

EARLY MODERN
GOLD COINS

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From the Deutsche Bundesbank Collection

DEUTSCHE BUNDESBANK · FRANKFURT AM MAIN

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FOREWORD

With this volume the Deutsche Bundesbank continues its long-standing series of publications about coins and banknotes from the collection of its *Geldmuseum*. At the same time, the sequence of books on gold coins latterly published within the scope of this series is herewith completed by the publication of a third one. The first two volumes on this theme (published in 1980 and 1982) were devoted to ancient and medieval issues; the present volume has early modern gold coins for its subject.

Geographically it embraces both European countries and countries producing gold coins in other parts of the world. The issues in the old south and central American regions are inserted among the chronologically-arranged coins of the Old World, since from the start they had an occidental character. The gold coins of the Ottoman Empire and those of the Asiatic states are presented separately, because of their independent development.

The period dealt with extends from about 1500 until the 19th century. Consequently all the gold coins illustrated fall historically into the period of "modern history", the early modern period: the era of "contemporary history" (the modern) is not considered at all. Thus while the beginning of our presentation (the early 16th century) follows on in direct chronological sequence from the previous volume on medieval gold coinage, the end is fluid. We were unable to choose a single formal chronological break but, on factual grounds, took several different ones, often because of geographically distinct political and politico-economic developments, or on account of definite alterations in the technique of coinage manufacture. Thus the collapse of the monetary economy in 1820/21 and the cessation of the issue of zecchini which went with it form the conclusion for the Ottoman Empire, whereas in the Asian countries the termination does not come until the transition to European coinage-forms in the course of the 19th century, for example in Japan in 1860. For Europe several facts mark our chronological boundary: on the one hand, the introduction of coining in a closed collar from 1815 is a major technical innovation. On the other, new rich gold mines in various parts of the world led to an alteration in the basis of the currency in many countries; silver was replaced by gold as the

standard currency metal. For example, England officially went over to the gold standard in 1816: as a sign of this changeover, the sovereign superseded the guinea. In addition, there was during the century a gradual transformation of the system of nations in the Americas, as well as in Europe (Italy, Belgium, the Netherlands, the north Balkans, later also Germany) and there were accompanying breaks in the monetary system at different times, according to circumstances.

As in the previous volumes, the gold coins are illustrated enlarged in 79 colour plates and explained in detail. For this we have primarily selected such pieces from our collection as were important for the development of the monetary system or are especially interesting historically or on account of their designs. Their degree of rarity or value has not been taken into account.

We are grateful to Dr. Lutz Ilisch of Basle and Nicholas Lowick of the British Museum in London for their help in describing the Ottoman and Indian coins. Mr. Takefumi Emori, deputy representative of the Bank of Japan in Frankfurt, has kindly and generously assisted us in the treatment of the Japanese pieces. Our thanks are further due to Professor Ruth Altheim-Stiehl of Münster, who checked the correct rendering of the Hebrew inscriptions.

Frankfurt am Main, December 1985

THE HISTORY OF EARLY MODERN GOLD COINAGE

“Gold is excellent above all; from gold comes great wealth, and with it whoever possesses it can do anything in the world that he wishes...” wrote Christopher Columbus to the Catholic monarchs Ferdinand and Isabella of Spain. Even if the fleets subsequently arriving at the then seaport of Seville bearing the gold and silver treasures of Peru and Mexico did not, as prophesied, bring lasting wealth and power to the Spanish kingdom, they and the later Portuguese precious metal imports from Brazil were nevertheless decisive in shaping the development of the monetary economy and financial and commercial structure of the European states. With the successful voyages of discovery, the economic centre of gravity first shifted westward from the Mediterranean area and the Upper Italian cities (Florence, Genoa, Venice) to the Iberian peninsula and then moved northward to the Netherlands, and later to England. The centre of trade was at first Antwerp, after whose decline in the second half of the 16th century Amsterdam became the principal emporium for precious metals and Europe’s leading money market. The Wissel bank, founded there in 1609, became one of the first important clearing banks north of the Alps.

Impressive though the quantity of gold which flowed into Europe may have been, in the context of the various national monetary systems it was only of secondary importance. As in the Middle Ages, it was silver – of which many territories had their own supplies – that provided the real basis of the currency. Until the beginning of the 19th century, when many countries went over to the gold standard, coins made of gold were used mainly for two reasons: firstly as a medium of exchange in international relations of the most diverse kinds, and secondly to satisfy the rulers’ desire to project a prestigious image by the issue of large and magnificent coins.

THE EUROPEAN STATES

The principal gold coin of the German Empire during the 15th century was the Gulden, which was established in imitation of the florins emanating from Florence (see Vol. II, pp. XV ff.). Its coinage was particularly extensive in the four Rhenish Electorates of Mainz, Trier, Cologne and the Palatinate. Incorporated in their monetary union from 1385, this gold coin became a standard currency as the “Rhenish Gulden”. The abbreviation commonly used for this (fl. rh. = florenus rhenanus) is retained to this day in the sign fl for the Netherlands guilder.

Increasing shortage of gold led on the one hand to a reduction in the output of the Rhenish mints and on the other to a gradual reduction in fineness. By 1500 this had dropped from its original 23 carats (= 958/1000) to 18½ carats (= 771/1000), i.e. by a fifth, and the fine weight was now only 2.53 g out of a gross weight of 3.28 g. The Rhenish Gulden thereby lost its function as a well-known and stable measure of value and that of a leading currency. In addition, this coin was eventually valued only by its gold content, and no account was taken of its increasing and likewise valuable proportion of silver, which finally amounted to 4 carats and 5 grains.

The first imperial coinage decree, published in Esslingen in 1524, again set the fineness of the Gulden at 22 carats. The intention was to standardise the monetary system in the many territorial states into which the German Empire had splintered, but this regulation was ignored. Competition arose for the Gulden from the end of the 15th century, in the form of the large silver coins struck, first in the Tyrol and then in Saxony, on the basis of an increase in the output of the metal. As their names Guldiner and Guldengroschen indicate, they were the equivalent of the Gulden (Gulden means “golden” or “the golden one”). These coins were incorporated into the monetary system by the 16th-century imperial coinage decrees and eventually, as the Reichstaler, became the principal currency-coin. In the second imperial coinage decree, finalised in Augsburg in 1551, the Gulden was called Goldgulden, to distinguish it from the silver types. Its original exchange rate was 60 Kreuzers, but this could not be maintained, and was annulled by the third imperial coinage decree, issued in Augsburg in 1559.

The reason lay in the altered gold:silver ratio, which had moved since 1551 from 1:10⁷/₈ to 1:11¹/₂. The price of gold coins as currency metal fluctuated with respect to the silver. The extent to which the Goldgulden had meanwhile decreased in importance is indicated by the introduction of a second imperial gold coin, namely the ducat, which will be considered below.

Nevertheless, the coinage of Goldgulden continued until well into the 17th century. In some cases Goldgulden and ducats were issued simultaneously (Plate 3), while in others the ducat superseded the Goldgulden, as in the cities of Frankfurt and Magdeburg (Plates 29 and 38).

With two gold types of differing fineness, dealings in everyday monetary circulation were certainly not easy, especially since values were not shown on the coins. Nevertheless, the ducat was worth 104 Kreuzers, whereas the Goldgulden was officially rated at 72 Kreuzers. They could not even be distinguished on the basis of their designs: there were coining authorities which issued both denominations simultaneously, struck from the same dies.

Outside the German Empire, Goldgulden were occasionally issued in Denmark and in the Netherlands. However, the Carolusgulden introduced here in 1521 by Charles V, and issued in great numbers, was clearly inferior to the imperial coin, having a weight of 2.91 g and a fineness of 583/1000 (Plate 5).

At the end of the 17th century, the Electorate of Bavaria took up the coining of Goldgulden afresh. From 1715 they were issued as double pieces (the so-called Max d'or) and from 1726 in triple weight and value as well. The latter was called the Karl d'or or Carolin after its issuer, the Elector Charles Albert (Plate 48). They were larger and heavier than the ducat. Their prototype was the French Louis d'or, but they did not follow it in standard. The fineness prescribed for the Carolin was 18¹/₂ carats (= 771/1000). 24 pieces were to be struck from the Cologne mark of 233.856 g (the weight basis of the coinage, fixed by the imperial coinage decree of Esslingen in 1524), which resulted in a nominal weight of 9.74 g per coin. There were also half and quarter Carolins, which were subject to the same conditions. The Carolin and its fractions were to be worth 10, 5 and 2¹/₂ Gulden respectively, or 5 Talers, a value on issue which was set too high for a circulating coin. In Regensburg the full Bavarian Carolin was valued in 1738 at 8 Gulden and 50 Kreuzers (i. e. 530 Kreuzers).

Numerous south and west German princes imitated the new Carolin coin-type, for example Electoral Cologne, the Electoral Rhenish Palatinate, Württemberg, Hesse, Würzburg and Bamberg. Its varying issues (i. e. diminution of the gold content) led to uncertainties regarding its tariffing, so that the Carolin failed to establish itself in the long term. Its striking was abandoned in Bavaria as early as 1737 and after the middle of the 18th century it gradually disappeared from circulation. However, the Carolin was retained as a coinage of account. After 1750 it represented a sum of eleven Gulden in small change.

The ducat, created in Venice in 1284, was derived in its standard (i. e. weight and fineness) from the florin, the Florentine gold coin created 32 years earlier (see Vol. II, p. XV). Both coins were thus at first equal in value. Unlike the florin imitations (Goldgulden), the fineness of the ducat did not deteriorate at all. In Venice itself, its place of origin, it was struck until the end of the Republic in 1797 with an unaltered design (the Doge kneeling before St. Mark, and Christ standing), from 1526 with a gross weight slightly reduced to 3.494 g. The ducat was frequently also called zecchino, from the Italian word *zecca* (mint). Many of the larger and smaller Italian states aligned themselves to this coin and struck this type with their own designs, which were thus able to hold their own as trading coins in Germany as well during the early modern period. The numerous multiples were conspicuous: in Venice these attained their highest value in coins of 100 zecchini, with a weight around 350 g, struck under the last Doges in the second half of the 18th century. On the other hand, issues of half- and quarter-ducats were comparatively small. The double ducat is commoner. This, like the double value of other denominations, was called *doppia*. As a result, it is not possible to decide at present whether most of the Italian gold coins bearing this name were struck to the ducat standard.

The Swiss territories differed considerably from one another in their coinage of gold. Thus in Zurich (Plate 53) the ducat established itself in the end, while Solothurn (Plate 64), for example, issued the *duplone* or *pistole* as its main gold coin, in imitation of the French *Louis d'or*. The situation in Geneva (Plate 50) was similar to that in Solothurn: after discontinuing the issue of the *écu d'or*, which was based on French prototypes, and the *écu pistolet*, which followed the Italian pattern, Geneva finally decided to strike the *pistole* as its sole gold coin.

The ducat spread through Venetian trade as early as the Middle Ages above all in the eastern Mediterranean, which led there to imitations or issues following this prototype (cf. Vol. II, Plate 29). The Ottoman Empire continued this tradition. At first it used the Venetian ducat itself for its foreign trade, and then at the end of the 15th century it introduced a gold coin of its own based on this coinage standard, whose history is dealt with in more detail on p. XXIII. The Order of St. John, resident in Malta from 1530, also exclusively issued ducats identical in design to those of Venice, until into the 17th century (cf. Plate 55).

The ducat was already established in Aragon in the second half of the 15th century, thanks to the location of that territory in the western Mediterranean and its south Italian possessions. In 1497, following a territorial union brought about through marriage, this initiated the introduction of a gold coin of the same standard in Castile. It was known by the name *excelente* and was also issued in higher values (Plate 2). While the *excelente* survived in Spain itself only for four decades, it was taken up in the Southern Netherlands at the end of the 16th century, as the double ducat, with the same designs (cf. Plate 23).

The rich imports of gold from West Africa and its trade with overseas territories helped Portugal to economic prosperity in the second half of the 15th century, and this is reflected in the coinage as well. The first issue of the large $23\frac{3}{4}$ -carat gold pieces called *Português* in 1499 coincided with Vasco da Gama's homecoming from his voyage of discovery to India. This gold coin was worth ten cruzados, which were likewise gold. Reduced in weight to 35 g, it was comparable to ten ducats, and the cruzado to one ducat (Plate 6). A reference in a Hamburg coin-balance of 1589 confirms this: "the cruzado weighs the same as the Hungarian Gulden". The *Português* also reached other countries in the course of trade. In Brussels, during his Netherlands journey in 1520/21, the painter Albrecht Dürer received two of these pieces, amongst other gold coins, which he described as "large Portuguese Gulden, each weighing ten ducats". Above all, the *Português* influenced northern Germany, where it was extensively imitated (Plate 18 and 20). As well as the single, there were double, half- and quarter-Portugalöser, worth 20, 5 and $2\frac{1}{2}$ ducats respectively. However, they were not so much intended for monetary circulation, but rather as

gifts. In Hamburg, which from about 1560 issued most of these coins, they became medallic in the 17th century and have retained the name for this type of issue until the present. Portugalöser were also issued at times in Denmark and Sweden.

In Portugal itself the issue of the *Português* was abandoned before the middle of the 16th century and the fineness of the *cruzado* reduced twice, finally to $22\frac{1}{8}$ carats in 1555. The *cruzado calvário* valued at 400 reis is an example of the new issue (Plate 12). These measures, introduced in a first coinage reform in 1538, were forced on the Portuguese king John by a massive drain of gold out of the country, which had various causes. The high-purity coins left the kingdom and were replaced by a flood of foreign gold coins of lesser value. In addition there was, for example, the cost of maintaining the Queen mother and of two dowries (John's sister Isabella became the Emperor Charles V's wife, and his eldest daughter married the later King Philip II), which are said to have amounted to 1,400,000 cruzados; as well as the Emperor Charles V's later attempt, prompted by the lack of money occasioned by his permanent wars, to get his hands on as much Portuguese gold as possible from his brother-in-law. In central and northern Europe the ducat first established itself at the beginning of the 16th century. The florin or Gulden of gold-rich Hungary, struck unchanged in quality since 1325, inspired coins of the same value in the Tyrol in 1481 and in Salzburg in 1500 (Plate 3). The Emperor Maximilian I incorporated them into the Austrian coinage system in a coinage decree of 1510, and called them ducats to distinguish them from the Rhenish Gulden and their imitations, which were sometimes even worse. Under Ferdinand I, the ducat became from 1527 the sole gold coin in the Austrian territories. The Augsburg Imperial Coinage Decree of 1559, already referred to, then declared the ducat to be the imperial gold coin and laid down the conditions for its issue as follows: 67 pieces were to be struck from the Cologne mark of 233.856g and the fineness was to be 23 carats 8 grains. This meant a nominal weight of 3.49g and a fine weight of 3.44g. 'Ducat gold' became established as a term for the fineness of 23 carats 8 grains or 986.111/1000. The ducat was only to be struck by imperial estates that had gold in their territories, a condition which went largely unneeded. The ducat, at 104 Kreuzers, was favourably tarified by comparison

with the Goldgulden of 72 Kreuzers, and this eventually helped it to triumph over the Goldgulden. From the middle of the 17th century the ducat was virtually the only gold coin in the Empire. Still struck today at the Vienna mint, there have been ducats for 700 years. The Venetian designs were not imitated north of the Alps: only the name and standard (i.e. weight and fineness) were adopted.

The most important areas issuing the ducat were Hungary and Austria (Plates 17 and 53), the German Empire (Plates 27, 33, 38, 43, 68) and the northern Netherlands (Plates 35 and 52). It was issued not only as the single value (Plates 38 and 68), but also as fractions (Plate 43) down to $\frac{1}{32}$ and as multiples (Plates 25, 27 and 39). The last were particularly common in the 17th and 18th centuries. They principally served the purpose of gifts and are an expression of an increased requirement for display. Extensive and splendid series were produced in gold-rich Transylvania (Plate 25) and in Bohemia, which in 1629 struck its highest value, a piece of 100 ducats.

The data prescribed for the ducat by the Imperial Coinage Decree of 1559 were binding only for the coinage-states of the German Empire. The issues of neighbouring areas and coinage-states took their pattern from this standard, but as a rule they were lower in fineness (Plate 53). This is especially true of the ducat introduced in the northern Netherlands in imitation of the Empire: despite a reverse legend assuring "according to the imperial standard" it did not satisfy this claim. It was struck in great numbers in the northern Netherlandish provinces from 1586, and sometimes also as the double ducat. It was imitated not only here (Plate 35) but above all in the northern and eastern European countries it reached as a trading coin during the 17th and 18th centuries (Plates 34, 58, 60, 66). In Russia it was even faithfully imitated for over a century as the "Dutch chervonets" (as this gold ducat-type coin was called) with recognised, if hidden status: in the mint documents it was referred to as a "well-known coin". Numerous contemporary forgeries, for instance of gilded silver, also testify to the popularity of this Netherlands ducat.

The ducat was not accepted at all in France. The principal gold coin in this country was the *écu d'or* (shield), already struck during the Middle Ages. It owed its name, which was now and then more closely defined by symbols and design

varieties, to the French fleurs-de-lys arms on its obverse (Plates 4 and 9). The écu d'or remained the sole French gold coin until 1640. The écu was, incidentally, also struck as a silver coin after 1640 and its issue in gold was finally abandoned during the 1650s. The issue of double and single Henris d'or, a type completely different in both weight and design, begun in 1550, only lasted about a decade (Plate 13). From 1519 the fineness of the écu d'or remained constant at 23 carats, while the number of pieces to be struck from a Paris or Troyes mark (244.753 g) was increased in 1575 from $71\frac{1}{6}$ to $72\frac{1}{2}$, meaning a slight reduction in the nominal weight to 3.38 g. In contrast to this, the value of the coin was constantly raised, as a result of the increases in the price of gold. While in 1519 it was still set at 40 sols (sous), in 1640 it amounted to 5 livres 4 sols tournois (104 sols tournois), i. e. it had more than doubled.

Until 1550, more gold than silver was struck in France; afterwards this proportion was reversed. The manufacture of gold coinage took place partly in Paris, but mainly in southern French mints such as Bayonne, Toulouse, Montpellier and Lyon, i. e. near the borders of the gold-rich monarchies of the Iberian peninsula, upon which the country was dependent because of the lack of its own deposits of metal. At first the gold came via Portugal from the Sudan and Ethiopia, and after the Spanish conquests from the American territories. The écu d'or was one of the coin types current beyond France's frontiers which played an important part in the international monetary circulation of the time, and was frequently listed in German coinage tariffs. It also arrived in the German Empire in considerable amounts as bribes, for instance for the Imperial elections due in 1519, or as subsidies. The estate of the Franconian margrave Albert Alcibiades, who died in 1557, included 682 Portuguese cross-ducats (cruzados: Plate 12), also 374 French crowns of the sun, as they were called here. A coin hoard buried around 1535, found in 1969 at Werfen in the Salzburg area, consisted of a total of 771 gold and 249 silver coins. Of the 378 examples of French origin, 244 were issues of King Francis I alone, principally from southern French mints. Many European countries imitated the écu d'or. It spread in Italy, starting with the issues of the French Kings Louis XII and Francis I in Genoa and Milan respectively at the beginning of the 16th century (Plate 4). These issues, which embraced a remarkable number of multiples,

covered the whole peninsula, from the scudo veneto introduced in Venice in 1528 to the south, and here partially displaced the ducat as the main gold coin (Plates 7, 11, 31, 41). For these scudi the name and occasionally the design were taken over from France. Outwardly, the scudo was distinguished from the ducat solely by its larger diameter and the smaller thickness of the metal disc. There are no investigations into the coinage standard of the Italian scudi. It is known for Scotland, England, Spain and the Netherlands: averaging 22 carats and lower, it lies below the French statutory norm of 23 carats (cf. Plates 8, 10 and 30). The displacement of high-fineness gold coins in England and Spain by the French *écu d'or* led to the introduction in both countries, through coinage reforms in 1526 and 1537, of denominations of explicitly equal value, the crown and the *escudo* or *corona*. England for a long time struck coins of fine gold of 23³/₄ carats and "crown gold" of 22 carats (compare Plates 10, 15 and 19). The English crown was struck until the end of the hammered coinage in 1662. The silver crown was introduced as its equivalent in silver in 1551. It was worth five shillings and corresponded to the German Taler.

The *escudo* created in 1537 became the standard gold unit in Spain. King Philip II, son and successor of the Emperor Charles V, introduced the double *escudo* or *doblon* and the fourfold *escudo* in 1566. The eightfold multiple, the *onza* or *quadrupla*, with which Philip III enlarged the series in 1614, was coined particularly frequently in the Spanish-American colonies. Its weight of about 27g reflected the vast gold wealth of the New World (Plates 45 and 54). The double *escudo* in particular influenced the monetary system of the European countries in the 17th and 18th centuries. It was imitated from the island of Malta in the south to Norway in the north, as can be seen in the family tree set out in the Appendix. France played a decisive part in this wide dissemination, by introducing the *Louis d'or* (based on its example) with the decree of 31 March 1640 (Plate 32). The fineness of 22 carats, laid down by law, was as a rule not achieved. A year later a silver coin was created, also to the Spanish standard: the *écu d'argent*, which corresponded to the German Taler. Under Louis XIV the *Louis d'or*, with its fractions and multiples, became a global coin and was struck as the sole gold coin until the end of the monarchy in 1792. Like the earlier *écu d'or*, the *Louis d'or* had many varieties, e.g. *Louis*

de Noailles, Louis aux lunettes. In the 18th century, while the fineness remained the same, the nominal weight (originally 6.75g) changed several times. For example, it was increased in 1709 to 8.16 g for the Louis au soleil and reduced to 7.64 g in 1785 for the Louis écu (cf. Plate 67). These alterations in weight, regularly accompanied by increases in value, were apparently also reflected in the issues of other coinage states (Plates 50, 55 and 64).

With the so-called “Réformations”, beginning in 1689, many Louis d’or streamed into the German Empire (Plate 44). In south and west Germany they engendered imitations from 1715 in the previously-mentioned Max d’or and the lower-fineness Carolin (Plate 48); in north Germany a type of coin was issued copying the old Louis d’or of 1640, commonly known as the pistole (the origin of the word has not been solved) or following the French example named after the respective issuing ruler, such as the Prussian Wilhelm d’or and Friedrich d’or or the Saxon August d’or (Plates 49 and 61). The table in the Appendix gives information about the various coinage standards, which differ slightly. The original value of five Talers appeared on the pistole even when this indication was no longer true because of the increasing price of gold. The valuation of the double August d’or shows this, with its inscription as 10 Talers, although in 1779 it was only valued at 9 Talers 16 Groschen. Moreover, the increase in the gold price found its counterpart in a reduction in the price of silver. Pistoles were struck in great numbers until into the 19th century and established themselves as trading coins alongside ducats.

With the reform of 1722, Portugal too aligned itself with the Spanish system and introduced half-, single and multiple escudos. The highest denomination was the dobra of eight escudos, which was given a value of 12,800 reis, the Portuguese unit of account (Plate 62). Its weight of 28.68 g was about half that of the dobrão, which is one of the heaviest gold coins, representing a quintuple moeda (Plate 40). This dobrão was struck principally in the years between 1724 and 1727 at the Brazilian mint of Minas Geraes, which was specially set up for immediate exploitation of the immense amounts of gold occurring there. The handbooks published for merchants and bankers at the end of the 18th century and the beginning of the 19th called it the old pistole to distinguish it from the dobra, and frequently mention that the whole and half dobrãos

(the two highest values) are very rare in Lisbon; from 1822 they were melted down again.

On the other hand, the escudo made no impact on the evolution of monetary history in England and the Netherlands, which turned themselves into the leading economic and maritime powers in Europe and have an especially rich and diverse gold coinage. During the long reign of Queen Elizabeth I of England there were nine denominations, partly in 23.9 carat fine gold and partly in 22 carat crown gold (Plate 15), as well as eleven silver denominations. The biggest and most beautiful coin in this series was the fine-gold sovereign, introduced in 1489, which cannot disclaim its medieval origin (Plate 19). The output of crown gold was eight times greater than that of fine gold: coins of fine gold served internal circulation, the others external trade. The practice of issuing coins of two different finenesses parallel to one another ended in the middle of the 17th century. In 1663 the guinea was introduced as the principal gold coin, taking its name from the country of origin (Guinea) of the gold chiefly used at first. It was reduced in weight compared with the preceding issues, the laurel and unite (cf. Plates 28 and 36). In 1816, when gold standard was introduced in England, a new sovereign replaced the guinea. The guinea, calculated as 21 shillings, survived until our own day for the settlement of fines in English courts. The issue of gold coinage in the Netherlands was even more extensive than in England, consisting until 1612 of 21 different denominations (Plates 5, 16 and 23). The gold crown, introduced in 1540 by Charles V and imitating the French *écu d'or*, survived the longest, and was also taken up by neighbouring coin-issuers (Plate 30). The low fineness of only 583/1000 chosen for individual issues is remarkable. The heaviest coins (7.65 g and 7.21 g respectively) are the Rosenobel of English type and the double ducat copying the Spanish (cf. Vol. II, Plate 52; Plates 2 and 23). In the 17th century the wealth of types melted away. The *souverain*, whose name and initially also design were taken from the English sovereign, became established in the Spanish southern provinces (Plates 19, 26, 37 and 63). In the northern United Provinces, the principal currency coin was the ducat already mentioned (Plates 35 and 52), alongside which the *rijder* (which was struck to the standard of the English unite) circulated from time to time (Plate 57).

The Netherlands coinage of gold and silver was also sizeable in quantity, based on the market in precious metal, which was traded in the international centres of Antwerp (at first) and later Amsterdam. Portuguese and mainly Spanish escudos, irregular and imperfect, because of a ban on the export of unminted gold (Plate 8) supplied the material. The rôle played in the Netherlands by foreign gold during the 16th and 17th centuries is exemplified by two coin finds. A hoard buried in the middle of the 16th century at Amersfoort (Utrecht province) consisted of 2,015 silver and 3,662 gold coins from the period between 1415 and 1557. Of the latter, a fifth was foreign coin of English, French, Spanish and German origin which, consisting of denominations larger than the Netherlands ones, made up half the value of the hoard. A cache of 1,150 gold coins hidden about 70 years later at Serooskerke (Zeeland province) consisted of Netherlands, Portuguese, Moroccan, Italian, German, Austrian, Hungarian and Polish issues and a conspicuously large number of English and Spanish types, especially high-value ones, such as rose nobles, unites (cf. Plate 28), single, double and quadruple escudos and double ducats (cf. Plates 2 and 8) with a date range of 200 years.

Foreign gold streamed into the territories not only through trade and commerce, but also in the wars, as soldiers' wages and in the form of subsidies. Political and religious connections, dynastic entanglements and personal relations promoted the influx and distribution of foreign types, which circulated to a greater or lesser extent alongside a country's own issues. Since the value of a coin depended on its fineness as well as its weight, regular examinations, whose results were published, were required for all circulating coins (domestic and foreign). These so-called valuation tables or coin tariffs, which fixed the value of foreign coins in the local currency, first appeared in printed, placard form in the Netherlands at the end of the 15th century. They were the forerunners of the exchange list. A last great tariffing of all domestic and foreign gold and silver coins in circulation took place for the German Empire during the Imperial Diet at Regensburg in 1737-1738. The gold:silver ratio was set at 1:15.10, and the ducat of four Gulden placed on a par with two Reichstalers, each of two Gulden. For example, according to the report, which runs to many pages, a royal Spanish quadrupla (the 8-escudo piece) had an actual fineness

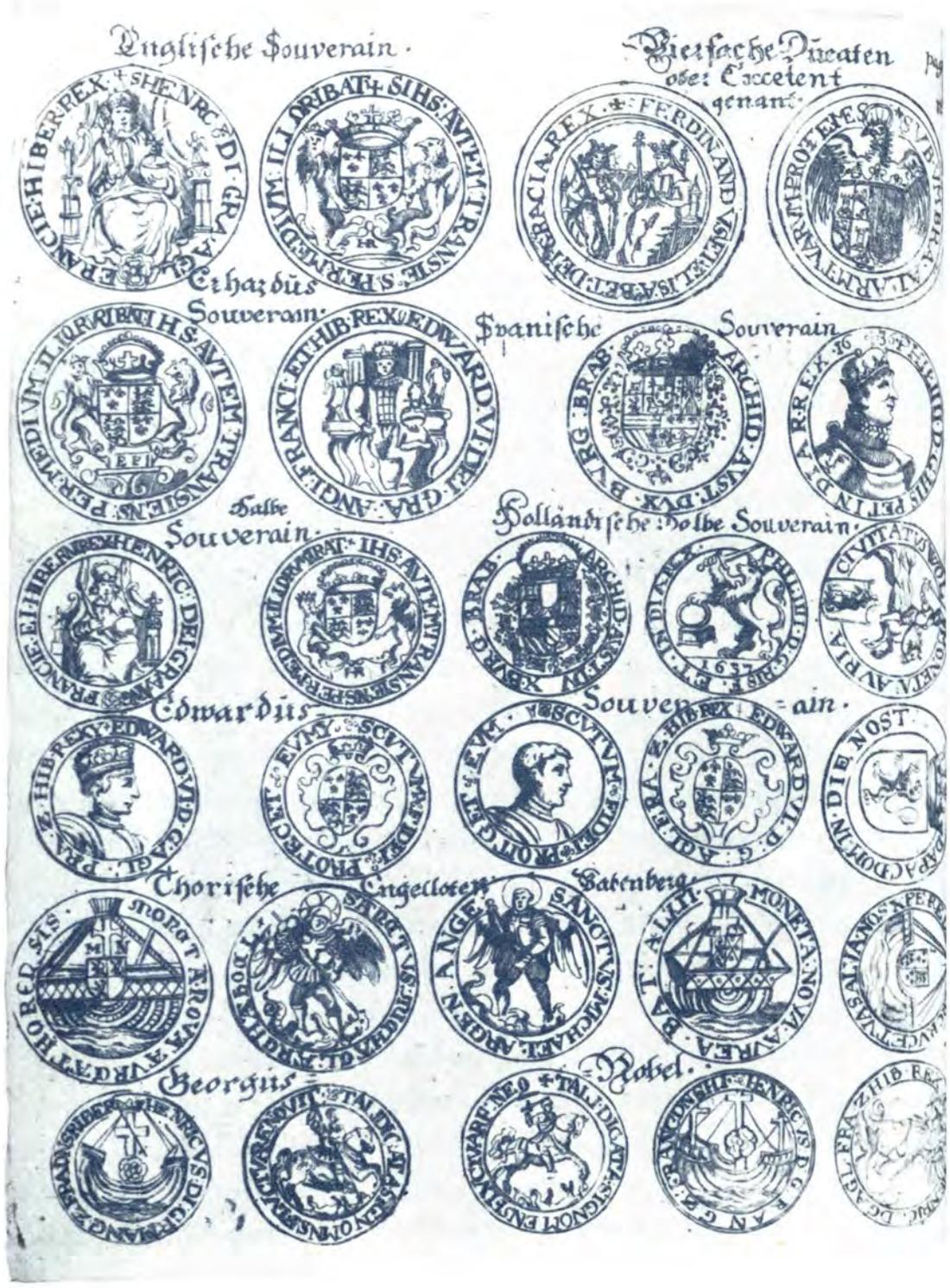


Illustration from Leonhard Wilibald Hoffmann's *Alter und Neuer Münz-Schlüssel*, Nuremberg 1692

of 21 carats 7 grains and from this a value of 28 Gulden 45 Kreuzers; a Louis d'or was 21 carats 10 grains (22 carats was prescribed by law) and was tariffed at 7 Gulden 3 Kreuzers.

For merchants, who needed a good knowledge of the circulating money for their business, books appeared from the end of the 16th century, some of them voluminous. In these the authors listed the coins available to them with their appearance and details of value. One such publication is the "Alter und Neuer Münz-Schlüssel" of Leonhard Wilibald Hoffmann, which appeared in Nuremberg in 1692, from which a page reproducing English, Spanish and Netherlands gold coins is illustrated on page XXI.

THE OTTOMAN EMPIRE

The Ottoman Empire, which started as a small principality in western Asia Minor, and whose later heartland forms present-day Turkey, became the successor of the Byzantine Empire after the fall of Constantinople in 1453. With the capture of Cairo in 1517 it came into possession of the former Mamluk territories in the western and southern Mediterranean area and on the Red Sea. The Ottoman Empire was at its most extensive around the year 1683. In the north, the whole of the Balkans, including regions of Hungary, was under its control, together with virtually all the territories bordering the Black Sea to the north and east. The whole of Iraq and western parts of present-day Iran, as well as the northern coast of Africa as far as Morocco, likewise belonged to the sultan's sphere of influence. Besides Rhodes and Cyprus, of the larger eastern Mediterranean islands even Crete was in Turkish hands by 1669.

However, the ever-increasing geographical expansion was not accompanied by internal strength. The stability of the national budget could no longer be guaranteed under Sulayman I (1520–1566). In 1605, under Sultan Ahmed I, expenses were twice as high as receipts, which were estimated at around three thousand million zecchini. In this period the number of silver coins, known as akçe, which corresponded to a gold coin, was increased from 50 to 60 and then

to 300; later, the rate is 400 and more. Attempts at stabilisation were wrecked by mismanagement and the cost of war. In 1821, under Mahmud II, the monetary system finally collapsed altogether.

The first Ottoman gold coin, the Altın, was initially issued 25 years after the capture of Constantinople, in the year 882 Hijra (AD 1477/78). Mehmed II followed here a course already pursued by the Mamluks in 1408/9: he aligned the weight and fineness of the gold coinage with the zecchino (the Venetian ducat), which had become the leading currency in the Levant. Only his coins bore the year of issue as date. A little later a second type was issued, with exactly the same value as the first, but distinguished from it by its inscriptions. Both were struck alongside each other until the end of the 17th century.

A first reform of the gold coinage was begun under Mustafa II and completed by the following sultan, Ahmed III. Coins copying the Venetian zecchini were retained; nevertheless, their appearance was altered (Plate 70). Alongside the designation Zer-i Istanbul they were also known as »Fındıq Altını«. There can only be speculation about the meaning of this name, but the sequence of consonants in the word Fındıq could well refer to the name "Venice" and thus to the origin and value of this gold coin, the more so since at the same time a second standard coin of 2.6 g was issued for the first time. This was therefore about 1g lighter, and bore the name Zer-i Maḥbūb (Plate 71). Under Ahmed III, there were for the first time fractions and multiples of the Fındıq.

Gold coins of the design introduced under Mustafa II and Ahmed III remained in circulation until 'Abdu'l-mejīd's currency reform of February 1844. However, fineness and weight were greatly reduced. Thus the last issues of the original Zer-i Maḥbūb standard were produced in 1820/21 (1236 Hijra). Thereafter the value dropped: while the weight was reduced to 1.50 g, the fineness was at the same time diminished from 800/1000 to 748/1000.

The zecchino thus served as the prototype for the gold coinage of the Ottoman Empire for more than 300 years. Developments in north-western Africa were not so clear-cut. The Maghreb lands could not be bound firmly to the Sublime Porte in Istanbul because of their geographical remoteness and so went their own way, especially with regard to the fineness of their issues, which was generally lower.

Alongside domestic issues, Venetian zecchini were found at all times in circulation within the sphere of influence of the Ottoman Empire. Under Sultan Sulayman II, testing of all coins was begun in 1688, occasioned by the appearance of large numbers of forgeries of these pieces. Genuine ones, furnished with the countermark “saḥḥ” (regular, flawless) were returned to circulation. The use of foreign coins resulted from the lack of native gold and the resulting inability to produce sufficient quantities of domestic issues.

THE ASIATIC STATES

Unlike the situation in Europe, there were only a few states in Asia with an extensive domestic gold coinage. Foremost amongst these may be mentioned the Mughal Empire in north and central India, the south Indian territories and the Empire of Japan.

The beginnings of the Mughal Empire in India lie in the first half of the 16th century. Expelled from Transoxania (now the Soviet Republic of Uzbekistan), the successors of the Mongol Tamerlane settled in present-day Afghanistan in 1505, and from there twenty years later set out on the conquest of India. Mughal domination was first consolidated by Akbar, who ascended the throne at the age of fourteen and who at the end of his fifty-year reign was ruler of north and central India as far as the edge of the Deccan uplands, which divide the sub-continent into a northern and a southern half. The sequence of great Mughal emperors began with him, and came to an end with the death of Aurangzeb in 1707. True, the Empire survived in name until 1857, but Aurangzeb's successors became more and more dependent upon the ever-expanding British East India Company. From 1765 the English were the real rulers of the former great Mughal Empire. In 1857, following the so-called Indian Mutiny, India became part of the British Empire.

The gold coinage of the Mughal Empire began under Akbar. With the mohur (Persian muhr = seal), he created in 1562 a standard coin whose weight survived virtually unaltered until the end of the dynasty in 1857. Its nominal weight lay

around 11 g, but in most cases was not achieved. The value of the mohur was essentially determined by its fineness. We learn from Abu'l-Fazl, friend and biographer of the emperor, that the coin issued c.990/1000 fine by Akbar (Plate 74) was the equivalent of nine silver rupees. Although no information of this kind is at our disposal for Farrukh Siyar's issues, we may assume that his mohur was tarified at a lower value than Akbar's, on account of its reduced fineness of c. 950/1000.

As well as the single value, mohurs were also issued as multiples and fractions. The largest-known denomination ever produced, a single piece of Shah Jahan's which is now lost, had a nominal value of 200 mohurs. Its diameter was 13.6 cm and its estimated weight around 2 kg. This issue was thus a purely representative coin, and the same applies to the 20-, 50- and 100-mohur pieces. Fractions existed down to $\frac{1}{64}$ of the single value.

Akbar's initial issues remain completely in the tradition of their Mongol ancestors, with broad, relatively thin fabric, the obverse dominated by the Kalimah (the formula "There is no god but God, Mohammad is the prophet of God"), and the reverse giving his name, as well as the mint and year of issue. As a concession to the wishes of the populace, Akbar very soon had his coins struck thicker and correspondingly smaller in diameter. But since the old dies continued to be used, the obverse legend with the names and honorific titles of the first four caliphs disappeared from the new issues. Through this diminution of the original coin-design, the statements on the reverse appear only incompletely. A change took place in 1584. With the introduction of a new, religiously-inspired dating system known as the Ilāhī or divine era, a regnal year calculated by this method also appeared on the coins, accompanied by the name of the Persian solar month in which the coin in question was struck. Akbar's successors reverted to the traditional Hijra-dating. However, some of them still counted the Ilāhī-years for their reign, and placed these on the coins as well. Persian influence may also be detected in the altered inscriptions. As early as Akbar, verses in Persian written in Arabic script began to be placed on the reverses of the coins. An example of this is the illustrated coin of Farrukh Siyar (Plate 76). On the other hand, Akbar's attempt to introduce square and even rectangular coins with bowed ends had no lasting impact.

The independent gold coinage of the Mughal rulers finally came to an end under Shah Alam (1759–1806). After 1765 the British East India Company in north India began to manufacture gold and silver coins at the Bengal mint of Calcutta, which faithfully copied Shah Alam's contemporary issues. The Company continued to strike these unchanged even after his death, later using machinery.

Things were similar in south India. From the middle of the 17th century, coins struck by the British East India Company circulated alongside the native gold coins, known as pagodas. With the authorisation of the south Indian rulers, the British issued coins which at first were closely modelled in both their form and their designs on local prototypes (Plate 78), until the Company issued an independent coin-type at the beginning of the 19th century. A few years later the south Indian gold pagoda had to give way to the silver rupee as the new standard coin.

Sixteenth-century Japan was characterised by continuous power struggles between the country's daimyos. Each of these powerful territorial rulers was anxious to enlarge his estate and with it his prestige and power. These constant conflicts were terminated by Oda Nobunaga (1534–1582). Using new methods of warfare, he managed to achieve supremacy among the daimyos and to eliminate anarchy in the country. However, the final unification of the country was left to Tokugawa Ieyasu (1542–1616). With his appointment in 1603 as seii-tai-shōgun (Commander in chief against the barbarians), a shōgun exercised unlimited central power over the whole of Japan for the first time. Although the emperor living in Kyoto remained nominally head of state, actual power lay in the hands of the shōgun. Members of the Tokugawa family held this office in an uninterrupted sequence until 1868.

To consolidate his power, Tokugawa Ieyasu carried out some radical economic reforms following his appointment as Shōgun. One of these measures also affected the coinage. Although important daimyos had already begun to have their own gold coins struck at an earlier period for the territories they ruled, this right now lay with the shōgunate alone. Two mints were set up in Edo (Tokyo) for the gold coinage. Ōbankin were exclusively manufactured at the Obanza (Plate 77), with two further values, Kobankin (Plate 75) and Ichibukin, pro-

duced at the Kinza. Down to the 19th century, four further gold denominations were added, among them the Nibukin (Plate 79). The syllable “-kin” appended to the name of the coin means “gold” in Japanese. Tokugawa Ieyasu’s gold coins, with their standardised sizes, fixed weights and values stamped or painted on with ink, were the first official issues current throughout Japan.

Gold perhaps began to be used as a currency in Japan during the 7th century. At first gold dust and granules were weighed out and wrapped in sealed paper packets and bamboo canes. In the course of time a switch was made to the manufacture of small gold bars and sheets. When a payment was made, pieces of the required weight were cut off from these. The outward appearance of the Ōbankin and Kobankin goes back to the partly oval shape of these sheets. On account of their high value, the Ōbankin never appeared in general circulation. Only the country’s feudal upper crust (and later the rich commercial sector) made use of them. By contrast, the small gold denominations found a wide dissemination. In the old Japanese economy, silver only played a subordinate role and bore no fixed value-relationship to the gold.

The end of the Tokugawa shōgunate and return of governmental power to the emperor in 1868 was also accompanied by the creation of a completely new currency system based on the modern Yen.

COINAGE DESIGN

During the second half of the 15th century a fundamental change, originating in Italy, took place in the pictorial design of coinage. In 1472 the Venetian Doge Nicolo Tron was the first Italian ruler to have himself portrayed with recognisable individual features, on the obverse of a silver coin. Others very soon followed this example, resulting on the gold coinage too, in such impressive Renaissance portraits as those of the Sforza of Milan (Plate 1). At the end of the 15th and during the 16th century the transition from medieval to modern visual composition took effect in very varied forms in different territories. The triple ducat of the Archbishop of Salzburg is another early example of the new style (Plate 3). Since Leonhard of Keutschach had travelled in Italy, he perhaps brought the idea back from there. Yet the profile representations of the two Spanish rulers on the 4-excelentes piece are heavily bound up with medieval tradition, being designed in a completely 14th-century style (Plate 2; cf. Vol. II, Plate 30). On the other hand, when we meet it once again on the 6-ducat piece of the duchies of Liegnitz and Brieg (Plate 27), the composition with the two rulers turned towards each other is impressive. Later, portraits staggered one behind the other were preferred (Plates 31, 42 and 62). In some countries the introduction of portrait coins was considerably delayed, and coins of traditional form continued to be produced alongside them. In England, for example Queen Elizabeth I had her portrait placed on the obverse of the half-pound (Plate 15). In contrast, the sovereign, on which the queen is depicted not as an individual personality but as a type characterised by her symbols of power, continued to be issued unaltered in the form created in 1489 (Plate 19). One peculiarity of the English coinage may be remarked: from the second half of the 17th century, the direction faced by the portrait was altered at every change of ruler. In 16th-century France, a coin with the ruler's portrait was only issued once, under King Henry II (Plate 13), alongside the principal gold coin, the *écu d'or*. The portrait coin did not find a foothold in France until the creation by King Louis XIII of the *Louis d'or* in 1640. Things were different in the Italian territories, whose die-engravers sometimes created impressive and artistically excellent portraits of their rulers (Plates 7 and 21). Yet at the same time coins

imitating the French écu d'or were also issued around the middle of the 16th century (Plate 11).

In the course of time, as the portrait prevailed more and more on the obverse of the coin, there was likewise for the reverse design an almost universal transition to filling it with a coat of arms, which sometimes brought together a multiplicity of heraldic charges (Plates 16, 26, 31, 54). However, designs of different types were also used: the reverses of the coins were embellished with religious motifs (for instance Plates 12, 36, 48, 64) as well as those taken from antiquity (Plates 7, 21, 67, 68), views and coats of arms of cities (Plates 18, 20 and 39), even sporadic elements from the world of chivalry (Plates 1 and 25). France was an exception: her rulers long remained bound up with medieval tradition in having the initial letters of their names set in the form of a cross (Plates 13 and 44), as a modification of the model of their early coins (Plate 9).

During the early modern period legends also became more detailed. As a rule, the obverse legend mentions the ruler's names and titles, sometimes in highly abbreviated form (Plates 17, 39 and 49); in some cases they are broken up into individual letters (Plate 48). There was frequently insufficient room on the obverse for the numerous titles, so that the legend had to be continued on the reverse (e.g. Plates 1, 8, 23, 26, 30). Normally, however, the illustration on this side was surrounded by mottoes or texts referring to its design (e.g. Plates 2, 3, 5, 6, 11, 64). A change also took place in the letter-forms: "gothic" letters were replaced by the clearer and more austere Roman script. However, the languages in which the legends were composed were unaffected by this change. Latin, which was universally understood by the educated, remained predominant, and only occasionally was the local vernacular language of a country used (Plates 36, 46, 51, 58, 66–68). In two cases this shift can be attributed to radical political changes (Plates 36 and 67).

Closely-dated gold coins, i.e. those furnished with an annual date, were still relatively rare in the 16th century. For those coins which bear no date it is sometimes possible to determine the date of issue using the design, a mark or a signature, with the aid of written sources (Plates 2, 8 and 44). Statements of value are to be found even more rarely than dates on the coins illustrated in the Plates. If the value of a coin was stated, this was done on the one hand using clear-cut

denominational terms such as ducat, rouble, pistole (Plates 33, 38, 46, 51, 56, 66) or on the other hand it was specified on the gold coins in (silver) coinage of account (Plates 28, 36, 40, 55, 57, 61, 67). Multiple values could be indicated by the corresponding numeral (Plates 2 and 45).

Many pieces bear marks of the most diverse kinds: single letters, monograms, symbols and coats of arms. These originate from the persons involved in the manufacture of the coins and are to be regarded as a form of guarantee of the quality of the pieces. As a rule, the mintmaster signed the coin; only occasionally was this undertaken by a higher-ranking person (Plates 7 and 10) or (as an instance of control) the warden (Plates 45 and 54). A double signature is rare (Plates 41, 59 and 67); in one case of this, we know that it was prescribed by law (Plate 59). But sometimes it was only the die-engraver who placed his initials on his work. On undated pieces which are not supplied with a reference to the place of issue, the signatures can provide information about the place and date of origin of the coin.

Traditional methods of identification by symbols (e. g. Plates 4, 15, 16, 23) or secret marks remained at first the most widely used for supplying information about the mints. In France a system which has remained valid until our own times was introduced by Francis I in 1540: letters replaced the coded information about the mints (Plates 9 and 13). Where cities acted as coinage authorities, the place-name was always stated in full (Plates 18, 20, 27, 29, 35, 38, 39). Ottoman Empire issues were completely different from European ones. Following Islamic tradition, they bore no pictorial designs at all, but were supplied exclusively with texts in Arabic language and script, while the dates were given according to the Islamic chronology. They were expressed in figures read from left to right, in contrast to the script. On the coins of the Ottoman rulers, unlike on Arabic coinages, there are no indications of denomination. They are known to us only from contemporary sources. The sultan's name and that of his father, the mint and initially only the year of accession are mentioned in the legends, which are divided between the obverse and reverse. In addition, there are the ruler's titles and prayers for benediction. From the second half of the 18th century it became customary to indicate the appropriate regnal year of the sultan as well, with the help of which it was possible to identify the date

of issue of the coin accurately. The so-called Tughra (the sultan's seal) found a place in the design (Plates 70–72) with the introduction of the Zer-i Maḥbūb (Plate 71). On the Zer-i Istanbul of Ahmed III, it dominates the obverse of the coin on its own (Plate 70). The Tughra maintained its place there from then on until the 20th century.

The Indian gold coins shown in this volume come from different areas within the subcontinent. The northern issues, oriented towards Islam, name the issuing ruler, the mint and the year of production of the coin, in Arabic script and language (Plates 74 and 76). In addition, the Kalimah appears on the obverse of our early Akbar mohur (Plate 74; cf. Vol. II, pp. XXVI–XXVII). Following Islamic rules, these coins bear no pictorial representations. On Akbar's earlier issues, the ruler's name was embedded in two lines of verse, which are written in Persian and whose words (sometimes even parts of words) follow each other arbitrarily. The multiplicity of such verses existing under Akbar and Jahangir was later restricted to a single one, which is characteristic only of the ruler in question. In Jahangir's case the aniconic Islamic tradition was interrupted for a while, and script was replaced on the obverse by signs of the Zodiac. These coins are to be seen as circulating money in contrast to Jahangir's portrait coins, which on account of their unusual design and the simultaneous issue of normal coins are to be regarded purely as money of the Mughal court.

The southern Indian coin on Plate 78 is different: it was struck by the British East India Company, copying local issues, and shows the figures of the Indian religious pantheon. The Company was also later allowed to manufacture north Indian coins which were accurate copies of the customary local issues.

The Japanese coins, which are of course fundamentally different from those of other cultural areas because of their sheet-like form, likewise cannot be compared in their design with other issues shown here (Plates 75, 77 and 79). It is remarkable that no issuing ruler, emperor or shōgun, is named on any of these coins. Only the nominal value, the era (in one case) and the name of the man responsible for the coinage are found as official statements. This latter was, from the time of the shōgun Tokugawa Ieyasu onwards, a member of the Gotō family. We encounter this name in Kaō, a special seal-script, stamped on or applied in Indian ink alongside the written-out form (Plate 77). The forename Mitsutsugo

is even additionally stated on two coins (Plates 75 and 79). The face value of the Ōbankin and Kobankin was stated in Ryō, the basic weight unit of the currency. The date of issue of the older Japanese coins can only be determined on the basis of contemporary written sources. An aid to dating is given in some cases by a mention of the era during which the coin concerned was made (Plate 79). The pictorial design of the coins was restricted to repeated reproductions of the Kiri-flower, an ancient symbol of authority, of unknown origin.

SOURCES OF GOLD

As far as the extraction of gold was concerned, circumstances at the end of the 15th /beginning of the 16th centuries had hardly changed from those of the Middle Ages. The Portuguese-ruled west coast of Africa continued to lead the field as the supplier of gold. This situation altered when Christopher Columbus discovered America in 1492. From 1493 to 1600, the Spanish conquistadors brought back a total of around 340,000 kg of gold. For the most part this was made up of cult and decorative objects looted from the native populations, who had accumulated them over the centuries. The returns from the gold panning which was soon set up were by comparison somewhat limited. Vein-gold, the real wealth of the conquered countries, was discovered two centuries later. Only then was Columbus's prayer "may the Almighty in his mercy help me to find the mines from which this gold is gained" answered.

During the 17th and 18th centuries the Spanish and Portuguese possessions in Central and South America produced the great bulk of the gold needed in Europe. At the end of the 17th century such enormous deposits were discovered in Brazil that the country temporarily became the most important gold-producer in the world. Whereas Spain and Portugal controlled the virtually inexhaustible supplies from their colonies, the other European states had to seek other possibilities of acquiring gold.

England obtained some of the gold it needed for coinage from imports from Guinea by the Africa Company. This source of metal is referred to in the name

and a design detail of one of the pieces shown in the plates (Plate 42). In addition, by signing a trade agreement with Portugal in 1703 the island kingdom succeeded in acquiring the bulk of the gold which poured into Lisbon from Brazil. The seizure of Spanish ships laden with precious metals from the New World added a not insignificant amount. By comparison, the supplies of the remaining European territories, where little or no gold was extracted, were limited. The only important mines were those at Salzburg (already mentioned in the last quarter of the 13th century), and in Hungary and Transylvania (Plate 25), as well as the deposits at Reichenstein in Silesia (Plate 27). The alluvial gold panned from local rivers in Germany, mainly during the 18th century, was not abundant, and played very little part in the coinage (Plate 68). Extraction of gold started relatively late in Russia. Systematic exploitation of the deposits in the Ural region north of Ekaterinburg was only begun in 1750.

By way of comparison, Japan looked back on a long tradition. While the precious metal was at first obtained only in the form of panned gold, output increased considerably during the 16th century with the discovery of rich deposits of vein-gold. From 1540 Portugal procured large quantities of the yellow metal from the mines on Sado, an island off the west coast of Hondo, the main Japanese island.

India already had substantial gold reserves in ancient times, thanks almost entirely to its trade with the western world. With Vasco da Gama's discovery of the sea-route to India, a new influx of precious metal begun in 1498. Most of the Portuguese gold originating in West Africa was now siphoned off into the treasuries of Indian rulers.

The rulers of the Ottoman Empire pursued a completely different course. Since their own gold deposits were unable to meet demand, they allowed Venetian ducats to circulate alongside their own issues. The former were first tested for their purity and countermarked with the word *saħh* ("all right").

Other possibilities of getting hold of the desired metal, principally resorted to by countries with few or no gold reserves of their own, lay in the reutilisation of already manufactured gold. This included in particular the melting-down of old and foreign coins (Plates 32, 50 and 64); but occasionally sacred and profane precious metal objects also came to the mints as raw material.

THE MANUFACTURE OF COINAGE

Up to the middle of the 16th century there were no appreciable alterations in the technique of coin-making compared with the practices in antiquity and the Middle Ages. The only innovation which took place was in the preparation of the strip-ingots from which the blanks were cut: the metal bars were pulled through a draw-bench and thus given a uniform thickness.

Radical changes in the method of coining first took place around the middle of the 16th century. At the Augsburg Imperial Diet of 1550/1551, inventors offered their newly-developed rotary coining machines to the future Emperor Ferdinand I. These were intended primarily for the manufacture of large silver coins, but they also found employment for the gold coinage. This is at least suggested by an account published in 1609, which describes operations at the Austrian mint of Hall in detail. But whether the rotary-press method achieved as wide a distribution for the coining of gold as was the case for silver is impossible to tell.

As early as 1551, the king of France appeared as one of the first interested parties when he had one of the Augsburg goldsmith Marx Schwabe's machines installed in Paris in that year. Schwabe claimed that 50 workers could be dispensed with through his invention. However, by 1556, strong opposition from the mint's employees and from other mints resulted in the restriction of the machine's use to the production of medals, jettons and the like. By 1585, France had reverted entirely to "hammer" production, and even a fresh attempt to reintroduce mechanical coining in 1620 was unsuccessful. Things looked much the same in England. Here too the definitive introduction of mechanical coining was frustrated by massive opposition from the mint workers. Mestrel, constructor of the machine, was implicated in counterfeiting in 1569 and again in 1577, and probably executed the following year. England did not convert exclusively to mechanical coining until 1662. Only in Austria did this process take place without major difficulties. Rotary coining, encouraged by the Emperor Ferdinand I and his successors, improved during two decades to such an extent that from 1571 the mint at Hall was able to produce coins entirely by machinery and abandon the "hammered" coinage, which was produced in

parallel. Hall became the model for many European mints. For example, the Spanish king demonstrated his interest in the new machines by seeking their installation at Segovia, in order that they could help with the coining of the enormous amounts of precious metals flowing in from the American possessions. His wish was complied with, and in 1585 the Austrian ruler sent rotary coining machines made in Hall to Spain, together with the personnel necessary for their operation.

From the end of the 17th century the screw press, also known as *balancier*, found a wider distribution than the rotary machine. Although it was invented as early as 1550, opposition from mint workers to the machine's introduction was only overcome a century later and persisted for a further 40 years, until the use of the screw press was customary everywhere. Up to 30 coins a minute could be struck by it. At the same time, the use of a punch in the manufacture of blanks was a major step forward. With its help it was possible to punch out uniform round discs from the metal strip – ingots – a prerequisite for the introduction of edgemarking. This was applied mechanically, in the form of lettering or ornament, using a so-called knurling machine, before or after the coining process, or at the same time, by use of a collar formed of several segments laid on the lower die. Edge decoration ensured that henceforth no illicit manipulations such as clipping or filing could be undertaken on the coins. Although treatment of the edge of the coin had become universal by the end of the 17th century, a distinction was still made during the 18th century, especially in the case of ducats, between those with unmarked and those with marked edges, and the use of the latter in payments was frequently demanded.

The coins of the Ottoman Empire were made by the traditional “hammering” method for much longer than in Europe. It seems that aids such as the draw-bench and the punch first arrived in the coinage towards the end of the 17th century. The final introduction of mechanical striking probably took place in the mid-19th century, when ‘Abdu’l-mejīd had the mint of Istanbul equipped along European lines in the course of his reform of the currency.

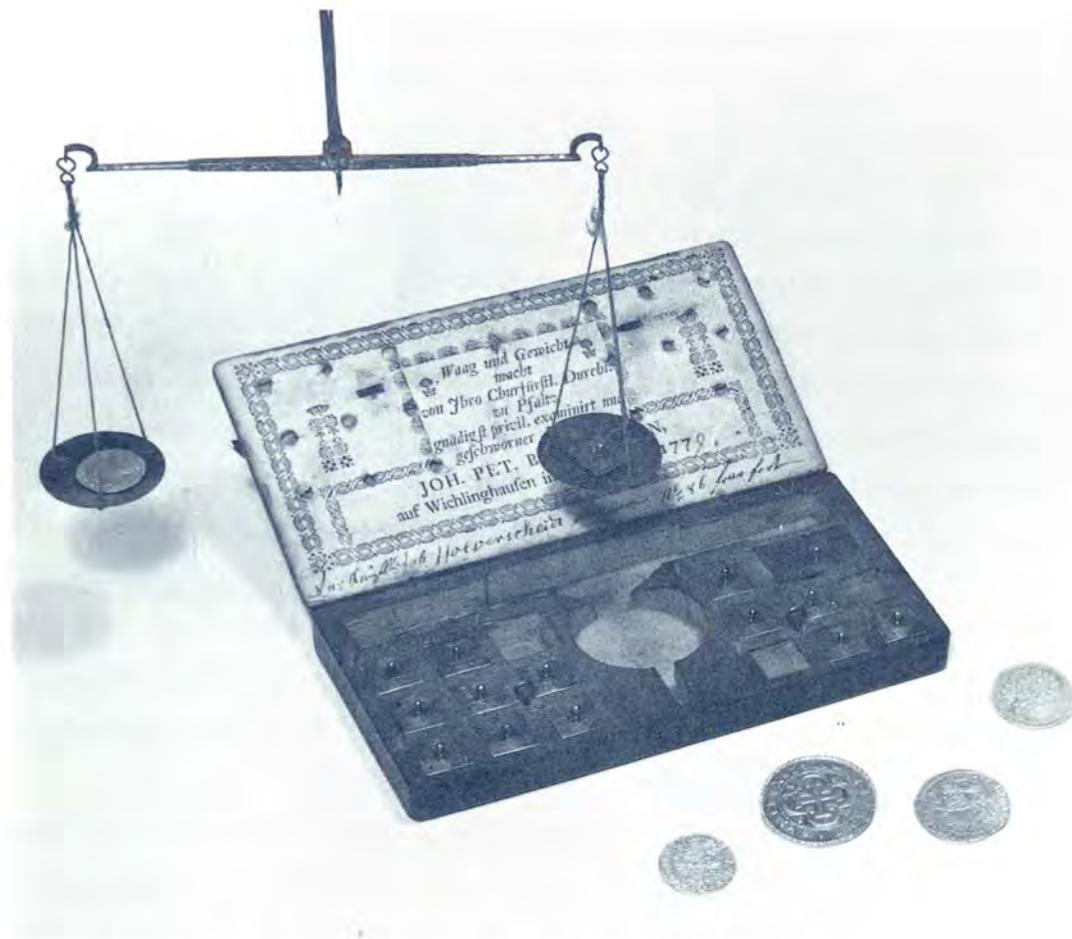
We are considerably better informed about the manufacture of the large plate-shaped Japanese gold coins (Plates 75 and 77). Until the suspension of their production in 1860, they were prepared by hand using a protracted process:

following the casting of a block of metal of the weight prescribed for the coin, this was brought to approximately the desired flat shape by hammering out. In the next operation several of the sheets thus prepared were laid on each other and their edges hammered until all pieces were the same size. They were then furnished with the official stamps before finally being given numerous notches running horizontally on the obverse, which were applied using a chisel. Finished examples of the Ōban size had to be submitted to the member of the Gotō family responsible for the coinage, who was obliged to apply his personal signature and the denomination to the obverse of the coin using Indian ink.

COIN-BALANCES

The multitude of gold denominations circulating in Europe from the sixteenth century (of which the Plates in this book should convey an impression) made coin-balances an indispensable item of everyday monetary transactions. As long as the principle of real worth was current, the weight and fineness of a precious-metal coin were of decisive importance for its value. Since the edge was only later protected by ornamentation or script, it was possible to clip or file this part of the coins with intent to defraud. That this was indeed widely practised is shown by the previously-mentioned Austrian hoard from Werfen, in Salzburg territory. This consisted entirely of cut-down gold and silver coins, together with the gold and silver clippings which had come from them. The hoard also contained clippings from other coins. In addition, coins sometimes circulated for over a century, as likewise emerges from coin hoards, valuation-tables and the weights used with coin-balances; i. e. even without fraudulent manipulation, they could become abraded and worn out from long use which made itself felt in their weight.

As shown by the illustration opposite, the ordinary, most commonly used coin-balance consisted of an equal-armed balance with two scale pans, together with a series of base-metal single weights corresponding to the gross weights of the most important gold (more rarely silver) coins in circulation, for use in deter-



Coin-balance from Berg, made by Johann Peter Braselmann in 1779

mining fitness for further circulation. As well as the full weights, many coin-balances included “compensatory weights” in an additional recess which could be closed by means of a flap or a sliding panel. These consisted of small, thin metal plates on which the weights were marked. If, upon weighing, a coin proved to be under-weight, the coin-balance was evened out by means of the compensatory weights. The measured difference from the nominal weight of the coin was converted into money and had to be paid additionally. Unfamiliar coins, not allowed for in this scheme, could be classified on the basis of their weight and their value determined. The scales and coin-weights were housed in a compact container (box) and could thus be carried about conveniently at all times. The coin-balances were used by money-changers, bankers and merchants, as illustrated by sixteenth-century paintings. Size and style were

governed by their needs and wishes. Small balances (for example with five weights) provide a picture of the coins most commonly found in transactions, while large ones with up to sixty weights thereby give an idea of how many types of coins were used in international trade at any one time.

Some of the great commercial towns developed into centres of the craft of balance-making. Among these were Milan, Paris, Lyon, Antwerp, Amsterdam, London, Nuremberg and Cologne. In this Rhenish trade metropolis about 50 weight- and balance-makers have been counted for the period 1600–1800. From the middle of the eighteenth century the production of such balances spread to the Duchy of Berg, which since 1614 had belonged to the Electoral Rhenish Palatinate. A typical coin-balance from this area is illustrated in the Appendix and described in detail. As a rule, German, French and Netherlandish weights were square and frequently bore on their upper surface a slightly simplified illustration of the corresponding coin, and later the names of the coins, which were also recorded in handwriting over the recesses reserved for the weights in the box used for storage and transport.

The balance- and weight-makers were organised in guilds and their products underwent strict quality controls. It was obligatory to identify the maker. This was done by a statement of name, place and date, and a master's sign on the scale pan, the case or the underside of the weights. The precision-made coin-balances were an expensive purchase, and hence were used for several generations, as can be gathered from the replacement weights for examples lost or no longer required. During the eighteenth century the precision of the weights worked out at 0.05 g. This resulted in a tolerance of 1.5% for ducats, for instance, and correspondingly less for the larger coins. Since it was possible to manipulate not only the coins but also the weights, inspectors known as "adjusters" ("Eichmeister") were appointed by the authorities, to make sure that neither the owner of a coin-balance nor the craftsmen involved in its manufacture tampered with the weights.

During the nineteenth century, improvement in coining technique, such as the universal introduction of the edge-marking collar (which did away with fraudulent clipping or filing of the coins) and the disappearance of the older coin-types from circulation made the use of coin-balances unnecessary.

POSTSCRIPT

Gold has fascinated men from time immemorial; they raised it to a mythic significance and endowed it with legendary powers. Moreover, its chemical properties made it an ideal raw material for coinage, the basis of all wealth. Even in antiquity, alchemists sought to manufacture the ever-scarce yellow metal by artificial means. During the period covered by this book, particularly in the 17th and 18th centuries, many princes maintained alchemists, in the hope of relieving thereby the pecuniary difficulties caused by their expensive households; so did Augustus the Strong, Elector of Saxony, who held Johann Friedrich Böttger in custody in Dresden. The latter did not succeed in making gold, but in 1707/1708 he discovered in his researches how to manufacture white porcelain – a “white gold”.

T H E P L A T E S

The colour illustrations of Plates 1–79 reproduce the coins at varying scales, each enlarged to between 1.7 and 7 times its actual size, with the exception of No. 77, which, owing to its large dimensions, has had to be shown at a reduced scale. The black-and-white photographs beside the captions give the actual sizes of the coins, except for Nos. 75 and 77, which are reduced in scale.

The coin design as a whole is described from the point of view of the observer, as is usual nowadays, except that figures are dealt with in the opposite (heraldic) fashion: for instance, the right hand of a standing figure lies in the left half of the coin design.

All Arabic inscriptions are to be read from right to left.

The date of striking is not recorded on all coins, and is given in the caption after the designation of the coin. Dates in brackets indicate that the date of production has been inferred from information on the coin itself or from other sources.

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DUCHY OF MILAN

Duke Lodovico Maria Sforza, 1494–1500

Double ducat, n. d.

Mint: Milan

Obverse: Head LVDOVICVS ♀ M ♀ – SF ♀ ANGLVS ♀ DVX ♀ MLI
(Ludovicus Maria Sfortia anglus dux Mediolani)

Bust, right

Reverse: + PP ♀ ANGLE ♀ Q3 ♀ CO ♀ AC ♀ I – ANVE ♀ D ♀ 7 – e ♀
(Papiensis Angleriae Tricarici comes ac Ianuae dominus etc.)

The duke, brandishing a sword, galloping on horseback, right

Weight: 6.87 g · ∅ 25.3 mm

Literature: CNI 8



In succession to the Visconti, the Sforza dynasty took over control of the Duchy of Milan in 1450 and ruled it, with interruptions, until 1535, when the family died out with Francesco II. The family took its name from Muzo Attendolo, father of the first Sforza to be duke of Milan, who had been named “the forceful” (Sforza). Following the death of his nephew, for whom he had already illegally exercised guardianship since 1481, Lodovico Maria Sforza succeeded to absolute power in 1494. His short reign ended in 1499 with flight from the troops of Louis XII of France. In an attempt to regain his duchy, Lodovico was taken prisoner on 9 April 1500, and Milan now became subject to the French crown.

The portraits on Lodovico’s coins are among the most accomplished of the Renaissance. In the realistically depicted features, one may recognise a proud man, conscious of his power; the portrait may have been based on sketches by Ambrogio Preda, a pupil of Leonardo da Vinci. Francis I of France later had himself depicted in a similar fashion on his Milanese coins. Double ducats were the only gold denomination produced. Their theoretical weight was 7.02 g, with a fineness of 24 carats, i.e. the coins were to be of pure gold. Analysis of our example gave a gold content of 995/1000.

The double ducat was also known as the gold testone, from the portrait on the obverse. The testone (a silver coin) was first struck by Galeazzo Maria Sforza in 1474, in imitation of the Venetian lira Tron, the first Italian coin with a ruler’s portrait. A reference to the mint of our double ducat is made by the head of the patron saint of Milan, St. Ambrose, which can be seen at the beginning of the obverse legend.



KINGDOM OF CASTILE

Queen Isabella I of Castile and King Ferdinand II of Aragon, 1474–1504

4 excelentes de la Granada, n. d. (after 1497)

Mint: Segovia



Obverse: ✠ FERNANDVS : ET : HELISABET : REX : ET : REGINA : C
(Ferdinandus et Elisabeth rex et regina Castellae)

The busts of the two sovereigns turned towards each other;
above, an aqueduct as mintmark and the figure 4 for the value

Reverse: S SVB : VMBRA : ALARVM : TVARVM : PROT
(Sub umbra alarum tuarum protege nos)

Crowned shield with the arms of Castile/Leon, Aragon/Sicily and Granada,
in front of a nimbate eagle with outspread wings; in the right field, the letter A

Weight: 13.98 g · ø 34.5 mm

Literature: Heiss 59

The marriage of Isabella I and Ferdinand II, contracted in 1469, laid the foundations for the subsequent unity of Spain. However, Castile (inherited by Isabella in 1474) and Aragon (king of which Ferdinand became in 1479) remained at first administratively separate kingdoms. With the conquest of the last Moorish foothold, Granada, in 1492, they ruled virtually the whole Iberian peninsula. Only the kingdom of Portugal, which lay to the west on the Atlantic coast, was excepted.

The journeys of Christopher Columbus, whose voyages were partly financed by Isabella, also took place during the reign of the two “Catholic sovereigns” – an honorary title bestowed on them in 1496 by Pope Alexander VI.

The Spanish word *excelente* (i. e. “fine”, “splendid”) denoted gold coins of very high fineness. A new *excelente*, furnished with the distinguishing appellation “de la Granada”, was introduced in the second coinage reform of 1497, known as the Pragmatic of Medina del Campo. With a fineness unaltered at 23¾ carats and a weight of 3.52 g (the previous *excelente*, the *dobla castellana*, weighed 4.60 g), it was now adjusted to the Aragonese ducat. The use of this denomination in Aragon resulted from its coastal position in the western Mediterranean and its Italian possessions. The *excelente de la Granada*, like the earlier coins, bore as well as Isabella’s portrait that of her husband, and mentioned both their names in its legend. With this issue, the reverse shield united the arms of Castile and Aragon on the gold coinage for the first time. In addition, a split pomegranate, referring to the fall of Granada, was incorporated in the lower field. Beginning with the double *excelente*, the shield was surmounted by an eagle, and surrounded by a complementary legend taken from Psalm 17, verse 8: “hide us under the shadow of thy wings.”

The mint of Segovia had as its mark the Roman aqueduct in the city.



PRINCE-ARCHBISHOPRIC OF SALZBURG

Prince-archbishop Leonhard of Keutschach, 1495–1519

3 ducats, 1513

Mint: Salzburg

Mintmaster: Hans Thenn



Obverse: ✠ LEONARD⁹ DE KEWTSCH' ARE' SAL'

(Leonardus de Keutschach archiepiscopus Salisburgensis)

Beneath a mitre, a shield quartered with the archiepiscopal and family arms; beside it, the date, divided 15 – 13

Reverse: ✠ ORA PRO ME SA – NCTE RVDBERTE

Bust in monastic garb, right

Weight: 10.61 g · ø 28.3 mm

Literature: Bernhart and Roll 9

The Augustine canon Leonhard of Keutschach was elected Archbishop of Salzburg in 1495 and consecrated the following year, on 17 April 1496. Leonhard, who had already in 1490 obtained for himself the encumbered provostship of the cathedral by payment of 3,000 Gulden, was able during his period of office to redeem pawned goods belonging to the archbishopric and considerably to enlarge the territory of the archbishopric of Salzburg through the acquisition of new districts.

From 1500, Leonhard had two types of gold coin issued, one being the Goldgulden of Rhenish standard (see Vol. II, Plate 63), the other the ducat following the Hungarian standard. The latter was also issued as multiples up to sixfold weight, in both round and square shapes. Leonhard's coins reflected the transition from the Middle Ages to the early modern period. In the letter-forms of the legend, the new Roman script is also used on the ducats of 1513 alongside the hitherto usual Gothic letters. A change is likewise noticeable in the design and composition of this issue: the standing figure of St. Rudbert on the reverse of the coin is replaced by a portrait-bust of the archbishop. This shows similarities to the portrait-coins struck in Italy from the middle of the fifteenth century (cf. Plate 1); however, whether the piece illustrated here goes back to these cannot be said for certain.

Around 1513, the year this coin was produced, the Salzburg mint was transferred to the present-day Badergässchen, where Hans Thenn had bought a house on Leonhard's instructions. He and his descendants worked there as mintmasters for the archbishops until 1572.



DUCHY OF MILAN

Francis I, King of France, 1515–1522

Scudo d'oro del sole, n. d. (1515–1519)

Mint: Milan



Obverse: Head ◊ FRANCISCVS ◊ O ◊ G ◊ FRANCOR ◊ REX ◊ OVX ◊ M ◊
(Franciscus dei gratia Francorum rex dux Mediolani)

Beneath a crown, a large shield with three fleurs-de-lys; above it, a sun

Reverse: Serpent ◊ XPS ◊ VINCIT ◊ XPS ◊ REGNAT ◊ XPS ◊ IMPERAT ◊
(Christus vincit, Christus regnat, Christus imperat)

A cross, the arms of which end in lilies

Weight: 3.43 g · ø 26.1 mm

Literature: Lafaurie 634 – CNI 4

The struggle over the claims of the House of Anjou to Naples, which had been smouldering since 1494, led the young king Francis I to Italy in the very year of his accession to the throne. In the battle of Marignano (present-day Melegnano) in Upper Italy, he defeated the Swiss in Milanese service and then occupied Milan. Like his predecessor Louis XII, Francis I was however unable to maintain his position there. In 1521, the allied troops of the Habsburg Emperor Charles V and Pope Leo X expelled the French again, and in the following year Francesco II Sforza returned to the duchy his family had ruled since 1450.

Among the coins struck for Francis I in Milan, there are two very dissimilar types of gold issue. The one is the double ducat, never issued in France even as the single denomination, which in its standard, design and style follows local prototypes, i. e. the preceding issues of the Sforza. The obverse bears a bare-headed portrait of the King with mid-length hair, and the reverse a crowned shield quartered with the arms of France and Milan.

The scudo d'oro del sole shown here is the well-known écu d'or of the French coinage system. The small sun over the crown, added under Louis XI in 1475, was joined to the name in explanation, and denoted the issue. This apparently typical French coin contains several indications of its Italian minting-place. The inscriptions each begin with a Milanese symbol: the head of the city's patron saint Ambrose, and a serpent devouring a child – the coat of arms of the Lombardian noble family Visconti. The obverse legend ends with the title "Duke of Milan," which is not found on the contemporary issues from French mints.

The cross on the reverse, linked with the words Christ conquers, Christ reigns, Christ governs, formed the characteristic design of the écu d'or from the time of Louis IX, and was retained on the gold coinage until the French Revolution.



DUCHY OF BRABANT

Emperor Charles V, 1506–1555, from 1519 Holy Roman Emperor,
from 1516 as Charles I also King of Spain

Carolusgulden, n. d. (1521–1545)

Mint: Antwerp



Obverse: KAROLVS x D' x G' x ROM' x IMP' x Z x HISPA' x REX hand
(Karolus dei gratia Romanorum imperator et Hispaniarum rex)
Crowned hip-length figure of the emperor, half-right, holding in his right
hand a sword, in his left the imperial orb

Reverse: Crown DA x MICHI x VIRTVT' x CONTRA x HOS' x TVOS
(Da mihi virtutem contra hostes tuos)

On a double-headed eagle, a shield with the arms of Castile and Leon
upper left and lower right, and of Austria, Valois, Burgundy and Brabant
in the other two quarters

Weight: 2.90 g · Ø 23.7 mm

Literature: de Witte 662 – van Gelder and Hoc 185–1a

While still a child, Charles V, who was born in 1500 in the Flanders city of Ghent, inherited Burgundy and Netherlandish territories, following the early death of his father, Philip the Fair. During his reign he added to these Friesland, Utrecht and Overijssel, Groningen and Guelders. In 1543 these possessions comprised 17 provinces, stretching from the county of Artois in the west to the Ems in the north-east. After the second division of the Holy Roman Empire into administrative “circles” in 1512, these provinces formed a substantial part of the Burgundian Imperial Circle.

With the second issue, introduced in 1521, Charles V abandoned the coinage system he had taken over from his father and introduced new denominations and types for both the gold and the silver coinages. The Carolusgulden, bearing a portrait of the emperor, took the place of the florin Philip (Vol. II, Plate 62), which depicted that saint, and was the most debased coin of this issue, with a lighter weight and a fineness reduced to 583/1000. The Carolusgulden had a value of 20 stuivers (sols), three Carolusgulden equalling the real (also new and with the same design) and 1½ Carolusgulden its half. In 1540 these gold coins were supplemented by the crown of the sun (i. e. the écu d'or au soleil) based on the French prototype.

The emperor's personal motto (Give me strength against thine enemies) was chosen as the reverse legend for all coins of the second issue. In which of the 17 provinces the coin was issued is no longer apparent from the legend, and so can now only be recognised from the mint-mark, the hand before the emperor's name. From surviving figures, Antwerp produced 1,739,228 pieces between 1521 and 1552.

Almost twenty years after the golden Carolusgulden, a silver equivalent was produced, also valued at 20 stuivers. This issue was comparable with the German Taler.



KINGDOM OF PORTUGAL

King John III, 1521–1557

Português, n. d.

Mint: Lisbon



Obverse: ✠ IOANES : 3 : R : PORTVGALIE : AL : C ·
G : C : N : C : ETI / ARAB – PSIE

(Ioanes 3 rex Portugaliae Algarbiae dominus Guineae conquisitionis navigationis
commercii Ethiopiae / Arabiae Persiae Indiae)

Crowned coat of arms, with the letters L – R at the sides

Reverse: ✠ IN ✠ HOC ✠ SIGNO ✠ VINCEES

Cross of the Order of Christ in a quatrefoil

Weight: 34.85 g · Ø 38.1 mm

Literature: Ferraro Vaz J 3.06 var.

When John III succeeded his father Manuel I on the throne, Portugal was the leading maritime and colonial power of western Europe. She dominated trade in the Indian Ocean and had settlements on both the west and east African coasts. In 1500 Brazil was taken into possession by Pedro Alvarez Cabral as Portugal's first American territory, and under John III it was colonised from 1532.

Portugal's wealth at this time was also reflected in her coinage, as shown by the português, introduced in 1499 under Manuel I. This large, imposing coin was struck from gold imported from west Africa. It had a fineness of 23¾ carats and a nominal weight of around 35 g. One português was worth ten cruzados, which were also struck in gold of the same fineness.

The obverse bears the Portuguese arms: five shields in the form of a cross (known as the Quinas), surrounded by seven castles. In the legend, which is partly arranged in two lines, the titles and possessions of the king are combined with references to long-distance trade, which includes Ethiopia, Arabia, Persia and India. The equal-armed cross on the reverse is the sign of the Portuguese Order of Christ, the Grandmaster of which was the king.

The striking of this large gold coin, which took place in the mints of Lisbon and Porto, was discontinued in 1538.

The português was the prototype for the Portugalöser of 10, 5 and 2½ ducats, struck mainly in northern Germany from about 1560 (Plates 18 and 20).



KINGDOM OF NAPLES

Emperor Charles V, 1516–1556, from 1519 Holy Roman Emperor

Double scudo, n.d. (from 1525)

Mint: Naples

Mint Director: Giovanni Baptista Ravaschieri

Die-engraver: Giannantonio Ennece

Obverse: CAROLVS·V·ROM·IMP

(Carolus V Romanorum imperator)

Armoured bust with radiate crown, right; above the right shoulder, the latinised monogram IBR of the mint director

Reverse: MAGNA OPERA DOMI

(Magna opera domini)

Pax with cornucopia, standing left; with a torch she is setting fire to a book and piled-up weapons

Weight: 6.69 g · \varnothing 25.8 mm

Literature: CNI 26



In 1515 Charles V assumed power in the Netherlands in place of his mad mother. One year later, following the death of Ferdinand, he became King of Spain and simultaneously ruler of Naples and Sicily. He had both provinces administered by viceroys. During his reign, Charles laid the foundations of the Spanish Empire: on his instructions, the first circumnavigation of the globe was achieved by Magellan in 1518, Mexico was conquered by Cortés two years later and Peru by Pizarro in 1531, through which the Spanish crown came into the possession of immense reserves of precious metals.

Charles V had only a few gold denominations struck. The ducats initially issued were later replaced by the scudo d'oro, which subsequently became the principal Neapolitan gold coin; alongside it, smaller amounts of its double and quadruple were produced. Two designs are known for the double scudo; they are modelled on the example of ancient Roman coins and bear a powerfully expressive portrait of the ruler. Mythological designs of Pax and Athena were chosen for the reverses. The signature of the mint director Giovanni Baptista Ravaschieri enables us to date our coin more precisely. He was in charge of the Naples mint under Charles V from 1525 and occupied the post until the time of Philip II of Spain.



KINGDOM OF SPAIN

Queen Joanna and King Charles I, 1516–1555,
from 1519 Holy Roman Emperor as Charles V

Escudo, n. d. (after 1537)
Mint: Seville



Obverse: IOANA ° ET ° KARO [LVS]

Crowned shield with the arms of Castile/Leon, Jerusalem/Navarre, Aragon/
Sicily and Granada; beside the shield a quadrilateral mark and the letter S

Reverse: HISPANIARVM ° REG [ES ° SICILIAE]

Cross of the Order of the Holy Sepulchre in a quatrefoil whose angles
are decorated

Weight: 3.13 g · Ø 21.3 mm

Literature: Heiss 2 var.

After the death of Ferdinand of Castile and Aragon in 1516, his grandson Charles inherited both crowns. Charles, who was also a grandson of the Emperor Maximilian I, thus founded the rule in Spain of the Habsburg family, which lasted for around 200 years. Charles's mother Joanna was passed over by this succession; she was declared unfit to rule on account of her deep depressions following the early death of her husband Philip the Fair of Burgundy in 1506. Nicknamed "the Mad", she lived in the castle of the old Castilian city of Tordesillas on the Duero until 1555. One year later Charles abdicated and retired to the monastery of San Yuste. The Spanish territories passed to his son Philip II. The outflow of high-purity *excelentes* into neighbouring countries caused Charles to create a coin comparable to the *écu d'or au soleil* and the Italian *scudo d'oro* derived from it. Therefore, he introduced the *escudo* (i. e. "shield") in 1537. The new denomination also bore the name "corona", after the crown over the coat of arms. However, its standard was altered *vis-à-vis* its French prototype: the fineness was reduced to 22 carats (= 916.6/1000) and the nominal weight was somewhat lower, at 3.38 g (cf. Plates 4 and 9).

The designs of the obverse and reverse followed the French types. The shield united the arms of the territories which were subject to the Spanish crown, to whose number the kingdom of Naples had belonged since 1503. From its claim to the title "King of Jerusalem," this bore in its arms a cross, which on the *escudo* occupies the reverse.

The mint of Seville is identified as the source of our coin by the letter S, representing one of the two wardens (who according to the regulations had to place their marks on the coinage), and the mark beside the shield. Its symbol, a castle above the shield, cannot be made out on our uncentred piece.

Under Charles's son Philip II the double *escudo* became in 1566 the *doblon*, with the same design. This became known abroad as the *pistole* and later served as the prototype for the coinages of many issuing authorities (Plate 56).



KINGDOM OF FRANCE

King Francis I, 1515–1547

Écu d'or à la croisette, n.d. (1541–1545)

Mint: Poitiers

Mintmaster: Jean de la Roche



Obverse: ✠ FRANCISCVS : DEI : GRA : FRANCORV : REX · R

(Franciscus dei gratia Francorum rex)

A large crowned shield with three fleurs-de-lys; below, the mint-letter G

Reverse: ✚ XPS : VINCIT : XPS : REGNAT : XPS : IMPER · R ·

(Christus vincit, Christus regnat, Christus imperat)

Within a twelve-arched tressure, a small equal-armed cross with a central pellet

Weight: 3.39 g · \varnothing 24.7 mm

Literature: Lafaurie 749

Francis I, who was descended from the collateral Orléans-Angoulême line of the House of Valois, succeeded his father-in-law Louis XII as king at the age of 21. In terms of foreign policy, his reign was determined by four wars extending over two decades against the Spanish-Habsburg hegemony of Charles V, by whom he had already been defeated in the Imperial Election of 1519 at Frankfurt am Main. Under Francis I the Renaissance in France reached its zenith. The flamboyant king laid the foundations of the famous châteaux of the Louvre, Fontainebleau and Chambord on the Loire. He summoned numerous scholars and artists to his court, including some from Italy: among their number was Leonardo da Vinci, who died in 1519 in the château at Amboise.

The principal 16th century French gold coin is the écu d'or (i.e. golden shield), whose name comes from the shield which fills the obverse. Different issues were designated more closely by additional labels based on the design. The type shown here, with a small equal-armed cross (croisette) on the reverse, was introduced on 19 March 1541 and was also issued as a half-écu. The standard laid down in 1519, which prescribed a fineness of 23 carats (958.3/1000) and a weight of 3.439 g, remained unaltered. Accordingly, 71½ pieces were to be struck from the Paris or Troyes mark of 244.752 g. The value of the écu was nevertheless increased from 40 to 45 sols tournois.

From 1389 it was usual to distinguish the various mints by pellets in the inscriptions. In 1540 Francis I introduced a system (in force to the present) whereby the 28 mints working in the country were denoted by letters. Our coin bears, under the shield on the obverse, the letter G for the mint of Poitiers as well as a pellet under the eighth letter of the obverse and reverse legends, which follows the old system.



KINGDOM OF ENGLAND

King Henry VIII, 1509–1547

Crown, n. d. (1546/1547)

Mint: Bristol

Under-treasurer: William Sharington

Obverse: ⚔ · ꝥENRICꝰ · 8 · ROSA · ⚔ · SINE · ⚔ · SPINE · ⚔ ·

(Henricus 8 rosa sine spine)

Beneath a large crown, a double rose between the crowned letters ꝥ – R

Reverse: ⚔ · W · D · G · ANGLIE · ⚔ · FR · Z · HIB · REX

(WS dei gratia Angliae Franciae et Hiberniae rex)

Beneath a large crown, a shield quartered with the arms of England and France

Weight: 2.94 g · Ø 24.2 mm

Literature: North 1836 – Seaby 2310



Henry VIII, portrayed so strikingly as a self-confident Renaissance prince by Hans Holbein the Younger, who lived at the English court, broke away from Rome and in 1534 made himself supreme head of the English church. His excuse was the Pope's objection to his divorcing his first wife, Catherine of Aragon, who had not borne him his hoped-for son and heir to the throne. The king married a further five times; he was prone to violent acts, and had two of his wives (Anne Boleyn and Catherine Howard) put to death.

The crown denomination was created in 1526 by Cardinal Wolsey, Henry VIII's chancellor and personal adviser, in the course of and as part of an important and necessary coinage reform. It formed a counterpart of equal value to the French écu d'or, which was entering England in huge numbers, and took its name from the latter's more precisely-defined issue "à la couronne". The fineness of 22 carats chosen for this coin lay below that of the other English gold denominations. From its connection with the new type it became a standard term, "crown gold". From 1544, the poor financial situation caused Henry VIII to reduce the standard of the gold coinage repeatedly; the crown reached a fineness of only 20 carats and a weight-standard of 3.11g. In spite of the erection of supplementary mints, the amount of debased coinage struck during these years was so great that the quality of their outward appearance fell to a low level, as is well illustrated by our example, which was produced in this period. It was struck at the Bristol mint, as is evident from the initials WS of the under-treasurer William Sharington.

The obverse bears the double rose of the House of Tudor, to which Henry VIII belonged. The legend likens the king to a rose without thorns, a formula which was even amplified on other coins by the word rutilans, i. e. dazzling, radiantly handsome. The reverse legend consists of his titles, amongst them that of King of Ireland, adopted in 1542.



LORDSHIP OF MIRANDOLA

Lord Lodovico II Pico, 1550–1568

Scudo d'oro del sole, n. d.

Mint uncertain



Obverse: * LVD · PICVS · II · MIR · CON · Q · DNS

(Ludovicus Picus II Mirandolae Concordiaequae dominus)

Decorated shield quartered with the arms of Mirandola (1st and 4th quarters) and of Mirandola-Concordia (2nd and 3rd quarters), charged with the Pico family arms; above, a six-rayed sun

Reverse: * IN · TE · DOMINE · CONFIDO

Decorated cross with lilies in the four angles

Weight: 3.30 g · Ø 25.1 mm

Literature: CNI 6

Mirandola, which lies 32 km north-east of Modena, was the centre of the small Upper Italian territory of the same name, and belonged to the Pico family from the fourteenth century. Besides Mirandola, they owned Concordia, 7 km north-west of their family seat, which is referred to in the obverse legend. The lord of Mirandola was raised to ducal status by the Emperor Mathias I in 1617. The rule of the Pico ended barely a century later: finding Francesco Maria Pico guilty of treachery during the War of the Spanish Succession, the Emperor Charles VI declared him to have forfeited his dukedom, confiscated the family's private possessions and on 15 July 1710 sold the territory to the Duke of Modena for 175,000 doppie.

Mirandola was granted the mint right in 1515, by Maximilian I, and this privilege was confirmed by Charles V in 1521. The extensive coinage of the rulers of Mirandola bears no relationship to the small size and political insignificance of their possessions. Thus the zecchino, the doppia and the scudo, and sometimes also their halves and multiples, were issued in gold. Among the last, one coin is especially worthy of note, which with a nominal value of 24 scudi and a weight of about 79 g can surely not be described as currency in the true sense, but has a purely representative character.

Lodovico II restricted his gold coinage to the scudo shown here and its half. The écu d'or au soleil, introduced by Louis XI of France in 1475 and thus named because of the small sun over the coat of arms, served as its prototype. The reverse design, with four lilies in the angles of a fragmented ornamental cross, goes back to the earliest écu d'or of the thirteenth century. However, the original legend (Plate 9) was replaced by the beginning of Psalm 31, verse 2: "In Thee, O Lord, do I put my trust."



KINGDOM OF PORTUGAL

King John III, 1521–1557

Cruzado calvário, n. d. (1555–1557)

Mint: Lisbon



Obverse: ✠ IOA:III:POR:ET:AL:RE
(Ioannes III Portugaliae et Algarbiae rex)
Crowned coat of arms

Reverse: :IN:HOC:SIG – NO:VINCES
Cross calvary

Weight: 3.56 g · Ø 23.8 mm

Literature: Ferraro Vaz –, cf. J 3.19 ff.

Under John III, the Portuguese homeland encountered increasing economic difficulties, exacerbated among other things by the great earthquake of 1531, which destroyed Lisbon and several cities. Moreover, problems arose through the Protestant movement, which the King sought to check by the introduction of the Inquisition. This earned him the nickname “the Pious” and the honorary title *Zelator fidei* (Zealot of the faith), which was granted to him by Pope Paul III. The export of high-grade Portuguese coins compelled John III first to suspend the striking of the largest coin, the *Português* introduced by his father (Plate 6), and then to reduce the fineness of the 23³/₄-carat *cruzado*. This took place through decrees to this effect in 1538 and 1555. However, the reduction of fineness to 22⁵/₈ carats, as initially decided upon, was not sufficient. The fineness was therefore eventually reduced again to 22¹/₈ carats (= 921.9/1000).

With the second coinage reform, the type shown here appeared as the new issue of the *cruzado*, which was also known as the “*calvário*” from the cross on the reverse. The value of this *cruzado* was 400 reis.

The thematically related *São-vicente*, a heavier gold coin with the effigy of St. Vincent (patron saint of Lisbon), was put into circulation a year later; as with the *cruzado calvário* its design and legend refer to the Catholic faith which John III protected. The legend chosen for it was “Zealot of the faith unto death”.



KINGDOM OF FRANCE

King Henry II, 1547–1559

Double Henri d'or, 1558

Mint: Rouen

Mintmaster: Nicolas Delisle



Obverse: HENRICVS · II · D · G · FRAN · REX

(Henricus II dei gratia Francorum rex)

Bust of the king in armour, right

Reverse: ✠ DVM · TOTVM · COMPLEAT · ORBEM ciborium 1558

Cross consisting of four crowned Hs; fleurs-de-lys and crescent moons in the angles; in the centre the mint-letter B

Weight: 7.24 g · \varnothing 28.5 mm

Literature: Lafaurie 809

The foreign policy of Henry II was determined, as was that of his father Francis I, by the wars against the Emperor Charles V, i. e. the Habsburg and Spanish territories. With the help of the German Protestants he overran the three Lorraine bishoprics of Metz, Toul and Verdun in 1552, and in 1558 he regained Calais, the last English possession on the Continent, for the crown. By the Treaty of Cateau-Cambrésis he was forced to finally renounce his claims in Italy in favour of Spain. Henry II died prematurely in 1559 as the result of a tournament injury. Following the early death of his sickly son Francis II (who was married to Mary Stuart, Queen of Scots), his consort Catherine de Medici took over the regency for the under-age Charles IX.

While the portrait of the ruler had been usual on silver testons for decades, the profile portrait appeared for the first time on the gold coinage under Henry II. The new type, called the Henri d'or, differs from its predecessor, the écu d'or, in standard, design and legends. The fineness remained at 23 carats, and the standard weight was increased to 3.65 g, i. e. 67 coins were to be struck from the Paris mark. As well as the single piece, double (as our coin) and half Henris d'or were issued. The value of the Henri d'or was set at 50 sols tournois.

The reverse legend contains the king's motto and, as a pictorial supplement to this, the crescent moon in the angles of the cross. This personal mark of the king's is also interpreted as an emblem of his mistress, Diana of Poitiers.

The double Henri d'or represented here comes from the mint of Rouen, identified by the letter B and the pellets beneath the fifteenth letter of the legends. The mintmaster employed there from 1551 was Nicolas Delisle, who may be identified on the coins by his symbol, a cup or ciborium.

Charles IX, the younger son of Henry II, reverted in 1561 to the écu d'or of the old style.



THE TEUTONIC ORDER IN LIVONIA

Master of the Order William of Fürstenberg, 1557–1559

Broad heavy Goldgulden, 1559

Mint: Wenden ?



Obverse: WILHELM ☸ FVRSTE - NBERG ◦ D ◦ G ◦ M ◦ LI - ◦

(Wilhelm Furstenberg dei gratia magister Livoniae)

The Master in armour, standing facing, with his sword shouldered.

In front of him a richly decorated shield, quartered with the arms of the Order and of his family. In the field right and left ☸ between pellets

Reverse: ☸ CHRISTVS ☸ SAL - VS ☸ NOSTRA ☸ 5 • 9 • - •

Mary as queen of heaven with the infant Jesus, holding a sceptre and standing in a circle of rays on a crescent moon

Weight: 4.04 g · ø 29.4 mm

Literature: N.N., Goldgulden Wilhelms von Fürstenberg, Deutschordensmeister in Livland, in: *Berliner Münzblätter* N.F.13/14 (1903) 220–222

In 1557 William of Fürstenberg became Master of an already declining Teutonic Order in Livonia. An alliance against Russia formed, contrary to agreement, between the Order and Poland led Russia under Ivan IV to begin the conquest of Livonia in 1558. In the very same year Nawa and Dorpat fell to the Tsardom. In this distress William was forced to resign the office of Master of the Order in 1559. He was captured by the Russians at Vellin castle in 1560 and taken to the Moscow region. William's successor and the last Master of the Order, Gotthard Kettler, at first placed Livonia under Poland's protection and finally ceded it in 1561. The remaining parts of the Order's lands were occupied by Sweden and Denmark.

The origins of the Teutonic Order go back to the twelfth century. In 1189, citizens of Bremen and Lübeck founded a hospital before the city of Acre (present-day Akko in Israel), which was being besieged by the Crusaders. After the city's capture, the hospital was shifted into the city and carried on by a religious brotherhood, whose transformation into a knightly order followed in 1198. Profiting from the favour of pope, emperor and other secular princes, the Order was able to expand its territory greatly in the course of time. Under the last High and German Master, Archduke Eugen of Austria, the Teutonic Order was transformed in 1925 into a nursing order.

Extremely little is known about the coinage of Master of the Order William of Fürstenberg. Gold coins exist from the years 1558 and 1559. As with the coin illustrated, they are without exception broad heavy Goldgulden. William had coins struck at his mints of Riga, Reval and Wenden. Wenden, the seat of the Order's Master, may be accepted as the source of the gold coins on which the mint name is not given. The coinage consisted of Goldgulden valued at five Riga marks and double Gulden of ten marks, which are known only from literary sources.



KINGDOM OF ENGLAND

Queen Elizabeth I, 1558–1603

Half-pound, n.d. (1560/1561)

Mint: London



Obverse: ELIZABETH·D·G·ANG·FRA·ET·HIB·REGINA star

(Elizabeth dei gratia Angliae Franciae et Hiberniae regina)

Crowned bust of the Queen, left, with ruff and richly decorated dress

Reverse: · Star SCVTVM·FIDEI·PROTEGET·EAM·

Crowned quartered royal shield, with the letters E – R at the sides

Weight: 5.54 g · \varnothing 30.6 mm

Literature: North 2019

Following the short reigns of her half-brother Edward VI and her half-sister the Catholic Mary I, Elizabeth I ascended the English throne at the end of 1558. She was the daughter of Henry VIII and his second wife, Anne Boleyn. The divorce from his first wife, refused by the Pope, had led to the separation from Rome and the founding of the Anglican church, which finally took shape and was established under Elizabeth.

During her 45-year reign, Elizabeth issued a rich series of gold coins, which – including the fractional pieces – consisted of nine denominations, but only four designs. In addition, there were eleven different silver coins. The gold issues divide into two groups according to their fineness: those produced in “crown gold” of 22 carats (= 916.6/1000) and those in fine gold of 23.9 carats (= 994.8/1000). They circulated simultaneously. The half-pound of 10 shillings illustrated here was struck in crown gold, which was originally introduced in 1526. All gold coins of this fineness (pound, half-pound, crown and half-crown) bear a profile portrait of the Queen and the crowned English arms. The letters ER stand for Elizabeth regina. The reverse legend reads in translation: the shield of faith shall protect her.

The undated coins of Elizabeth can be dated by reference to fixed marks, whose dates of use are known. The issues with the star at the end of the obverse legend and the straight Z in the queen’s name belong to the years 1560–61. At this time the Parisian Eloye Mestrell introduced mechanical coining into the London mint, which was used alongside the conventional technique (hammered coinage) until 1571, when it had to be abandoned because of opposition from the mint workers. The difference between machine-made and hand-struck coins is apparent from a comparison of the half-pound shown here and the sovereign in Plate 19.

The pound was worth 20 shillings. Thirty-three coins were struck to the Troy pound of 373.248 g, giving a standard weight of 11.31 g.



COUNTY OF FLANDERS

King Philip II of Spain, 1555–1598

Half-real, n. d. (1560–1567)

Mint: Bruges



Obverse: DOMINVS · MIHI · ADIVTOR

Bust of the King, right; below, the mintmark (a lily) between colons

Reverse: · PHS · D · G · HISP · REX · COMES · FL ·

(Philippus dei gratia Hispaniarum rex comes Flandriae)

Beneath a large crown, a shield with the arms of Castile/Leon;

Aragon/Sicily; and Austria/Valois/Burgundy/Brabant charged with

Flanders/Tyrol

Weight: 3.47 g · \varnothing 25.0 mm

Literature: van Gelder and Hoc 207 – 7b

Philip II was unable to maintain the 17 Netherlandish provinces he inherited from his father as an entirely united territory. Residing finally and for good in Spain from 1559, he handed over their administration first to his half-sister Margaret of Parma, who was later succeeded by the Spanish general the Duke of Alva.

Increasing centralism and religious antagonism towards the firmly Calvinist north precipitated the Revolt of the Netherlands in 1566 and led to the secession from Spain of the seven northern provinces in 1581.

Philip II took over the gold real and its half, introduced by his father in 1521, and struck both with unaltered weight and fineness until 1598. While the full real had a standard weight of 5.32 g and a fineness of 992/1000, the half-real was distinctly heavier than half this, weighing 3.50 g. This was balanced by a lower fineness of 750/1000, so that in 1559, for instance, two half-reals of 35 stuivers were still intrinsically the equal of a real of 70 stuivers.

According to figures surviving for the Bruges mint, the output of the fractional piece (584,410 examples) was considerably larger than that of the real, of which 350,095 were struck.

The designs of the obverse and reverse are no longer comparable with the original type, whose designs corresponded exactly to those of the Carolusgulden illustrated in Plate 5. The half-figure of the ruler has given way to a striking portrait with the regent's individual features, and the double-headed eagle is lacking behind the coat of arms.

Philip II's personal motto (God is my helper) forms the obverse legend. The fractional piece is distinguished from the full real by details: the real shows the king crowned, not bare-headed, and the coat of arms is surrounded by the collar of the Order of the Golden Fleece.



KINGDOM OF HUNGARY

King Ferdinand I, 1527–1564, from 1556 Holy Roman Emperor

Ducat, 1563

Mint: Kõrmõcz-Bánya (Kremnitz)

Die-engraver: Abraham Eyzkher



Obverse: FER · D · G · EL · RO · IM – shield – · S · AV · GE · HV · BO · R
(Ferdinandus dei gratia electus Romanorum imperator semper augustus
Germaniae Hungariae Bohemiae rex)

The crowned Virgin Mary with the infant Jesus, enthroned on a crescent moon

Reverse: S * LADISLAVS * – * REX * 1563 *

St. Ladislaus, in armour and crowned, standing facing with halberd and imperial orb; right and left, the mint-letters K – B

Weight: 3.54 g · Ø 22.7 mm

Literature: Markl 1288 var. – Pernt collection 211

In the years 1521 and 1522, the Emperor Charles V transferred the Austrian and German possessions of the Habsburg house to his brother Ferdinand. Ferdinand was married to the sister of the subsequent Hungarian king and on the latter's death he enforced his own election as King of Hungary and Bohemia in 1526. The coronation took place a year later. On Charles V's abdication in 1556, Ferdinand became his successor and after his brother's death in 1558 had himself crowned emperor in Frankfurt.

From 1527 Ferdinand authorised the ducat as the sole gold coin to be issued in all his states. The prototype for this denomination was the gold florin (fiorino d'oro), created in Florence in 1252. The name ducat goes back to the zecchini which originated in Venice in 1284 (likewise derived from the Florentine issue), and specifically to the last word of the legend "Sit tibi Christe datus quem tu regis iste ducatus". Ferdinand declared the ducat to be the principal gold coin of the Holy Roman Empire in the Augsburg Imperial Coinage Decree of 1559. According to the directions, the imperial ducat was to be issued 23²/₃ carats fine and with a standard weight of 3.49 g. As can be seen from the higher weight of our piece, Hungary continued to follow the regulations from the early period of florin coinage: the fineness was the same, but the nominal weight was 3.55 g.

The obverse depicts St. Mary, who as patron saint of Hungary appeared on the coins from 1470. King Ladislaus, who was beatified in 1192, is depicted on the reverse; his image replaced that of St. John the Baptist from 1358. The halberd and imperial orb symbolise on the one hand his military achievements and on the other the internal order of the country which he safeguarded.

CITY OF HAMBURG



Portugalöser, n.d. (1574–1577)

Mint: Hamburg

Mintmaster: Andreas Metzner

Obverse: ⚔ MONETA • NOVA • AVREA • CIVITATIS • HAMBVRGENS • /
* NACH • PORTVGALIS • SCHROT • VND • KORN

Around the city arms, two circles of inscription; in the gate of the city, below the portcullis, a nettle-leaf

Reverse: * IN • XPO • CRVCIFIXO • PENDET • SALVS • NR̄A

(In Christo crucifixo pendet salus nostra)

Cross of the Order of Christ, whose angles are filled by leaves and rhombuses

Weight: 35.13 g · Ø 41.1 mm

Literature: Gaedeckens 3 – Bahrfeldt, Portugalöser 2

In its coinage the city of Hamburg can look back upon a long tradition. In 1325 it purchased the mint of its landlord, the Count of Holstein. The emperor granted the city the privilege of striking Goldgulden from 1435 and also ducats forty years later. It issued the latter until 1872.

Large gold coins of 10 ducats imitating the Portuguese ‘Português’ were produced particularly in north German territories, and were known as Portugalöser, on account of their origin (Plates 6 and 20). Most of these pieces were issued by Hamburg from about 1560. As well as the full pieces, examples also exist in double, half and quarter weights; these were frequently struck using the same dies, i.e. with the same diameter, merely having different thicknesses.

The legends on the obverse clearly identify the Portugalöser shown here as a coin meant for circulation, even if its high value hardly made it suitable for everyday transactions. Its issue, which did not correspond to the prescriptions of the Imperial coinage decrees, repeatedly gave rise to discussions at the coinage trial meetings, and these led eventually to the passing of a resolution prohibiting it at the Diet of Regensburg in 1576.

When the Portugalöser lost its status as money, the Hamburg Bank and other companies began to produce it in medallionic form for use as gifts.

KINGDOM OF ENGLAND

Queen Elizabeth I, 1558–1603

Sovereign, n.d. (1585–1587)

Mint: London



Obverse: ELIZABETH·D·G·ANG· – FRA·ET·HIB·REGINA·scallop·
(Elizabeth dei gratia Angliae Franciae et Hiberniae regina)

Within an arched tressure, the queen enthroned, holding sceptre and orb;
at her feet a portcullis

Reverse: A·DNO·FACTV·EST·ISTVD·ET·EST·MIRAB·IN·OCVLIS·
NRS scallop

(A domino factum est istud et est mirabile in oculis nostris)

The quartered royal arms over a stylised Tudor rose

Weight: 15.44 g · ϕ 42.8 mm

Literature: North 2003

England, whose population numbered a mere four million at the time, grew up under Elizabeth I into a trading and maritime power and began to play an important part on the international political scene. The first English colony in America was founded in 1584 and named Virginia after the unmarried queen, and the Levant Company (1592) and East India Company (1600) were called into being. The nautical knowledge won from the ocean journeys was an advantage in naval warfare. When Philip II of Spain used the execution of the Catholic Mary Queen of Scots in 1587 as a reason for going to war against Elizabeth the following year with his seemingly invincible Armada, the English fleet showed itself to be superior.

The sovereign, which was given its name by the depiction of the majestic enthroned ruler on its obverse, was introduced by Henry VII as early as 1489. It was of 23.9 carat gold and was originally worth 20 shillings of 12 pence, i.e. it equalled the pound sterling. Now the 22 carat gold pound embodied this value, while the sovereign was reckoned at 30 shillings and, as a result of its higher fine gold content, was also described as the “fine” sovereign (see Plate 15).

The designs of the sovereign, which was struck for nearly 130 years until the reign of James I (1603–25), were changed only in details, and remained medieval. The same applied to the other fine gold issues, the ryal, angel and their fractions. Merely the gothic script was replaced by simple, clear Roman lettering.

The portcullis under the queen’s feet appeared on coins from the time of Henry VIII; it was the sign of the Beaufort family, to which that king’s grandmother belonged. The reverse legend ‘This is the Lord’s doing and it is marvellous in our eyes’ is taken from Psalm 118, verse 23, and first occurs on the sovereigns of Mary the Catholic.

The coin shown here is dated (by the scallop mark placed at the ends of the legends) to the years 1585 to 1587.



CITY OF RIGA
under the Polish crown

King Stephan Bathory, 1576–1586

Portugalöser, 1586

Mint: Riga

Mintmaster: Herman Wulf



Obverse: STEPHANVS ✦ D ✦ G ✦ REX ✦ POLO ✦ MAG ✦ D ✦ LI ✦

(Stephanus dei gratia rex Poloniae magnus dux Lithuaniae)

Hip-length portrait, crowned and armoured, right. The king holds a shouldered sceptre in his right hand, and his left grips his sword-hilt

Reverse: ✦ MONET ✦ NOVA ✦ AVREA ✦ CIVITAT ✦ RIGENS ✦

Two double-tailed lions holding the city arms of Riga; below, the date 15 – 86

Weight: 35.30 g · Ø 39.3 mm

Literature: Hutten-Czapski 771

Unlike the Archbishopric of Riga, which came under Polish suzerainty with the cession of Livonia in 1561 (Plate 14) and ceased to exist after the death of the Archbishop William, Margrave of Brandenburg-Ansbach, in 1563, the city of Riga was able to prolong its independence. Indeed, the city promised not to separate itself from Livonia, and refused an oath of allegiance to the Polish king, since it acknowledged only the German emperor as its protector. Not until 1581 did Riga place itself under the Polish crown.

Stephan Bathory, Grand Prince of Transylvania and from 1576 King of Poland, restored minting rights to the city on condition that the coins issued should be of Polish type and standard. It is thanks to him that the unified Polish coinage system was created with the decree of 1578: the coinage standard and external appearance of the coins were laid down by statute. The king viewed technical innovation with an open mind. He allowed the brothers Hans and Caspar Goebel to set up a mint in the Marienburg and put their new rotary coining presses into operation there. An increasing proportion of the coinage was produced by private entrepreneurs. The lessees of the mints signed their coins with letters or symbols; the lily at the beginning of the reverse legend of the illustrated coin is such a mark.

Apart from normal issues, the city of Riga also issued Portugalöser of the weight and value of ten ducats. However, unlike these coins produced in North Germany (Plate 18), whose design closely follows that of the Portuguese prototype, Riga issued a completely independent type in the Polish tradition. Thus the obverse bears the hip-length portrait familiar on many of the other coins of the country and the large city arms of Riga take the place of the cross of the Order of Christ on the reverse.

The representational Portugalösers were frequently worn mounted or turned into jewellery; traces of a loop which was subsequently removed may be recognised over the crown on the piece illustrated here.



DUCHY OF PIACENZA

Duke Alexander Farnese, 1586–1592

2 doppie, 1591

Mint: Parma

Die-engraver: Andrea Casalino

Obverse: ALEX ▾ FAR ▾ PLAC ▾ E ▾ PAR ▾ DVX ▾ III ▾ E C ▾
(Alexander Farnesius Placentiae et Parmae dux III etc.)

Bust, left

Reverse: PLACENTIA ▾ FLORET ▾ 1591 ▾

She-wolf standing left, in front of three lilies; above, the ducal crown; below, the initials of the die-engraver, ·A·C·

Weight: 13.09 g · ø 30.7 mm

Literature: CNI 20



Parma and Piacenza passed into the possession of the Farnese in 1545, when Pope Paul III made them over to his son Pierluigi, together with the title of duke. In 1586 Pierluigi's grandson, Alexander Farnese, assumed nominal power over this double duchy in Upper Italy. Alexander spent most of his life as a general in the Netherlands, Spain and France. Following his mother, who was appointed as administrator of the Spanish Netherlands by her half-brother King Philip II, he fought there against the northern provinces, which seceded in 1581.

Despite his permanent absence, many coins with Alexander's portrait and in his name were issued in the two duchies. The gold coinage of Piacenza – unlike that of Parma – was restricted to the 2-doppie, or double pistoles; these were to be manufactured with a nominal weight of 13.10 g and 21³/₄ carats fine. Many of this ruler's coin-designs were created according to ancient tradition. Thus the obverse of our piece clearly harks back to the portrait-busts of Roman Imperial coins, and the picture of the she-wolf on the reverse is likewise borrowed from mythology. In this Alexander followed the example of his father, who had scenes of classical antiquity depicted on the reverses of some of his coins.

The old name of the city (Placentia) also appears in the legends. It was colonised by the Romans during the Second Punic War.



DUCHY OF SÖDERMANLAND

Duke Charles, 1560–1604

8 marks, 1598

Mint: Stockholm

Mintmaster: Gillis (Julius) Coyet the Elder

Obverse: Sheaf of the Vasa, between C – D / · S ·
(Carolus dux Sudermaniae)

Reverse: יהוה 1 – 5 – 9 – 8
(Yahwæ 1598)

The name of God, in a circle surrounded by rays and flames; in the corners of the square, the figures of the date

Weight: 3.25 g · Ø 18.2 x 17.9 mm

Literature: Tingström 7



Charles, Duke of Södermanland and the youngest son of Gustav Vasa, founder of the Swedish state, first played a part in Sweden's political affairs after the death of his brother Johan III. After Johan's son, King Sigismund III of Poland, had acceded to power in Sweden in 1592, he found his bitterest antagonist in Charles. Charles managed to frustrate Sigismund's efforts to unite Sweden with Poland and to restore the country to Catholicism. Sigismund III was dethroned in 1599, a year after the duke's appointment as prime minister; in 1604 the Swedish Estates raised the latter to king as Charles IX.

The coin illustrated here demonstrates a peculiarity of Scandinavian coinage. These so-called klippinge were struck in Denmark and Sweden from the beginning of the sixteenth century and owe their unusual appearance and their name to the method of manufacture of their flans: the coin-blanks were cut out from a sheet of metal using shears (i. e. "clipped"); they thus had a somewhat irregular shape. The design was reduced to the bare essentials, moreover in a highly abbreviated fashion. In fact, the statement of value was omitted from the piece illustrated. The form of the reverse, which renders the name of God in Hebrew, is conspicuous. Until the beginning of the eighteenth century, all Swedish rulers (with the exception of Queen Christina, Plate 33) used mottoes which referred to God, usually taken from the Old and New Testaments.

Apart from an impressive series of 6-ducat pieces from the years 1606–1609, Charles issued gold coins with nominal values between five and sixteen marks. The mark system had spread from North Germany to Scandinavia during the sixteenth century and was introduced in Sweden under Gustav Vasa. In the new accounting system four marks corresponded to one Riksdaler.



DUCHY OF BRABANT

Archduke Albert of Austria and Archduchess Isabella, 1598–1621

Double Albertin, 1601

Mint: Antwerp

Die-engraver: Joos van Steynmolen



Obverse: •ALBERTVS•ET• – ELISABET•D•G•

(Albertus et Elisabeth dei gratia)

Beneath a large crown, a shield with the arms of Hungary/Bohemia; Castile/Leon and Aragon/Sicily charged with Portugal; Austria/Valois/Burgundy/Brabant charged with Flanders/Tyrol; surrounded by the collar of the Order of the Golden Fleece

Reverse: ARCHIDVCES AVST•DVCES•BVRG•ET•BRAB•Z hand

(Archiduces Austriae duces Burgundiae et Brabantiae et)

Beneath a small crown, a St. Andrew's cross with floral ends; from the middle hangs the Lamb of the Order of the Golden Fleece; in the field, the date divided 16 – 01

Weight: 5.08 g · ø 26.1 mm

Literature: de Witte 892 – van Gelder and Hoc 284-1

Albert was the youngest son of the Emperor Maximilian II and his wife Maria, the daughter of Charles V. He grew up and was educated at the Spanish court of Philip II and was initially intended for an ecclesiastical career – in 1577 he was created a cardinal and Archbishop of Toledo. In 1595 he became governor of the Southern Netherlands, following the death of his brother Ernest. Four years later he married Isabella (Elizabeth) Clara Eugenia, eldest daughter of Philip II and heiress to this area, which they administered jointly as independent regents.

Albert and Isabella attempted to stabilise their country's currency further by means of politico-economic measures. To this end, in 1599 they ordered double ducats and double and single Albertins to be struck as new gold denominations. The double Albertin, named after the Archduke, was worth two-thirds of the double ducat, and circulated at 100 stuivers, a value last attained by the real of Philip II (Plate 16). Compared with the latter, the double Albertin was clearly debased: its nominal weight was 5.15 g and its fineness was prescribed at 895.8/1000.

While the double ducat depicted the busts of the archducal couple facing each other on the obverse, in Spanish style (Plate 2), both of the other issues took over the coat of arms otherwise usual for the reverse.

On account of their poor standard, the Albertins circulated in large numbers mainly in the northern provinces of the Netherlands, where they drove the fine coin-types out of circulation.

The reverse legend, which ends with “and”, refers to further titles for which no more room could be found on the coin. A small superscript “c” is often added to the latin “et”.



KINGDOM OF SCOTLAND

King James VI, 1567–1625

Sword and sceptre piece, 1603

Mint: Edinburgh

Obverse: ⚔ · IACOBVS · 6 · D · G · R · SCOTORVM ·

(Jacobus 6 dei gratia rex Scotorum)

Crowned Scots arms

Reverse: ⚔ · SALVS · POPVLI · SVPREMA · LEX ·

Crossed sceptre and sword; in the angles a crown (above) and thistles (left and right); below, the date · 1603 ·

Weight: 5.07 g · \varnothing 28.3 mm

Literature: Seaby 5460



The nobility, which under King James V of Scotland had gone over to Protestantism, imprisoned the strict Catholic Mary Stuart in 1567, and forced her to renounce the Scottish throne. The reason may have lain not just in her faith, but also in her private life: the Queen's third marriage was to Lord Bothwell, who was reckoned to be the murderer of her second husband. Her son James VI, who was still a minor, was made the new king, and a regency established for him. On the death of Queen Elizabeth I, he inherited the crowns of England and Ireland in 1603.

One of the richest series of gold coins known to us came into being under James VI. Counting fractional pieces, it consists of eleven coins with seven different designs. The line began in 1575 with the twenty-pounds piece, a coin of around 30 g struck from 22-carat gold, the heaviest denomination ever minted here.

The "sword and sceptre" piece (named after its reverse design) constitutes the last issue, begun in 1601, and struck until 1604, as was the half-denomination associated with it. It superseded the rider, having the same weight and fineness, but was raised in value from 100 to 120 shillings. This practice may be seen in all the issues. The rapidly changing new types, appearing on average every three to four years (and frequently altered in weight and fineness) were devalued vis-à-vis the previous ones. The resulting profit helped to finance the enormous cost of the royal household, provided that the called-in types were surrendered. This was enforced under threat of heavy fines or imprisonment, but was often unsuccessful.

The thistle reproduced on the reverse is a plant that is widespread in Scotland and is to be found on many coins. There was also from the time of the Middle Ages an Order of the Thistle. The legend reads in translation: the welfare of the people is the supreme law.



PRINCIPALITY OF TRANSYLVANIA

Prince Stephan Bocskai, 1604–1606

10 ducats, 1605

Mint uncertain



Obverse: ☩ STE : BOCHKAY . D : G : HVNGA : TRAN : Q3 . PRIN : ET . SICV : COMES

(Stephanus Bochkay dei gratia Hungariae Transilvaniaeque princeps et Siculorum comes)

Armoured bust with flat Hungarian fur cap, right

Reverse: ☩ DVLCE . EST . PRO . PATRIA . MORI . 1 : 6 : 0 : 5 .

An arm issuing from clouds, holding a sword around which is wound a banner bearing the words PRO . DEO / ET . PATRIA

Weight: 34.13 g · Ø 41.1 mm

Literature: Resch 3

The Carpathian mountains formed the frontiers of Siebenbürgen to the north, east and south. This country may have taken its name from the castle of Sibinburg (later Hermannstadt), which was built in the twelfth century. To the west it was cut off from Hungary by dense forests. From these it obtained the latin state-name Transylvania, i. e. as seen from the Hungarian side “beyond the forest”.

Transylvania was an independent elective principality from 1556, and with the support of the Ottoman Empire it represented a permanent threat to the Habsburg monarchy in Hungary. In 1602 Sigismund Bathory handed the country over to the Emperor Rudolf II. Two years later Transylvania, under the leadership of Stephan Bocskai and aided by the Turks, successfully rose against foreign rule. The reverse design refers to this reconquest of the country and the struggle against the emperor, together with the words “it is sweet to die for one’s country” and the call “for God and Country”. The claim “Prince of Hungary” put forward in the obverse legend is derived from the territories conquered in north and west Hungary. The extremely extensive and splendid gold coinage of Bocskai is no exception, but characterises all of the princes of this country. The richness in gold of the Transylvanian Erzgebirge, known already to the Romans, allowed the country’s rulers to produce their coins mainly from this metal. Only ducats and their multiples were struck, as a rule up to ten ducats’ weight. A part of the coined gold was for payment as tribute to the court of the Ottoman Sultan, upon whose consent the ability of a Transylvanian prince to rule ultimately depended.





LORDSHIP OF TOURNAI

Archduke Albert of Austria and Archduchess Isabella, 1598–1621

Double souverain, n.d. (1612–1621)

Mint: Tournai

Die-engraver: Jaspas van der Heyden



Obverse: ALBER – TVS • ET • ELIS – ABET • DEI GRAT – IA

ARCHI – DVCES mintmark tower

The archducal pair enthroned; both are crowned; Albert holds in his right hand a sword, Isabella a sceptre

Reverse: AVSTRIAE • DVC – ES • BV – RG – VN – DIÆ – E – T • DOM • TORNA^Z

(Austriae duces Burgundiae et domini Tornacensis et)

Beneath a large crown, a shield with the arms of Hungary/Bohemia;

Castile/Leon and Aragon/Sicily charged with Portugal;

Austria/Valois/Burgundy/Brabant charged with Flanders/Tyrol;

surrounded by the collar of the Order of the Golden Fleece

Weight: 10.99 g · Ø 38.2 mm

Literature: van Gelder and Hoc 304–7a



A treaty made with the northern Netherlands in 1609 brought the southern provinces a period of peace after decades of conflict. Albert died in 1621 in Brussels, the seat of the archducal pair. Since the marriage had been childless, sovereignty over the area reverted to the Spanish crown – to King Philip IV. Isabella exercised the Stattholdership until her death in December 1633. However, her name no longer appeared on the coinage.

The increase in the price of gold caused Albert and Isabella to issue a second series of gold coins, whose weight and fineness were again reduced in relation to their value in terms of small coins. The prototype of this new Netherlands coin, as may be recognised from its name and design, was the English sovereign (Plate 19). There were four values: half-, two-thirds and single souverains, as well as the double souverain of 240 stuivers illustrated here, which was struck with the same weight of 11.08 g and a fineness of 919/1000 until the end of the eighteenth century.

The double souverain was produced in the mints of the provinces of Brabant, Flanders and Tournai and had the highest output of all the values. The output from Tournai was 70,086 pieces, according to surviving figures. On the single souverain the Archduke and Archduchess are shown as hip-length figures turned to the right, and on the two-thirds souverain they are reproduced as full-length standing figures. Their clothing is characteristically Spanish, with typical high, goffered ruffs.





DUCHIES OF LIEGNITZ AND BRIEG

Dukes John Christian and George Rudolf, 1602–1621

6 ducats, 1616

Mint: Reichenstein

Obverse: ⚔ D·G·IOHA·CHRIS·ET·GEOR·RVDO·DVC·SIL·LI·BR·
(Dei gratia Johannes Christianus et Georgius Rudolphus duces Silesiae
Lignicensis Bregensis)

Busts of the two brother dukes, facing one another

Reverse: MONET·NOV·REICHSTEI·1616·

(Moneta nova Reichensteinensis 1616)

Shield with the arms of Liegnitz and Brieg, decorated with three helmets
and tendrils

Weight: 21.05 g · Ø 41.1 mm

Literature: Friedensburg and Seger – cf. 1497 – Friedberg 2845



Silesia had been divided into numerous small principalities since the middle of the thirteenth century. The Lower Silesian Dukes of Liegnitz were among the most powerful, together with their Brieg line, which came into being through the division of an estate among several heirs, and which sometimes ruled independently. The two territories, which lay on the left bank of the Oder, were separated by the principality of Breslau.

The joint rule at first exercised by Dukes George Rudolf of Liegnitz and John Christian of Brieg was reflected in the pictorial design of their coins. Thus on the obverse both brothers are shown together, John Christian (the elder) on the left, and George Rudolf, who was four years younger, on the right. The reverse shows the arms of the territories, an eagle and chequers, both on the quartered shield and on the crests of the helmets. The Silesian eagle with a crescent moon on its breast, representing Liegnitz, always appears in the first and fourth quarters.

The reverse names the mint of Reichenstein as the place of origin. The father of the two dukes had bought this mining town in the territory of Brieg from the Lords of Rosenberg in 1599 and, after he had received the relevant Imperial privilege, he set up a mint there. Reichenstein, as can indeed be seen from its name, possessed ample mineral resources, among them deposits of gold, which John Christian and George Rudolf used for a series of gold issues. These included a remarkable number of pieces of three, four, five, six, and ten ducats' weight, as well as quarter, half and single ducats.

In 1620 the mint was transferred from Reichenstein to Ohlau, because of the threat of risk from war, and the joint coinage came to an end in July of the following year.





KINGDOM OF ENGLAND

King James I, 1603–1625

Laurel, n. d. (1623/1624)

Mint: London



Obverse: IACOBVS D·G·MAG·BRI·FRA·ET HIB·REX †

(Jacobus dei gratia Magnae Britanniae Franciae et Hiberniae rex)

Bust of the King, left, laureate and in armour, which is almost hidden by a sash; behind his head, XX

Reverse: FACIA – M EOS IN – GENTEM – VNAM †

On a cross fleury almost reaching the edge, a crowned shield quartered with the arms of England, Scotland and Ireland

Weight: 8.95 g · Ø 34.7 mm

Literature: North 2114



James VI, son of Mary Stuart by her second husband Lord Darnley, was King of Scotland from 1567. On the death of the childless Elizabeth I the English House of Tudor became extinct, and the succession fell to him. As James I he ruled in a personal union the three kingdoms of England, Scotland and Ireland. The coins of his reign refer clearly to this territorial union in their titlature, legends, design and in part in name. The country names England and Scotland were replaced from 1604 by the term Magna Britannia, which became officially established as Great Britain only in 1707. The reverse legend typical of the denomination illustrated here reads, in translation: I will make them one nation. These words are taken from Chapter 37, verse 22 of the book of the prophet Ezekiel. The shield also bears the Scots and Irish arms (lion and harp) in the second and third quarters, as well as the English. The laurel, introduced in 1619, took its name from the King's laurel wreath, and is of 22 carat gold, valued at twenty shillings, as indicated by the Roman numerals which appear here for the first time. However, its weight is less than Elizabeth's pound, which was of the same fineness and value. The same was also true of the previous issue, the unite (whose name is due to the reverse legend), which had a nominal weight of 10.03 g.

As well as the laurels, fractional coins of ½- and ¼-laurel were struck during the years 1619 to 1625, with the same designs.



CITY OF MAGDEBURG

Goldgulden, 1628

Mint: Magdeburg

Mintmaster: Peter Schrader



Obverse: MO:NO:AVR·CI·MAGDEBV – 1628

(Moneta nova aurea civitatis Magdeburgensis 1628)

A maiden with a wreath in her raised right hand, above a castle

Reverse: FERDINANDUS·D:G:RO:IM:SE:A✠

(Ferdinandus dei gratia Romanorum imperator semper augustus)

Crowned double-headed Imperial eagle with the Imperial orb on its breast;

above its wings the mintmaster's initials P – S

Weight: 3.20 g · Ø 22.8 mm

Literature: von Schrötter, Magdeburg 1010

Magdeburg, which lay on the middle Elbe, was an important ecclesiastical, cultural and economic centre. Here the land routes from the west and the east met and crossed one of the great waterways which ran from the south to the north.

An extensive coinage, which can be traced back to the tenth century, underlines the importance of this place. It was produced at first in the name of the German king, and subsequently in that of the archbishop. The city itself obtained the right to strike gold and silver coins from the Emperor Maximilian II in 1567, and exercised this for over a century until it passed into the possession of Brandenburg. From 1571, in accordance with the instructions laid down by the Augsburg Imperial Coinage Decree of 1559, Magdeburg principally struck Gulden (reproduced here) as its gold currency coins, and occasionally pieces of double weight as well. 72 pieces were to be struck from a Cologne mark of 233.856 g, which gave a nominal weight of 3.25 g. The fineness was 18.5 carats, or about 771/1000. The reverse is designed according to the Imperial instructions, and names in the legend the Emperor Ferdinand II, who was reigning at the time of its production. The “punning” arms of the city, a maiden (Magd) over a castle (Burg) fill the obverse, surrounded by the words “new gold money of the city of Magdeburg”. The almost total destruction of Magdeburg in 1631 during the Thirty Years War ended the issue of Goldgulden, whose last issue bears the date 1630. The ducat, which from the mid-sixteenth century was the principal gold coin of the German Empire, served as its successor a few years later.

PRINCE-BISHOPRIC OF LIÈGE

Prince-bishop Ferdinand of Bavaria, 1612–1650

Écu d'or Ferdinandus, 1637

Mint: Liège



Obverse: * FERDINANDVS · D · G · ARCH · COL · P · ELEC

(Ferdinandus dei gratia archiepiscopus Coloniensis princeps elector)

A cross fleury with an elector's cap over each of its four ends; in each of the four angles, the letter F

Reverse: EPIS · ET · PRIN · LEO · V · B · S · B · DVX;

above, the date divided 16 – 37

(Episcopus et princeps Leodiensis utriusque Bavariae, supremus Builloniensis dux)

Beneath an elector's cap, the arms of Bavaria charged with Bouillon; behind, crossed crozier and sword

Weight: 3.36 g · Ø 25.9 mm

Literature: Chestret de Haneffe 583 – Delmonte 355

The bishopric of Liège, with its seat in the same city, extended chiefly along the left and right banks of the river Meuse. Its most southerly area was the Duchy of Bouillon. The territory was virtually enclosed on all sides by the Spanish Netherlands, the provinces of Brabant, Hainault and Luxembourg. From the Middle Ages Liège belonged to the ecclesiastical province of Cologne.

Ferdinand of Bavaria was the second of five Wittelsbach regents to become a bishop. He was at the same time Archbishop of Cologne and Bishop of Münster, Hildesheim and Paderborn; he lived mainly in Bonn.

The existing gold coins of Ferdinand from Liège date from the first three years of his reign and the period between 1631 and 1644. Independent creations are not known: instead, older prototypes such as Rhenish Gulden were adopted, or types from other territories were copied, even (in 1638) the Dutch ducat. One of the most important was the écu d'or (also known as the couronne d'or), introduced into the Netherlands by the Emperor Charles V in 1540, which was struck most frequently for Ferdinand, apparently simultaneously with the neighbouring provinces. Under the regents Albert and Isabella, this denomination was the gold coin with the highest output between 1614 and 1621, 76,386 examples being produced in Brabant, Flanders and Tournai. Their successor Philip IV issued over half a million coins of this type, starting in 1623 and more intensively in the thirties and forties.

Ferdinand's écu d'or was based on the coinage reform of 1614, which prescribed a standard weight of 3.38 g and a fineness of 882/1000, which our example (c. 850/1000) does not achieve.



DUCHY OF SAVOY

Duke Carlo Emanuele II,
under the regency of his mother Christina, 1638–1648

4 scudi, 1639

Mint: Turin

Mintmasters: L. Buggia, G. P. Rotta, S. Virante

Obverse: CHR · FRAN · CAR · EMAN · DVCES · SAB ✦ 1639 ✦
(Christina Francia Carolus Emanuel duces Sabaudiae 1639)

Busts of Christina and Carlo Emanuele, right

Reverse: Ornament P ✦ P ✦ PEDEMON ✦ REGES ✦ CYPRI
(Principes Pedemontium reges Cypri)

Beneath a large crown, a highly decorated shield with the arms
of Jerusalem/Cyprus/Armenia/Luxembourg, Westphalia, Chablais/Aosta,
Geneva/Montferrat, charged with the Savoy shield

Weight: 13.31 g · ø 30.7 mm

Literature: CNI 1 var. – Simonetti 5/1 var.



Following the death of Duke Vittorio Amedeo I, his widow in 1637 undertook the regency on behalf of her two under-age sons. Of these, Francesco Giacinto outlived his father by only about a year, so that in 1638 the younger, Carlo Emanuele, assumed the position of heir to the dukedom. In 1648 he commenced sole rule, at the age of fourteen.

The coinage for Carlo Emanuele II began in 1639, when the Turin mintmasters Buggia, Rotta and Virante received permission to strike 126,771 scudi in eight-, four- and two-scudi pieces; however, in the first year only the four-scudi denomination was issued. The obverse of the example shown here was struck using a die for the mezza lira, which was virtually identical in design.

The title “King of Cyprus” shown in the reverse legend, and the corresponding arms in the first quarter of the shield hark back to a legacy of Charlotte de Lusignan. In 1487 she had transferred the hereditary title of the Kingdom of Cyprus to Charles I of Savoy, her husband’s nephew. The extraordinarily varied gold coinage of this ruler is reflected in the multiplicity of his coins: in all, eleven different denominations were issued between 1638 und 1675. Among these, show-pieces of ten, twenty, thirty and forty scudi are noteworthy. These were designed for use by the court rather than for general currency.

Parallel to the coins which show the young duke with his mother, his two uncles (who opposed the regent) produced ten-, four- and double-scudi pieces bearing only Carlo Emanuele’s portrait.





KINGDOM OF FRANCE

King Louis XIII, 1610–1643

Louis d'or, 1640

Mint: Paris

Medallist: Jean Warin



Obverse: LVD · XIII · D · G · – FR · ET · NAV · REX · 1640 ·

(Ludovicus XIII dei gratia Francorum et Navarrae rex)

Laureate head of the king, right

Reverse: · CHR · S · – · REG · N · – · VIN · C · – · IMP ·

(Christus regnat, vincit, imperat)

Cross formed from eight crowned Ls, with fleurs-de-lys in the angles, and in the middle the mint-letter A in a circle

Weight: 6.69 g · \varnothing 24.0 mm

Literature: Ciani 1613



The reign of Louis XIII was largely dominated by the outstanding personality of Cardinal Richelieu, who was appointed as the leading minister in 1624. By reducing the political rights of the nobility and the Huguenots, he strengthened the kingship and turned the country into an absolutist state. In addition, Richelieu founded in 1635 the famous Académie Française for the cultivation of arts and sciences, whose 40 members are known as “the immortals”.

The influx into the country of numerous foreign coins whose fineness was lower than that of the French écu d'or led Louis XIII to a fundamental coinage reform. A new unit, the Louis d'or, which matched the standard of the Spanish pistole, was introduced by the decree of 31 March 1640. The legally prescribed fineness was 22 carats, and the nominal weight 6.75 g. The Louis d'or was thus double the weight of the 23 carat écu d'or, which continued to be struck, though its value was increased from its previous 65 to 104 sols tournois; the Louis d'or was worth 10 livres of 20 sols tournois. The precious metal for the new coins came from the old écus d'or, but above all from foreign coins. The designs of the Louis d'or derived from those of the sixteenth-century Henri d'or (Plate 13). The cross made from the initial letter of the King's name and the well-known legend which had accompanied it for centuries carried on the reverse design of the écu d'or, albeit iconographically altered.

A half-Louis and multiples of two-, four-, eight- and ten-Louis were also produced. These high values had a more medalllic character and served as gifts. With the new gold coins, mechanical striking and edge-milling were finally introduced; in 1645 all French mints were equipped with the new machinery. This was mainly due to the medallist Jean Warin, who was born in Liège in 1604.





DUCHY OF POMERANIA

under Swedish rule

Queen Christina, 1632–1654, sole ruler from 1644

Ducat, 1642

Mint: Stettin

Mintmaster: Ulrich Butkau



Obverse: ❁ CHRISTINA * D * G * SVE * GO * VAND * Q * DES * R
(Christina dei gratia Suecorum Gothorum Vandalorumque designata regina)
Bust of the Queen almost full-front

Reverse: ❁ MO - NETA · NOVA · DVCA · POMERAN · 1642
(Moneta nova ducatus Pomeraniae 1642)

Nine-part Pomeranian arms in an ornamental shield

Weight: 3.43 g · Ø 22.6 mm

Literature: Ahlström 4

The Ducal House of Pomerania died out in 1637 on the death of Bogislaw XIV. The Swedish army of occupation, on Pomeranian soil as a result of the Thirty Years War, successfully opposed legitimate claims to the territory which Brandenburg-Prussia also sought to impose militarily. In the Peace of Westphalia in 1648, the larger (and with the ports of Stettin and Stralsund the more important) part of Pomerania fell to Sweden; Brandenburg-Prussia acquired only Farther Pomerania and the bishopric of Kammin.

Following the death of her father Gustavus II Adolphus, the National Council named Christina, then aged six, as successor and queen-designate, and established a regency for her until her majority in 1644. Six years after taking over sole government she finally had herself crowned with great splendour, in order to prepare for her abdication soon afterwards. In 1654 she relinquished the royal dignity, converted to the Catholic faith, and settled in Rome. There she devoted herself almost exclusively to building up her art collection, which amongst other things included an important coin collection, consisting predominantly of antique pieces. Christina herself was considered an expert numismatist and also made her collection available to scholars for study. One of these was Joseph Hilarius von Eckhel, the founder of the modern science of Ancient Numismatics. During Christina's reign, the coins of Sweden differed greatly from those of the numerous Swedish possessions. In Sweden itself only silver and copper (in increasing quantities) were struck, while in the regions possessed by Sweden an extensive and sometimes splendid series of gold ducats and their multiples was struck alongside the silver series. Realistically, they depict Christina as a young girl. Coins with her portrait on the obverse and the city or country arms on the reverse were produced at Reval, Riga and in Pomerania. The areas of Stettin, Pomerania (reversed), Kassuben, Wenden, Rügen, Usedom, Barth, Gützkow and Wolgast are represented on the Pomeranian coat of arms illustrated here.



KINGDOM OF DENMARK

King Christian IV, 1588–1648

½ ducat, 1644

Mint uncertain

Mintmaster: Henrik Køhler

Obverse: CHRISTIANU · – flower – S · 4 · D · G · DAN · R ·

(Christianus 4 dei gratia Daniae rex)

King standing to right, with sceptre and royal orb

Reverse: Ornament / · IUSTUS · / יהוה / · IUDEX · / 1644

(Iustus Yahwæ Iudex 1644)

Inscription in four lines; the year is divided by the mintmaster's mark

Weight: 1.73 g · Ø 19.0 mm

Literature: Hede 35



Christian IV was declared to be of age by the Rigsraad and assumed sole rule as King of Denmark and Norway in 1596. His unfortunate foreign policy brought the country severe losses. Thus Christian had to abandon his designs for the acquisition of north German territories in the Peace of Lübeck, brought about at the instigation of Wallenstein in 1629. However, Danish territories remained untouched in the negotiations. In contrast, the losses of lands to which Denmark was forced to consent at the close of the war with Sweden in 1645 were more serious. With the abandonment of the islands of Gotland and Ösel, Denmark lost its influence in the Baltic; its possessions in Sweden were lost as well.

Directly after the invasion of Jutland by Swedish troops in 1643, Christian had gold and silver coins struck which referred to this event. Körfiz Ulfeld, high steward and the king's son-in-law, was responsible for the manufacture of these inferior coins, which were not popular with the populace and were called "Hebrews" because of their reverse legend. They were struck at Copenhagen, Elsinore and Frederiksborg. Instead of the king, only his monogram was shown on the obverse of the silver coins. The reverse legend "God (is a) just judge" may be interpreted as an appeal to God's justice.

Gold coins were issued with values of 2, 1, ½ and ¼ ducat, with a fineness of only ca. 964/1000. Although supplied with an independent reverse, the obverse can be clearly recognised as using the Hungarian ducat as its prototype. Christian's extensive gold series includes further imitations, of English ryals and sovereigns, Rhenish Gulden and Portugalöser. This king thus left an exceptionally varied coinage, with a total of around 180 types.





IMPERIAL CITY OF ZWOLLE

Ducat, 1650

Mint: Zwolle

Mintmaster: Arend van Romunde

Die-engraver: Gerrit Versefelt



Obverse: FARDINA • III – D • G • R • H • BO

(Ferdinandus III dei gratia rex Hungariae Bohemiae)

The crowned emperor, standing half-right in full armour, holding the sceptre in his right hand and the imperial orb in his left; between his feet, the arms of Zwolle, and in the field the date, divided 16 – 50

Reverse: MONE / AVRIA / CIVIT / ZWOL

(Moneta aurea civitatis Zwollensis)

A four-line inscription on an ornamental tablet

Weight: 3.48 g · Ø 22.9 mm

Literature: Delmonte 1133 – cf. Verkade pl. 168,4



Zwolle lies in the province of Overijssel, which extended from the IJsselmeer in the west to the German frontier in the east, and which from 1581 belonged to the northern United Netherlands. The present capital of this area, it was, with the two other Imperial cities of Deventer and Campen, an important trading centre and a member of the Hanse.

Zwolle had received the privilege of striking coins from the Emperor Frederick III in 1488. Following a 16th-century phase of joint coinage by the three named cities, Zwolle opened its own mint again in 1591.

Our ducat comes from this second, independent period, which lasted for around a century. A first brief look suggests that it might be an issue of the northern Netherlandish Provinces (Plate 52). The Imperial city of Zwolle adopted the principal type issued and circulating in this region, and only altered such details as were necessary. The place of the knight was taken by the emperor, in the same posture, with the Imperial insignia, and the obverse legend was connected with him. The tabular inscription of the reverse names the city of Zwolle as mint, but omits the formula “according to Imperial law” which the ducat of the Provinces includes.

Apart from the single denomination, double ducats with the same designs were also issued in the years 1655, 1656 and 1662. An analysis of the fineness of our ducat gave a figure of c. 965/1000.







COMMONWEALTH OF ENGLAND



Unite, 1651
Mint: London

Obverse: •THE•COMMONWEALTH•OF•ENGLAND•sun
The shield of St. George in a wreath of palm and laurel

Reverse: •GOD•WITH•VS•1651
Shield of St. George and shield of Ireland; above them •XX•

Weight: 9.00 g · \varnothing 34.0 mm
Literature: North 2715



Political and religious differences between Charles I and Parliament led eventually to the outbreak of civil war in England in 1642. Seven years later, the king was executed and a republic proclaimed, ruled by a 41-member Council of State, until Oliver Cromwell had himself named Lord Protector of England, Scotland and Ireland in 1653.

In design and legend, the coins of these years have nothing whatever in common with the royal issues. Obverse and reverse are filled only with single, plain coats of arms; for England a shield with the cross of St. George, patron saint of the country since the 13th century, was chosen. For the first time the inscription is no longer in Latin, but is given in English. Coins of silver and gold bear this uniform type in all denominations, but with some of the elements of the design missing on the small denominations. Also, a statement of the respective values and dates was prescribed.

Fineness and weight remained unaltered. The unite of 20 shillings shown here is of 22 carat gold and has a standard weight of 9.10 g. It thus matches the laurel of 20 shillings introduced by James I in 1619. Only in name does it go back to an earlier issue.







DUCHY OF BRABANT

King Philip IV of Spain, 1621–1665

Souverain, 1655

Mint: Brussels

Die-engraver: Balthazar Laureys



Obverse: • PHIL • IIII • D • G • HISP • ET • INDIAR • REX • mintmark a small head (Philippus IIII dei gratia Hispaniarum et Indiarum rex)

A crowned rampant lion, left; he supports himself on a globe with his left forepaw and holds a sword aloft with his right; below, the date 1655

Reverse: • ARCHID • AVST • DV – X • BVRG • BRAB • Z

(Archidux Austriae dux Burgundiae Brabantiae et)

Beneath a large crown, a shield with the arms of Castile/Leon and Aragon/Sicily charged with Portugal; Austria/Valois/Burgundy/Brabant charged with Flanders/Tyrol; surrounded by the collar of the Order of the Golden Fleece

Weight: 5.54 g · ø 29.2 mm

Literature: de Witte 998 – van Gelder and Hoc 325 – 3



Philip IV left the administration of the Netherlandish part of his empire, which on the death of Archduke Albert had reverted directly to the Spanish crown, in the hands of governors.

In 1621, after the Twelve Years Truce, armed conflict again broke out with the northern United Provinces, whose independence was finally acknowledged in the Peace of Westphalia in 1648. To distinguish it from the northern “States General”, the term “Spanish Netherlands” was adopted for the southern part.

By and large, Philip IV maintained the coinage system introduced in the southern Netherlands by Albert and Isabella in 1612 (Plate 26). However, of the four pieces in the souverain series, he issued only the double and the single value, the latter illustrated here. This was also called the lion d’or (golden lion) on account of its altered obverse design. The name and motif had been known previously in these lands on coins of the Middle Ages (Vol. II, plate 50). The title rex Indiarum, referring to the central and south American possessions, is found for the first time on Netherlands coins under Philip IV.

The single souverain was increased in weight and reduced in fineness relative to the issue established in 1612, i.e. like the double it was now struck with a fineness of 919/1000 and had a nominal weight exactly half that of the latter. The souverain had to be revalued in 1644 because of the rise in the price of gold; instead of 120, it was now valued at 133 stuivers. Philip IV issued a third type of gold coin, a crown of French type, i.e. the écu d’or.







IMPERIAL CITY OF FRANKFURT AM MAIN

Ducat, 1657

Mint: Frankfurt am Main

Mintmaster: Johann Ludwig Hallaicher

Obverse: NOMEN DOMINI TVRRIS FORTISSIM A

The crowned Frankfurt eagle, looking right; below, the date 1 - 6 - 5 - 7

Reverse: DVCATVS / NOVVS / REIPVB / FRANCO / FVRT

(Ducatus novus reipublicae Francofurtensis)

Five-line inscription in a decorated cartouche; above it, the mintmaster's symbol of three acorns

Weight: 3.45 g · Ø 22.4 mm

Literature: Joseph and Fellner 486



The Frankfurt fairs, initially annual, then twice-yearly (spring and autumn), turned the city not only into one of the most significant trading centres in the west of the German Empire but also into an important finance and exchange centre. The prestige of the city was increased by the Imperial elections and (from 1562) coronations, which took place in the Cathedral of St. Bartholomew, to which the seven Electors and their numerous retinues travelled in the years in question, tarrying there for weeks or even months.

The city used the right to strike gold coinage, granted by the Emperor Charles V in 1555, from 1572. The Gulden initially issued in this metal were succeeded as trading coins in 1633 by ducats, whose last examples bear the date 1856. Their issue was especially plentiful towards the end of the Thirty Years War. The precious metal for the ready money that was much needed at this time frequently came from gold and silver vessels and utensils. The obverse legend "the name of the Lord is the surest defence" also refers to these disturbed times. The reverse design, which goes back to the Dutch ducats (Plate 52), was retained for this denomination until 1749, with only minor variations.

The mintmaster J. L. Hallaicher, who was summoned from Augsburg, worked at the Frankfurt mint from 1646 until 1666. This follows, *inter alia*, from his "signature", the three acorns, which he was required to place, together with the date, on all the types coined by him.







CITY OF THORN
under the Polish crown

King John Casimir, 1648–1668

5 ducats, 1659

Mint: Thorn

Mint lessee (?): **HL** (H. Lauer?)



Obverse: IOAN : CAS : D : G : REX · POL · ET · SVE · M · D · L · R · P ·
(Joannes Casimirus dei gratia rex Poloniae et Suecorum magnus dux
Lithuaniae Russiae Prussiae)

Crowned armoured bust, right

Reverse: ▽ EX AVRO · SOLIDO · CIVIT : THORVNENS : FIERI F :
(Ex auro solido civitas Thorunensis fieri fecit)

View of the city of Thorn, with boats plying the Weichsel in the foreground.
In the clouds above the city two hovering angels, holding the decorated
arms of Thorn; below left, 16 **HL** 59

Weight: 17.22 g · Ø 36.9 mm

Literature: Hutten-Czapski 2133



Simultaneously with the secession of several Prussian territories from the Teutonic Order in 1454, the city of Thorn also dissociated itself from the Order and placed itself under the protection of the Polish king. The striking of coins with the royal portrait and titles was begun in Thorn by order of Casimir IV while the city was still the subject of disputes between the Order and Poland. In 1457 Thorn, together with Danzig and Elbing, received the mint right for all time. This privilege was confirmed by Casimir's successors, and it preserved the city from condemnation at the Warsaw Imperial Diet in 1632 for alleged unlawful exercise of coining activity.

During the reign of John Casimir, Thorn was captured in 1655 by Sweden in the course of the Swedish-Polish war, and was only won back by Poland three years later. Besides Poland's external threats, John Casimir had to grapple with great difficulties within the country.

The voluminous gold coinage of this king stood in stark contrast to these external and internal political conditions. The ducat – single and half – and its multiples were issued. The three-, four-, five- and ten-ducat pieces were struck only in Thorn and Danzig. On the reverse they show the respective city views, and thereby differ from the smaller denominations. The difference is a reference to the purpose of these pieces: although they were struck according to the current coinage standard and on occasion furnished with a statement of value, they were not denominations meant for general currency, but coins for gifts, specially made for this purpose.







KINGDOM OF PORTUGAL

Prince-regent Peter, 1667–1683

Moeda de ouro, 1678

Mint: Lisbon

Obverse: PETRVS D·G·P·PORTVGALIE

(Petrus dei gratia princeps Portugaliae)

Crowned coat of arms; at its sides left, the value 4000 and right, four rosettes

Reverse: ·IN HOC·SIGNO·VINCES·1678

Cross of the Order of Christ, with rosettes in its angles

Weight: 10.60 g · \varnothing 29.0 mm

Literature: Ferraro Vaz PR.08



With the extinction of its royal house in 1580, Portugal fell to Spain. Sixty years later a national uprising elevated Duke John of Braganza to king. However, Portugal regained her independence from Spain (with English support) only through the Treaty of Lisbon in 1668.

John's son, Alfonso VI, being declared unfit to rule, his younger brother Peter took over the affairs of state in 1667 as Prince Regent.

During his regency, Peter (eventually to be raised to the Portuguese throne in 1683 as Peter II) issued single, double and quadruple cruzados in gold. The last were given the simple name moeda de ouro, i. e. gold coin. The smaller values of one and two cruzados were correspondingly also designated as quarto (quarter) and meia (half) de moeda. These coins, described collectively by the single term "moidore", were well known as global trading coins, and around 1700 were particularly widespread in Ireland and the west of England.

The cruzado, which was current for 400 reis during the sixteenth century, was continually raised in value, because of the rise in the price of gold. By 1662 it had achieved a value of 1,000 reis, i. e. the moeda was worth 4,000, as stated here. The design of the cruzado had not been altered from earlier times (Plate 12). The obverse shows the crowned coat of arms surrounded by a legend with the name and title of the regent. The five small shields set in the middle in a cross, which still form part of the Portuguese arms today, had already appeared on the medieval morabitini (Vol. II, Plate 19). As with the earlier cruzados and the Português, the reverse bears the cross of the Order of Christ and the explanatory legend "in this sign you will conquer".

The moeda shown here, with its clear, sharp designs, comes from the first year of mechanical manufacture, introduced in Portugal in 1677. A further technical innovation was added in 1686: the decorated edge, which was intended to frustrate clipping of the gold coinage.







PAPAL STATE

Pope Innocent XI, 1676–1689

Quadrupla, 1678/1679

Mint: Rome

Mint Director: Monsignore Ottaviano Corsini

Die-engraver: Giovanni (Johannes) Hamerani



Obverse: INNOCEN • XI • PONT • MAX • AN • III

(Innocentius XI pontifex maximus annus III)

Bust with camauro and richly decorated stole, right; below, the ligatured letters JHf (Johannes Hameranus fecit)

Reverse: FVNDA ♣ NOS – IN ♣ PACE ♣

The Virgin Mary, surrounded by rays and clouds, seated on a rainbow; below, the mint director's arms

Weight: 13.35 g · ø 32.5 mm

Literature: Muntoni 1



During the seventeenth century the territory of the Papal State, which was numbered amongst the largest territories on Italian soil, stretched from the Po in the north to the city of Terracina in the south. The Popes were not just spiritual chief shepherds, but also secular territorial princes, and as such sought to secure and expand their power.

On 21 September 1676 the bishop of Novara, Benedict Odescalchi, was elected Pope and mounted the sacred throne as Innocent XI. He was charitable and humane by nature, but extremely strict in his moral principles and ranked as a bitter enemy of the Jesuits.

In his coinage, Innocent followed the example of his predecessors. Like them he authorised the issue in gold only of the scudo d'oro, its double, and the fourfold value illustrated here, which can be precisely dated by the pontifical year shown. This began on the day of the Papal election and thus was not identical with the calendar year.

The dies for Innocent's coins were prepared by Giovanni Hamerani, the nephew of Johann Andreas Hameran, of Bavarian origin, who had settled in Rome at the beginning of the seventeenth century. He and his descendants worked for the Popes as die-engravers for nearly two centuries.

Alexander VII had transferred the mint, originally housed in the Castell St. Angelo, to the Papal palace. The famous architect and sculptor, Bernini, had been employed in the installation of its water mills.





KINGDOM OF ENGLAND

Queen Mary and King William, 1689–1694

5 guineas, 1692

Mint: London



Obverse: GVLIELMVS · ET · MARIA · DEI · GRATIA

Jugate profile busts of the king and queen, right; William's head is laureate; under the truncation of his bust, an elephant with a castle on its back

Reverse: MAG · BR · FR · ET · HIB · – REX · ET · REGINA · 16 – 92 ·

(Magnae Britanniae Franciae et Hiberniae rex et regina 1692)

A crowned, decorated shield quartered with the arms of England, Scotland and Ireland, charged with the lion arms of Nassau

Edge: † · DECVS · ET · TVTAMEN · · ANNO · REGNI · QVARTO · † ·

Weight: 41.67 g · ϕ 37.5 mm

Literature: Seaby 3423

James II, having been converted in 1672, tried to restore Catholicism to the country. The birth of an heir to the throne caused Parliament in 1688 to call to England William of Orange, governor in the Netherlands, who was married to Mary, the Protestant daughter of the English king. James II fled to France. The following year William III and Mary were raised to the English throne, with equal rights; they reigned together only for a few years, since the Queen died at the beginning of January 1695.

The guinea, introduced in 1663, was the principal English gold coin until 1816. It took its name from Guinea, situated on the west coast of Africa, whose rich deposits of gold were imported into England by the African Company. Its mark, a small elephant (or, as on the example shown here, an elephant with a castle) is to be found on the obverse of many issues, as a reference to the source of the precious metal.

A decisive innovation in manufacture accompanied the new gold coins. Mechanical coining, which Elizabeth I had unsuccessfully attempted to introduce a century earlier, finally superseded manufacture by hand. For the first time, the technical requirements for milling and edge-lettering were met, and this effectively eliminated clipping of the coins and with it the diminution of their value. Referring to this, the words “an ornament and a safeguard”, taken from Virgil’s *Aeneid*, were used on the edge of the 5 guineas until the nineteenth century.

The added lion-shield is the coat of arms of the House of Nassau-Orange, from which William was descended.

The engravers of this unsigned coin may be identified as the brothers James and Norbert Roettiers, members of a famous Flemish family of minters and medallists, which was active at the London mint for several generations.

The Bank of England was founded under William and Mary, in 1694.



DUCHY OF MECKLENBURG

Duke Frederick William, 1692–1713

¼ ducat, 1701

Mint: Schwerin

Mintmaster: Zacharias Daniel Kelpé



Obverse: FRIDERICVS WILH – D G DVX MECLLENB

(Fridericus Wilhelmus dei gratia dux Mecklenburgensis)

Beneath a crown, a shield with the arms of Mecklenburg, Rostock, Schwerin, Ratzeburg, Stargard and Wenden, charged with the shield of the Counts of Schwerin, and draped with a prince's mantle

Reverse: QVO DEVS ET FORTVNA DVCVNT * 1701•

Crowned steer's head

Weight: 0.85 g · ø 15.5 mm

Literature: Evers 153,4

Mecklenburg's history was characterised by numerous partitions and reunifications of the country. Division into the lines of Schwerin and Güstrow took place in 1556, while from 1628 Albert of Wallenstein ruled the whole duchy for a short time. However, the deprived dukes were able to win back both parts of their possessions in 1630. Frederick William was eventually able to settle to his own advantage the succession crisis which broke out in 1695 with the death of the Duke of Mecklenburg-Güstrow. A commission of settlement set up by the emperor awarded him the greater part of Güstrow in 1701, while his opponent Adolf Frederick II had to be content with Mecklenburg-Strelitz, made up from the remaining territory and the principality of Ratzeburg.

The production of coinage was instituted in Mecklenburg at the beginning of the thirteenth century. The Dukes Magnus and Balthasar requested in 1495 from the Emperor Maximilian I the privilege of having the right to strike gold coinage, and they were permitted to issue Goldgulden according to the Rhenish standard. Here, as in many other territories, these were later replaced by ducats.

During his reign, Frederick William authorised the issue of ducats with various designs. All bear the coat of arms on one side, while the other depicts a portrait of the ruler, his extremely complex monogram, or a steer's head. The last is to be found on Mecklenburg issues as early as the thirteenth century. In the course of time, the steer's head became the land's coat of arms, and was also occasionally used as a coin design, as in this case. The meaning of this representation is unclear: The idea that it is traceable to an old heathen steer-cult in Rethra (the former chief shrine of the Wends) is as yet unproven.



KINGDOM OF FRANCE

King Louis XIV, 1643–1715

Louis d'or aux 8 L et aux insignes (1701/1702)

Mint: Paris

Die-engraver: Joseph Roettiers

Obverse: LVD·XIII·D·G sun – FR·ET·NAV·REX
(Ludovicus XIII dei gratia Francorum et Navarrae rex)
Laureate bust, right

Reverse: CHRS·--·REGN·--·VINC·--·IMP ♁
(Christus regnat, vincit, imperat)

Cross formed from eight crowned Ls; the angles filled by two crossed sceptres, headed by hands and fleurs-de-lys; in the middle, the mint-letter A

Weight: 6.66 g · ø 25.9 mm

Literature: Ciani 1805



Louis XIV, who owes his nickname “the Sun King” to this universally-used symbol, transferred his permanent residence to Versailles in 1682. This splendid château and its famous extensive pleasure gardens with their fountains still attract numerous visitors today.

An expensive court with a large royal household (which became the contemporary ideal for many princes), and above all the wars of conquest against Spain, Holland and the Palatinate as well as the War of the Spanish Succession, put extraordinary stress on the national budget in the last decades of his long reign.

From 1689 the king made use of the gold and silver coinage to finance these external undertakings. The circulating coins were lowered in value and then called in and overstruck, in order subsequently to reintroduce them to circulation with a higher value. These so-called “Réformations” were repeated several times until 1708. The Louis d'or illustrated here was overstruck on a Louis d'or aux quatre L, a type of the years 1693 to 1695. The obverse design overlies the former reverse: traces of a crown and the letters VIN of the characteristic legend can be seen clearly below the truncation of the bust. On the reverse, at the upper left, part of the previous obverse legend LVD XIII D G can be made out, as well as the sun and the line of the back of the King's head.

The Louis d'or aux quatre L was issued in October 1693 with a value of 14 livres, but by 1701 was current for only 12 livres 10 sols. In October of the same year it was replaced by our Louis d'or aux huit L et aux insignes, which was once again valued at 14 livres.

As with the earlier écus d'or, the issues of Louis d'or were more closely described from their designs, our example after the 8 L (the King's initial letter) and the “insignes” – the lys-sceptre and the sceptre with a hand, which acted as a symbol of judicial authority.



SPANISH COLONIAL EMPIRE: PERU

King Philip V, 1701–1746

8 escudos de oro, 1717

Mint: Lima

Warden: Cristóbal Melgarejo



Obverse: ✚ PHILIPPVS V. D. [G.] HISPANIAR

(Philippus V dei gratia Hispaniarum)

Cross of the Order of the Holy Sepulchre with the arms of Castile and Leon in its angles

Reverse: Ornament ET YNDIA – REX ANO 717

(Et Indiarum rex anno 1717)

L – 8 – M/P. – V. – A[.] / 7 – I – [7], divided by the Pillars of Hercules and two transverse lines; waves below

(Lima 8 Melgarejo / plus ultra / 1717)

Weight: 26.95 g · Ø 33.5 mm

Literature: Calicó and Trigo 94

In a secret will, the Spanish King Charles II, who remained childless, named Philip V, Duke of Anjou and grandson of Louis XIV, as his successor. Following Charles II's death in 1700, this provision of his triggered the War of the Spanish Succession, in the course of which Philip had to accept considerable territorial losses. He was only able to maintain his rule with French help.

From 1554, after unsuccessful attempts by the conquerors of Peru to break away from the Spanish crown, the country was ruled as a colony by a Spanish viceroy. Although coining had already been introduced at Lima under Philip II, gold was used as a coinage metal only from 1696. For gold coins, eight-, four-, double and single escudos were issued, whose standard had to conform to the prescriptions of the Spanish mainland. Eight and a half pieces of the 8-escudo coin illustrated here (also known as the onza or quadrupla, being the same as the quadruple pistole) were to be produced from the Spanish mark. Its fineness was 22 carats (= 916.6/1000).

The escudos manufactured in Peru differed greatly in design from those of the other colonies, whose production was closely modelled on the issues of the mainland. These bore the complicated Spanish arms on the obverse, and on the reverse the cross of the Order of the Holy Sepulchre with floral ornaments in its angles. On the Peruvian pieces the cross was placed on the obverse, and the reverse was divided into nine fields by the Pillars of Hercules and two lines running horizontally. Reading from left to right the first line includes the initial letter of the mint, the denomination and the Warden's initial; in the second the motto "plus ultra" (ever further) is found, reduced to three letters; the lowest section gives the year of issue.



EMPIRE OF RUSSIA

Tsar Peter I, the Great, 1689–1725

Double rouble, 1720

Mint: Moscow



Obverse: ЦРЬ ПЕТРЪ АЛЕУЕВИЧЪ В П САМОД
(Tsar Peter Alexeyevich sole ruler over the whole Russian Empire)
Laureate and armed bust, right

Reverse: М НОВА ЦЕНА ДВА РУБЛИ 17–20

(New coin of value two roubles 1720)

St. Andrew standing in front of a diagonal cross

Weight: 4.05 g · Ø 20.7 mm

Literature: Severin 82

In 1689 Peter I became sole and absolute ruler of the Russian Empire by deposing his half-sister Sophia, who since 1682 had acted as Regent for him as well as his insane half-brother Ivan V. During the reign of Peter I Russia achieved predominance over the Baltic Sea in a war against Sweden and thus entered the sphere of the great European powers.

Peter's extensive domestic reform work was of similarly great significance for the future of the country. One of his most important reforming achievements was the creation of a new and uniform decimal currency system. The main aim of this reform was to incorporate the Russian precious-metal issues into the prevailing European currency systems on an equal footing. The Tsar obtained ideas during his numerous foreign journeys. In 1698 he even visited the English mint in the Tower of London, accompanied by his technical adviser; the director of that mint at the time was Isaac Newton.

Peter I's gold coins were the first official currency in this metal. Their issue started in 1701 with the production of ducats and double ducats; the double rouble was added in 1718 as a multiple of the silver rouble. Unlike the ducats, the reverse depicts St. Andrew, who according to legend was said to have been the first apostle of Russia. The gold kopeks which were occasionally struck in earlier periods had an exclusively medallic character and were distributed as military awards or were thrown among the spectators at Imperial coronations.



PORTUGUESE COLONIAL EMPIRE: BRAZIL

King John V, 1706–1750

Dobrão, 1726

Mint: Minas Geraes



Obverse: IOANNES · V · D · G · PORT · ET · ALG · REX

(Ioannes V dei gratia Portugaliae et Algarbiae rex)

Shield with the arms of Portugal, beneath a large crown; on the left, the value 20,000, and on the right, five rosettes

Reverse: ❀ IN ❀ HOC ❀ SIGNO ❀ VINCES ❀ 1726 ❀

Cross of the Order of Christ with four large Ms in its angles

Weight: 53.58 g · ϕ 38.0 mm

Literature: Ferraro Vaz J5.03 – Meili 8

In 1500, Pedro Alvarez Cabral took possession of Brazil, which he named Terra da vera cruz, for the Portuguese crown. At first the new territory was for Portugal merely a welcome opportunity to get rid of disagreeable persons and those condemned by the Inquisition. Colonisation of the country was instituted under King John III (Plate 12). Brazil achieved its greatest significance for the Portuguese nation towards the end of the seventeenth century. Through the discovery of gold deposits in the province of Minas Geraes, north of Rio de Janeiro, it became for a while the most important gold-producing country in the world.

John V ordered the erection of a mint in Minas Geraes in the statute of 19 March 1720. All of the pieces manufactured there were to be marked with the letter M, the model being taken from the mint in Lisbon. This letter appears four times on the reverse, in the angles of the cross of the Order of Christ. Coining took place in Minas Geraes from 1724, but the mint was closed again as early as a decade later.

The dobrão illustrated here is one of the heaviest gold coins existing. It weighs almost twice as much as the Spanish 8-escudo piece (Plate 45). Its statutory fineness was 22 carats, and its nominal weight amounted to 53.78 g. The value of this coin, given on the obverse as 20,000 reis in Portuguese reckoning, was in fact 24,000 reis.

The visual design of the reverse goes back in its basic elements of cross and legend to the Português (Plate 6). In 1722 it was abandoned in favour of a new type with the ruler's portrait on one side and the Portuguese arms on the other.



ELECTORATE OF BAVARIA

Elector Charles Albert, 1726–1745, from 1742 Holy Roman Emperor

Carolin, 1730

Mint: Munich



Obverse: * C · A · V · B · & P · S · D · C · - P · R · S · R · I · A · & E · L · L ·
(Carolus Albertus utriusque Bavariae et Palatinus superioris dux,
comes palatinus Rheni sacri Romani imperii archidapifer et elector
landgravius Leuchtenbergensis)

Head, right

Reverse: CLYPEVS OMNIB⁹ - IN TE SPERANTIB⁹ - 1730

(Clypeus omnibus in te sperantibus 1730)

The Virgin Mary seated with the infant Jesus on her lap; she grasps a sceptre in her right hand, and with her left hand holds a shield quartered with the arms of the Palatinate, Bavaria and in the middle the electoral arms, which stands before her. The shield is surmounted by the electoral cap and surrounded by the collar of the Order of the Golden Fleece

Weight: 9.69 g · Ø 24.3 mm

Literature: Beierlein 1919

The conquest of Bavaria by the Austrian Emperor Joseph I brought Charles Albert (later the Emperor Charles VII) and his sister into Austrian custody for eleven years. Freed following the peace concluded at Rastatt, he journeyed through France and Italy and in 1717 took part in fighting against the Turks. He later derived claims to the Imperial crown from the marriage he contracted in 1722 with Maria Amalia, daughter of the Emperor Joseph I, and his descent from the Emperor Ferdinand I. These were fulfilled with his election and coronation in Frankfurt in 1742.

Charles Albert introduced the Karl d'or or Carolin as a new larger gold coin in 1726. It came into being as a continuation of the Max d'or, created by his father first as a single piece and from 1715 as the double, but was half as heavy again as the latter. Since these coin types were struck at the standard of the old Goldgulden, the Carolin was accordingly a triple Goldgulden (Plate 29).

On its issue, the new denomination was given an excessive value of 10 Gulden of account or 600 Kreuzers, which did not match its real value. The Imperial coinage meeting at Regensburg in 1738 devalued the Carolin to 8 Gulden 50 Kreuzers. As well as the full piece, there were also half- and quarter-Carolins.

The extremely abbreviated obverse legend also names amongst the Elector's titles that of Landgrave of Leuchtenberg. This territory came into Bavarian possession in 1650.

The reverse legend, "a buckler to all them that trust in thee", is taken from the second book of Samuel. Like the Virgin Mary and the infant Jesus, it also appears earlier and frequently on the coins of Bavaria.



KINGDOM OF PRUSSIA

King Frederick II, the Great, 1740–1786

Friedrich d'or, 1746

Mint: Breslau

Mintmaster: Adam Heinrich von Ehrenberg

Obverse: FRIDERICUS · D · G · REX · BORUSSORUM

Bust in armour, with an ermine mantle, right

Reverse: M · B · S · R · I · A · C · ET - PR · EL · S · SIL · D ·

(Marchio Brandenburgensis sacri Romani imperii archi-camerarius et princeps elector supremus Silesiae dux)

The Prussian eagle, crowned, above a shield with the letter W; standards, kettledrums and a gun barrel; in the upper field the date, divided 17 – 46; in the exergue, the ligatured signature of the mintmaster, *Æ*

Weight: 6.66 g · Ø 24.8 mm

Literature: von Schrötter, Preussen 19



Frederick II, whom contemporaries were already calling “the Great” after only a few years of his reign, made Prussia into a great power. During his long reign, he extended the kingdom to include the county of Ostfriesland (inherited) and Upper and Lower Silesia, as well as the county of Glatz and part of the county of Mansfeld. The geographical union of hitherto separated parts of the country (East Prussia and the remaining central territory round the nucleus of Brandenburg) was finally brought about in 1772 with the acquisition of West Prussia, Ermeland and the Netze region.

This Friedrich d'or was produced in Breslau, as shown by the W (for Wratistlawia) on the shield beneath the eagle. The already extant mint was taken over immediately after the conquest of the country in the First Silesian War of 1740–1742, and until 1751 the mintmaster working there was Adam Heinrich von Ehrenberg, who signed himself with the letters AHE.

The prototype of the Friedrich d'or was the Louis d'or, which upon the introduction of the so-called (coinage-) reformations in France in 1689 had flowed out in abundance into the German territories. It was soon imitated in weight, fineness and size by many princes and called by the names of the respective local rulers. Prussia produced this type, which had been introduced by Frederick William I in 1737, until 1850, i. e. for over a century. As with the Louis d'or, the obverse depicts the reigning monarch. The reverse, the Prussian eagle above trophies of war, is political in character: it refers openly to the belligerent confrontations beginning immediately after the start of Frederick II's reign.

Double and half Friedrichs d'or were also struck, as well as the single denomination.



CITY OF GENEVA

Pistole, 1755

Mint: Geneva

Mint Director: Jean-Louis Chouet

Die-engraver: Jean Dassier



Obverse: RESPUBL • – GENEVEN •

(Respublica Genevensis)

The arms of Geneva, richly ornamented; above, the name of Jesus (ΙΗΣΥΣ) in a wreath of rays and flames

Reverse: * POST TENEBRAS LUX * J 755

In a circle of rays and flames, the letters ΙΗΣΥΣ

Weight: 5.63 g · ø 22.0 mm

Literature: Demole 561

Clerical rule over the city of Geneva came to an end in 1533 with Pierre de la Baume, its last bishop. The reason for the bishop's expulsion was his attempt to place Geneva under the rule of the Duke of Savoy. In 1535 Farel, later assisted by Calvin, introduced the Reformation in the city, but both were soon banished from the city on account of their severe actions. In the same year the production of coinage was taken up in Geneva. The Council appointed as mintmaster Claude Savoie, who until 1532 had been working in the Savoy mint of Cornavin; his first issues were silver coins whose metal came from melted-down ecclesiastical objects.

In 1540 the city began to mint gold coins as well. For trade with France, écus d'or of that type were created; however, these were not accepted there and were already being decried in 1544. With an eye to Italy, the écu d'or was abandoned in favour of the écu pistolet in 1562. The striking of the pistole was started in Geneva in 1633. At the same time the ducat, with its double and quadruple, still circulated. In due course, only the pistole out of this multiplicity of denominations was able to establish itself, and during the 18th century it was the only gold coin issued by the city. The instructions for its issue were set out in a Council decree of 15 August 1752: 43½ pieces were to be coined from the Paris mark, and their fineness was set at 22 carats; their value was 10 livres or 35 florins. The pistole was also for a short time issued as its triple and as the pistole forte. The latter was about 1 gram heavier than the single denomination and was only struck in 1722 and 1724, from the gold of confiscated forgeries of the French écus d'or.

The coins of Geneva maintained a single design over the course of centuries, with hardly any change: the arms of the city, the motto "after darkness, light" and the name of Jesus appear on virtually all pieces.



EMPIRE OF RUSSIA

Tsarina Elizabeth I, 1741–1762

Imperial, 1756

Mint: St. Petersburg



Obverse: Б·М·ЕЛИСАВЕТЪ·І·ИМП·САМОД·ВСЕРОС·

(By God's grace Elizabeth I Empress and sole ruler over the whole Russian Empire)

Crowned bust, right. The broad ribbon of the Order of St. Andrew partly conceals a richly decorated dress. The ermine mantle, decorated with the Russian double-headed eagle, is attached to the right shoulder by a clasp. Below the bust, the mint-letters СІБ

Reverse: ИМПРСКАЯ – РОССІИС – МОН·ЦЕНА – ДЕСЯТ·РУБ

(Imperial Russian coin worth ten roubles)

Four coats of arms adorned with crowns, forming a cross round the triply-crowned Russian double-headed eagle. Four roses in the angles, and in the field between the arms the date 1756

Weight: 16.04 g · ϕ 32.2 mm

Literature: Severin 216 – Michailovitch 246 var.

Elizabeth I, daughter of Peter the Great (Plate 46) and Catherine I, was proclaimed tsarina in 1741. She was named as successor to Peter II by her mother, but allowed Anna Ivanovna, Duchess of Courland and niece of Peter I, to take power on Peter II's death in 1730; not until 11 years later, after Anna's death, was Elizabeth able to make good her claim to the throne and come to power. Unlike her father, she completely lacked political enterprise, so that in affairs of state she was dependent on her advisers and favourites.

During Elizabeth I's reign, the variety of gold coins increased considerably. In addition to those already existing, five new denominations were struck for the first time, including the Imperial of 10 roubles, whose issue was ordered by an Imperial decree of 19 November 1755. A fraction, the half Imperial of five roubles, was issued simultaneously. A completely new reverse design was chosen for the Imperial. The coats of arms symbolise Moscow (top), nucleus and starting-point of the future Russian Empire, together with the three 16th-century tsardoms conquered by Moscow: Kazan (right), Siberia (below) and Astrakhan (left). This historical fact is reflected in the crowning of the coats of arms: that of Moscow bears the Imperial crown, while the other three are decorated with simple five-pointed crowns. Despite its size and considerable value, the Imperial was used for making payments and formed part of the general currency.



UNITED NETHERLANDS, PROVINCE OF UTRECHT

Ducat, 1756

Mint: Utrecht

Mintmaster: Johan Ernst Novisadi

Die-engraver: C. van Swinderen



Obverse: CONCORDIA RES – PAR : CRES : TRA · – ■

(Concordia res parvae crescunt Traiectum)

A knight standing half right; in his right hand a sword, in his left a bundle of seven arrows; beside him the date, divided 17 – 56

Reverse: MO : ORD : / PROVIN : / FOEDER : / BELG · AD / LEG IMP ·

(Moneta ordinum provinciarum foederatarum Belgiae ad legem imperii)

A five-line inscription on a richly ornamental tablet

Weight: 3.42 g · \varnothing 21.5 mm

Literature: Delmonte 965 – Verkade 552

The northern Netherlands seceded from King Philip II of Spain in 1581; since then, the seven provinces of Guelders, Holland, Zeeland, Utrecht, Friesland, Overijssel and Groningen have formed the Republic of the Netherlands. Their independence, which at the same time meant their separation from the German Empire, was finally recognised in the Peace of Westphalia, concluded in Münster in 1648. The hereditary governors from the House of Orange were from 1579 responsible for the military affairs of the provinces. William III, King of England from 1689, was, incidentally, one of them (Plate 42).

In 1586, a reorganisation of the currency, which *inter alia* planned uniform issues for all members, was carried out under the Governor-General Robert, Earl of Leicester, who had been sent to the Netherlands by Queen Elizabeth I of England. The prototype for the gold coinage was the ducat of the German Empire, whose prescribed standards of weight and fineness were followed. The reverse legend refers specifically to this.

In its design the obverse has its origin in the Hungarian type depicting the standing saint Ladislaus. The seven arrows in the knight's hand represent the provinces, whose unity is underlined by the band which encircles them. The legend "unity produces strength" complements the pictorial depiction in words. The name of the province in which the ducat was produced appears abbreviated at the end of the obverse legend, on our example in the Latin form Traiectum, for Utrecht. The mintmark of the arms of Utrecht also points to its origin.

The ducat, and a double ducat of the same type, were struck virtually unaltered until 1808. In the 17th and 18th centuries the ducat was successful above all as a trade coin in eastern Europe and was frequently imitated there (Plate 60).

The edge-marking which was prescribed from 1749, intended to frustrate clipping, is hardly visible on our example.



CITY OF ZURICH

Ducat, 1756

Mint: Zurich

Mintmaster: Hans Jakob Gessner



Obverse: DUCATUS REIPUBLICÆ TIGURINAE :

Rampant lion with a sword and the arms of Zurich, left

Reverse: DOMINE / CONSERVA / NOS IN / PACE / 1756

A five-line inscription in a wreath of tendrils and ornaments

Weight: 3.45 g · \varnothing 22.1 mm

Literature: Hürlimann 237

As well as the immediacy achieved in 1218, the grant of the mint right was another important requirement for the development and prosperity of Zurich. This privilege brought to an end its dependence on the powerful Fraumünster Abbey. The abbey held the mint right from the middle of the 11th century and the city was forced to lease it until 1425. During the course of the 15th century Zurich, which was favourably placed for communications, occupied a leading place in the Confederation, which it had already joined in 1351. With Zwingli's appointment at the Grossmünster, the city became the starting-point for the Reformation in Switzerland.

The right to strike gold coinage was awarded by the Emperor Charles V in 1521. The Goldgulden which were initially struck were later followed by gold crowns and ducats. These last, together with their half- and quarter-values, served for normal transactions. Multiple ducats up to fifteen ducats weight were struck using the dies of the larger silver denominations; they were used almost exclusively for gifts and for external payments. The design of the ducat illustrated here was introduced in 1707 and remained unaltered for 60 years. The last word of the obverse legend comes from the Celtic tribe of the Tigurini, whose area of settlement had been in the west of Switzerland. Following a decree of the Zurich Council in 1673, 68 ducats with a fineness of 23 carats 5 grains were to be struck to the mark. An analysis of our piece showed that with a fineness of 23 carats 4 grains it corresponds almost exactly to this prescription. It was further ordered in 1750 that ducats should only be struck with decorated edges.

The mintmasters working for the city of Zurich from 1677 to 1773 were Hans Jakob Gessner and in succession his son and grandson of the same name. The reverse die of our coin was used in an earlier year: the original date "3" is still clearly visible beneath the altered figure "6".



SPANISH COLONIAL EMPIRE: COLOMBIA

King Ferdinand VI, 1746–1759

8 escudos de oro, 1758

Mint: Santa Fe de Bogotá

Warden: José Prieto Salazar



Obverse: FERDND ×VI×D×G×HISPAN×ET IND×REX ☉ 1758 ☉

(Ferdinandus VI dei gratia Hispaniarum et Indiarum rex 1758)

Bust, right

Reverse: NOMINA MAGNA SEQUOR ☉/☉N·R☉-☉J

Beneath a large crown and surrounded by the collar of the Order of the Golden Fleece, a shield with the arms of Castile/Leon, Aragon/Sicily, Austria, New Burgundy, Old Burgundy/Flanders, Tyrol/Brabant, charged with the shield of New-Anjou

Weight: 27.03 g · Ø 37.6 mm

Literature: Calicó and Trigo 56

Spain's American possessions were initially divided into two viceroyalties: New Spain (Mexico) in the north and New Castile (Peru) in the south. In 1717 two new viceroyalties were created: La Plata and New Granada, with Santa Fe de Bogotá as capital.

Following the transfer of the mint of Cartagena to Santa Fe de Bogotá, coinage was started there in 1623, at first restricted to silver and small coins in base metal. The first gold coin, a double escudo de oro, was produced in 1627. As in Peru (Plate 45), Colombia too had to conform to the issues from the Spanish mainland, so the same regulations applied to the piece shown here as to that struck in Peru.

The escudos which Ferdinand VI first had struck in Santa Fe de Bogotá still had the design laid down in 1537 (Plate 8). Two innovations were introduced in 1756: firstly the cross on the obverse was replaced by the ruler's portrait, and secondly the coins received a decorated edge. The name of the country appears in the reverse legend as the highly abbreviated NR, standing for Nuevo Reino de Granada. To the right of this, the Warden responsible signed, using the initial letter of his first name.



MALTA
under the Knights of St. John

Grandmaster Frà Emmanuel Pinto de Fonseca, 1741–1773

10 scudi, 1762

Mint: Valetta



Obverse: F·EMMANVEL PINTO M·M·H·S·S·1762

(Frà Emmanuel Pinto magnus magister hospitalis Sancti Sepulcri 1762)

Below a royal crown, a shield quartered with the arms of the Order and the Grandmaster, framed at the sides by branches

Reverse: NON – SVRREXIT·MAIOR

St. John the Baptist with the banner of the Order in his right hand; he points with his left hand to the Paschal lamb, which stands at his feet looking up at him; in the exergue, S·X

Weight: 7.66 g · \varnothing 23.5 mm

Literature: Schembri p.155, 5 – Restelli and Sammut p.162, 45

The Order of St. John, founded originally for nursing in Jerusalem in 1070, received the island of Malta from the Emperor Charles V in 1530 with orders to safeguard the western Mediterranean against the Turks. The climax of this fighting confrontation was the so-called “Great Siege” in the summer of 1565 by the armed forces of Sulayman I (Plate 69). The Knights of St. John, later known as the Knights of Malta, remained in possession of Malta until Napoleon occupied the island in 1798.

At first the Order struck gold zecchini and their multiples in Malta. The Grandmaster Frà Emmanuel Pinto, who came from Portugal, eventually introduced another coin-type known as the doppia nuova or new pistole of ten scudi, together with the half- and double-denomination (i. e. five and twenty scudi respectively); the relevant value is indicated in the exergue. The zecchini, which Pinto continued to issue, bore his portrait, together with the combined arms of the Order and the Grandmaster (five crescent moons arranged as a diagonal cross) on the reverse. On the new coin type the coat of arms was transferred to the obverse, whose inscription refers to the origin of the Order and its first nickname, the Hospitallers. The reverse introduced by Pinto is dominated by St. John the Baptist, the order’s patron saint, bears the legend “none greater than him” and at the same time emphasises the significance of the Knights of St. John. This Grandmaster’s idea of his office is conspicuous in the royal crown on the obverse, which replaces the hitherto usual ducal crown.



PRINCE-BISHOPRIC OF HILDESHEIM

Prince-bishop Frederick William of Westphalia, 1763–1789

½ pistole, 1763

Mint: Hildesheim

Die-engraver: W. Dowig (Dobicht)



Obverse: FRID:WILH:D:G:EPISC:HILDES:S:R:I:PRINC:
(Fridericus Wilhelmus dei gratia episcopus Hildesiensis sacri Romani imperii princeps)

Quartered coat of arms decorated with laurel and palm branches, beneath a princely crown and in front of an outspread prince's mantle; behind this, crossed sword and bishop's crozier

Reverse: ½ / PISTOLE / 1763

Three-line inscription in a cartouche decorated with flowers and branches

Weight: 3.32 g · ø 20.4 mm

Literature: Cappe 323 – Bahrfeldt, Hildesheim 2

The Bishopric of Hildesheim, founded in the early ninth century by Louis the Pious, extended north-west from the Harz between the rivers Leine and Oker. Over the centuries there were repeated confrontations with the dukes of Brunswick-Lüneburg (whose territory surrounded the bishopric), as a result of which Hildesheim had to relinquish major parts of its lands.

In 1763, after a vacancy of two years, Frederick William of Westphalia was elected as the new bishop by the circle of 32 canons.

The half pistole shown here matched in its design those produced in the same year by the Cathedral Chapter, which also possessed minting rights during a vacancy. The neutral reverse die, with statements of the value and the date, was apparently reused for the coinage of Bishop Frederick William, which was introduced immediately after his election. The obverse die had to be freshly engraved and the new ruler of the mint may be recognised by the legend and the Westphalian family arms additionally placed in the second and third quarters.

The single and double pistoles which were produced in the succeeding three years have the arms on the reverse, and depict a profile portrait of Bishop Frederick William on the obverse. On these denominations the value was no longer given in pistoles but in Talers. The half pistole of 2½ Talers was struck only in 1763. According to a Hildesheim regulation of 1764, the pistole should be struck with a fineness of 21⅓ carats (= ca. 903/1000) and 35 pieces were to be struck from the Cologne mark. This results in a nominal weight of 3.34 g for the half pistole. The name "pistole", given to the Spanish double escudo, can to this day still not be satisfactorily explained (Plate 8). This name was frequently used, above all in north Germany, for gold coins struck to its standards.



UNITED NETHERLANDS, PROVINCE OF HOLLAND

Rijder, 1763

Mint: Dordrecht

Mintmaster: Wouter Buck

Die-engraver: Johan Drappentier jr.



Obverse: * MO: AUR: PRO: CONFOED: - BELG: HOLLAND: (Moneta aurea pro confoederatione Belgica Hollandia)

An armoured mounted knight, brandishing a sword, galloping right; below the horse, the crowned arms of the province of Holland

Reverse: CONCORDIA · RES · PARVÆ · CRESCUNT ·

Beneath a large crown, the arms of the United Provinces; at the sides the value 14 - G^l and above the crown, 17 - 63

Weight: 9.94 g · \varnothing 26.7 mm

Literature: Delmonte 782 - Verkade 226, pl. 40,4

Holland was the most important of the seven provinces of the northern Netherlands. Its economic focus was the city of Amsterdam (also known as the Venice of the North), built on piles and traversed by canals. In 1622 it already numbered 100,000 inhabitants. Amsterdam made thriving progress, principally in the 17th century, through world trade, and grew to be the pre-eminent trade metropolis of Europe. The Dutch East India and West India trading companies both had their headquarters here.

The rijder, which owed its name to its obverse design, was added to the ducat in 1606 as a second, larger gold denomination. In its standard it was modelled on the unite which had been introduced a few years previously by the English King James I (cf. Plate 36). Between 1640 and 1650 its production was halted, but 100 years later the provinces again took up its issue, as shown by our example of 1763. This saw to it that the worn and clipped Netherlands ducats which were flowing back into the country were withdrawn from circulation. These lightweight ducats were recoined into the debased (c. 22 carats) rijder and its half. Unlike the ducats, the rijder and likewise the half-rijder had a fixed price, which for the pieces produced between 1748 and 1765 was established at 14 and 7 Gulden respectively. The name and, below the horseman, the arms of the issuing province appear on the obverse, and on the reverse the Union shield (the joint arms of the States-General) with the motto familiar from the ducats (Plate 52).



EMPIRE OF RUSSIA

Tsarina Catherine II, the Great, 1762–1796

Ducat, 1766

Mint: St. Petersburg

Die-engraver: Timothei Ivanov



Obverse: Б·М·ЕКАТЕРИНА·П·ИМПЕРАТРИЦА·

(By God's grace Catherine II Empress)

Crowned bust, right. The richly decorated dress is partly obscured by the broad ribbon of the Order of St. Andrew. The Imperial mantle lies on the right shoulder and on its sleeve can be seen the initials of the engraver.

Below the bust, the mint-letters СІБ

Reverse: I САМОДЕРЖ·ВСЕРОСИСКАЯ·1766·

(and sole ruler over the whole Russian Empire 1766)

A triply-crowned double-headed eagle, holding in its talons a sceptre and an imperial orb. On its breast it bears the arms of Moscow surrounded by the collar of the Order of St. Andrew

Weight: 3.50 g · Ø 21.3 mm

Literature: Severin 273 – Michaïlovitch 85.

Following the deposition and murder of the Tsar Peter III, who fell victim to a plot led by his wife Catherine II, the latter was crowned the new empress in Moscow in 1762. From the very start, this monarch devoted herself intensively to the affairs of state. Russia was able greatly to expand her area of power through two successful wars against the Turks, the three partitions of Poland which took place during her reign and the annexation of Courland. For all these external successes, the tsarina by no means forgot the internal administration of her empire. Catherine founded new cities, promoted trade and advocated legislative reform. At the same time she tried to get rid of existing abuses in the administration.

While the gold coinage of Elizabeth I (Plate 51) was notable for its particular diversity, that of Catherine may be described as rather modest. Only Imperials, half-Imperials and ducats were issued. In a few cases gold roubles and their half and double-denominations were minted by special order of the empress, but these were destined more for use at court than for general circulation. Ducats were during Catherine II's reign struck only in the years 1763, 1766 and 1796. On the occasion of the first issue the tsarina's Ukase of 16 February 1763 decreed as follows: the coins should bear her portrait on the obverse and on the reverse her arms (i.e. the state arms) and should match the Dutch ducats in weight and fineness. In line with this decree, 118 pieces of fineness c. 980/1000 and a weight of c. 3.50 g were struck to the Russian pound.





HABSBURG LANDS

Empress Maria Theresia, 1740–1780

Ducat, 1766

Mint: Vienna

Mintmaster: Johann Augustin Cronberg

Warden: Sigismund Anton Klemmer von Klemmersberg



Obverse: M·THERES·D·G·R· – IMP·HU·BO·REG·

(Maria Theresia dei gratia Romanorum imperatrix Hungariae Bohemiae regina)

Crowned veiled bust, right

Reverse: ARCHID·AUST·DUX· – BURG·COM·TYR·1766·

(Archidux Austriae dux Burgundiae comes Tyrolis 1766)

Crowned double-headed eagle, with the crowned Austrian arms on its breast; above its talons the initials C. – K. of the mintmaster and warden

Weight: 3.49 g · Ø 21.8 mm

Literature: Eypeltauer 184



In accordance with the succession laid down by the Emperor Charles VI in the Pragmatic Sanction, his daughter Maria Theresia took over the government in 1740, after his death. This arrangement set off the War of the Austrian Succession, which lasted until 1748, in the course of which Maria Theresia was nevertheless able to prevent a threatened partition of her empire. Beloved of her subjects, this monarch ruled for forty years an empire whose lands stretched for a while from the Austrian Netherlands to Transylvania and from Silesia to Parma. In the way this contemporary and opponent of Frederick the Great ruled her heterogeneous state she demonstrated the same skill as the Empress Catherine II of Russia (Plate 58).

In the empire, there existed several currency systems, corresponding to the nationalities united under the Habsburg crown. The gold coins struck were the ducat, the souverain d'or for the Austrian Netherlands (Plate 63) and the doppia and zecchino for the Italian possessions. In the original Habsburg lands the ducat was the principal gold coin; there existed fractional values down to 1/8-ducat and multiples up to a weight of twelve ducats. The latter were struck using Taler and half-Taler dies, principally for use as gifts. At the beginning of Maria Theresia's reign the nominal weight of the ducat stood at 3.49 g and its fineness was 986/1000; it met almost exactly the provisions of the Imperial Coinage Decree of 1559, and these were also complied with during the following period.

Our coin, which was produced after the death of her husband in 1765, shows the monarch with a widow's veil. Those lands in which Maria Theresia herself was regent are named in the obverse and reverse legends. The shield on the breast of the double-headed eagle indicates the mint. Thus the piece illustrated here, with the Austrian barred shield, was made in Vienna; other mints (for example Graz, Hall and Prague) may be recognised by their respective state coats of arms.





KINGDOM OF POLAND

King Stanislaus Augustus, 1764–1795

Ducat, 1770

Mint: Warsaw

Mintmaster: Jost Schröder



Obverse: STANISLAUS AUG. – D. G. REX POL. M. D. L.

(Stanislaus Augustus dei gratia rex Poloniae magnus dux Lithuaniae)

The king, dressed in Spanish style and wearing an ermine mantle, standing to the right, holding the Imperial insignia; to either side, the divided date 17–70

Reverse: MONETA / AUREA / POLONI. / AD LEG. / IMPER.

(Moneta aurea Poloniae ad legem imperii)

A five-line inscription on a richly decorated tablet; below, the mintmaster's signature I. S.

Weight: 3.46 g · \varnothing 21.9 mm

Literature: Hutten-Czapski 3118

At the instigation of Catherine the Great (Plate 58), her favourite Stanislaus Augustus Poniatowski was elected King of Poland and crowned in Warsaw on 25 November 1764. By this Russia exercised virtually uncontrolled power over the country and was already considering Poland a future part of her empire. Revolts directed against Russian rule and supported by other European powers were crushed by the troops of the Tsardom. The three partitions of Poland which took place during Stanislaus Augustus's reign spelt the end of the kingdom of Poland. Stanislaus Augustus, the last Polish king, had to abdicate on 25 November 1795, following Catherine the Great's enforcement of the ratification of the third and final partition treaty.

As regards the coinage, the king carried out an extensive reform as early as the year following his accession to the throne, with the aim of suppressing the foreign coin-types which inundated the country. The new Polish coins were struck according to the Imperial standard adopted from 1760 in most southern and western German territories. The gold coinage was restricted to the issue of ducats; only at the end of his reign did the king allow the issue of a new type, the single and double Stanislaus d'or, in 1794. The ducats had the same weight and fineness as the Dutch ones and to some extent also took over the design of their prototype in a slightly modified form (Plate 52). Thus, while the design was retained on the piece illustrated, the depiction of the knight on the obverse was replaced by the figure of the king; on the reverse merely the part of the inscription naming the country of issue was altered.



ELECTORATE OF SAXONY

Elector Frederick August III, 1763–1827, King from 1806

Double August d'or, 1777

Mint: Dresden

Mintmaster: Ernst Dietrich Croll

Obverse: FRID:AUGUST:D:G: – DUX SAX:ELECTOR

(Fridericus Augustus dei gratia dux Saxoniae elector)

Bust right in armour and mantle, wearing the ribbon of the Order of the Golden Fleece



Reverse: Beneath the electoral cap, two oval shields, surrounded by wreaths of leaves, with the electoral and ducal arms; between these the mintmaster's initials E.D.C.; in the exergue in two lines 10. THALER / 1777

Weight: 13.30 g · ϕ 27.7 mm

Literature: Buck 145 a

Following the early death of his father, Frederick August II, administration of the Electorate of Saxony was first conducted on behalf of his under-age son by his uncle, Prince Xavier; Frederick August III then took over the reins of government in 1769, at the age of 19. In work which took decades, he endeavoured to help to new prosperity a country which had been occupied by Prussia, ruined and economically bled to death during the Seven Years War from 1756 to 1763. In external politics, Frederick August III first followed Prussia, and later Napoleon.

Following the example of other German coining states, Frederick August III introduced a gold coin, based on the standard of the French Louis d'or, which was called the August d'or. The official proclamation, published in Dresden on 13 August 1772, prescribed a fineness of $21\frac{2}{3}$ carats (= c. 902/1000) and 35 pieces to be struck from the Cologne mark of 233.856 g. As well as the single piece, a double August d'or was also issued; both values appeared for the first time in 1777 and were struck for decades in large amounts as trading gold. The value placed in the lower part of the reverse is the value in Talers of account of 24 Groschen. 10 Talers of account (240 Groschen) corresponded in issued coins to $7\frac{1}{2}$ Talers, reckoned at 32 Groschen (i. e. 240 Groschen as well). Just as with the banknotes introduced in 1772, which were also current as Talers of account (the first state paper money in Germany), acceptance of the August d'or was not universal.

Our double August d'or shows on its obverse a youthful bust of the Elector with a long-haired curly wig, in keeping with contemporary fashion. The reverse illustrates both of the coats of arms of Saxony, on the left the electoral shield, with crossed swords, and on the right the ducal shield.



PORTUGUESE COLONIAL EMPIRE: BRAZIL

Queen Maria I and King Peter III, 1777–1785

½ dobra, 1785

Mint: Rio de Janeiro

Die-engraver: Joseph Gaspard

Obverse: MARIA · I · ET · PETRUS · III · D · G · PORT · ET · ALG · REGES · /
1785 ·

(Maria I et Petrus III dei gratia Portugaliae et Algarbiae reges 1785)

Double portrait, right; below, the mint-letter R

Reverse: Crowned Portuguese arms in a decorated cartouche

Weight: 14.30 g · ø 32.4 mm

Literature: Ferraro Vaz M 1.56 – Meili 1



In 1777 Maria I succeeded her father Joseph I on the Portuguese throne. She named as joint regent her uncle Peter, to whom she had been married since 1760, and bestowed upon him the title of king. After her husband's death in 1785, Maria reigned alone until 1799. In that year she transferred the regency to her son (later King John VI), who exercised it until his mother's death in 1816.

The specification for the new design of the half dobra, which from then on was to bear the double portrait of the two sovereigns, was published in the decree of 28 July 1777. At the same time the mint of Lisbon was instructed to prepare patterns in tin, which were also to be mandatory for the mints of Rio de Janeiro and Bahia. As for all gold coins struck in Brazil, the prescribed fineness for the meia dobra was 22 carats. Its nominal weight was 14.34 g and its value was set at 6,400 reis.

Established in 1698, the Rio de Janeiro mint first struck gold coins following Portuguese prototypes in 1703. The decrees from the Portuguese mainland concerning the coinage only reached the colonies after a considerable delay. For example, the orders of the reform of 1722 were not carried out in Rio de Janeiro until 1727. This applies similarly to the piece illustrated here: the Lisbon mint discontinued the striking of the type immediately after the death of Peter III in 1785, but Rio de Janeiro and Bahia were still striking it in 1786. However, the change-over to the new issue, depicting Maria alone and with a widow's veil, took place in both Rio de Janeiro and Lisbon in 1786, once the Queen had given her consent to the new coinage on 8 November of that year.



AUSTRIAN NETHERLANDS

Emperor Joseph II, 1780–1790

Double souverain d'or, 1788

Mint: Brussels



Obverse: IOSEPH·II·D G·R·IMP S·A·GER·HIER·HUNG·BOH·REX
(Joseph II dei gratia Romanorum imperator semper augustus Germaniae Hierosolymae Hungariae Bohemiae rex)
Laureate head, right

Reverse: ARCH·AUST·DUX·BURG· – LOTH·BRAB·COM·FLAN·
(Archidux Austriae dux Burgundiae Lotharingiae Brabantiae comes Flandriae)
On a St. Andrew's cross, a crowned shield bearing the arms of Austria/
Lorraine and Burgundy; surrounded by the collar of the Order of the Golden Fleece; below, between the date 17–88, the mint-symbol, a small head

Weight: 11.09 g · Ø 27.8 mm

Literature: de Witte 1148

By the Peace of Rastatt, which in 1714 finally settled the War of the Spanish Succession, Austria received the Spanish territories allocated to her the previous year in Utrecht. Apart from Naples-Sicily and Milan, these also included the southern Netherlands, i.e. roughly the present-day Belgium and Luxembourg.

Joseph II, eldest son of and from 1765 to 1780 joint regent with the Empress Maria Theresia, carried out numerous reforms, among them the abolition of serfdom. The measures envisaged for the Netherlands triggered a revolt there in 1789 (cf. Plate 65).

Under Joseph II, the double souverain was still struck with the same weight and fineness as under Archduke Albert and Archduchess Isabella; even the reorganisation of the monetary system under Maria Theresia from 1749 to 1755 left this gold denomination (as well as its half) untouched. Only its value had increased, from the original 240 stuivers (sols) to 372 sols 9 deniers in 1786.

The legend of the obverse, which is continued on the reverse, gives the name and titles of Joseph II, among them even that of King of Jerusalem. The arms of Lorraine (or, on a bend gules, three larks argent) go back to the Emperor's father, Francis Stephen, who belonged to this family.

The only Netherlands mint still operating under Joseph II was Brussels, whose mark of an angel's head appears on the reverse under the shield.

Apart from Brussels and Vienna, souverains were also struck at Milan from 1786; here they were called sovranos.



CITY OF SOLOTHURN

¼ duplone, 1789

Mint: Solothurn

Mint Director: Franz Xaver Zeltner

Obverse: RESPUBLICA SOLODORENSIS

Crowned and decorated coat of arms

Reverse: S·URSUS – MART·1789·

(Sanctus Ursus Martyr 1789)

St. Ursus in full armour, standing facing with a banner

Weight: 1.90 g · ø 17.1 mm

Literature: Divo and Tobler 675



Solothurn resumed the issue of coinage in 1759, after a gap of over a century, but it ended again relatively soon in 1798, with the occupation of the city by French troops and its subsequent incorporation into the Helvetian Republic.

An attempt to supplant foreign coins by the issue of gold Kreuzers and half-Kreuzers as well as by ducats was not noticeably successful. Success was had only in 1787, with the introduction of the duplone and its double-, half- and quarter-values. The name of the new coin refers to its origin: the dublone (the double Spanish escudo de oro) was one of the principal European gold coins, under the name “pistole”. The Solothurn duplone were struck from melted-down old French Louis d’ors, which were plentifully available. The coinage standard was taken from that of the new Louis d’or, which according to the decree of 30.10.1785 was to be issued with a standard weight of 7.65 g at 22 carats fine; counting all four denominations, a total of 8,061 examples were struck at Solothurn between 1787 and 1798. By a Council decree, the new duplone had to bear the arms on one side, and the city’s patron saint Ursus on the other. According to legend he belonged to the Roman Theban legion and was apparently executed for his Christian faith in Solothurn around A.D. 302.

The efficient mint of Solothurn was held in high esteem in the Confederation during the eighteenth century. It also produced coinage for other places from time to time. Apprentices were also trained and even the mintmasters of other cities perfected their knowledge here.



UNITED BELGIAN PROVINCES

Lion d'or, 1790

Mint: Brussels

Die-engraver: Theodor van Berckel

Obverse: DOMINI EST REGNUM •

A rampant lion, holding a sword and leaning on a shield bearing the word
LI / BER / TAS; below, 1790 •

Reverse: ET IPSE DOMINABITVR GENTIVM mintmark a small head

The arms of the eleven provinces in a circle around a sun

Weight: 8.29 g · Ø 28.0 mm

Literature: de Witte 1155 – Delmonte 221



The Emperor Joseph II's reforms, which *inter alia* provided for a centrally-administered empire with German as the sole official language, and curtailed the privileges of the individual countries, led in the Austrian Netherlands in 1789 to the so-called Brabançon Revolution. The eleven provinces of Brabant, Hainault, Guelders, Luxembourg, East Flanders, West Flanders, Limburg, Namur, Tournai, Tournaisis and Mecheln declared themselves independent. However, their freedom did not last long: the subsequent Emperor, Leopold II, was able to reincorporate this area into his empire by the end of 1790.

On 27 May 1790 the new republic decided on its own coinage series, which comprised eight denominations in gold, silver and copper. The gold issue was the lion, which showed on its obverse the eponymous lion as a joint coat of arms of the participants. According to surviving figures, 3,805 pieces were struck.

Unlike the northern provinces, each of which possessed its own mint and the origin of whose typologically uniform issues could be recognised, the eleven Belgian members produced a coinage which was uniform, even in details, for each denomination. The sole mint was Brussels, as shown by the "small head" mark on all issues. Theodor van Berckel, who engraved the dies for all of the coins issued by the United Belgian Provinces in 1790, worked here from 1776. He received 1200 florins (Gulden) for his work.

The coats of arms of the respective members are combined on the reverses of the lion d'or and the lion d'argent, the highest silver denomination. The obverse legend, which is continued on the reverse, reads in translation: the Kingdom is God's and he will be Lord over the people.

The lion d'or had a fineness of 22 carats $\frac{3}{4}$ grain and was valued at 14 florins.



KINGDOM OF DENMARK

King Christian VII, 1766–1808

Ducat, 1791

Mint: Copenhagen

Die-engraver: Johan Ephraim Bauert



Obverse: MONETA · AUREA · DANICA ·

Wild man standing half left, leaning on a club and a shield with the Danish coat of arms; beside him, the date divided 17–91. In front of his right foot, the die-engraver's initial B

Reverse: 1 · SPECIES / DUCAT / 23 · $\frac{1}{2}$ · K · ARAT / 67 · STYKKER /
1 · MARK · BRUTO

A five-line inscription on a richly ornamental tablet

Weight: 3.48 g · \varnothing 21.8 mm

Literature: Hede 2

Signs of insanity became apparent in Christian VII immediately after his accession to the throne in 1766 and soon rendered him incapable of looking after the affairs of state. After his divorce from his wife, who was convicted of adultery with his personal physician Struensee and banished to Celle in Lower Saxony, his stepmother and stepbrother governed from 1772. In 1784 Christian's son, later King Frederick VI, seized power.

The coinage was produced by order of the respective regents, but without this appearing on the coins. Most examples bear the portrait or monogram of the King. On the other hand, some give no hint whatever of the issuing ruler, for instance the ducat illustrated here, which can only be attributed to Christian VII on the basis of its date. It belongs to the series known as species-ducats.

The lighter and less fine courant-ducats were also in circulation. The species-ducat, which weighed 3.49 g with a fineness of 23½ carats, was valued at 14¾ marks, while the courant-ducat of 3.11g and 21 carats was worth only 12 marks. The type represented here was issued four times during the period 1791–1802, with a total output of 16,915 pieces.

The obverse design was taken in slightly altered form from the Albertsdaler, which had been produced for the Baltic trade since 1781. The reverse, which is shared with that of the Netherlands ducat (Plate 52), is remarkable: in a departure from the prototype, the value, fineness and standard weight of the coin are to be found. 67 of these coins were to be struck from a mark (by which the Cologne mark of 233.856 g is meant), on which basis the theoretical weight amounts to 3.49 g. A decorated edge ensured that the weight could not be unlawfully reduced by clipping or filing.



REPUBLIC OF FRANCE

24 livres, 1793

Mint: Paris

Mint Director: Alexandre Louis Roettiers de Montaleau

Die-engravers: Augustin Dupré und François Bernier



Obverse: •REPUBLICQUE FRANÇOISE• / •L AN II•, with the marks of the engraver (a lyre) and the Mint Director (a Leopard) between.

In an oaken wreath 24 / LIVRES • / — / A

Reverse: REGNE DE LA LOI •, below 1793 •

The winged genius of France, using the sceptre of reason, writes the word CONSTI / TUTION on a tablet standing on an altar; to the right a cockerel, to the left a lictor's bundle with a Phrygian cap; on the base of the altar, DUPRE

Weight: 7.65 g · ø 23.8 mm

Literature: Mazard 250

The French Revolution entered a new phase when in August 1792 the mobs from the Paris suburbs stormed the home of the royal family, the palace of the Tuileries, on the right bank of the Seine. Two months later the National Convention abolished the monarchy and proclaimed the (First) Republic. Louis XVI was tried and condemned to death and guillotined at the beginning of 1793.

On 5 March 1793 the National Convention ordered a new type of coinage, in which only the design of the obverse side was changed. The legend names the new form of government in the vernacular and instead of the king's portrait bears a statement of its value (for the first time on a gold coin), expressed in units of livre. The value and coinage standard were taken over from the Louis d'or. The reverse, which in design symbolises the new era, also originated from its last issue, known as the Louis constitutionnel. The cockerel guards freedom, and the lictor's bundle stands for unity and armed might. This design is the work of the Engraver-General Augustin Dupré, appointed by the General Assembly in 1791.

The coin is dated on both sides, on one according to the Christian era and on the other using the republican calendar introduced in 1793, which began with Year 1 on 22 September 1792. This issue was thus produced in the second year of the Republic.

By the end of the century only 17 of the former 32 mints in the French Kingdom were still working. The 24-livre coin is the last issue of the old coinage system. In 1795 decimal division was introduced with a new currency-unit, the franc, divided into 10 décimes, each of 10 centimes. The name franc (i. e. free) had already been used as a coin denomination in the 14th century (Vol. II, Plate 31).



GRAND DUCHY OF BADEN

Grand Duke Charles Frederick, 1738–1811, sole ruler from 1746

Ducat, 1807

Mint: Mannheim

Die-engraver: Heinrich Boltschauer



Obverse: CARL FRIEDRICH GROSHERZOG VON BADEN

Head, right; below, the die-engraver's initial B

Reverse: AUS RHEINSAND / 22½ KAR · / 1807

The river-god Rhenus with an urn (source), oar and the arms of Baden, reclining in front of a mountainous landscape

Weight: 3.66 g · Ø 21.5 mm

Literature: Kirchheimer 24

During his 73-year reign, Charles Frederick succeeded in considerably enlarging the original area of the Margraviate of Baden, and leading the territory to its greatest prosperity. This expansion was based on the one hand on claims of succession, and on the other on the compensation awarded to him by the Principal Resolution of the Imperial Deputation in 1803 for lands on the left bank of the Rhine ceded to France. Elevation to the rank of Elector took place at the same time. Charles Frederick took the title of Grand Duke on the signature of the Act for the Confederation of the Rhine on 12 July 1806.

The ducat illustrated here is this ruler's only gold coin as Grand Duke. Charles Frederick authorised its issue on 24 February 1807. Before this, some alterations in the design of the coin were carried out: details of fineness and year of issue, originally not given, were added, and the planned Latin legends were replaced by German ones, in order thereby to gain greater acceptance for the national language.

It may be inferred from the reverse legend that the metal for the manufacture of this piece was obtained by washing from the sands of the Rhine. The coins were therefore called river-gold or Rhine-gold ducats. In all, 1,022 coins were struck in June 1807 from about 3.78 kg of available gold. The raw gold won from the Rhine did not undergo any further working. Since the natural fineness of 22½ carats declared on the reverse lay below the level prescribed for the ducat (23⅓ carats), the coins had to be issued heavier, in order to achieve the fine gold content of 3.44 g required by statute.

Coining took place in Mannheim, the former mint of the Elector Palatine, which passed into the possession of Baden in 1802.



OTTOMAN EMPIRE

Sultan Sulayman I, 926–974 Hijra (AD 1520–1566)

Altın, n. d.

Mint: Constantinople



Obverse: ضارب النصر صاحب العز والنصر في البر والبحر
(Striker of gold, Lord of power and victory on land and sea)
Script in several lines; beside the lowest, heart-shaped ornaments, right and left

Reverse: سلطان سليمان بن سليم خان عز نصره ضرب في قسطنطينية سنة ٩٢٦
(Sultan Sulayman, son of Selim Khan, may his victory be glorious,
struck in Constantinople 926)
Script in several lines

Weight: 3.46 g · Ø 21.3 mm

Literature: BMC, Coins of the Turks 172 – Pere 175

Sulayman was one of the most important sultans of the Ottoman Empire. His usual nickname in Europe, “the Magnificent”, refers to his love of splendour, which also manifests itself in the numerous buildings (palaces, mosques, Koranic schools) erected by the famous court architect Sinan.

Pursuing his predecessor’s politics of conquest, Sulayman enlarged the empire by adding to it the island of Rhodes and parts of the north African coast, as well as Hungary in the north. In 1529 Turkish troops first stood at the gates of Vienna. The Turks failed to take the island of Malta from the Knights of St. John, despite the great military strength of the Ottoman fleet, which controlled the eastern Mediterranean (Plate 55).

The inscriptions, formulated in Arabic, and the heart-shaped ornaments in the remaining free space fill up the surface of this coin right to the edge. Individual longer parts of the interlocking letters project into the lines above. The resulting unclear, rough and not particularly artistic lettering suggests a poorly-trained die-engraver. It does not correspond to the calligraphy, which had by then reached its full flowering, nor does it reflect the strength and brilliance which the empire had meanwhile achieved.

The inscriptions still have the same wording as on the first Altıns, issued under Mehmed II in the second half of the fifteenth century (their name stands for gold). The date 926 refers to the year of accession to the throne and says nothing about the date of issue. The appropriate regnal year, from which the date of issue may be inferred, was not additionally stated until the middle of the eighteenth century.

Apart from Constantinople, where our coin was manufactured, further mints in which gold was struck were active under Sulayman I, for example Damascus and Aleppo.



OTTOMAN EMPIRE

Sultan Ahmed III, 1115–1143 Hijra (AD 1703–1730)

Zer-i Istanbul, n. d.

Mint: Islāmbōl (Istanbul)

Obverse: Tughra

Reverse:

(Struck in Islāmbōl 1115)

Script in five lines, with an ornament above

Weight: 3.46 g · ∅ 18.8 mm

Literature: BMC, Coins of the Turks 473 – Pere 499



ضر / ب / في / اسلامبول / ١١١٥

In the decades following the second fruitless siege of Vienna by the Turks in 1683, the Ottoman Empire had to accept considerable losses of territory from its European part. Numerous contacts with the west led to an intensive preoccupation with the intellectual currents and technical developments of the Christian states. Under Sultan Ahmed III permanent embassies were sent (for the first time in the history of the Ottoman Empire) to Paris, Vienna, Moscow and Warsaw. Ideas picked up there caused art and literature to prosper and also gave new impetus to building activity, as reflected in the Sadabād park, based on the château of Versailles.

Ahmed III was overthrown in 1730 by rebel janissaries (the elite troops of the army) and died in prison in 1736.

The obverse of the piece known as Zer-i Istanbul or also as Findik Altın bears as its design the seal of the sultan, the so-called Tughra. The title of the ruler of the day, his name and that of his father were worked into a basic pattern (which remained the same subsequently), consisting partly of transverse curved lines and partly of lines running vertically. In our example the name of Mehmed IV is given as well as that of Ahmed. There is in addition the formula “always victorious”, which by that period no longer fitted the facts. The reverse names the mint and the opening year of the reign. The name Istanbul for Constantinople, which had already become usual in colloquial speech, appears here for the first time on a coin. The Zer-i Istanbul was also issued as a half-piece.



OTTOMAN EMPIRE

Sultan Selim III, 1203–1222 Hijra (AD 1789–1807)

Zer-i Maḥbūb, 1213/1214 Hijra (AD 1799/1800)

Mint: Islāmbōl (Istanbul)



Obverse: سلطان البرين / و خاقان البحرين / السلطان بن السلطان
(Sultan of the two continents and ruler of the two seas, the sultan,
son of the sultan, 11)
Script in four lines

Reverse: عز نصره ضرب في اسلامبول ١٢٠٣
(May his victory be glorious, struck in Islāmbōl, 1203)
Script in several lines, with the Tughra above

Weight: 2.34 g · Ø 22.1 mm

Literature: BMC, Coins of the Turks 757

Alliance between Russia and Austria brought new military defeats for the Ottoman Empire and, in the peace of Jassy in 1792, loss of territory to Russia. Prussia, among others, had interceded on behalf of the Turks.

The decay of central authority made itself noticeable in the virtually independently-ruled provinces, for example in the Levant. After Napoleon's troops had been expelled from Egypt with English assistance, the Turkish commander seized power there as well.

The lost battles prompted Selim III, represented here by one of his coins, to reform his army along European lines. This gave rise to opposition from the janissaries, who were still powerful; the sultan was deposed by them and later murdered.

An earlier coinage reform, begun under Mustapha II and completed by his successor Ahmed III, had brought in the Zer-i Maḥbūb (depicted here) as a second, smaller, gold denomination. In translation, its name means "well-liked gold", in which the Persian zer means gold and the Arabic maḥbūb, well-liked. For the most part, the coins did not achieve the prescribed weight of 2.60 g.

In contrast to the simple, clear issues of Ahmed III, the designs of obverse and reverse were altered for Selim's coins (Plate 70). The Tughra (the seal of the sultan) now appears on the reverse, with the monogram "Selim bin Mustapha". In addition, the mint and the formula "may his victory be glorious" are given in a text which is arbitrarily distributed over the surface of the coin. The regnal year (in this case 11) is named as well as the year of accession; from these two figures, the date of striking can be calculated as AD 1799/1800. The two continents mentioned in the inscription are to be interpreted as Europe and Asia, and the seas probably as the Mediterranean and the Black Sea. Like the Altın, the Zer-i Maḥbūb was also issued in fractional and multiple weights.



OTTOMAN EMPIRE

Sultan Mahmud II, 1223–1255 Hijra (AD 1808–1839)

Jedid Rumi, 1235 Hijra (AD 1820/1821)

Mint: Constantinople



Obverse: In the central field, Tughra with floral ornament

Legend: سلطان البرين وخاقان البحرين السلطان بن السلطان
(Sultan of the two continents and ruler of the two seas, the sultan,
son of the sultan)

Reverse: In the central field, in several lines: ۱۳ ضرب في قسطنطينية ۱۲۲۳
(13, struck in Constantinople, 1223)

Legend: السلطان محمود خان ابن السلطان عبد الحميد خان دام ملكه
(Sultan Mahmud Khan, son of the Sultan Abd al-Hamid khan,
may his kingdom endure)

Weight: 2.41 g · ø 22.9 mm

Literature: BMC, Coins of the Turks 872

The murder of Selim III was avenged in 1808 by a local governor (who later became Grand Vizier) and in the following year the sole surviving prince, Mahmud II, was able to accede to the Ottoman throne. Externally his reign was characterised by numerous wars, and many territories, including eastern Moldavia (Bessarabia), Greece and Algeria, were lost by the empire. The sultan destroyed the janissaries in Istanbul in 1826; from 1835 the General (later Field Marshal) Helmuth von Moltke served as military adviser against the rebel Egyptians. Following an audience, he described Mahmud as a benevolent and kindly ruler.

This sultan far outdid all of his predecessors in his coinage. Mahmud's reign is marked by a multiplicity of gold coins brought into being through numerous and sometimes confusing reforms. The piece shown here, which originated at the beginning of the Greek Rising of 1820/1821, belongs to the Zer-i Maḥbūb series and represents its last issue. In the following year, a new gold coin was issued, weighing only 1.50 g, and 830/1000 fine.

The arrangement of obverse and reverse is altered yet again vis-à-vis those of the Ottoman issues shown in the preceding plates. An inscription typical only of this denomination appears around the central field; against the rule, the base of the lettering follows the outer edge of the circle of the coin. The text takes up earlier, well-known formulae. However, the sultan's name appears here twice, both in the Tughra, once more placed on the obverse, and in the reverse legend. The central field of the latter contains the regnal year, the mint (for which recourse was had to the old name Constantinople) and the year of accession to the throne.



SULTANATE OF ATJEH

Sultan Salah ad-Din, 1530–1539

Mas, n. d.

Mint uncertain



Obverse:

السلطان العادل

(The just Sultan) in bold calligraphic script, enclosed by a circle of pellets

Reverse:

صالح ابن علي ملك القاهر

(Salah, son of Ali, of the royal conqueror) in calligraphic and in part corrupt script, surrounded by a circle of pellets

Weight: 0.60 g · \varnothing 11.3 mm

Literature: Millies 132 – Vogel collection 471

The sultanate of Atjeh in north Sumatra probably came into being at the beginning of the 16th century through the integration of smaller local states. At the beginning of the 17th century, the Sultan of Atjeh ruled virtually the entire northern half of the island. Atjeh achieved considerable importance in the trade between China on one side and India and the Near East on the other thanks to its favourable geographical situation. The sultanate succeeded for a long time in beating off commercially motivated attempts at its seizure by the European powers. There was implacable hostility between Atjeh and the Portuguese mainland possession of Malacca; here, apart from trade interests, strong Catholicism stood opposed to a sometimes fanatical Islam. The state lost its independence in 1874 when conquered by the Dutch, who had declared war upon the Sultan the previous year on a flimsy pretext.

All chronicles agree that Sultan Salah ad-Din, in whose name this coin was struck, was an incompetent ruler. His father had succeeded in securing and extending the power of Atjeh, which fact is referred to in the reverse legend of his son's coinage. However, Salah ad-Din was more concerned to pursue his own pleasures than to carry on his father's work. In 1539 he was deposed by his brother Ala-ad-Din and incarcerated in the palace of Atjeh.

Very little is known of the Atjeh monetary system. As far as is known, the only coins struck were the golden Mas, its half and double denominations, and lead coins. The origin of the name "Mas" is unknown, but from metrological and linguistic investigations may be assumed to be in the Indian area. The fineness of this piece is around 800/1000.



NORTH INDIA
under the Mughal emperors

Padishah Jalal-ad-din Akbar, 963–1014 Hijra (A.D. 1556–1605)

Mohur, 983 Hijra (A.D. 1575)

Mint: Lahore



Obverse: لا اله الا الله / محمد / رسول الله
(There is no god but God alone, Mohammad is the prophet of God)
Inscription in three lines

٩٨٣

Reverse: بادشاه غازى اكبر جلال الدين محمد ضرب دار (الخلافة؟) لاهور
(The victorious Padishah Akbar Jalal-ad-din Mohammad, struck in
the Abode of the [Caliphate] Lahore, 983)

Inscription in several lines

Weight: 10.61 g · Ø 21.1 mm

Literature: BMC, Coins of the Moghul Emperors, pl. III, 59

The dynasty of the Mughal emperors began with Babur in 1526. His grandson Akbar ascended the throne in 1556 at the age of 14 and was able to hold it unchallenged for 49 years. His reign was marked by his military conquest of the Indian subcontinent as far as the Deccan highlands. An area of such size, inhabited to a large extent by followers of Hinduism and other persuasions, could only be ruled by a Sunni Moslem who had religious tolerance and by including persons of different faiths in the administration, a policy that Akbar recognised and adhered to strictly. The pantheism he developed led later to a new system of dating which followed the solar year and thus for a time took the place of the Islamic lunar year. At the same time, the Kalimah disappeared from the coins and was replaced by a generally-worded divine formula.

The standard for this coin came from Transoxania, the area south-east of the Aral Sea between the rivers Syr-Darya and Amu-Darya. Since thicker coins were preferred in North India, the struck surfaces of coins maintaining the same weight were smaller. The use of existing dies now marked the obverse with the former central field only: the inscription of praise for the first four caliphs is lacking; the same applies to the benediction formula “May the Almighty God perpetuate...” on the reverse. The use of over-large dies is no rarity.

The mohurs introduced under Akbar were sometimes of a square form, sometimes even in an oblong format with lobate ends. Both may originate from Akbar’s habit of innovation.

Under Akbar mobile military mints played an important part, accompanying the army during its expeditions. Their products were current, according to their legends, as Urdu- or Urdu Zafar Qarim-coinage: “camp on the way to victory.” The value-relationship of Akbar’s gold issues and the silver coinage was variable. In a list by Abu-‘l-Fazl, friend and biographer of Akbar, the piece illustrated here had a value of nine rupees.



EMPIRE OF JAPAN

Shōgun Tokugawa Ietsugu, 1712–1716

Kobankin, 1714

Mint: Edo (Tokyo)



Obverse: Two rectangular stamps, the upper reading Ichi Ryō, the lower, Mitsutsugo. Above and below them, the Kiri-flower, in each case in a crescent-shaped field. The whole surface is covered with thin horizontal scratched lines.

Reverse: In the centre, the Kaō-stamp Gotō. Below left, two name-stamps. Somewhat higher on the right, two private test-stamps

Weight: 17.80 g · Ø 69.5 x 38.2 mm

Literature: Bank of Japan, Vol. 3, 71–73

This Koban, manufactured from May of the fourth year of the Shotoku Era (1714), belonged to the qualitatively most valuable issues in the coinage history of Old Japan, with an unusually high fineness of 864/1000. It represented the equivalent of 1 Ryō (Ichi Ryō), the basic unit of the prevailing currency system. The issue of the Koban was begun in the fifth year of the Keicho Era (1600) and came to an end, as with the Ōban, in 1860.

Unlike the Ōban, the indication of value was stamped on to the smaller denominations, and not applied in ink by hand. The signature of the member of the Gotō family responsible for the gold coinage, in this case Mitsutsugo, was also stamped in the same way. The name Gotō is to be found in Kaō form in the middle of the reverse. As with the Ōban (Plate 77), the two stamps in the lower left-hand corner belonged to mint-personnel. Here, however, only a *single* worker was in charge of the manufacture of the piece. The two small marks struck on the right-hand side show that in this case the coin was also tested unofficially for its weight and fineness – principally by money changers and traders. If a coin once again came into the hands of someone who had already examined it and placed his personal mark on it, there was no need for further scrutiny. The existence of these marks shows that the Koban – unlike the Ōban – was a coin of general circulation.



INDIA
under the Mughal emperors

Padishah Farrukh Siyar, 1124–1131 Hijra (A.D. 1713–1719)

Mohur, 1127 Hijra (A.D. 1715)

Mint: Bijapur



Obverse: جلوس / س / ميمنت مانو / الظفر / دار بيجاپور / ب / ضر
(Struck in the House of Victory Bijapur in year 3 سنه ۳
[of his accession] of the reign of tranquil prosperity)
Several lines of script interspersed with floral ornaments

Reverse: حق فرخ سير / شاه / برسيم وزير ياد بحر و بر / سكه / زد از فضل ۱۱۲۷
(By the grace of truth struck coins in gold and silver the Padishah of sea
and land Farrukh Siyar, 1127)
Several lines of script

Weight: 10.91 g · Ø 20.6 mm

Literature: BMC, Coins of the Moghul Emperors 898 var. (regnal year)

The series of important Mughal emperors ended in 1707 with the death of Akbar's great-grandson Aurangzeb, during whose reign the coming decline of the empire was already looming. Although he succeeded in extending his power to cover virtually the whole Indian subcontinent, he had, as an orthodox Sunni Moslem, made bitter enemies of Hindus, Sikhs, Jains and Shiites. His successors, among them Farrukh Siyar, were unable to restore the empire to its original size and power: it began to disintegrate. Bijapur in the southern Deccan, conquered by Aurangzeb in 1685, was only active as an Imperial mint up to the reign of Farrukh Siyar.

The illustrated mohur complies with the typical design of north Indian coins of the Mughal period, which were later also sometimes imitated by the East India Company with the permission and in the name of the ruler of the day. The reverse bears a two-line verse in Persian which was used only by Farrukh Siyar, replacing the normally used title "victorious Padishah" by the formula "Padishah of sea and land" – a motto which did not match reality. As also on the obverse, the inscription starts with the lowest line; the words thus do not follow one another in order and are even occasionally split up into single syllables. The broad lines running transversely on both sides of the coin are greatly stretched out letters and perform a decorative division of the design. The mixing of Arabic and Persian on the obverse is linguistically noteworthy.

A peculiarity of Farrukh Siyar's gold coinage is the issue of tiny gold coins with diameters between 0.8 and 1.3 cm and weights between 1.40 and 3.40 g resembling South Indian issues. These coins were probably produced in the Deccan area.



EMPIRE OF JAPAN

Shōgun Tokugawa Yoshimune, 1716–1745

Ōbankin, 1725

Mint: Edo (Tokyo)

Obverse: Jū Ryō Gotō (written) Gotō (as Kaō = seal-script).

Four stamps in the form of a Kiri-flower, each enclosed in a single plain circle. The whole surface is covered with transverse grooves

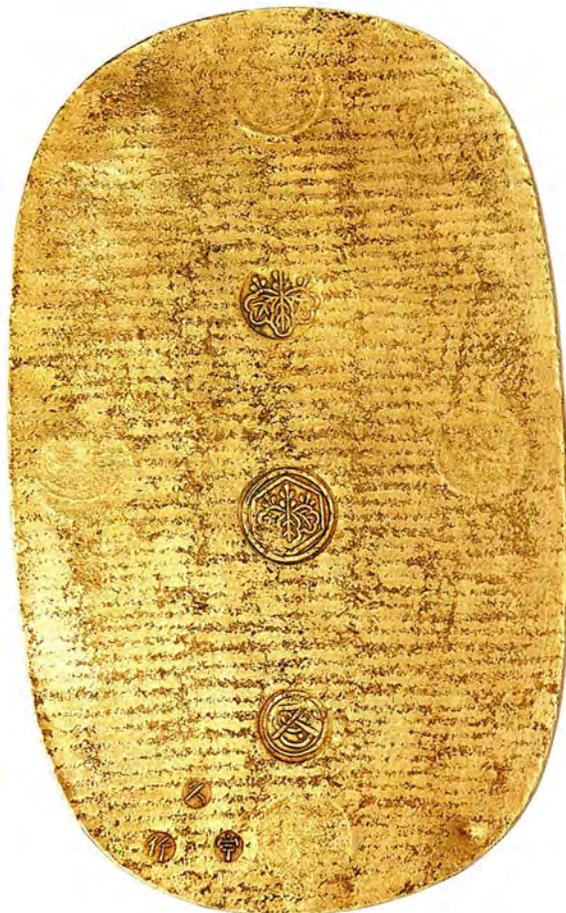
Reverse: Three large and three small stamps. Of the large, the two upper repeat the Kiri-flower – one within a hexagon and a circle, the other unenclosed. The lowest stamp reads Gotō (as Kaō). Three stamps in the lower left corner. On the lower right, a private test-mark.

Weight: 165.51 g · Ø 151.5 x 93.2 mm

Literature: Bank of Japan, Vol.3, 96



The Ōban illustrated here was one of an issue of only 8,515 pieces struck in October of the tenth year of the Kyōhō Era (1725). The value of this coin (Jū Ryō = 10 Ryō) was written on the obverse in ink. Below, the member of the Gotō family responsible for the gold coinage is designated (here simply by the family name) in two ways: the name is written out, and also presented in Kaō form. Kaō, a special calligraphic personal signature, was reserved for high-ranking individuals, and had to be executed by their own hand. From the form of the writing, the inscriber of this piece can be identified as Gotō Shinjō. The gold coinage came under the control of a member of the Gotō family as early as the time of Tokugawa Ieyasu (1542–1616, Shōgun from 1603). To prevent abrasion of the script, single pieces were wrapped in silk, cotton, etc., and larger amounts were kept in suitably compartmentalised wooden chests. It was possible to have the inscription renewed against payment of a fee. In addition to the script, the obverse bears four stamps in the form of Kiri-flowers, an old imperial symbol of unknown origin. The groove-marks which cover the whole of the obverse of the coin perhaps indicated that the piece consisted entirely of precious metal. The three small stamps on the reverse belonged to members of the mint staff. The two lower ones identify in abbreviated form the names of the workers who manufactured this Ōban, and the upper one was struck by a supervisor. With a weight of 165 g and a nominal value of 10 Ryō (corresponding to 75 kg of copper coinage), the Ōban possessed an enormous purchasing power – far too high for everyday transactions. Originally these coins were used in transactions of the Imperial Court, and by the court nobility as gifts. Later on, foreign and larger internal payments were made with the aid of Ōbans. The last Ōbans were produced in the first year of the Manen Era (1860).



SOUTH INDIA

British East India Company, 1600–1858

Pagoda, n.d. (ca. 1740–1808)

Mint: Madras



Obverse: A male figure standing between two women. Elongated oval shapes above their heads suggest crowns. The fields above right and left are filled with ornaments

Reverse: An irregular granulated surface

Weight: 3.44 g · Ø 13.0 mm

Literature: IMC Vol. I, XXX, 22

In 1600, Queen Elizabeth I of England bestowed the monopoly of the East India trade on a group of rich London merchants. India's most important exports were spices, precious stones, cotton and silk. This British East India Company (The Governor and Company of Merchants of London, trading to the East Indies) established its first settlements on the east and west coasts of the Indian peninsula as early as 1611 and 1613. The trading post of Madras, founded in 1640, soon afterwards obtained from the rulers of the South Indian kingdom of Vijayanagar the right to strike Pagodas of the local type. No hint of its issuing authority is to be found on the illustrated coin. It is generally accepted that this highly stylised type, with the figures shown only half-length, was principally issued by the British. With the Proclamation of 7 January 1818, English issues of the Pagoda were finally discontinued, and the silver rupee introduced as the new standard coin in the Madras Presidency.

The meaning of the three figures on the obverse is obscure. All that is agreed is that a trio of deities is depicted here. According to the coins of the Kingdom of Vijayanagar, which formed the prototypes, the central standing god should be identified with Venkateśvara, attended by two of his wives. The reverse of the coin is plain: originally completely flat, it was produced in a granulated form by the British.

The origins of the Pagoda, in Indian “varāha”, lie in South India. As the standard gold coin of this region, it developed there completely self-contained and independent from the rest of the Indian monetary systems. The earliest, not accurately datable, examples are little gold lumps either lacking a design or with a single small punch-mark. The Pagodas were the same weight as the “Molucca bean” (c. 3.30–3.40 g). The European name “Pagoda” is Portuguese in origin and is probably traceable to the goddess Bhagavati, who is depicted on some of these coins.



EMPIRE OF JAPAN

Shōgun Tokugawa Ienari, 1786–1837

Nibukin, 1828

Mint: Edo (Tokyo)



Obverse: Ni (right) Bu (left) between two Kiri-flowers. A border of pellets surrounds the whole design, interrupted by the two characters and the enclosure round the upper flower

Reverse: Mitsutsugo (in cursive script) Gotō (as Kaō). In the upper right-hand corner, Bun. Here too, the design is enclosed by a border of pellets

Weight: 6.54 g · \varnothing 23.2 x 13.8 mm

Literature: Bank of Japan, Vol. 3, 290–293

The execution of a coinage reform in the first year of the Bunsei Era (1818) made a start in countering the financial difficulties into which the Shōgunate had fallen during the reign of Tokugawa Ienari. It included a recoinage of existing coin types and the introduction of two new denominations, and stretched over a period of 18 years until the sixth year of the Tempo Era (1835). This “reform” was based firstly on a size-reduction of the coins and secondly on a reduction in their fineness.

Our illustration shows one of the newly-created denominations. This coin, with a nominal value of two Bu (Nibu) corresponded to a half Koban. Its production began in 1818 and there was a second issue in the eleventh year of the Bunsei Era (1828). The name of the era is given in abbreviated form on the reverse in the top right-hand corner of the design. This side is dominated by the signature of Mitsutsugo Gotō.

Tokugawa Ienari’s coinage reform had disastrous consequences for the country’s economy. The large numbers of small denominations put into circulation (the issue of Nibu alone amounted in all to 5,019,083.5 Ryō) led to colossal increases in the price of rice and other essential commodities. At the same time, the government-imposed *ad valorem* equation of the older, qualitatively better, coins with the new debased issues caused the good pieces to be withdrawn from circulation and hoarded by the populace. Even the infliction of the severest punishments was unable to stop this. In 1827, in order to recover the reserves of hoarded precious metal, the use of the old coins was forbidden, and their seizure ordered. However, the aim of this measure was not realised, since the population completely ignored the decree. The fineness of this coin is 480/1000.



APPENDIX

Introductory notes

The following pages comprise

- the family tree of the pistole
- a description of a coin-balance from Berg
- a table of coinage standards.

The “pistole” is the gold coin of two escudos introduced in Spain in 1566, which became the basic prototype for the coinage of many European countries.

The illustration of a coin-balance from Berg, its detailed description and reproductions of coins corresponding to the weights used with it are intended to give an idea of how the correct weight of a coin tendered in payment could be checked immediately.

The appendix concludes with a table of coinage standards summarising all the available data on the coins illustrated in this volume.

A text elucidates each of the three foregoing themes.

THE FAMILY TREE OF THE "PISTOLE"

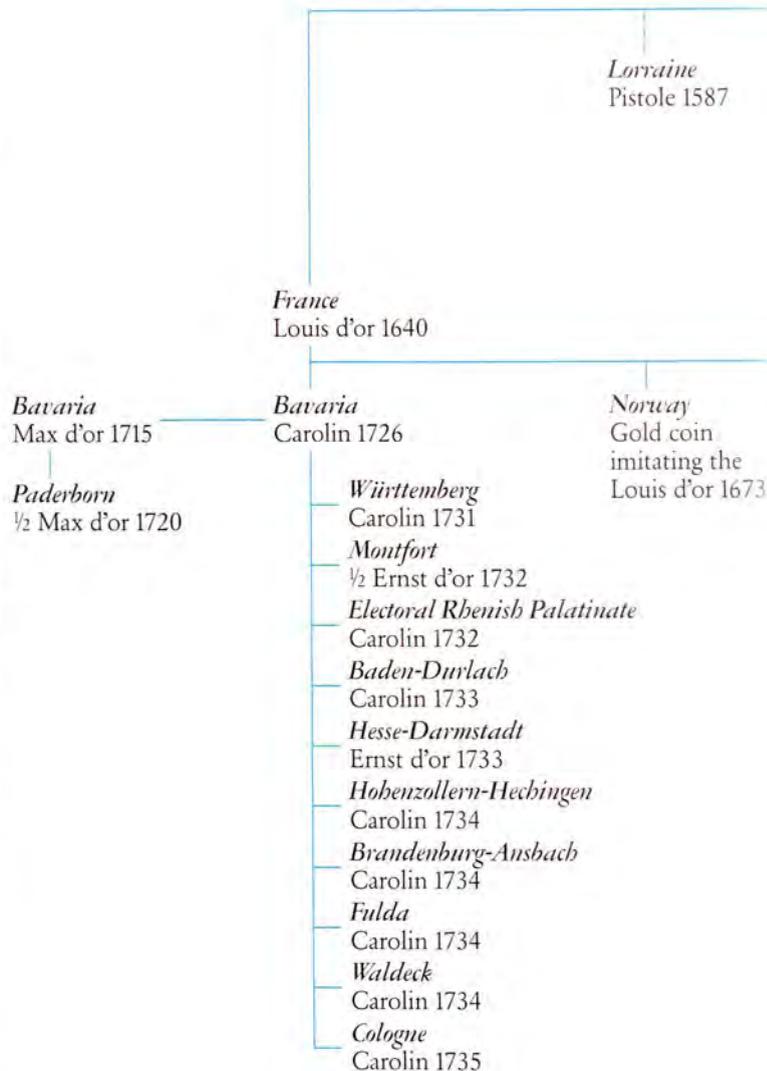
In 1566 King Philip II of Spain created a coin (the double denomination of the escudo introduced in 1537) which was to become the ancestor of many European issues. Called *doblon* in Spain, it was given abroad such names as *dublone*, *duplone* or *doppia*. However, the name *pistole*, whose origin has not been clarified to this day, was the most widely accepted. Its fineness, which was not altered for centuries, was set by law for the Spanish and French issues at 22 carats (916/1000), and its nominal weight was 6.76 g. The *pistole* became a global coin when King Louis XIII of France had the *Louis d'or* issued to its standards in 1640 (Plate 32). Unlike the Spanish *doblon*, which had on its obverse the arms of the ruler and on its reverse a cross in a quatrefoil, the French coin bore the ruler's portrait on one side and an ornamental design on the other. Many European territories adopted this idea and introduced similar types, which were also sometimes named after the issuing ruler.

At the end of the 17th century, large numbers of Spanish and French *pistoles* arrived in Germany. To curb this invasion of foreign gold coins (primarily French *Louis d'or*) King Frederick William I of Prussia created for his country the *Wilhelm d'or*, which was first issued in 1737 with the weight of a double *pistole*. However, the *pistole* was not issued in Prussia in its original weight until 1740 under Frederick II, as the *Friedrich d'or* (= ½ *Wilhelm d'or* – Plate 49).

The French prototype was copied earlier in Bavaria than in Prussia. In 1726, the Elector Charles Albert had the *Carolin* struck as successor to the *Max d'or*; it had a sharply reduced fineness but a higher weight (Plate 48). In Germany the *pistole* was worth five *Talers* of account and this value was even occasionally given on the coins (correspondingly on double *pistoles* as ten *Talers*).

The diagram opposite shows what a lasting effect the creation of the double escudo has had on the modern European monetary system: the *pistole* circulated from Malta in the south to Norway in the north, and from Scotland in the west to Russia in the east. Italian issues have not been included, since numismatic research has not yet definitively determined the various coinage standards in use there, and only a specific investigation of its fineness could ascertain whether a particular piece was struck according to the *pistole* or the *ducat* standard.

The Scottish (1701) and Netherlandish (1816) issues undoubtedly go back to the double escudo. However, the path of their descent cannot be traced with a sufficient degree of certainty. Therefore the depiction even of possible derivations did not appear to us to be justified.



————— definite derivation
 - - - - - possible derivation

SPAIN, DOUBLE ESCUDO 1566

Bouillon
Pistole 1587

Neuchâtel
Double pistole 1603

Orange
Double pistole 1616

Uri
Pistole 1613

Freiburg
Double pistole 1622

Geneva
Pistole 1633

Portugal
Dobra of 2 escudos 1722

Scotland
Pistole 1701

Malta
10 scudi 1736

Prussia
Wilhelm d'or 1737

Prussia
Friedrich d'or 1740

Brunswick-Wolfenbüttel
Karl d'or 1742

Anhalt-Bernburg
5 Talers 1744

Mecklenburg-Strelitz
5 Talers 1747

Saxony (for Poland)
August d'or 1752

Mecklenburg-Schwerin
10 Talers 1752

Wied
5 Talers 1752

Pomerania
Adolf d'or 1758

Hanover
Georg d'or 1758

Hildesheim
½ pistole 1763

Schaumburg-Lippe
10 Talers 1763

Saxe-Weimar
5 Talers 1764

Paderborn
5 Talers 1767

Hesse-Cassel
Pistole 1771

Lübeck
Pistole 1776

Oldenburg
5 Talers 1776

Anhalt-Bernburg
Pistole 1796

Westphalia
Jérôme-Napoléon d'or 1810

Electoral Hesse
Wilhelm d'or 1841

Russia
½ Imperial 1763

Denmark
Christian d'or 1771

Poland
Stanislaus d'or 1794

Solothurn
Duplone 1787

Berne
Duplone 1793

Lucerne
12 Münzgulden 1794

City of Basle
Duplone 1795

Netherlands
10 Gulden 1816

DESCRIPTION OF A COIN-BALANCE FROM BERG, DATED 1779

A flat rectangular maplewood box, stained black, closed from above by two brass hooks in the form of stork's bills decorated with stamped ringlets.

In the base of the box, specially cut-out recesses house the balance, sixteen weights (in three rows) and at the top right the compensatory weights, in a compartment closed by a brass flap. The balance-beam is of steel, with a plain pointer, and runs out at each end in the form of a swan's neck. The suspension of each of the two unsigned circular brass scale-pans consists of three green silk cords. The weights, cast in brass, are square truncated pyramids or square sheets. Their knob-shaped handles, attached in the centres, fit into cylindrical holes drilled in the inside of the lid. The name of the coin corresponding to each weight is stamped on its surface, and the coin-designations are also recorded in red ink above each compartment.

A decorative printed label with name, place and date is pasted on to the inner side of the lid:

Scale and weights
made by
Your Electoral Highness in the Palatinate's
most graciously privileged, examined
and sworn weightmaker
JOH. PET. BRASELMANN,
at Wichlinghausen in Oberbarmen. 1779.

sold to Joh. Holverscheid, Frankfurt am Main N^o 86

The following coin-weights are represented in the coin-balance:

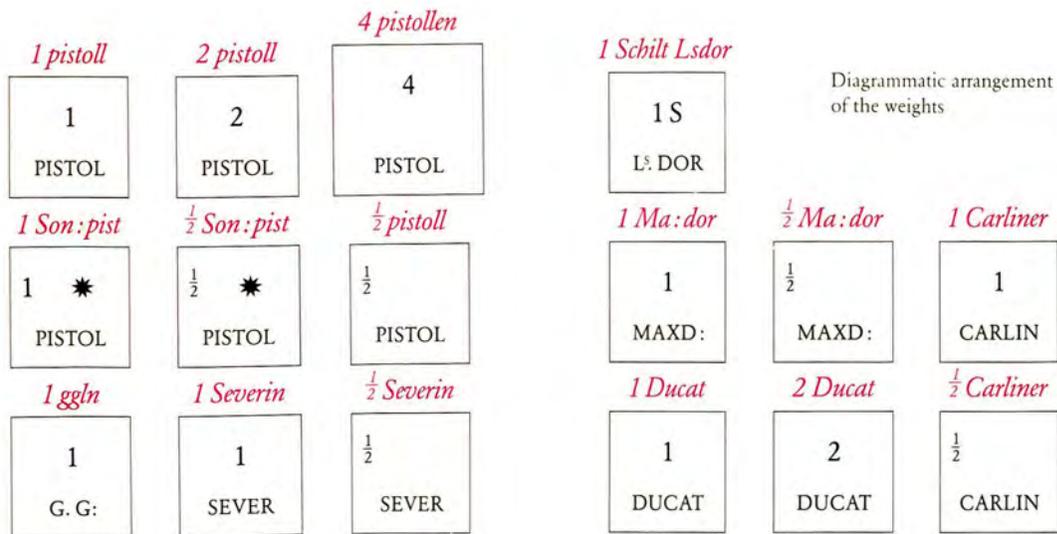
Spain	4 pistoles = 26.959 g
	2 pistoles = 13.479 g
	1 pistole = 6.729 g
	½ pistole = 3.333 g
France	1 Louis au soleil = 8.102 g, struck 1709–1716
	½ Louis au soleil = 4.054 g
	1 Louis aux lunettes = 8.115 g, struck from 1726
Netherlands	1 severin (double souverain) = 11.091 g
	½ severin (souverain) = 5.537 g
German Empire	1 Goldgulden = 3.226 g
	1 ducat = 3.473 g
	2 ducats = 6.952 g
	1 Max d'or = 6.476 g
	½ Max d'or = 3.227 g
	1 Carolin = 9.698 g
	½ Carolin = 4.895 g

The balance-maker Johann Peter Braselmann from Wichlinghausen near Oberbarmen lived from 1730 until 1791. He was granted the privilege for his trade on 16 January 1765. Judging by the manuscript entries on the lower edge of the label, he sold the balance at the Frankfurt Fair to Johann Holverscheid, who had stand number 86 and, according to the still extant "Fair Diagram", came from Solingen and dealt in knives and swords.



The corresponding coins
(scale 1:1.25)
in the same order





NOTES ON THE TABLE OF COINAGE STANDARDS

The table of coinage standards on the following pages gives details of the contemporary specifications (i.e. how heavy and with what proportion of gold) to which the coins illustrated on Plates 1-79 were to be struck. Such a summary is bound to be incomplete, since the specifications for some pieces are (still) not known. This is particularly true of the issues of the Ottoman Empire and those of the Asiatic states. Certain figures are given with a question-mark, since these details were taken from ordinances and sources which belong to periods earlier or later than the date of origin of the illustrated coins and thus do not refer directly to them. It is also an open question whether the statements made there are in fact true of the piece illustrated. The details given in 19th century merchants' handbooks should likewise be treated with caution, although these contain a great deal of valuable information.

The gold fineness of the coins is given both in carats and grains (1 carat = 12 grains; in England at first 1 carat = 4 grains) – the terms used in the old ordinances – and also as calculated in parts *per mille*. The basic coinage weight, the mark, describes the amount of gold (alloyed in the prescribed fineness) out of which a certain number of pieces was to be produced. It was this number, and not, for example, the nominal weight of the coins, that was given in the relevant ordinances. Cases in which the coinage decree appears on the coin itself are more common among silver coins; there are only a few examples of this among gold coins. One of them is the Danish species-ducat which is shown on plate 66. The complete coinage decree appears on its reverse:

Denomination: 1 species-ducat

Fineness: 23½ carats (= 979.16/1000)

Quantity to be struck from the mark: 67

Basic coinage weight: 1 gross mark (= 233.856 g)

Both the gross (nominal) weight and the fine weight can be calculated from these data as follows:

Basic coinage weight : number = nominal weight
(233.856 g : 67 = 3.49 g)

Nominal weight : 1000 x fineness = fine weight
(3.49 g : 1000 x 979.16 = 3.41 g)

For a few of the issues set out in the Table, the underlying mark-weight is known imprecisely or not at all. In a case of divergent information in the technical literature, the highest and lowest of the weights given are quoted as basic values. Either the city or country which gave its name to the mark in question appears as well after the numerical value, or the name of the basic weight is given.

The sequence in the table corresponds to that of the coins on the plates and not to the chronology of the individual decrees.

Plate	Date of decree	Country/City	Name of coin	Nominal weight in grams	Fine weight in grams	Fineness in carats and grains = parts per mille	Weight basis of coinage in grams
1	?	<i>Milan</i>	Double ducat	7.02	7.02	24 = 1000	234.9973 Milan
2	1497	<i>Castile</i>	4 excelentes	14.08	13.93	23 $\frac{3}{4}$ = 989.58	229.456 Castile
3	1500	<i>Salzburg</i>	3 ducats	10.65	10.53	23 $\frac{3}{4}$ = 989.58	
4	1515	<i>Milan under France</i>	Scudo d'oro	3.50	3.37	23 $\frac{1}{8}$ = 963.00	244.7529 Paris
5	1521	<i>Brabant</i>	Carolusgulden	2.91	1.69	14 = 583.33	244.7529 Paris
6	1499	<i>Portugal</i>	Português	35.09	34.72	23 $\frac{3}{4}$ = 989.58	229.50 Portugal
8	1537	<i>Spain</i>	Escudo	3.38	3.09	22 = 916.66	230.01 Spain
9	1541	<i>France</i>	Ecu d'or à la croisette	3.44	3.29	23 = 958.33	244.7529 Paris
10	1545	<i>England</i>	Crown	3.11	2.59	20 = 833.33	373.248 Engl. Troy pound
12	1555	<i>Portugal</i>	Cruzado calvário			22 $\frac{1}{8}$ = 921.88	229.50 Portugal
13	1550	<i>France</i>	Double Henri d'or	7.30	7.00	23 = 958.33	244.7529 Paris
14	?	<i>Livonia</i>	Goldgulden	4.14?	4.09?	23 $\frac{3}{4}$ = 989.58?	186.486 – 192.0 Kulm?
15	1558	<i>England</i>	Half-pound	5.65	5.18	22 = 916.66	373.248 Engl. Troy pound
16	1557?	<i>Flanders</i>	Half-real	3.50	2.62	18 = 750.00	244.7529 Paris
17	?	<i>Hungary</i>	Ducat	3.55	3.50	23 $\frac{2}{3}$ = 986.11	245.537 Ofen
19	1583/4	<i>England</i>	Sovereign	15.55	15.47	23 C 3 $\frac{1}{2}$ G = 994.80	373.248 Engl. Troy pound
20	1578/80?	<i>Riga under Poland</i>	Portugalöser	35.30?	34.56?	23 $\frac{1}{2}$ = 979.16?	197.0 Cracow
21	?	<i>Piacenza</i>	2 doppie	13.10	11.87	21 $\frac{3}{4}$ = 906.25	
22	?	<i>Södermanland</i>	8 marks	3.26	3.19?	23 $\frac{1}{2}$ = 979.16?	210.64 Stockholm
23	1600	<i>Brabant</i>	Double Albertin	5.15	4.61	21 $\frac{1}{2}$ = 895.83	244.7529 Paris
24	1601	<i>Scotland</i>	Sword & sceptre piece	5.09	4.66	22 = 916.66	373.248 Engl. Troy pound
26	1612	<i>Tournai</i>	Double Souverain	11.08	10.18	22 C $\frac{3}{4}$ G = 919.27	244.7529 Paris
28	1623	<i>England</i>	Laurel	9.10	8.34	22 = 916.66	373.248 Engl. Troy pound

Plate	Date of decree	Country/City	Name of coin	Nominal weight in grams	Fine weight in grams	Fineness in carats and grains = parts per mille	Weight basis of coinage in grams
29	1559	<i>Magdeburg</i>	Goldgulden	3.25	2.50	18 ½ = 770.83	233.856 Cologne
30	1637	<i>Liege</i>	Ecu d'or Ferdinandus	3.38	2.98	21 ⅙ = 881.94	246.028 Liège
32	1640	<i>France</i>	Louis d'or	6.75	6.19	22 = 916.66	244.7529 Paris
35	1586	<i>Zwolle</i>	Ducat	3.51	3.46	23 ⅔ = 986.11	246.084 Holl. Troy mark
36	1649	<i>Commonwealth of England</i>	Unite	9.10	8.34	22 = 916.66	373.248 Engl. Troy pound
37	1621	<i>Brabant</i>	Souverain	5.54	5.09	22 C ¾ G = 919.27	244.7529 Paris
38	1559	<i>Frankfurt</i>	Ducat	3.49	3.44	23 ⅔ = 986.11	233.856 Cologne
39	1650/56/58?	<i>Thorn under Poland</i>	5 ducats	17.75?			201.89 Cracow
40	?	<i>Portugal</i>	Moeda de ouro	10.74	9.84	22 = 916.66	229.50 Portugal
41	1596	<i>Papal State</i>	Quadrupla	13.50	12.37	22 = 916.66	339.072 Roman pound
42	1670	<i>England</i>	5 guineas	41.95	38.45	22 = 916.66	373.248 Engl. Troy pound
43	1559	<i>Mecklenburg</i>	¼ ducat	0.87	0.85	23 ⅔ = 986.11	233.856 Cologne
44	1701	<i>France</i>	Louis d'or aux 8 L...	6.75	6.19	22 = 916.66	244.7529 Paris
45	1675	<i>Peru</i>	8 escudos	27.06	24.80	22 = 916.66	230.01 Spain
46	1718	<i>Russia</i>	Double rouble	4.09	3.19	18 ¾ = 781.25	409.51 Russian pound
47	1720	<i>Brazil</i>	Dobrão	53.78	49.30	22 = 916.66	229.50 Portugal
48	1726	<i>Bavaria</i>	Carolin	9.74	7.50	18 ½ = 770.83	233.856 Cologne
49	1736	<i>Prussia</i>	Friedrich d'or	6.73	6.12	21 ⅙ = 909.72	233.856 Cologne
50	1752	<i>Geneva</i>	Pistole	5.66	5.19	22 = 916.66	244.7529 Paris
51	1755	<i>Russia</i>	Imperial	16.57	15.19	22 = 916.66	409.51 Russian pound
52	1586	<i>Utrecht</i>	Ducat	3.51	3.46	23 ⅔ = 986.11	246.084 Holl. Troy mark
53	1673	<i>Zurich</i>	Ducat	3.44	3.35	23 C 5 G = 975.69	233.856 Cologne
54	?	<i>Colombia</i>	8 escudos	27.06	24.80	22 = 916.66	230.01 Spain

Plate	Date of decree	Country/City	Name of coin	Nominal weight in grams	Fine weight in grams	Fineness in carats and grains = parts per mille	Weight basis of coinage in grams
55	1756	<i>Malta</i>	10 scudi	8.22	7.02?	20 ½ = 854.16?	316.61 Maltese pound
56	?	<i>Hildesheim</i>	½ pistole	3.34?	3.01?	21 ⅔ = 902.77?	233.856 Cologne
57	1749	<i>Holland</i>	Rijder	10.00	9.20	22 ½ = 920.13	246.084 Holl. Troy mark
58	1763?	<i>Russia</i>	Ducat	3.47	3.39	23 ½ = 976.16	409.51 Russian pound
59	1717	<i>Habsburg Lands</i>	Ducat	3.49	3.44	23 ⅔ = 986.11	233.856 Cologne
60	?	<i>Poland</i>	Ducat	3.49	3.44	23 ⅔ = 986.11	233.856 Cologne
61	1772	<i>Saxony</i>	Double August d'or	13.36	12.06	21 ⅔ = 902.77	233.856 Cologne
62	1777	<i>Brazil</i>	½ dobra	14.34	13.14	22 = 916.66	229.50 Portugal
63	1612	<i>Austrian Netherlands</i>	Double Souverain	11.08	10.18	22 C ¾ G = 919.27	244.7529 Paris
64	1787	<i>Solothurn</i>	¼ duplone	1.91	1.75	22 = 916.66	244.7529 Paris
65	1790	<i>United Belgian Provinces</i>	Lion d'or	8.29	7.62	22 C ¾ G = 919.27	244.7529 Paris
66	?	<i>Denmark</i>	Ducat	3.49	3.41	23 ½ = 979.16	233.856 Cologne
67	1793	<i>France</i>	24 livres	7.65	7.01	22 = 916.66	244.7529 Paris
68	1807	<i>Baden</i>	Ducat	3.67	3.44	22 ½ = 937.50	233.856 Cologne
73	?	<i>Atjeh</i>	Mas	0.60			9.60 Tael
75	1714	<i>Japan</i>	Kobankin	18.00			3750 Kwan
77	1725	<i>Japan</i>	Ōbankin	165.00			3750 Kwan
78	?	<i>British East India Company</i>	Pagoda	3.40?			373.248 Engl. Troy pound

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