the following Formulæ, may be found in the introduction to each of the places concerned in the preceding Class of Calculations for finding Simple Arbitrated Pars, as in Page 171, 178, &c., except in the third of these Operations, upon which we may observe, that the relation of the Hamburg and Petersburg Weights is usually reckoned  $54\frac{6}{7}$  Solotnicks to 1 Cologne Mark, but it is more exactly as we have rated it, viz. 54.82 Solotnicks to the Hamburg Standard or Banco Mark.

The charges attending these operations are very uncertain ; we have endeavoured to show some of the most usual estimates in the Exercises following these Formulæ.

---



FORMULÆ FOR ARBITRATED CROSS PARS OF EX-  
CHANGE FROM PRICES OF GOLD.

LONDON and AMSTERDAM  
through PARIS.

BAR GOLD.

Paris —  $5\frac{2}{3}$  per M. pr.  
Amsterdam —  $14\frac{1}{2}$  per Ct. pr.

Exchange at Paris 25 30

|  |         |                  |                     |       |         |
|--|---------|------------------|---------------------|-------|---------|
|  |         | 1                | £ ?                 |       |         |
|  | 1       | —                | * 25.30             | Fran. |         |
|  | 100     | $5\frac{2}{3}$ * | —                   | 1000  | with p. |
|  | 3434.44 | —                |                     | 1     | K. fine |
|  | 1       | —                | 1442.60             | Flor. |         |
|  | 100     | —                | * 114 $\frac{1}{2}$ | Flor. |         |

Fixed Number 420039

Result, 12.07.7 Flor.

LONDON and HAMBURG  
through AMSTERDAM.

DUCATS.

Amsterdam — 5.72 Flor.  
Hamburg —  $105\frac{1}{2}$  Schill.

Exchange at Amsterdam 12.10

|  |      |   |                     |          |        |
|--|------|---|---------------------|----------|--------|
|  |      | 1 | £ ?                 |          |        |
|  | 1    | — | * 12.10             | Florins. |        |
|  | 5.72 | * | —                   | 1        | Ducat. |
|  | 1    | — | * 105 $\frac{1}{2}$ | Sc. Bco. |        |
|  | 16   | — |                     | 1        | Mark.  |

Fixed Number  $\frac{1}{16}$

Result, Mks 13 15.16 Sc.

LONDON and PETERSBURG  
through HAMBURG.

BAR GOLD.

Hamburg — 438 Bco Mks.  
Petersburg — 370 Cop.

Exch. at Hamburg 13 10 $\frac{1}{2}$

|  |                     |   |            |          |              |
|--|---------------------|---|------------|----------|--------------|
|  |                     | 1 | Pap. Rub.? |          |              |
|  | 370                 | * | —          | 100      | Silver.      |
|  | 355                 | — |            | 100      | Solot. fine. |
|  | 54.82               | — |            | 1        | Col. Mk.     |
|  | 1                   | — | * 438      | Bco Mks. |              |
|  | 1                   | — |            | 16       | Schillings.  |
|  | 218 $\frac{1}{2}$ * | — |            | 240      | Pence.       |

Fixed Number 197317

Result, 10.69 Pence.

LONDON and HAMBURG  
through AMSTERDAM.

DUCATS.

Amsterdam — 5.72 Flor.  
Hamburg —  $105\frac{1}{2}$  Schill.

Exchange at Amsterdam 12.10

|  |      |   |                     |          |        |
|--|------|---|---------------------|----------|--------|
|  |      | 1 | £ ?                 |          |        |
|  | 1    | — | * 12.10             | Florins. |        |
|  | 5.72 | * | —                   | 1        | Ducat. |
|  | 1    | — | * 105 $\frac{1}{2}$ | Sc. Bco. |        |
|  | 16   | — |                     | 1        | Mark.  |

Fixed Number  $\frac{1}{16}$

Result, Mks 13 15.16 Sc.

LONDON and PETERSBURG  
through FRANKFORT.

DUCATS.

Frankfort —  $5\ 38\frac{1}{2}$  F. & K.  
Petersburg — 11 45 Rub.

Exchange at Frankfort 151

|  |         |   |                      |             |         |
|--|---------|---|----------------------|-------------|---------|
|  |         | 1 | Pap. Rub.?           |             |         |
|  | 11.45   | * | —                    | 1           | Ducat.  |
|  | 1       | — | * 5 38 $\frac{1}{2}$ | Fl. 24 G.F. |         |
|  | 55      | — |                      | 46          | W. Z.   |
|  | Flor. 1 | — |                      | 15          | Batzen. |
|  | 151     | * | —                    | 240         | Pence.  |

Fixed Number 301091

Result, 9.82 Pence.

FORMULÆ FOR ARBITRATED COMPOUND RATES,  
FROM BAR GOLD BOUGHT IN LONDON AND  
COINED INTO DUCATS AT UTRECHT.

LONDON and PARIS through  
AMSTERDAM.

|                   |   |           |          |
|-------------------|---|-----------|----------|
| London            | — | 77 s 6 d  | per Oz.  |
| Paris             | — | Fr. 11 95 | each.    |
|                   |   | 20        | Shill. ? |
| $77\frac{1}{2}^*$ | — | 1         | Oz. St.  |
| 12                | — | 11        | Fine.    |
| 1                 | — | 31.1002   | Wigties  |
| 1000              | — | 1442.60   | Florins. |
| 5                 | — | 1         | Ducat.   |
| 1                 | — | * 11.95   | Francs.  |

Fixed Number 164505

Result, 25.36 Francs.

LONDON and FRANKFORT  
through AMSTERDAM.

|                   |   |                          |             |
|-------------------|---|--------------------------|-------------|
| London            | — | 77 s 6 d                 | per Oz.     |
| Frankfort         | — | Flor. 5 38 $\frac{1}{2}$ | Kr.         |
|                   |   | 20                       | Shill. ?    |
| $77\frac{1}{2}^*$ | — | 1                        | Oz. St.     |
| 12                | — | 11                       | Fine.       |
| 1                 | — | 31.1002                  | Wigties.    |
| 1000              | — | 1442.60                  | Florins.    |
| 5                 | — | 1                        | Ducat.      |
| 1                 | — | * 5 38 $\frac{1}{2}$     | F. 21 G. F. |
| 55                | — | 46                       | W. Z.       |
| Fl. 1             | — | 15                       | Batzen.     |

Fixed Number 206379

Result, 150.23 Batzen.

LONDON and HAMBURG  
through AMSTERDAM.

|                   |   |                     |          |
|-------------------|---|---------------------|----------|
| London            | — | 77 s 6 d            | per Oz.  |
| Hamburg           | — | 105 $\frac{1}{2}$   | Sch.     |
|                   |   | 20                  | Shill. ? |
| $77\frac{1}{2}^*$ | — | 1                   | Oz. St.  |
| 12                | — | 11                  | Fine.    |
| 1                 | — | 31.1002             | Wigties. |
| 1000              | — | 1442.60             | Florins. |
| 5                 | — | 1                   | Ducat.   |
| 1                 | — | * 105 $\frac{1}{2}$ | Sch. B.  |
| 16                | — | 1                   | Mark.    |

Fixed Number 102816

Result, Mks 13 15.93 Sc.

LONDON and PETERSBURG  
through AMSTERDAM.

|            |   |            |            |
|------------|---|------------|------------|
| London     | — | 77 s 6 d   | per Oz.    |
| Petersburg | — | Rub. 11.45 | each.      |
|            |   | 1          | Pap. Rub ? |
| 11.45 $^*$ | — | 1          | Ducat.     |
| 1          | — | 5          | Flor.      |
| 1442.60    | — | 1000       | Wigties.   |
| 31.1002    | — | 1          | Oz. Troy.  |
| 11         | — | 12         | Stand.     |
| 1          | — | * 930      | Pence.     |

Fixed Number 121576

Result, 9.87 Pence.

**EXERCISES ON CROSS AND COMPOUND PARS OF EXCHANGE.**

---

What will be the net arbitrated Pars of Exchange,

**Ex. 1.** Between London and Amsterdam, from Bar Gold bought in Paris at 6 per Mille, and sold in Amsterdam at  $14\frac{1}{2}$  per Cent; the exchange being 25.20, and the charges 1 per Cent ?

**Ex. 2.** Between London and Hamburg, from Ducats bought in Amsterdam at  $5.62\frac{1}{2}$ , and sold in Hamburg at  $105\frac{3}{4}$ ; the exchange being 12.05, and the charges  $\frac{7}{8}$  per Cent ?

**Ex. 3.** Between London and St. Petersburg, from Bar Gold bought in Hamburg at  $102\frac{3}{4}$ , and sold in St. Petersburg at  $371\frac{1}{2}$ ; the exchange being  $13\ 11\frac{1}{4}$ , and the charges  $1\frac{1}{4}$  per Cent ?

**Ex. 4.** Between London and St. Petersburg, from Ducats bought in Frankfort at  $5\ 35$ , and sold in St. Petersburg at  $11\ 65$ ; the exchange being  $151\frac{1}{4}$ , and the charges  $1\frac{3}{8}$  per Cent ?

What net compound Pars of Exchange are produced from Bar Gold bought in London at 77 s 9 d per Oz. St. and sent to Utrecht to be coined into Ducats, which have afterwards been transmitted to the following places, and sold at the following prices; the charges for purchase and transport to Rotterdam being computed at  $\frac{5}{10}$  per Cent, and for Coinage and Commission, &c.  $\frac{1}{3}$  per Cent; the charges for transport thence and sale being as follows;

|               |                 |               |                     |         |                          |
|---------------|-----------------|---------------|---------------------|---------|--------------------------|
| <b>Ex. 5.</b> | Paris           | selling Price | 11 87 $\frac{1}{2}$ | Charges | $\frac{3}{8}$ per Cent ? |
|               | 6. Hamburg      | —             | 105 $\frac{3}{4}$   | —       | $\frac{3}{8}$ —          |
|               | 7. Frankfort    | —             | 5 42 $\frac{1}{2}$  | —       | $\frac{1}{2}$ —          |
|               | 8. St. Petersb. | —             | 11 55               | —       | $\frac{7}{8}$ —          |

**PRODUCTS.**

|        |          |        |      |    |       |        |      |    |
|--------|----------|--------|------|----|-------|--------|------|----|
| Ex. 1. | Flor.    | 12     | 04   | C  | Flor. | 11     | 92   | C  |
|        | 2. Mks   | 14     | 2.5  | Sc | Mks   | 14     | 0.5  | Sc |
|        | 3. Pence | 10.64  |      |    | Pence | 10.77  |      |    |
|        | 4. —     | 9.54   |      |    | —     | 9.67   |      |    |
|        | 5. Fr.   | 25     | 12   | C  | Fr    | 24     | 87   |    |
|        | 6. Mks   | 13     | 15.7 |    | Mks   | 13     | 13.4 |    |
|        | 7. Batz. | 151.52 |      |    | Batz. | 149.79 |      |    |
|        | 8. Pence | 9.82   |      |    | Pence | 9.97   |      |    |



# ARBITRATED PRICES

OF

## BULLION.

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An arbitrated price of Bullion is the rate or price of Gold or Silver in one country, as deduced from the price in another country.

The requisite data for calculations of arbitrated prices, are the same as for arbitrated Pars of Exchange, with the exception of substituting the Rate of Exchange instead of that price which is in the money of the country making the operation for arbitrated prices; there are therefore required, the price abroad, the Rate of Exchange at which either the cost is drawn for, or the proceeds of the sales are remitted for, with the relations between the weights and the degrees of fineness at which the prices are reckoned.

For these latter particulars, reference may be made to the explanations given, as introductions, to the places which have been selected as being the chief of those concerned in Bullion operations; and for estimating the per Centages of the differences in the prices, we may either take 1-100 th part of the given price for 1 per Cent; or taking Bar Gold at 80 s and Bar Silver at 60 d per Oz. Standard, it may be reckoned that the variation of 6 d per Oz. in Gold makes a difference of 5-8 ths per Cent; and 3 d per Oz. in Silver, a difference of 5 per Cent.

Taking also the same estimated values as being sufficiently accurate for the purpose of allowing for the charges, we may call for,

|               |           | Bar Gold. |        | Bar Silver. |          |
|---------------|-----------|-----------|--------|-------------|----------|
|               |           | Shill.    | Pence. | Pence.      | Eighths. |
| $\frac{1}{8}$ | per Cent. | 0.1       | or 1.2 | 0.075       | or 0.6   |
| $\frac{1}{4}$ | —         | 0.2       | - 2.4  | 0.150       | - 1.2    |
| $\frac{3}{8}$ | —         | 0.3       | - 3.6  | 0.225       | - 1.8    |
| $\frac{1}{2}$ | —         | 0.4       | - 4.8  | 0.300       | - 2.4    |
| $\frac{5}{8}$ | —         | 0.5       | - 6.0  | 0.375       | - 3.0    |
| $\frac{3}{4}$ | —         | 0.6       | - 7.2  | 0.450       | - 3.6    |
| $\frac{7}{8}$ | —         | 0.7       | - 8.4  | 0.525       | - 4.2    |
| 1             | —         | 0.8       | - 9.6  | 0.600       | - 4.8    |

## ARBITRATED PRICES.

## PARIS AND LONDON.

| BAR GOLD.                 |   |                 |             | BAR SILVER.               |   |                |           |
|---------------------------|---|-----------------|-------------|---------------------------|---|----------------|-----------|
| Premium per Mille         |   | 4½              |             | Premium per Mille         |   | 4              |           |
| Rate of Exchange          |   | 25.20           |             | Rate of Exchange          |   | 25.20          |           |
|                           | 1 | Oz. St. ?       |             |                           | 1 | Oz. St. ?      |           |
| 1                         | — | 31.1002         | Gram.       | 1                         | — | 31.1002        | Gram.     |
| 1000                      | — | 3148.24         | Francs.     | 1000                      | — | 202.47         | Francs.   |
| 1000                      | — | * 1004½         | Pr. incl.   | 1000                      | — | * 1004         | Pr. incl. |
| 25.20*                    | — | 20              | Shillings.  | 25.20*                    | — | 240            | Pence.    |
| 25.20                     | ) | 195822          | Fixed No.   | 25.20                     | ) | 151124         | Fixed N.  |
|                           |   | <u>77707</u>    |             |                           |   | <u>5997</u>    |           |
|                           |   | 310             | 4 per Mille |                           |   | 24             | 4 per M.  |
|                           |   | 39              | ½           |                           |   | <u>d 60.21</u> |           |
|                           |   | <u>s 78.056</u> |             |                           |   |                |           |
|                           |   | d 0.672         | = ⅝         |                           |   |                |           |
| Result, s 78 0⅝ d per Oz. |   |                 |             | Result, 60⅓ Pence per Oz. |   |                |           |

## Fixed Numbers for Rates of Exchange.

| Rates.                | Bar Gold.   | Bar Silver. |
|-----------------------|-------------|-------------|
| Fr. 25 00 Cents . . . | 78329 . . . | 60450       |
| 05 . . .              | - 172 . . . | - 329       |
| 10 . . .              | - 017 . . . | - 209       |
| 15 . . .              | 77862 . . . | - 089       |
| 20 . . .              | - 707 . . . | 59970       |
| 25 . . .              | - 553 . . . | - 851       |
| 30 . . .              | - 400 . . . | - 733       |
| 35 . . .              | - 247 . . . | - 616       |
| 40 . . .              | - 095 . . . | - 498       |
| 45 . . .              | 76944 . . . | - 381       |
| 50 . . .              | - 793 . . . | - 265       |
| 55 . . .              | - 643 . . . | - 149       |
| 60 . . .              | - 493 . . . | - 033       |

## ARBITRATED PRICES.

## AMSTERDAM AND LONDON.

| BAR GOLD.                               |                  |  | BAR SILVER.                            |                              |  |
|-----------------------------------------|------------------|--|----------------------------------------|------------------------------|--|
| Premium per Ct.                         | 14               |  | Price per Pond.                        | 103 $\frac{3}{4}$            |  |
| Rate of Exchange                        | 12.10            |  | Rate of Exchange                       | 12.10                        |  |
|                                         | 1 Oz. St. ?      |  |                                        | 1 Oz. St. ?                  |  |
| 12 —                                    | 11 Fine.         |  | 40 —                                   | 37 Fine.                     |  |
| 1 —                                     | 31.1002 Wigties. |  | 1 —                                    | 31.1002 Wigties.             |  |
| 1000 —                                  | 1442.60 Florins. |  | 1000 —                                 | * 103 $\frac{3}{4}$ Florins. |  |
| 100 —                                   | * 114 Pr. incl.  |  | 12.10* —                               | 2.10 Pence.                  |  |
| 12.10* —                                | 20 Shillings.    |  |                                        |                              |  |
| 12.10 )                                 | 822527 Fixed No. |  | 12.10 )                                | 690424 Fixed No.             |  |
|                                         | <u>67977</u>     |  |                                        | <u>5706</u>                  |  |
|                                         | 6797 10 per Ct.  |  |                                        | 171 for 3 Flor.              |  |
|                                         | 2719 4 —         |  |                                        | 43 - $\frac{3}{4}$ -         |  |
|                                         | <u>s 77.493</u>  |  |                                        | <u>d 59.20</u>               |  |
|                                         | d 5.916          |  |                                        |                              |  |
| Result, s 77 5 $\frac{9}{16}$ d per Oz. |                  |  | Result, 59 $\frac{1}{2}$ Pence per Oz. |                              |  |

## Fixed Numbers for Rates of Exchange.

| Rates.                  | Bar Gold.   | Bar Silver. |
|-------------------------|-------------|-------------|
| Flor. 11 80 Cents . . . | 69706 . . . | 58511       |
| 85 . . .                | - 412 . . . | - 264       |
| 90 . . .                | - 120 . . . | - 019       |
| 95 . . .                | 68831 . . . | 57776       |
| 12 00 . . .             | - 544 . . . | - 535       |
| 05 . . .                | - 260 . . . | - 297       |
| 10 . . .                | 67978 . . . | - 060       |
| 15 . . .                | - 698 . . . | 56825       |
| 20 . . .                | - 420 . . . | - 592       |
| 25 . . .                | - 145 . . . | - 361       |

## ARBITRATED PRICES.

## LONDON AND HAMBURG.

| BAR GOLD.                |                   | BAR SILVER.                            |                   |
|--------------------------|-------------------|----------------------------------------|-------------------|
| Price per Fine Mark      | 438               | Price per Mark                         | 27 11             |
| Rate of Exchange         | 13 10½            | Rate of Exchange                       | 13 10½            |
|                          | 1 Oz. St. ?       |                                        | 1 Oz. St.         |
| 82 —                     | 10 C.Mk Fine      | 65 $\frac{1}{11}$ —                    | 8 Marks F.        |
| 1 —                      | * 438 Bco Mks     | 1 —                                    | * 27 11 M. & Sc.  |
| 13 10½ —                 | 20 Shillings      | 13 10½ *                               | 240 Pence.        |
| 13 $\frac{21}{2}$ )      | 2.43902 Fixed No. | 13 $\frac{21}{2}$ )                    | 295343 Fixed No.  |
|                          | 0.17860           | $\frac{1}{2}$ -                        | 21627             |
|                          | 440               |                                        | 27                |
|                          | <u>7.144</u>      |                                        | 583929 for 27 Mks |
|                          | 71.44             | $\frac{1}{4}$ -                        | 10813 - 8 Sc.     |
|                          | <u>s 78.584</u>   | $\frac{1}{2}$ -                        | 2703 - 2 -        |
|                          | d 7.008           |                                        | 1351 - 1 -        |
|                          |                   |                                        | <u>d 59.8796</u>  |
| Result, 78 s 7 d per Oz. |                   | Result, 59 $\frac{7}{8}$ Pence per Oz. |                   |

## Fixed Numbers for Rates of Exchange.

| Rates.           | Bar Gold. | Bar Silver. |
|------------------|-----------|-------------|
| Mks 13 6 Sc. . . | 18236 . . | 22082       |
| - 7 . . .        | 151 . .   | 21979       |
| - 8 . . .        | 067 . .   | 877         |
| - 9 . . .        | 17983 . . | 776         |
| - 10 . . .       | 901 . .   | 676         |
| - 11 . . .       | 819 . .   | 578         |
| - 12 . . .       | 738 . .   | 480         |

## ARBITRATED PRICES.

## FRANKFORT AND LONDON.

| BAR GOLD.                  |     |                 |            | BAR SILVER.               |     |                 |            |
|----------------------------|-----|-----------------|------------|---------------------------|-----|-----------------|------------|
| Price per Mark             | 320 |                 |            | Price per Mark            | 20  | 25              |            |
| Rate of Exchange           | 150 |                 |            | Rate of Exchange          | 150 |                 |            |
|                            |     | 1               | Oz. St. ?  |                           |     | 1               | Oz. St. ?  |
| 12                         | —   | 11              | Fine.      | 40                        | —   | 37              | Fine.      |
| 1200                       | —   | 159½            | Marks.     | 1200                      | —   | 159½            | Marks.     |
| 1                          | —   | * 320           | Florins.   | 1                         | —   | * 20 25         | Flo. & Kr. |
| 1                          | —   | 15              | Batzen.    | 1                         | —   | 15              | Batzen.    |
| 150 *                      | —   | 20              | Shillings. | 150 *                     | —   | 240             | Pence.     |
| 150                        | )   | 365520          | Fixed No.  | 150                       | )   | 442613          | Fixed No.  |
|                            |     | <u>24368</u>    |            |                           |     | <u>29508</u>    |            |
|                            |     | 320             |            |                           |     | 59016           | for 20 Fl. |
|                            |     | <u>s 77.978</u> |            |                           |     | ¼ - 984         | - 20 Kr.   |
|                            |     | d 11.736        |            |                           |     | 246             | - 5 —      |
|                            |     |                 |            |                           |     | <u>d 60.246</u> |            |
| Result, s 77 11¾ d per Oz. |     |                 |            | Result, 60¼ Pence per Oz. |     |                 |            |

## Fixed Numbers for Rates of Exchange.

|        | Rates. |   | Bar Gold. |   | Bar Silver. |
|--------|--------|---|-----------|---|-------------|
| Batzen | 148    | . | 24697     | . | 29906       |
|        | 8½     | . | 614       | . | 806         |
|        | 9      | . | 532       | . | 706         |
|        | 9½     | . | 450       | . | 607         |
|        | 150    | . | 368       | . | 508         |
|        | 0½     | . | 287       | . | 410         |
|        | 1      | . | 207       | . | 312         |
|        | 1½     | . | 127       | . | 215         |
|        | 2      | . | 047       | . | 119         |
|        | 2½     | . | 23969     | . | 024         |

## ARBITRATED PRICES.

## BAR GOLD.

| BERLIN.                          |   |                     |          | NAPLES.                     |   |      |            |
|----------------------------------|---|---------------------|----------|-----------------------------|---|------|------------|
| Per Mark P. D. 218 $\frac{3}{4}$ |   |                     |          | Per Denaro                  |   |      |            |
| Exchange 6 27                    |   |                     |          | Exchange                    |   |      |            |
|                                  |   | 1                   | Oz. St ? |                             |   | 1    | Oz. St ?   |
| 12                               | — | 11                  | Fine.    | 937 $\frac{1}{2}$           | — | 1000 | Oz. N. St. |
| 1                                | — | 480                 | Grains.  | 1                           | — | 24   | Denari.    |
| 3608 $\frac{3}{4}$               | — | 1                   | Pr. Mk.  | 1                           | — | * 91 | Grani.     |
| 1                                | — | * 218 $\frac{3}{4}$ | Doll.    | 100                         | — | 1    | Ducat.     |
| 6.27 *                           | — | 20                  | Shill.   | 5.95 *                      | — | 20   | Shill.     |
| Fixed No. 243851                 |   |                     |          | Fixed No. 512.              |   |      |            |
| Result, s 77 3.69 d per Oz.      |   |                     |          | Result, s 78 3.66 d per Oz. |   |      |            |

| PETERSBURG.                        |   |                     |           | LISBON.                     |   |        |           |
|------------------------------------|---|---------------------|-----------|-----------------------------|---|--------|-----------|
| Per Silver Ruble 372 $\frac{1}{2}$ |   |                     |           | Premium 24 per Cent.        |   |        |           |
| Exchange 10 $\frac{3}{4}$          |   |                     |           | Agio 22 per Cent.           |   |        |           |
|                                    |   | 1                   | Oz. St ?  | Exchange 50                 |   |        |           |
| 12                                 | — | 11                  | Fine.     |                             |   | 1      | Oz. St ?  |
| 1                                  | — | 480                 | Grains.   | 1                           | — | 480    | Grains.   |
| 6318 $\frac{1}{2}$                 | — | 96                  | Solotn.   | 3541 $\frac{1}{2}$          | — | 1      | Mark.     |
| 100                                | — | 355                 | S. Ruble. | 1                           | — | 96.000 | Reis.     |
| 100                                | — | * 372 $\frac{1}{2}$ | P. Ruble. | 100                         | — | * 124  | Pr. incl. |
| 1                                  | — | * 10 $\frac{3}{4}$  | Pence.    | 89 *                        | — | 100    | Legal.    |
| 12                                 | — | 1                   | Shill.    | 1000                        | — | * 50   | Pence.    |
|                                    |   |                     |           | 12                          | — | 1      | Shill.    |
| Fixed No. 197768                   |   |                     |           | Fixed No. 108428            |   |        |           |
| Result, s 79 2.32 d per Oz.        |   |                     |           | Result, s 75 6.41 d per Oz. |   |        |           |

## ARBITRATED PRICES.

## BAR SILVER.

## BERLIN.

Per Mark P. D.  $14\frac{3}{10}$   
Exchange 6 27

1 Oz. St. ?  
40 — 37 Fine.  
1 — 480 Grains.  
 $3608\frac{3}{4}$  — 1 P. Mk.  
1 — \*14.3 Dollars.  
6 27\* — 240 Pence.

Fixed No. 295282

Result, 61.19 d per Oz.

## NAPLES.

Per Pound Duc. 13.87  
Exchange 5.95

1 Oz. St. ?  
40 — 37 Fine.  
10 — 12 N. Stand.  
1 — 480 Grains.  
4950 — 1 N. Pound.  
1 — \*13.87 Ducats.  
 $5.95^*$  — 240 Pence.

Fixed No. 258327

Result, 60.218 d per Oz.

## PETERSBURG.

Per Silver Ruble  $372\frac{1}{2}$   
Exchange  $10\frac{3}{4}$

1 Oz. St. ?  
40 — 37 Fine.  
1 — 480 Grains.  
 $6318\frac{1}{2}$  — 1 Pound.  
1 —  $22\frac{3}{4}$  S. R.  
100 — \*  $372\frac{1}{2}$  P. R.  
1 — \*  $10\frac{3}{4}$  Pence.

Fixed No. 159864

Result, 64.01 d per Oz.

## LISBON.

Premium 20 per Cent.  
Agio 22 per Cent.  
Exchange 50

1 Oz. St. ?  
40 — 37 Fine.  
11 — 12 Port. St.  
1 — 480 Grains.  
 $3541\frac{1}{2}$  — 1 Mark.  
1 — 6000 Reis.  
100 — \* 120 Pr. incl.  
 $89^*$  — 100 Legal.  
1000 — \* 50 Pence.

Fixed No. 820607

Result, 55.32 d per Oz.

**THE APPLICATION OF THE FORMULÆ AND TABLES  
FOR ARBITRATED PRICES PER OZ.**

**EXAMPLE 1.**

It is required to find the arbitrated Price per Oz. Standard of Bar Gold, when the Price in Amsterdam is  $13\frac{3}{4}$  Premium, and the Rate of Exchange is 11 95; and also to find the net rate for export to Amsterdam, and the full rate for import to London, admitting the charges either way to be  $\frac{5}{8}$  per Cent.

|                                |       |          |
|--------------------------------|-------|----------|
| Fixed Number for 11.95         | . . . | 68.831   |
| 10 per Cent                    | . . . | 6.883    |
| 3 —                            | . . . | 2.065    |
| $\frac{3}{4}$ —                | . . . | .516     |
| <hr/>                          |       |          |
| s 78 3 $\frac{1}{2}$ d =       | . . . | 78.295   |
| Charges $\frac{5}{8}$ per Cent | . . . | .489     |
| <hr/>                          |       |          |
| s 77 9 $\frac{5}{8}$ d =       | . . . | s 77.806 |
| <hr/>                          |       |          |
| s 78 9 $\frac{3}{8}$ d =       | . . . | s 78.784 |
| <hr/>                          |       |          |

To the fixed number taken from page 211 for the Rate of Exchange, are added the proportional parts for the Premium, and the amount forms the arbitrated price in Shillings, without regarding the charges, which are subtracted for export and added for import.

After reducing the decimals .295 .806 and .784 into pence, we find that, with the given rates in Amsterdam, the arbitrated rate without charges is 78 s 3 $\frac{1}{2}$  d, and that Gold must not cost more in London than 77 s 9 $\frac{5}{8}$  d per Oz. Standard, to admit of its export without loss, or it must sell in London for not less than 78 s 9 $\frac{3}{8}$  d per Oz. Standard, to admit of its being imported so as to defray the expenses.



## EXAMPLE 2.

When the price of Bar Silver in Hamburg is  $27\ 11\frac{1}{2}$ , and the Exchange on London is  $13\ 8\frac{3}{4}$ , it is required to find the arbitrated price per Oz. Standard ; and the charges being estimated at  $\frac{3}{4}$  per Cent, and the price of Bar Silver in London being  $59\frac{1}{2}$  d, it is required to find the Profit or Loss per Cent for exportations from London to Hamburg ?

|                                                   |               |
|---------------------------------------------------|---------------|
| The fixed Number for 13 Mks $8\frac{3}{4}$ Sc. is | 21801         |
|                                                   | 27            |
|                                                   | 58863         |
| for 8 Sch. . . . .                                | 1090          |
| 2 . . . . .                                       | 272           |
| 1 . . . . .                                       | 136           |
| $\frac{1}{2}$ . . . . .                           | 68            |
|                                                   | 60.429 Pence. |
| $\frac{3}{4}$ per Cent . . . . .                  | .453          |
|                                                   | 59.976        |
| Given Price . . . . .                             | 59.5          |
|                                                   | 0.476         |
| Profit = $\frac{3}{4}$ per Cent. . . . .          | 0.476         |

The fixed number for  $13\ 8\frac{3}{4}$ , which is found from the two fixed numbers in page 212, for 13 8 and 13 9, is multiplied by the number of the Marks, and parts are taken for the  $11\frac{1}{2}$  Sch. out of the rate for 1 Mark.

The export charges  $\frac{3}{4}$  per Cent are subtracted from the full rate, and upon comparing the remainder, or net rate, with the given price, there appears to be a profit of  $\frac{3}{4}$  per Cent upon this price.

## EXERCISES.

Ex. 1. When Bar Gold in Paris is  $9\frac{1}{2}$  Premium, and Bar Silver  $5\frac{1}{2}$  Premium, and the Rate of Exchange is 25.20, what are the net arbitrated prices per Oz. Standard, allowing for export Charges, Interest, &c. on Gold  $\frac{1}{2}$  per Cent, and on Silver  $\frac{5}{8}$  per Cent. ; and what is the Profit or Loss per Cent. on each, when the prices in London are 77 9 and  $59\frac{3}{4}$  ?

2. When Bar Gold in Amsterdam is  $14\frac{3}{4}$  Premium, and Bar Silver  $105\frac{1}{4}$ , and the Rate of Exchange is 11.95, what are the arbitrated prices per Oz. Standard, allowing for export Charges, &c. on Gold  $\frac{1}{2}$  per Cent., and on Silver  $\frac{5}{8}$  per Cent. ; and what is the Profit or Loss per Cent. on each, when the prices in London are 77 9 and  $59\frac{7}{8}$  ?

3. When Bar Gold in Hamburg is  $438\frac{1}{2}$ , and Bar Silver is 27  $10\frac{3}{4}$ , and the Rate of Exchange is 13  $10\frac{3}{4}$ , what are the arbitrated prices per Oz. Standard, allowing for export Charges, &c. on Gold  $\frac{1}{2}$  per Cent, and on Silver  $\frac{5}{8}$  per Cent. ; and what is the Profit or Loss per Cent on each, when the prices in London are 77 6 and  $59\frac{1}{2}$  ?

4. When Bar Silver in Frankfort is 20 30, and the Rate of Exchange on London is  $149\frac{1}{4}$ , what is the arbitrated price per Oz. Standard, for both exports and imports, allowing for Charges, &c.  $\frac{7}{8}$  per Cent ?

5. When Bar Gold in Berlin is  $219\frac{9}{10}$ , and the Rate of Exchange on London is 6 26, what is the arbitrated price per Oz. Standard, allowing for export Charges, &c. 1 per Cent. ; and what is the Profit or Loss per Cent., when the price in London is 77 9 ?

6. When the Silver Ruble in Petersburg is  $371\frac{1}{2}$ , and the Rate of Exchange on London is  $10\frac{3}{4}$ , what is the arbitrated price of Gold per Oz. Standard, allowing for export Charges, &c.  $1\frac{1}{4}$  per Cent. ; and what is the Profit or Loss per Cent., when the price in London is 77 9 ?

PRODUCTS.

---

Ex. 1.

|        |            |             |           |                       |
|--------|------------|-------------|-----------|-----------------------|
| Gold   | Full Price | 78 s 5.32 d | Net Price | 78 s 0.52 d           |
|        | Difference | 0 . 302 s   | Profit    | $\frac{3}{8}$ per Ct. |
| Silver | Full Price | 60 . 283 d  | Net Price | 59 . 907 d            |
|        | Difference | 0 . 157 d   | Profit    | $\frac{1}{4}$ per Ct. |

---

Ex. 2

|        |            |              |           |                         |
|--------|------------|--------------|-----------|-------------------------|
| Gold   | Full Price | 78 s 11.78 d | Net Price | 78 s 7.06 d             |
|        | Difference | 0 . 839 s    | Profit    | $1\frac{1}{12}$ per Ct. |
| Silver | Full Price | 60 . 809 d   | Net Price | 60 . 429 d              |
|        | Difference | 0 . 554 d    | Profit    | $\frac{1}{6}$ per Ct.   |

---

Ex 3.

|        |            |             |           |                        |
|--------|------------|-------------|-----------|------------------------|
| Gold   | Full Price | 78 s 4.86 d | Net Price | 78 s 0.16 d            |
|        | Difference | 0 . 513 s   | Profit    | $\frac{5}{8}$ per Ct.  |
| Silver | Full Price | 59 . 777 d  | Net Price | 59 . 404 d             |
|        | Difference | 0 . 096 d   | Loss      | $\frac{1}{16}$ per Ct. |

---

Ex. 4.

|        |            |              |              |            |
|--------|------------|--------------|--------------|------------|
| Silver | Full Price | 60 . 795 d   | Export Price | 60 . 263 d |
|        |            | Import Price |              | 61 . 327 d |

---

Ex. 5.

|      |            |             |           |                        |
|------|------------|-------------|-----------|------------------------|
| Gold | Full Price | 78 s 1.09 d | Net Price | 77 s 3.72 d            |
|      | Difference | 0 . 440 s   | Loss      | $\frac{1}{32}$ per Ct. |

---

Ex. 6.

|      |            |              |           |                        |
|------|------------|--------------|-----------|------------------------|
| Gold | Full Price | 78 s 11.77 d | Net Price | 77 s 11.94 d           |
|      | Difference | 0 . 243 s    | Profit    | $\frac{5}{16}$ per Ct. |

## APPENDIX.

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### ARBITRATIONS OF MERCHANDISE.

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The calculations of the Arbitrations of Merchandise are most usually made for the purpose of finding the arbitrated Price, but sometimes also for finding the arbitrated Rate of Exchange, produced from goods bought in one country and sold in another.—Similar data are required for these calculations as for those of the Arbitrations of Bullion; but as the charges are of much greater amount, and frequently depend more upon the quantity than upon the value of the Goods, they often require different adjustments, which can only be conveniently done in pro formâ Statements of the Purchases and Sales.

#### EXAMPLE I.

#### ARBITRATED PRICE.—IMPORTATION.

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To find the arbitrated price per Imperial Gallon, of Cognac Brandy, bought in Bourdeaux at 165 Francs per 27 Veltes; the whole charges being estimated at 22½ per Cent, the course of exchange being 25.20 Francs, and 10 Veltes being reckoned equal to 16½ Imperial Gallons.

|         |   |                     |
|---------|---|---------------------|
|         |   | 1 Imperial Gallon ? |
| 16½     | — | 10 Veltes.          |
| 27      | — | ≠ 165 Francs.       |
| 25 20 * | — | 20 Shillings.       |

|                  |            |          |                        |
|------------------|------------|----------|------------------------|
|                  | s          | d        |                        |
| Product          | 2          | 11¼      | Price without Charges. |
|                  | -          | 7        | 20 per Ct.             |
|                  | -          | ¾        | 2½ per Ct.             |
| Arbitrated Price | <u>s 3</u> | <u>7</u> | with Charges.          |

## EXAMPLE 2.

## ARBITRATED PRICE.—IMPORTATION.

To find the arbitrated price per Cwt of Argol, bought at Leghorn at 50 Lire effettive per 100 lb., Exchange at 49 Pence, with the following estimations; Charges at Leghorn  $4\frac{1}{2}$  per Cent; Charges in London 15 per Cent; Discount on the Selling Price  $2\frac{1}{2}$  per Cent; and allowances on the weights, 2 per Cent more at Leghorn than in London.

|                       |   |              |                          |           |   |         |
|-----------------------|---|--------------|--------------------------|-----------|---|---------|
|                       |   |              |                          |           |   |         |
|                       |   | 112          | lb. Avoirdupois ?        |           |   |         |
| 112                   | — | 149.6        | lb. of Leghorn.          |           |   |         |
| 100                   | — | 50           | Lire in Silver.          |           |   |         |
| $5\frac{3}{4}$        | — | 1            | Pezza.                   |           |   |         |
| 107                   | — | 100          | in Gold.                 |           |   |         |
| 1                     | — | 49           | Pence Sterling.          |           |   |         |
| 12                    | — | 1            | Shilling.                |           |   |         |
|                       |   |              |                          |           |   |         |
| 1496                  | × | 50           | ×                        | 49        | = | 366520  |
| $5\frac{3}{4}$        | × | 107          | ×                        | 12        | = | 7383    |
| s 366520              | ÷ | 7383         | =                        |           |   | 49.64 s |
|                       |   |              |                          |           |   |         |
|                       |   | 49.64        |                          |           |   |         |
| Leghorn Charges       |   | 2.23         | $4\frac{1}{2}$ per Cent. |           |   |         |
|                       |   | <u>51.87</u> |                          |           |   |         |
| London Charges        |   | 7.78         | 15 per Cent.             |           |   |         |
|                       |   | <u>59.65</u> |                          |           |   |         |
| Discount              |   | 1.49         | $2\frac{1}{2}$ per Cent. |           |   |         |
|                       |   | <u>61.14</u> |                          |           |   |         |
| Difference in Weights |   | 1.22         | 2 per Cent.              |           |   |         |
|                       |   | <u>61.14</u> |                          |           |   |         |
| Arbitrated Price      |   | s 59.92      | =                        | 59 s 11 d |   |         |

The pro-formâ statement of the purchase and sales for the above, may be made out in the following manner.

PRO-FORMA ACCOUNT ( Conto finto .

---

12 Casks, Argol, from Leghorn to London.

Gross 11118 lb.      222 at 2 per Cent, Peso.

24 Corde.

1254 Casks (real Tare)

Tare 1548

48 Cortesia.

Net 9570 at 50 Lire eff: per 100 lb. .    Pezze 832 3 5

Charges . . . . . 19 9 7

851 13 0

Commission 2 per Cent                      17 1 0

Silver 868 14 0

Gold 811 17 4

CHARGES                      at 49 d    £ 165 15 1

|                                         | £ | s  | d |         |
|-----------------------------------------|---|----|---|---------|
| Insurance on £ 200 at 30 s . . . . .    | 3 | 0  | 0 |         |
| Policy . . . . .                        |   | 10 | 0 |         |
| Freight on 4 Tons at 40 s . . . . .     | 8 | 0  | 0 |         |
| Primage . . . . .                       |   | 16 | 0 |         |
| Wharfage, Landing, Entries, &c. . . . . | 2 | 10 | 6 |         |
| Rent 6 Weeks at 4 d per Ton . . . . .   |   | 8  | 0 |         |
| Brokerage, Advertisements, &c. . . . .  | 3 | 10 | 0 |         |
| Duty on 66 Cwt. at 2 s . . . . .        | 6 | 12 | 0 | 25 6 6  |
|                                         |   |    |   | 191 1 7 |

Discount  $2\frac{1}{2}$  per Cent on £ 196 . . . . . 4 18 0

Arbitrated value, nearly 60 s per Cwt.    £ 195 19 7

Viz. 11118 lb. of Leghorn at 149.6

= Cwt. 74 1 7    Gross—Tare    8 1 14

8 3 18                      Draft    2 4

Cwt. 65 1 17 at 60 s                      =                      £ 196 4 0

---

N. B. For the relations of Lire to Pezze, and of Silver to Gold money, see page 37.—And it may here, in addition, be remarked, that although the general money of account of Leghorn is, as there stated, in Silver, yet the accounts current, &c. of foreign correspondents are usually made up in Gold money.

## EXAMPLE 3.

EXPORTATION.—ARBITRATED PROFIT OR LOSS  
PER CENT.

To find the arbitrated Profit or Loss per Cent, produced by Cochineal bought in London and sold in Hamburg—Cost Price 10 s 6 d per lb with  $2\frac{1}{2}$  per Cent Discount; Charges of Export &c.  $2\frac{1}{2}$  per Cent; Selling price  $9\frac{1}{2}$  Marks Bco per lb, with the rabat of  $8\frac{2}{3}$  per Cent; Charges at Hamburg 6 per Cent; Rate of Exchange 13 Mks 10 Sc.; and allowance for loss of Interest &c. 2 per Cent.

|                  |   |                 |                   |                           |
|------------------|---|-----------------|-------------------|---------------------------|
|                  |   |                 | 100               | £ ?                       |
| 1                | — | 20              | Shillings         |                           |
| $10\frac{1}{2}$  | — | 1               | lb Avoirdupois    |                           |
| 100              | — | 93.6            | lb Hamburg        |                           |
| 1                | — | $9\frac{1}{2}$  | Marks Bco         |                           |
| $108\frac{2}{3}$ | — | 100             | Net selling Price |                           |
| 100              | — | 94              | with Charges      |                           |
| $13\frac{5}{8}$  | — | 1               | £ Sterling        |                           |
| 20               | × | 93.6            | ×                 | $9\frac{1}{2}$ = 17784    |
| $108\frac{2}{3}$ | × | $13\frac{5}{8}$ | ×                 | $10\frac{1}{2}$ = 1554612 |
| 17784            | ÷ | 1554612         | =                 | 114.395                   |
|                  |   | 6 per Cent      | .                 | . 6.863                   |
|                  |   |                 |                   | 107.532                   |
|                  |   |                 |                   | 102.000 with Interest.    |
|                  |   |                 |                   | 5.532                     |
|                  |   | Profit per Cent | £                 | 5.532 = £ 5 10 8          |

It is here to be observed, that the Discount being the same per Centage as that of the estimated shipping Charges, the one is set off against the other, making nearly the same result as not allowing the Discount, and in the lieu thereof delivering the Goods free on board.



## EXAMPLE 4—EXPORTATION.

## ARBITRATED RATE OF EXCHANGE.

With the same data as to the preceding calculation, it is required to find the arbitrated rate of exchange, with the Percentage of the Profit in comparison with the given rate of exchange.

|                   |            |                   |                |                    |
|-------------------|------------|-------------------|----------------|--------------------|
|                   |            | 20                | Shillings ?    |                    |
| 10 $\frac{1}{2}$  | —          | 1                 | lb Avoirdupois |                    |
| 100               | —          | 93.6              | lb of Hamburg  |                    |
| 1                 | —          | 9 $\frac{1}{2}$   | Marks Bco.     |                    |
| 108 $\frac{2}{3}$ | —          | 100               | with Rabat     |                    |
| 100               | —          | 94                | with Charges   |                    |
|                   |            | 20                | ×              | 93.6               |
|                   |            | 108 $\frac{2}{3}$ | ×              | 10 $\frac{1}{2}$   |
|                   |            |                   |                | = 17784            |
|                   |            |                   |                | = 1141             |
|                   | 1141       | )                 | 17784          |                    |
|                   |            |                   | 15.586         | = 15 Mks 9,1 Sch.  |
|                   | 6 per Cent |                   | .935           |                    |
|                   |            |                   | 14.651         | = 14 Mks 10,4 Sch. |
| 13 Mks 10 Sch.    | =          |                   | 13.625         |                    |
|                   | 2 per Cent |                   | .272           |                    |
|                   |            |                   | 13.897         |                    |
|                   | Difference |                   | .754           | = 11.7 Sch.        |

Mk 0.754 on Mks 13.625 = £ 5 10 8 per Cent.

This result is the same as that of the preceding calculation ;

FINIS.

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