AUSTRALIAN NUMISMATIST

2008

Publication of the
NUMISMATIC ASSOCIATION OF VICTORIA
(Incorporating the Numismatic Society of Victoria, founded 1914,
and the Association of Australian Numismatists (Melb.), 1939)

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Founded 1946

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***Cover**: Hungarian Fund 5 dollars issued by Lajos Kossuth in United States of America in an attempt to raise funds for another Hungarian revolution*

MATERIALS FOR COINS

By W E (Bill) Purnell, NAV 718[1]

Figure 1 – Bill Purnell in 1974

In the past the requirements for a coinage (as distinct from tokens or notes, which, used to be stated on our notes, are a promise to pay) were:

l. The material must have an intrinsic value to the people as a whole, for example the material can also be used for ornamentation.

2. It must be readily workable, corrosion resistant and substantially permanent.

3. It must be reasonably scarce, but it must be available in all parts of the world and not a monopoly of any one nation or group of nations.

Thus platinum is acceptable on the first and second requirements and was first used by Spain as a substitute for gold about 1760 and extensively by Imperial Russia from about 1829 until about 1870 for the same reason, as a substitute for gold, but it was generally discounted as being less valuable than gold and eventually discontinued for coinage, because at that time the supply of platinum was a monopoly of Imperialist Russia, and, as far as is known, platinum has not been used for coinage since 1870, although by now probably the largest producer of platinum is the International Nickel

[1] Bill presented this paper to NAV meeting 349 on 17 July 1970 and it was published in the *Australian Numismatist*, August 1970, pp 5-12. It is republished here as a tribute to Bill who died during 2008.

Company of Canada, as a by-product from their production of nickel and copper. The price of platinum is now so high, perhaps two to five times the price of gold, and its uses so extensive in industry both for electrical and electronic devices and in even larger quantities as the basis for catalysis in the chemical industry, that it is not seriously considered as a possible material for coinage in the 1970's.

Thus, only gold and silver and alloys of them were true coinage materials, those of copper having been generally in the past considered merely as tokens, but with the increasing price of copper, if the old standards were still valid, copper might soon be soon begin to be a true coinage. Remembering that Dennis Gabor in his provocative book "Inventing the Future" contends that copper will be a precious metal by the end of this century, then it is not surprising that the size of our so called copper coins have been drastically reduced, and it is likely that this trend will be extended.

CONDITIONS FOR SATISFACTORY COINAGE MATERIAL

Satisfactory coinage material must meet two broad conditions – reasonable manufacture and good in circulation.

In **manufacture**:

(a) miscibility of the constituents

(b) ease of melting within reasonable temperatures

(c) satisfactory availability of the constituent metals

(d) uniform composition so that coin produced complies with narrow legal requirements

(e) good casting, rolling and stamping properties, ductility and plasticity, and

(f) reasonable hardness after work are sought.

In **circulation** it should:

(a) have good wearing quality so that the design remains legible

(b) be difficult to counterfeit

(c) resistant to tarnishing

(d) pleasing to the eye and to the aesthetic sense

(e) sonorous, giving an assurance of soundness when rung and thus satisfying a popular test.

GOLD

Gold is the most malleable of all metals – one gram, ie 1/28th of an ounce can be worked into a sheet nearly 0.6 square metres, ie, a sheet approximately six square feet in area with a thickness of less than one ten-thousandth of a millimetre, or a little over 3 millionths of an inch or into a piece of wire 2½ kilometres long, more than one and a half miles. It is impervious to the common acids by themselves and can only be dissolved by aquaregia, a mixture of three parts concentrated hydrochloric acid and one part concentrated nitric acid, by azoimide, by sodium and potassium cyanide in the presence of oxygen.

Its reflectivity to ultra violet and visual light is quite low, but it has an exceptionally high reflectivity to infra red and red light and is therefore used in glass to produce heat reflecting windows, and also in infra red reflectors in industry.

Gold by itself is too soft to be used for coinage, i.e. 100% or 24 carat gold is too soft and most coinage consists of round about 90% gold, ie 22/24 or 22 carat, with varying alloy materials.

United Kingdom coinage is 9l.66% gold and 8.33% copper as was Australian coinage after 1870, but our early gold coinage in Australia was 91.66% gold and 8.33% silver and was much less red or more yellow than English or American gold. Our Australian sovereigns were at first discounted but later had a premium of 6d over a British sovereign. United States gold coinage was 90% gold and 10% copper.

At lower levels dental gold varies between 65% to 90% gold with 5-12% silver and sometimes with the addition of small amounts of platinum, palladium or iridium for hardening purposes. Eighteen carat gold, ie, 18/24 or 75% gold is the usual material of highclass jewellery, and this should consist of l8 parts of gold with six parts of silver. Fifteen carat gold being l5 parts of gold, 8 parts of silver and one part of copper , and 14 carat gold being l4 parts of gold 8¼ parts of silver and 1¾ parts of copper. White gold is a mixture of gold and zinc, but in any case where less than 50% of gold is used in the material, then it cannot legally be called gold. Filled gold specifically means that the material consists of another metal over which has been plated a gold coating. Gold is extremely sensitive to the presence of impurities especially in alloys, one part in 4000 of lead or one in 10,000 of Tellurium are fatal in gold for coins, they render the metal cold short and the tensile strength is reduced to less than one quarter of pure gold. It is

made fragile by one part in 4000 of Bismuth and this defect is accentuated in alloys. The influence of selenium and tellurium is increased when the strip is annealed – zinc retained from the cyanide process of gold extraction also has an embrittling effect.

As a generalisation, in earlier times – on a weight basis gold has had l5 to l6 times the value of silver, but due to the pegging of the price or gold at $US 35.00 per ounce, and silver not being pegged, the price of silver has varied considerably, so that this ratio is no longer necessarily valid.

ELECTRUM

Electrum is a natural alloy of gold and silver that was originally found in Anatolia and probably near Kena in what is now the United Arab Republic between the Nile and the Red Sea, – it was widely known in Egypt as Asem. It was extensively used for coinage and was not always realised to have been an alloy, and appears to have been first produced as an alloy by the Romans. It usually contained 70% to 80% of gold and 30% to 20% of silver with a colour ranging from pale yellow through greenish yellow to greenish white, depending on the other adventitious materials occluded with the naturally occurring alloy.

SILVER

Silver is normally purified electrolytically and is above suspicion but occasionally Cupelled silver is offered, that may contain 1% lead which can be absorbed in coinage operations but is not welcomed. Fine silver is 99.9% silver with a Vickers hardness of 76 and is thus too soft for coinage, Sterling silver is not less than 92½% silver alloyed up to 7½% copper. US coinage silver usually contains 90% silver and 10% copper, has a Vickers hardness of about 148, whereas if the composition were 90% silver 7½% copper and 2½% aluminium, it age hardens to a Vickers hardness of 190.

The price of silver over the last forty years has varied widely from a low in 1931 of 11c. an ounce, to a high in 1968/69 of over $2.00 an ounce. Currently, it is priced at $A1.44 – its main and increasing use is in photographic film, then as anodes for silver plating, for jewellery, for silver solders and for evaporators and condensers.

There are a wide variety of alloys of silver and a great number of these have been used for coinage at one time or another. Generally one speaks of such

alloys as being debased coinage, and in 1946 the silver content of our Australian coinage was reduced from 90% to 50%, – the composition being 50% silver, 40% copper, 5% zinc, 5% nickel. Even so with the price of silver having climbed, Australian "Silver" coins minted between 1946 and the introduction of decimal currency in 1966 all now have a value for the silver content considerably in excess of their face value.

Similarly with the 50c. coin issued in 1966 having a composition of 80% Silver, 20% copper, its silver value was immediately higher than its face value.

Most of the so-called noble metals, noble because they are unaffected by oxygen, ie are so unreactive that they do not corrode, could be used for coins, if they were not, so valuable, that is, as well as gold and silver, all the platinum group including iridium, osmium, rhenium, rhodium, rubidium, and Ruthenium, – whereas they are used – Iridium for hardening platinum points on distributors, etc. Osmium and Ruthenium for hard points on fountain pens, Rhodium with Platinum for high temperature thermocouples. Both Osmium and Platinum salts and fumes are extremely poisonous and Osmium Oxide is very volatile so that about one part in 100 million is the maximum permissible exposure concentration.

One other material in the platinum group of the noble metals must be mentioned as it is actually in use for coinage and medals, namely Palladium. Great Britain minted Palladium proof sovereigns in 1869 not that long after the element was discovered by Wollaston. Pure Palladium is a soft grey metal having a melting point of l552°C and for coinage is usually alloyed with a small percentage of other metal resulting in hard white coloured coins. Tonga has minted three Palladium coins, but the material is so intractable that Mr Henderson of our Australian Mint considers that the costs of die replacements could be so excessive that he will not permit Palladium coinage to be minted at Canberra.

COPPER

Copper, in terms of quantity has been and is the most important metal used in coins, it is practically all electrolytic and runs 99.9% Copper. The presence of Bismuth in copper is the chief danger, not more than one part in 50,000 is permissible as it remains fluid long after the general mass has solidified, i.e., until the temperature has fallen to the freezing point of Bismuth itself - 271°C. In polished sections under the microscope the

Bismuth shows as fine threads or films running through the cast structure. At a later stage splitting of the fillet during rolling, or edge frilling occurring after the squeeze in marking will probably be observed. When the Bismuth is in the oxidised condition, e.g., after melting copper or a high copper alloy without a charcoal cover it is innocuous; but melting under these circumstances is bad practice and brings other serious troubles in its train.

Over the ages and particularly over the last century, many materials have been called some sort of silver, for example, "German silver" which was originally 65% copper, 20% zinc, 13% nickel and 2% silver to modern coinage in "nickel silver" consists of 55-65% copper, about l8% nickel and 27 to 17% zinc, and very little if any silver.

NICKEL

And so to Nickel:

Pure nickel has been used and is used by many countries for coins. Switzerland once again was the first to use it – in l88l. It is a hard metal, silver white in colour, with a melting point of 1453oC. Nowadays most nickel is 99.9 pure but sometimes Cobalt is present and whilst this has little effect on the working properties of nickel alloys, in contact with silver, Cobalt behaves like iron and goes into solution only with great difficulty. Cobalt salts are efflorescent and even one part in 200 promotes tarnishing by forming minute amounts of Cobalt salts which, in contact with the atmosphere, absorb moisture and start incipient corrosion.

Nickel work hardens readily and therefore it is essential to ensure that the blanks going to the presses are sufficiently soft to yield a good impression. For the same reason, only low relief can be used. There are various qualities of "nickel silver" so called "high grade" nickel silver containing as much as 25-35% nickel. It is a silver white with a grey tinge, and this alloy is very hard, having a melting point of 1l60°C. France uses 25% nickel in her "nickel silver" coinage.

Medium grade "nickel silver" usually contains 20-24% nickel and is somewhat less hard and has a melting point of l070°C. Zambia uses 20% nickel in her "nickel silver" coinage.

Low grade "nickel silver" contains 5-19% nickel and has a melting point approximating to l000°C. Switzerland was apparently the first to mint

"Nickel Silver" coins in 1850 and uses 10% nickel in them. Russia used to use 18% nickel in older nickel silver coins and now in modern coinage uses 12% nickel.

NICKEL BRONZE

Nickel Bronze has been used by a few countries for coinage. It is usually an alloy of copper nickel zinc and tin, tin usually being 5%, and again is referred to as high, medium and low grade "nickel bronze".

High grade nickel bronze contains 25 to 30% Nickel, is white in colour with a melting point of about 1100°C. When it existed as a separate state Serbia used 25% Nickel in its nickel bronze coins.

Medium grade containing 20 to 25% Nickel is white with a melting point of about l050oc. Mozambique uses 20%Nickel in its coinage.

Low grade nickel bronze tends to be yellow in colour and contains 10-19% nickel, melts at about 960°C. Sweden uses about 16% nickel in its nickel bronze coinage which contains some silver.

CUPRO NICKEL

Cupro Nickel should consist of 75 Copper, 25 Nickel. It was first used by Belgium for coinage in 1861. It is fairly hard, silvery white in colour with a melting point of about l200°C. It is perhaps currently the most widely used material for coinage and the majority of the F.A.O. coinage is in this or a similar alloy.

Difficulties peculiar to the alloy are:-

(a) High pouring temperature (about l400°C.)

(b) Vital need for dozzle pouring.

(c) Need for thick walled moulds to give good conductivity.

(d) The possibility of carbon absorption during melting, leading to brittleness which, however can be removed by remelting with about ½ per cent cupric oxide,

(e) The danger of graphitization in the blank if the annealing temperature is too high (greater than 800°C.)

BRONZE

Prior to 1860 Copper was used almost entirely for lower token units. In France bronze containing 88 to 89% Copper was used in about 1790 but in 1852, in order to replenish the coinage at a time when raw materials could not be afforded, church bells were melted down with copper. The resulting metal produced almost fortuitously, and succeeding only by trial and error, had all the attributes of a good bronze coinage alloy and was adopted in a Law of that year. It contained 95% Copper, 4% Tin 1% zinc and was introduced into England in 1860 and was not changed until 1923 when it was amended to 95½% Copper, 3%Tin, l½%

Zinc, an alloy that is somewhat softer in working but gives satisfactory coins.

During World War II due to the shortage of Tin, 97% Copper, ½% Tin, 2½% Zinc was used as the alloy and this is the alloy used in Australia for all pennies, half-pennies, two and one cents.

Bronze coinage was perhaps the earliest and bronzes are among the most widely used and widely varying alloys. Yet all are called Bronze.

A few examples:

Bronze name	Copper	Zinc	Tin	Lead
Naval Bronze	60	39	¾	1/5
Roman Bronze	60	39¼	¾	
Tobin Bronze	59 – 60	39 – 40	½ – 1	
Lead Bronze	75	Nil	1 – 2	23 – 24

From these bronzes, one can see it is no great step on the one hand to **Gunmetal**, which should have a composition of:

88 copper, 2 Zinc, and l0 Tin,

or on the other to:

Pewter, which is now 9l tin, 6 antimony, 1½ copper, l½ bismuth, although originally it was 70 tin, 30 lead, and just to make it difficult, English pewter consisted of 91 tin and 9 Antimony,

– or on the other to **Brasses** which vary in composition from 95 copper, 5 zinc to 50/50, with differing properties in colour hardness and melting point, e.g.

Copper	Zinc	Comment
95	5	Melting point of l060°C
85	15	is called Red Brass
70	30	called Cartridge Brass has maximum ductility
60 to 40	20 to 38	Muntz Metal
55 to 45	?? [2]	has maximum tensile strength is silvery white but is brittle
50	50	Melting Point of 790°C

A few generalisations from Twentieth century research relative to brasses and bronzes might be of interest.

The addition of 0.0l% Arsenic inhibits corrosion.

The addition of small amounts of tin increases tensile and hardness.

The addition of small amounts of Iron increases hardness, reduces grain size, makes the brass more suitable for forging.

A very small addition of silicon increases the strength.

A very small occlusion of nitrogen increases the strength and toughness.

Small additions of manganese greatly increase the hardness of brass and the material is then called manganese bronze and the bearings which support the Sydney Harbour Bridge as well as many other arch type bridges of the same vintage are of this material.

From a historical, archaeological point of view and in Numismatics the brass coins of Rome are of greatest importance.

ORICHALCUM

The name Orichalcum to indicate Copper-Zinc coins of the late Republican (first issue about 45 BC) and Imperial Roman Times, and the manufacture of Orichalcum was probably a State monopoly Originally lead and tin were in Orichalcum coins only as impurities, but later these additions were intentional and Third Century copper zinc tin lead coins should be called zinc bronzes.

[2] The zinc content is not given in the 1970 published paper

Orichalcum is not the earliest copper alloy containing zinc, but it was the most widely used and important early copper zinc coinage material. It was probably made by a cementation process, eg, but not for sure, bars, plates and irregular pieces of copper were buried in a mixture of zinc ore, eg, zinc sulphide and charcoal in a crucible and the charge heated so that the zinc ore was reduced, liberating the zinc in form of vapour which was absorbed by the copper. The number of variables would make any modern metallurgist shudder.

I have said nothing about deoxidizers or cladding or marraging as is now done with US 25 cent pieces and some other coinage. Nothing about the wide range of aluminium alloy coins so prevalent in Europe (and Indonesia) and of course, nothing about the wide variety of odd materials ranging from Siamese bullet money to cowrie shells that have served as currency, but this talk is supposed to be limited to thirty minutes, – so finally to the future of coins, – if there is a future – and here there is great speculation because of the convenience of credit cards, – coins will increasingly be used only for trivia and whereas on the one hand with our increased knowledge of the properties of metals, we can design an alloy that on the one hand will be sufficiently malleable and ductile that it will be acceptable to Mr Sare and Mr Henderson at the Mint, and on the other hand will be adequately resistant to corrosion and wear or erosion, to meet most demands, and you heard only two months ago from Mr. Henderson the enormous production capabilities of a modern coining press. Yet with a raw material cost, at current prices, of under 1.6 cents for our 20 cent coin, and for all their elegant design, a raw material cost for most Italian corns of less than 1/15 th the face value of the coin, it seems unlikely that the world will return to coins having values approximating to their face value at least not in the foreseeable future.

But to end this sketchy survey paper, let me bring to your attention that in the not too distant future, if the research and development activities of Professor Okamura of Kyoto, Japan come to fruition, there will be produced currency notes in a polymer, e.g., polyvinyl alcohol, onto which another polymer has been radiation grafted and this grafted copolymer will be a State monopoly that many of us think will be really beyond the capabilities of any would-be forger, so that, eg, fake $10.00 notes just should not be.

MARIA THERESIA TALERS
DATED 1780 BUT WITH SOME DIGRESSIONS

By Len Henderson, NAV #409[1]

I once had a few Maria Theresia talers but got rid of them and I am now starting again. I should have kept those I had and built on the series as it is so complex.

Maria Theresia was born in 1717 and reigned from 1740 to 1780. She was an Archduchess, a Queen and a Countess of the far reaching Austro-Hungarian Empire.[2] The talers we see today come from an even more wider area as they are restrikes and copies from 21 different mints – about 800 million have been made with an estimated 400 million surviving. It is easy to say they are not scarce but this does not apply to all issues.

The Austro-Hungarian Empire extended to parts of Italy (Milan and Florence) and the Netherlands. The restrikes have been made in France, England, Belgium, America, Russia, and India.[3]

It became a universal coin outside of the Empire, being used in the Middle East (where it was called the Levant Dollar), East Africa, Arabia, the Portuguese territories of the Azores In the Atlantic), and as far away as Brazil.

Maria Theresia is often referred to as an "Empress", this is not so. Her husband, Francis, was Duke of lorraine and also of Tuscany. He was elected Holy Roman Emperor in 1745 and died in 1765. Maria had always been Queen of bohemia and Hungary. On the death of her husband, their son, Joseph II, became Emperor of Rome, and another son, Leopold, succeeded as Holy Roman Emperor in 1790.

There are two similar but confusing titles here. The shield of the Emperor of Rome has an eagle with one head, and the Holy Roman Emperors have a double headed eagle on their coat of arms. The two headed eagle bore in its claws a sword and orb whilst the single headed eagle of Rome did not.

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1 Len presented this paper to NAV meeting 948 on 18 July 2008

2 MacLagen

3 Broome

Another brother, Maximilian, became Archbishop of Cologne and Grand Master of the Teutonic Order, which the Pope declared to be heretical.

Following the death of Francis, many kings claimed that under the Salic Law, a woman could not inherit and laid claim to the Austro-Hungarian Empire; this led to the Wars of the Austrian Succession.

COIN DESCRIPTION

The obverse of the Maria Theresia taler shows the Archduchess facing right. She has a veiled head which was acceptable to Muslims using the coin in the Middle East. She also has, not a crown or tiara, but a diadem, an ancient Greek symbol of royalty. She has a pearl broach on her breast. (As a slight digression when Ross Wilkinson gave his talk on *George III* in 2007[4], he mentioned that Queen Caroline had the same type of broach.) The inscription surrounding the Archduchess reads in abbreviation "M. Theresia, D.G (by the Grace of God), R. Imp. Hu, Bo, Reg. (of Hungary and Bohemia Queen). The original designer's initials, S.F. appear below the bust. These letters stand for Tobias Schöbel and Joseph Faby who worked at Günzerb. These designer initials have been changed from time to time.

Figure 1 – Vienna striking, 2006

The reverse has a double-headed eagle supporting a doubly-crowned shield of eight quarterings representing the different provinces and territories but these can vary slightly. Superimposed on this shield is an escutcheon, a smaller shield representing the noble marriage with another crown above it. Between the two heads of the eagle is yet another crown; this is the iron crown of Hungary - not actually made of iron but in gold with a thin band

[4] NAV meeting 940 on 19 October 2007

of iron inside it which reputedly came from one of the nails of the true cross.[5] Around all this is an inscription, Archduchess of Austria, Duchess of burgundy, Countess of the Tyrol, 1780; this is followed by a saltire, which is like a St Andrew's cross you see on the flag of Scotland. This saltire cross comes in six different styles with left limb over right, right over left, no distinction, looking like thick twigs, or crescents back to back. The different shapes help tell where the restrikes were made.

Another major point to consider is that the edge has no milling but bears the motto "Justice and Clemency" and arabesques. These arabesques also help tell us where and when the pieces were made.[6]

There are a number of ways of telling the restrikes – signs in the arabesques, the feathers on the tail of the eagle, the fact that the eagle does not have the sword and orb of the Holy Roman Empire, the quarterings in the coat of arms, as well as the fact that the abbreviation of AUSTRIA is spelt, not with a "U" but a "V".

MINTS

There have been at least 21 mints striking the Maria Theresia talers and they have been counter-stamped in many places. The mints are Vienna, Günzberg, Hall, Olnitz, Milan, Florence, Prague, Rome, Venice, Paris, Marseilles, Brussels, Utrecht, Leipzig, Leningrad, Bombay, Calcutta, London, Birmingham, San Francisco, Missouri (?), and now Pu Shan (?) in China.[7]

A DIGRESSION

These coins are now close to 84% silver. In the early days of coinage in the Middle East they could not completely separate the various elements in the ore. Consequently the electrum coinage (600 – 400 BC) varied from 20% to 60% gold mixed with silver and copper.

These Maria Theresia talers contained traces of noble metals and it was discovered that the Indian pieces, struck in 1940-41, were of higher intrinsic value than their "face" value.

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5 Hafner
6 ibid
7 ibid

Here in Australia the Adelaide pound, although supposedly worth less than 20 shillings to allow for manufacturing costs, was really worth 21/6 which led to them being sent to Europe to be melted down; this is a major reason for their scarcity.

Also out here, the Sydney Mint sovereigns contained 20/10 worth of gold and with nothing left for running expenses such as payment of wages, pensions, and the buying of new equipment. This is one of the reasons the Sydney Mint went bankrupt and closed in 1926.[8] Although the Sydney Mint made profits in its early years, 1891 was the first time since 1875 that it made a profit.[9]

It was a man named Francis Bowyer Miller, here at our Melbourne Branch of the Royal Mint, who discovered a process of almost fully separating gold from the rough ore and its other metals. This was done to extract gold from mainly silver ore.

The Miller process is an industrial scale chemical procedure used to refine gold to a high degree of purity (99.6%). The chemical process involves blowing a stream of pure chlorine gas both over and through the molten impure gold. This process purifies the gold as silver and base metals form chlorides whereas the gold is stable and remains as the metal. At the temperature at which this process is conducted, silver chloride is molten and can be poured, and the base metal chlorides are volatile and are removed by the flow of the chlorine.

To extract gold from its ore, the ore is ground and then treated ore by one of several various processes, which can involve arsenic, cyanide, or mercury. This results in an impure gold which is further refined by either the Miller process or the Wohlwill process. The Wohlwill process is an electrolytic process which passes an electric current through a bath containing an acidic solution of gold chloride; this results in gold with a purity of 99.95%.

THE EAGLE

The feathers on the tail of the double-headed eagle is one of several ways in which we can tell where the restrikes were made. The tail feathers can vary between three, five and seven feathers.[10]

8 Hanley and James, p188-9
9 Hyman, pp142
10 Hafner

Regarding the quality of the ore used, and the Miller process, and more modern techniques of separating gold from silver, it was found that the Indian piece from Bombay (1941-42) contained traces of gold which individually did not amount to much, but with 18 million pieces struck it all added up. Consequently 16 million pieces were bought back and melted to extract the gold. Of the two million left, many had been exported too East Africa, and other places, where they were counterstamped by local rulers. The Sultan Marad V of Hedgas melted down his Maria Theresia talers in 1976 and so there are now only four pieces known of that issue. This is the second scarest issue.[11]

Figure 2 – Chinese striking

THE DESIGNER'S INITIALS

Whilst the commonest initials to be found below the bust are "S.F.", the following varieties can be found:

- "A.H." and "G.S." for A J Hammerschmidt and G Schickmayer, both of Karlsburg;
- "B" for Kremnitz;
- "S.K." and "P.D." for Sigmund Klemmer and Paschal Damiane of Kremnitz;
- "EvS" for Paul Erdmann von Schwingerschuh of Prague;
- "I.K." for Ignaz Kendler also of Prague;
- "I.C." and "F.A." for Johann von Cronberg and "Franz Alcherau of Vienna.

[11] Broome

ANOTHER DIGRESSION

Of the restrikes, copies, forgeries, made in China, these do not have the edge arabesques and motto but a milled edge. The Chinese piece is 46 mm in diameter which is far bigger than normal. China has a long history of forging European coins and 28 years ago I wrote a paper on this subject that was published in the May issue of *Australian Coin Review*.[12]

CONCLUSION

The Austrian taler has been around in various forms since the Counts of Shlick in Bohemia first produced it in 1518 from silver mined in Joachimsthal. Virtually all countries have given up using the noble metals for coinage nad many no longer use bronze. The Maria Theresia talers will survive being made for jewellery and bullion and for collectors of an historic and attractive design.

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[12] Henderson, R L, "Chinese Forgeries of Spanish/Mexican Dollars" in *The Australian Coin Review*, May 1980, pp7-9

GILWEROO GOLD GUINEAS

By Frank Robinson, NAV 713

2008 is the Year of the Scout which celebrates the Centenary of Scouting, not only worldwide but also here in Australia.

As a former Scout Leader, I decided to combine my Scouting experience with numismatics, particularly paper "money".

WHAT IS THE VICTORIAN SCOUT GILWEROO?

The Victorian Scout Gilweroo is a weekend activity camp for Scouts and has been held in late October each year at Gilwell Park, Victoria.

It is now held at Bay Park (Mt Martha) on the Mornington Peninsula in November.

Gilwell Park (which was named after its counterpart in England) is Victoria's main Scout training and camping centre and is located near Gembrook which is 70 km east of Melbourne (in the southeast part of the Dandenong Ranges).

To be able to properly train Scouts, the Scout Leaders must also be trained. At the successful completion of their training, Scout Leaders are awarded their Wood Beads and become members of the world-wide 1st Gilwell Park Scout Group.

After a major revision of the Scout movement in Australia in 1973, the last actual training course became the Stage 4 Course. Leaders on their Stage 4 will often say "we must have a reunion"; some do but many don't. On the 21st Stage 4 course held in 1975, the trainee Leaders decided to have a reunion the following year and to bring their Scouts along as well – this was the first Victorian Scout Gilweroo.

Each year a few more Troops have been invited and the number of Scouts has increased. During my years there, the numbers went from about 450 to about 600. This year there will be over 950 Scouts plus 240 Leaders and helpers!

GILWEROO ACTIVITIES

The activities consist of both rostered activities and spare time activities (STAs). All activities are done by the Scouts in their Patrols. There are usually eight activities which are rostered. In between these activities, they need to fit in as many STAs as possible; they also need to fit in lunch.

On most Scout camps the Scouts do their own cooking. However on Gilweroo, all their time is taken up with many various activities and so some of the Leaders, and their helpers (parents, and other volunteers), do the cooking. Leaders and other helpers are also responsible for running the activities.

On Saturday evening, there was either a film or, after the number of girls attending increased, a disco.

Some of the rostered activities that have been held at Gilweroo are:

- Abseiling
- Air Rifles
- Archery
- Ballistas
- Basketball
- BMX Bikes
- Canoeing / Rafting
- Flying Fox
- Gauntlet
- Gilweroo Knights
- Gilweroo Lights
- Initiative Course
- Puppeteering
- Rocket Launchers
- Video Games

This year (2008) at least 12 “full time” activities are being offered.

Some of the STAs that have been available at Gilweroo are:

- Badge Making
- Badge Swapping
- Bush Skateboards
- Computer Games
- Conservation
- Electronics
- Go Karts
- Ham Radio
- Remote Control Cars
- Rope Making
- Scavenger Hunt
- Silk Screen Printing
- Soldering
- Welding
- Woggles
- Wood Burning

As a member of the Australian Badge Club, I usually worked on the Badge Club tent (ie badge swapping).

Wood burning was using a hot wire to burn a design (or word) onto a piece of wood.

This year (2008) at least 14 “spare time” activities are being offered.

GILWEROO GOLD GUINEAS

When each activity is completed, the Patrol Leader is given a "Gilweroo Gold" note. In theory, a Patrol is required to obtain a certain number of these notes; however the organizers do not usually worry about this.

Most years the "Gilweroo Gold (Guinea)" notes are different to the previous issues, although sometimes the differences are not that great. The notes name the issuing authority as the “Bank of Gilwell”. Most are signed by Andre Stomm (the Camp Chief, as "Governor") and John Peart (the Camp Secretary); later ones have a different "Governor".

At the final Parade, on the Sunday afternoon, each Patrol receives a Gilweroo Gold Certificate.

Every Scout, Leader, and helper attending is given a Gilweroo badge. These badges are not permitted to be worn on uniform. They are intended for either a camp shirt or a camp blanket.

1988

Figure 1 – 1988 Gilweroo Gold (shown at 60%)

The 1988 note depicts a caricature of André Stomm (the Camp Chief) with his signature as Governor on the left. On the right is a caricature of

John Peart (the Camp Secretary) with his signature as Secretary. In the centre of the note is a tree; a tree appears on nearly all the notes, however two different designs were used. Denomination is "Gilweroo Gold".

The number in the top left corner indicates the Gilweroo number, not the date in October.

1989

Figure 2 – 1989 Gilweroo Guinea Gold (shown at 60%)

While the tree remains the central feature of the note, the World Scout Badge is shown in the circle on the left and an excited Scout on the right. Denomination is now "Gilweroo Guinea Gold"; "1 Guinea" is on the top right corner.

1990

Figure 3 – 1990 Gilweroo Gold (shown at 60%)

A sleepy Scout is shown peering out of a tent in circle on the left while a Scout is hiking on the right. Denomination is back to "Gilweroo Gold".

1991

Figure 4 – 1991 Gilweroo Gold Guinea (shown at 60%)

The circle on the left has been replaced by a shield which has text; this includes the location of the camp as Gilwell Park. There is a tent on the right. The tree has changed to the second design. Denomination is now "Gilweroo Gold Guinea".

1992

Figure 5 – 1992 Gilweroo Gold Guinea (shown at 60%)

This note is the same as the previous design except the roof of tent has been patched.

1993

Figure 6 – 1993 Gilweroo Gold Guinea (shown at 60%)

There is different caricature of André Stomm in the shield on the left. The words "Gilwell Park" has been added at top right. Jon Peart is shown busily typing at the right.

1994

Figure 7 – 1994 Gilweroo Gold Guinea (shown at 60%)

The shield on the left has text again. On the right is a large hole with a rope ladder going down and a tent in the background.

1995

Figure 8 – 1995 Gilweroo Gold Guinea (shown at 60%)

This is the same design as two years earlier (1993). This issue was printed on two different coloured papers (thick pale cream and thin yellow).

1996

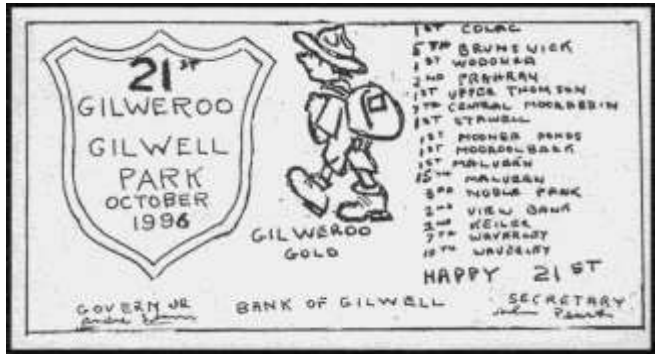


Figure 9 – 1996 Gilweroo Gold (shown at 60%)

In 1996, the Victorian Scout Gilweroo celebrated its "coming of age" with the 21st Gilweroo. The original 16 Troops are named on the right and the hiking Scout is shown in the centre. This is the only note that I have seen without the tree. Denomination is "Gilweroo Gold".

1997

Figure 10 – 1997 Gilweroo Gold Guinea (shown at 60%)

This is the only note printed in green. By now there were many female Scouts attending Gilweroo; so why not show one on the note. In the shield on the left is a male Scout on the march with a smile on his face! Denomination is back to "Gilweroo Gold Guinea".

1998

Unfortunately I do not have a note from the 1998 Gilweroo.

1999

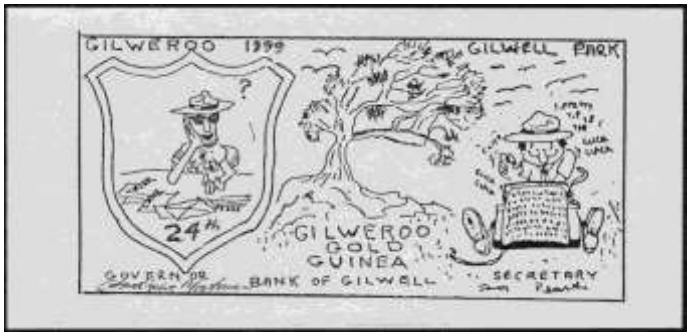


Figure 11 – 1999 Gilweroo Gold Guinea (shown at 60%)

Back to the design used for the 18th and 20th Gilweroos. New signatory – Andrew Mortimer is now Governor (ie Camp Chief).

2000

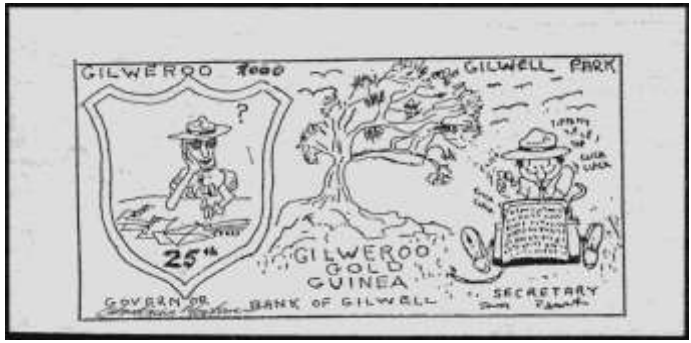


Figure 12 – 2000 Gilweroo Gold Guinea (shown at 60%)

Silver anniversary (25th) Gilweroo. Same design again.

2001

Figure 13 – 2001 Gilweroo Gold Guinea (shown at 60%)

Same design again. This issue has a new signatory – Bryan Crow is now Governor (ie Camp Chief).

This is the last Gilweroo Gold Guinea that I have. I didn't attend in 2002 and when I went in 2003, they didn't use the Gilweroo Gold Guinea notes. Thus it appears that the series has been discontinued.

THE SILVER COINS OF PERU FROM 1863 TO 1935

By Bill Xynos, NAV 1112[1]

PROLOGUE

The silver coinage of Peru struck in the period from 1863 to 1935 is undoubtedly one of the most attractive series of South American coins struck during the second half of the 19th century. Their attractive designs alone convinced me that these coins are a 'must' in everyone's world coin collection. In fact, the Half and One Dinero coins were some of my very early coin acquisitions and since then, sixty-eight coins of this Peru series have been accumulated so far, with some varieties among them.

The catalyst for analysing this complex subject and preparing this article (presenting at the August 2008 NAV general meeting) was my recent acquisition of the 1916 Half Dinero 'FERUANA' error coin.

As I've been looking through my small collection of Peruvian coins, I remembered one of the numerous 'show and tell' sessions with my friend and fellow numismatist, the late Peter Wall. At the time, I was proudly showing him my coins from Peru and in return, he showed me examples of die varieties and defects on modern Australian decimal coins (such as the blob 10 Cents coin). As I recall, he has done some solid research on them for a while, well before such examples were published in numismatic magazines recently.

Peter encouraged me further: 'Bill, it's not good to just buy some coins, you also have to do some research about them too…' Indeed, I wanted to study these Peruvian coins for a while and offer some explanation about their date varieties too.

BASIC AND HISTORICAL BACKGROUND

The Republic of Peru is located on the pacific coast of South America. Covering an area of about ½ million sq. mi. (1.3m sq km), Peru is inhabited

[1] Bill presented this paper at NAV meeting 949 on 15 August 2008

by a population of 27.9 million by 2007 estimates[2]. Her economy is focused on mining, fishing, agriculture; and diverse products such as fish, meat, sugar, copper, zinc and iron ore are exported. Peru's capital is Lima.

Figure 1 – Map of the South American continent (part) and the map of Peru (shadowed area)

Figure 2 – Machu Picchu, the "Lost City of the Incas"

Once part of the great Inca Empire reaching from northern Ecuador to central Chile, Peru was conquered by Francisco Pizarro by defeating the Incan Emperor Atahualpa in 1531.

[2] *Encyclopaedia Britannica Year Book 2008*

Figure 3 – Portraits of Inca's Emperor Atahuapa, conqueror Pizzaro and Viceroy Francisco de Toledo

The country was exploited mainly for its agricultural products and mineral deposits and soon, became one of the richest Spanish colonies. Consequently, internal Spanish interests tore the country apart until 1569, when Francisco de Toledo restored an efficient administration that would continue being so for the next two and a half centuries.

The capital Lima was developed as the most aristocratic colonial capital and Peru became the stronghold of Spain's American possessions. Silver deposits were discovered and the efficiency of the established mines, being maintained by enslaved Incas, was improved. This ensured the economic

prosperity of the Spanish Crown for many decades, until the late period of the 18th century, when silver production declined.

With political developments in North America and Europe towards the early 19th century, movements for independence were fermenting in South America. Peru's independence was proclaimed on 28 July 1821 by Jose de San Martin of Argentina, and secured by Simon Bolivar of Venezuela in December 1824 when the last Spanish army in South America was defeated. Despite several futile attempts to re-establish its South American Empire, Spain recognised Peru's independence in 1879.

Figure 4 – Portraits of San Martin and Bolivar

CONFEDERATION AND DISSOLUSION

A liberal constitution of 1828 was adopted, but just a year later, General Gamarra became the head of government by illegal means but was toppled by General Salaverry after a military unrest.

Peru's history was interlinked to that of Bolivia's during this period. The emergence of Andres Santa Cruz, one of Bolivia's early presidents, was paramount to the realisation of a 'Peruvian-Bolivian' Confederation. Santa Cruz's mother was a high-ranking Inca, making him a unique and appropriate figurehead for uniting these two countries.

This union started in 1836 but lasted for only three years. Regional unrest led to the Battle of Yungay in 1839, won by the joint forces of nationalist Peruvians and Chileans. The Confederation was broken and Santa Cruz went into exile.

Numismatically, separate State and Republic coins for North Peru (1836-1839) and for South Peru (1837-1838) were struck. Denominations used were ½ Real, Real, 2 Reales, 4 Reales, 8 Reales, ½ Escudo, Escudo, 2 Escudos, 4 Escudos and 8 Escudos.

Back to the history, since 1839, a succession of military strongmen-presidents ruled Peru. Marshall Castilla revitalised Peruvian politics from 1845 to 1851 and from 1855 to 1862. His major accomplishment was the exploitation of guano deposits (faeces of seabirds, bats and seals) along the Peruvian coast and offshore islands.

Guano was found to be an effective fertiliser and gunpowder ingredient, rich in phosphorus and nitrogen, and was odourless. With these properties, guano became a strategic commodity in the region and beyond.

In 1864, Spain dispatched a naval force to supposedly protect the rights of Basque immigrants, but actually, to reclaim its one-time colony. This dispute was the commencement of a war with Spain that lasted until 1866. Strong local opposition against Spain continued and by 1869, the Spanish forces were withdrawn and Spain recognised Peru's independence in 1879.

The conflict was a heavy drain on Peru's treasury. The economic deterioration and later, the struggle for controlling the guano deposits started the War of the Pacific (1879–1884) with Chile, when Bolivia imposed taxes on Chilean harvesters of guano.

During the Occupation of Lima by the Chilean forces (1881-1882), its archives and art treasures were destroyed. The coining machinery of Casa de Moneda was moved, along with the government, to Ayacucho.

By the end of the War, the Peru-Bolivia Alliance was defeated and some of Peru's southern territories (Arica and Tarapaca) were lost to Chile. As the guano deposits were slowly depleting, Peru's economy became more

fragile. The foreign economic domination was gradually rejected and inflation grew.

COIN DESIGN

Figure 5 – Obverse and reverse of Half-Sol Coin

For the purposes of this article, the orientation of obverse and reverse for these Peruvian coins was the same as that according to the *Standard Catalog of World Coins*. The inscriptions and designs on the coins are:

Obverse of the Coin:

Inscription: 'REPUB: PERUANA LIMA 9 D : FINO F.G.', translated to 'Republic of Peru (Republica Peruana); Lima Mint; silver purity of 9/10 (9 Decimos); Assayer's Initials F.G.'

Designed by Jose Gregorio Paredes[3].

Design:

- (centre) Coat of Arms of Peru

  This is divided into:
  - top left–the vicuna (llama), the national animal;
  - top right–the cinchona tree, the national tree and source of quinine;
  - lower centre–cornucopia with coins, representing the mineral richness];
- (above centre) holm oak Civic Crown representing victory and glory, and on the sides, laurel and olive branches, tied by a ribbon;
- (bottom) the coin's date is inscribed.

3 According to the Website www.coinsite.com

Reverse of the Coin:

Inscription: 'Firme Y Feliz Por La Union', translated to 'Firm And Happy For The Union'.

Design:

- (centre) Allegorical representation of Liberty (seated Lady) holding a phrygian cap (Liberty Cap) on a spear;
- (lower left) Protecting shield with sun and rays (Inti, worshipped by the Incas);
- (lower right) Monument with ribbon 'Libertad – Liberty', topped by a holm oak Civic Crown;
- (bottom) The coin's denomination.

EARLY DISCOVERY OF SILVER

The discovery of silver at Potosi in 1545 changed Peru's profile to a wealthy land with enormous mineral deposits. The Potosi Mint was eventually established 20 years later. Three years later, in 1568, its first coinage took place. Since then, the mint had an uneven life span during the Spanish Colonial period. The Mint was closed from 1573 to 1577 and later, from 1588 to 1659. Unauthorised coinage in silver and gold were struck by the mint, forcing its closure from 1660 until 1684, when it struck cob style coins. Further coins were struck at the mint until 1752.

MINTMARKS

The following Mints and Mintmarks have been observed[4] [5] on Peruvian coins:

Local Mints	AREQUIPA, AREQ = Arequipa
	AYACUCHO = Ayacucho
	CUZCO (monogram), Cuzco, Co. Cuzco
	PASCO (monogram), Pasco, Paz, Po = Pazco
	L, LIMAE (monogram), Lima (monogram), LIMA = Lima
Other Mints	(B) = Brussels (Belgium)
	(L) = London (Great Britain)

4 *Standard Catalog of World Coins* [19th Century]
5 *Standard Catalog of World Coins* [20th Century]

P, (P) = Philadelphia (United States)
S = San Francisco (United States)
(W) = Waterbury
CT (United States)
Santiago (Chile)

ASSAYERS

The Assayers' initials have been recorded[6] on Peruvian coins.

For the Republican Coins from 1826 to 1857, the initials appear on the 5 o'clock position, rather than on the 11 o'clock position for the Colonial coinage.

Table 1
Assayers initials appearing on the coins of the period in discussion

Y.B. (1863 to 1869)	T.F. (1886 to 1896), F. (1896)
Y.J. (1870 to 1877), L.D. (1873)	V.N. (1897 to 1898), J.F. (1897 to 1898)
B.F. (1881 to 1882)	J.F. (1899) and (1901 to 1907)
F.N. (1882 to 1883)	F.G. (1907 to 1917)
B.D. (1884), R.D. (1884)	G.M. (1924 to 1929)
J.M. (1885 to 1886), A.C. (1885), T.D. (1885)	A.P. (1935)

MONETARY SYSTEM AND EARLY COINAGE

The monetary system changed over time. Here is the summary of the systems adopted in Peru:

Republican Period (1826 to 1857):	16 Reales = 1 Escudo
Confederation Period (1836 to 1839):	16 Reales = 1 Escudo
Transitional Period (1858 to 1863):	16 Reales = 1 Escudo, 100 Centavos = 1 Sol

[6] See notes 4 and 5

Decimal Period (1863 to 1935): 1 Libra = 10 Soles = 100 Dineros = 1000 Centavos

Briefly, the Republican Coinage employed the resources of the Lima, Arequipa, Cuzco and Pasco Mint. The majority of the silver coinage has a silver content of 90.3%. The Arequipa and Cuzco Mints minted coins with a content of only 66.7%. The Santiago Mint (Chile) struck some One-Sol coins and Pasco Mint coins are considered today as rare.

The Confederation Coinage (1836 to 1839) complemented the Republican coinage as well as reflecting the political changes of the region at the time. These coins are scarce too.

The Transitional Coinage (1858 to 1863) was denominated in Medio (Half) Real (1858 - 1861), Real (1858 - 1861), 25 Centavos (1859), 50 Centimos (1858), 50 Centavos (1858 - 1859), 4 Escudos (1863), 8 Escudos (1862 - 1863).

DECIMAL COINAGE (1863 TO 1935)

This coinage commenced in 1863 and its monetary system was based on the 'Sol', subdivided into 100 Centavos or 10 Dineros. Also, the one Libra gold coin was worth 10 Soles. The word Sol signifies the Sun, one of the central historical, religious and cultural elements of Peru and the Incas. Mints used were Lima, Cuzco, Arequipa, Santiago and Philadelphia.

The internal social and political unrest, the local wars, the worldwide political and financial changes affected the country during the 19th and early 20th century. Its restructured monetary system of 'Centavo-Dinero-Sol' saw a gradual withdrawal of silver from its coins.

This is more evident by 1918. In that year, the Half and One Dinero silver coins were replaced by the brass-made Five and Ten Centavos coins respectively. This was soon followed by the Twenty Cents brass coin replacing the One-Fifth Sol silver coin. Still, changes to the Half Sol and the Sol silver coins were not implemented until 1935.

In 1873, the Santiago Mint was assigned to strike the One Sol coins. During the Chilean Occupation, the One Sol coins were struck at Ayacucho (1880-1882) as well as in Lima[7]. The One and Five Pesetas coins of 1880 to 1882 resulted from the adoption of the Latin Monetary Union coinage

[7] Harris, p 97

system based on the French Franc. The value of the One Sol was ten to the Pound Sterling until 1916 at which time a financial decline commenced. From 1923 to 1926, the Philadelphia Mint was assigned to strike the One-Sol coins but their design didn't change the 'LIMA' Mintmark. To distinguish them from the actual Lima Mint striking, the legends and letters are larger with the US struck coins.

DESIGN CHANGES BETWEEN THE TRANSITIONAL & DECIMAL COINS

The basic design changed from the transitional coinage to the Decimal coinage. For instance, the 'standing' Liberty is now seated and the protecting shield has changed from narrow to wide. Also, the 'Coat of Arms' outline has changed, the laurel and olive branches are now larger and the shape of the cornucopia has been altered.

Figure 6 – Obverse: Design changes on a Half Real 1858MB, the One-Fifth Sol of 1874YJ and the Half Dinero of 1892TF (coins are not shown in actual size).

Figure 7 – Reverse: Design changes on a Half Real 1858MB, the One Fifth Sol of 1874YJ and the Half Dinero of 1892TF (coins are not shown in actual size).

Even during the decimal coinage, the inscription of the denomination was changed from circular to linear format. Another interesting variety can be found on the reverse with the word 'LIBERTAD', done in both incuse and relief (see Table 2).

Table 2
Formats of 'LIBERTAD' observed in our sample of coins

Denomination	LIBERTAD incuse	LIBERTAD relief
Half Dinero	SCWC not recorded	SCWC not recorded, 1892*
One Dinero	SCWC not recorded	SCWC not recorded
One Fifth Sol	SCWC: 1893-1917 (not all years)	SCWC: 1888-92
Half Sol	SCWC: 1922	SCWC: 1922
One Sol	SCWC: 1885-87 (type x), 1893-97 (type xii), 1914-16, 1923-26, 1930-31, 1933-35	SCWC: 1888-1892 (type xi), 1916, 1922-23

* New variety discovered (*Standard Catalog of World Coins* has no such record).

STUDY AND ANALYSIS

The complexity of varieties found on these silver coins was more evident as I found out with further research. Related numismatic literature available was, at best, very limited. My best solution at hand was to consult my trusty catalogue on world coins for extrapolating some useful information.

My curiosity on defective coins became stronger following the inspection of these 68 Peruvian coins. This sample consists of 44 examples of the Half Dinero, 10 examples of the Dinero, six examples of the One-Fifth Sol, seven examples of the Half Sol and only one example of the Sol. All coins are dated between 1863 and 1935 and some show evidence of die cracks on many surface locations. Some of the coin samples also show changes on their dates. One may ask the question: 'Are these coins defective ones or varieties?'

I would argue that a defective coin has evidence of unusual striking, mainly due to production faults. Coins struck off-centre, those with excess metal spillage around the rim, or those with double striking may point towards a gradual deterioration in quality control during coin production. Production

faults may also be focused on the pre-striking stage too. Planchets with metal impurities, surface faults and selection of wrong planchet size for a mint order are good examples.

On the other hand, cracks on coins and even lettering and/or design fillings may signify progressive deterioration of dies.

Which ones are coin defects and which ones varieties?

Numismatists may classify the latter case (coin cracks or fillings) as varieties. As we'll see later, upon closer inspection, our sample of coins has cracks; so many and different that each coin may be classed as unique!

Therefore, it may be suggested that important varieties must be distinguished from common ones by isolating coins with major die cracks, depending on size and character.

In addition, the inspection identified evidence of date alterations. Should these coins be classed as varieties? In my view, the dies may have been intentionally altered for some reason, and these coins may be classed as true varieties.

Why were the dies altered? The answer must be based on solid and reliable evidence from the Lima Mint, but at the time of researching the topic, no such evidence was successfully gathered.

The only evidence gathered instantly was from the Coin Bible[8] and I admit that at the start, I was doubtful if this approach would give me the answers I was seeking. Still, a reasonable explanation was needed and the following approach taken is simple enough for any numismatist to follow for gathering complementary research material on a country's coinage.

BACK TO BASICS

My inescapable belief was that the occurrence of die deteriorations must be linked with the number of coins struck in some way, and perhaps, linked with the die-date alterations made by the Mint.

One of the best places to access mintage information of world coins is the Coin Bible. As expected for these old coins, a complete picture of all mintage for all denominations and for all years wasn't formed. In fact, for some years of issue, double-dated minting did occur, most of which was

8 *Standard Catalog of World Coins*

recorded without separate mintage figures. Instead in most such cases, their mintage was included with the mintage for the striking year.

This is perhaps a usual phenomenon of records keeping at many world mints for that period, including the Lima Mint. It is possible that records kept were not complete, or some may have been destroyed. The existence of papers, articles or books written by academics, journalists and economists, based on authentic interviews with Mint officials, or taken from mint records cannot be dismissed. Still, further resources and time will be needed to gather such evidence for analysis.

CHARACTERISTICS

Here are the main characteristics of the Peruvian silver coins that have a vertical rim:

Table 3
Characteristics of Peruvian Silver Coins (1863 – 1935)

Denomination	Diameter	Weight	Silver content	Silver purity
Half Dinero	15.5 mm	1.25 g	0.0362 oz	90 %
Dinero	18 mm	2.50 g	0.0723 oz	90 %
One-Fifth Sol	23.5 mm	5.00 g	0.1447 oz	90 %
Half Sol	30 mm	12.50 g	0.3617 oz	90 %
Sol	38 mm	25.00 g	0.7234 oz	90 %

QUANTITIES

Aim: Let us prove that there is a correlation between the quantities of coins struck and the number of overdates recorded.

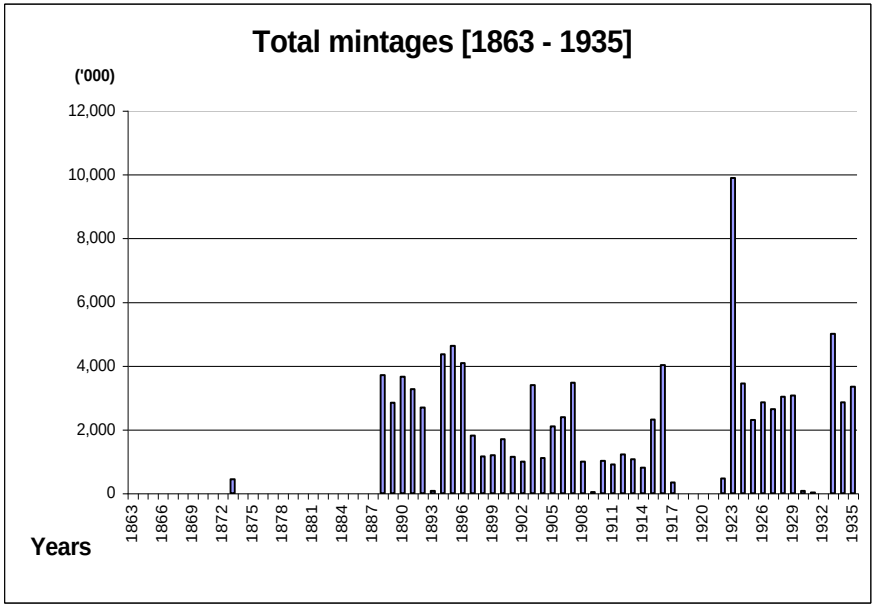
The total silver coins struck for the period (1863 – 1935) was 100,837,000 coins, in their majority by the Lima Mint. Below, published records[9] of quantities of coins minted are shown in denomination order:

9 *Standard Catalog of World Coins*

Table 4
Quantities of Peruvian Silver Coins Minted (1863 – 1935)

Denomination	**Minted Period**	**Years of Production (all mints)**	**Number of Coins (all mints)**	**Percentage (%)**
Half Dinero	1863 to 1917	29	13 253 000	13.14
One Dinero	1863 to 1916	35	7 404 000	7.34
One Fifth Sol	1863 to 1917	35	9 372 000	9.29
Half Sol	1864 to 1935	16	17 641 000	17.49
One Sol	1864 to 1935	45	53 167 000	52.73
Totals			**100 837 000**	**100.00**

For all coins struck for the period, over half of them were for the One Sol. This overall distribution of quantities is shown graphically (see Graph 1), irrespective of denominations. The gap in graphical activity until 1888, with the exception of year 1873 should not alarm the reader as it shows the absence of records on mintage, and not of minting inactivity.



Graph 1 – Total mintage of all Peruvian silver coins struck from 1863 to 1935

OVERDATES

For some years and for some denominations, requirements for larger quantities may have demanded the excessive use of working dies in order to complete the minting orders. Perhaps this can explain the occurrences of die cracks appearing on some coins as the dies deteriorated gradually with use.

It may also be assumed that defective dies, used beyond their natural life and damaged, may have forced the mint to use stored surplus dies used in previous years. Should this be true, then this emergency practice would have achieved some significant savings for the Mint. Rather than preparing new dies, adjustments on old-working dies would have been made (date alterations) and after a shorter period of time, ready them for completing the minting order.

This is an overview[10] of producing a working die from a design for a coin:

1 A design is submitted in a plaster.

2 From this, a mould is made in metal.

3 The surface of the metal is hardened and placed on a reducing machine.

4 The cutter of the reducing machine would transfer the design to a block of steel but on a smaller scale (the reduction punch).

5 This reduction punch is stamped on a tool, called the master matrix.

6 From the master matrix, (master) punches are produced.

7 From (master) punches, working matrices are made.

8 From working matrices, working punches are made.

9 From working punches, working dies are made.

Modern literature[11] [12] shows a much-simplified process of preparing the moulds and dies:

1 A design is submitted in a plaster.

2 From this, a mould is made in nickel.

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10 Coin Collecting, by T.Hanson, Collins Nutshell Books, ed. 1965, p.21

11 Coins & Currency, by Brenda Ralph Lewis, Hobby Handbooks (Random House), ed.1993, p.28

12 Money, by Joe Cribb, Collins Eyewitness Guides, Collins Publishers Australia, ed.1990, p.14-15

3 The cutter of the reducing machine would transfer the design onto a master die (hub, reduction punch) and in the same size as the actual coin to be made from.

4 The reduction punch is stamped on a tool called the (master) matrix and the design is transferred.

5 The matrix is then stamped for creating working punches.

6 The working punch is used to make the working die.

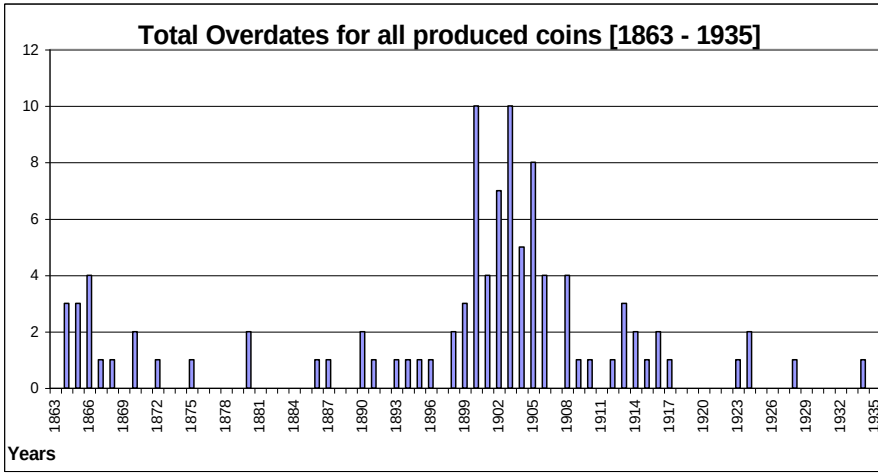
7 Chemicals and heat treatment harden the working die. Later, it's cleaned is and polished (if needed).

8 A typical working die is durable enough to strike at least 200,000 coins.

So, an overdate would have been prepared by filing off the date from an existing working punch, a matrix would be struck from this and a new numeral engraved in its place.

Working punches and working dies are then made from this.

Going back to the Coin "Bible", it's interesting to note a quote[13] on the Half Dinero coin: "Most coins 1900-06 show faint traces of 9/8 or 90/89 in date. Non-overdates without such traces are scarce".



Graph 2 – Total occurrences of overdates (101) on all Peruvian silver coins struck from 1863 to 1935

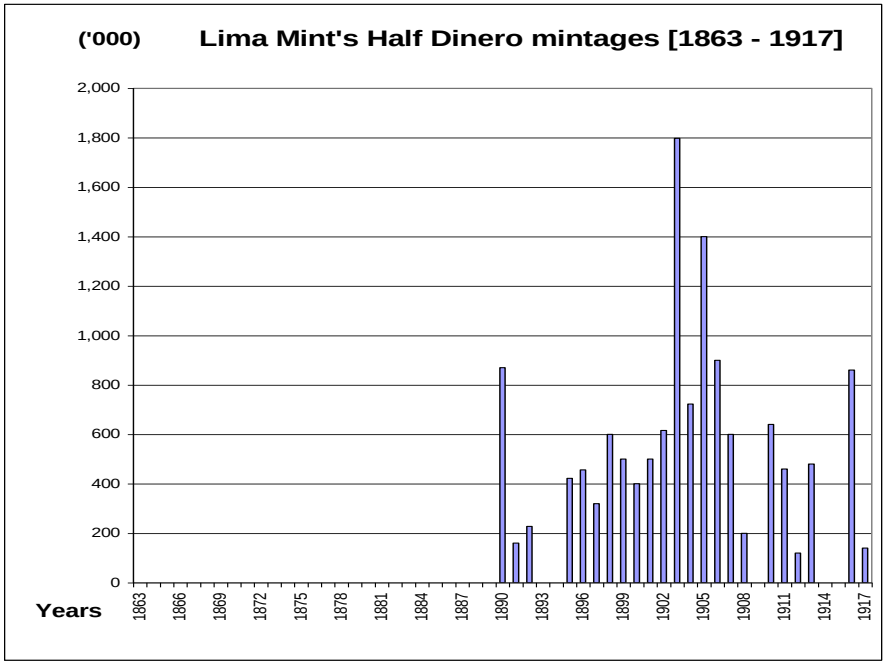
13 Notes on the Half Dinero coin, *2001 Standard Catalog of World Coins*, p 1479

Graph 2 shows an interesting concentration of overdated coins produced mainly from 1899 to 1906. This graph does not record multiple overdates that may occur within a specific year; instead, it records a single overdate activity in each year for each denomination, added for all coinages. When Graphs 1 and 2 are examined, there is some solid evidence of a relationship between the increased minting activity (quantity of coins) and the occurrence of overdates. This is more visible for the period from 1899 to 1906. By 1917, the absence of overdates may be explained by technological improvements in coin minting production.

In order to get a much better picture of the correlation between the increased minting activity and overdates, as well as explain some unusual spikes on these two graphs, we may have to examine similar graphs for each denomination. For this purpose, we'll focus on the Lima Mint coins.

MINTAGES AND OVERDATES

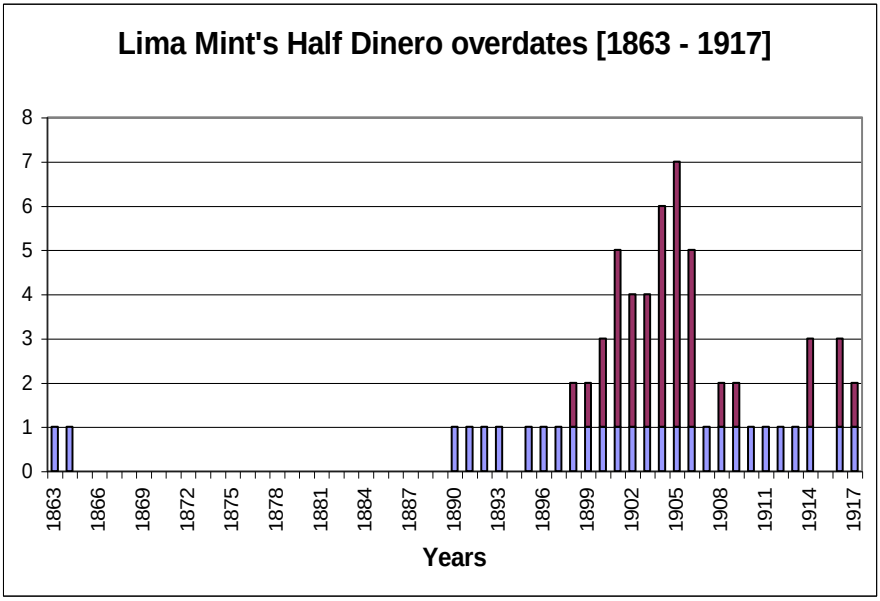
THE HALF DINERO COIN



Graph 3 – Mintage of the Lima Mint's Half Dinero coin from 1863 to 1917

Graph 3 shows a steady increase in minting activity from the mid-1890s until 1907, with unusual spikes in 1890, 1903 and 1905. By excluding the spike of 1916, this activity was increasing quite steadily until 1907 when a decrease is noticed.

Thirty six instances of overdates have been recorded so far. As seen on Graph 4, for some issued dates, more than one type of overdate was observed. The graph shows an increased number of overdates from 1899 until 1906 with a peak in 1905. Comparing this with the increased mint activity, we may deduct that there is a direct link between quantities struck and the number of overdates.



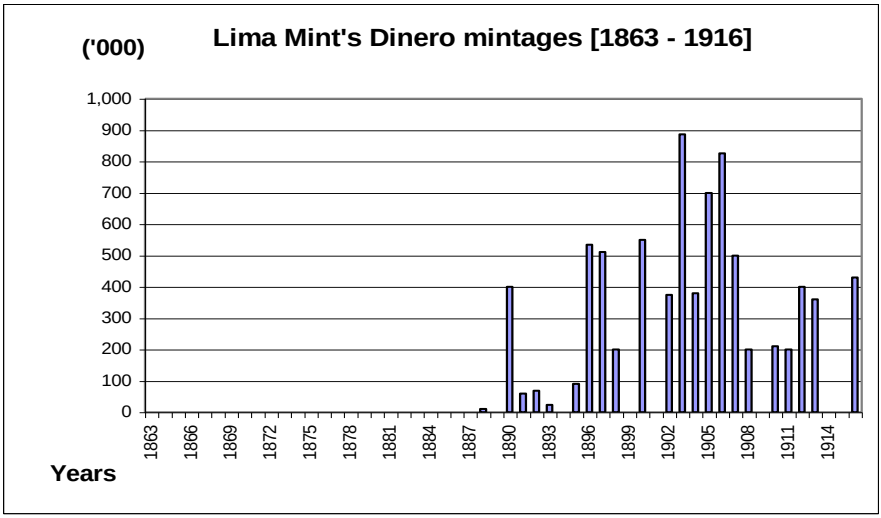
Graph 4 – Thirty six occurrences of overdates for the Half Dinero coin from 1863 to 1917

Important note: *The 'overdates' numbers on the graph should be decreased uniformly by one. This is because in order to record minting activity for a year and to be shown graphically, an entry of 'one' had to be added, irrespective of if an overdate striking occurred in that year. For example, a figure of 1 indicates that coins were struck for that year but with no overdate. If the figure is 2, again, coins struck for that year have a record of one overdate, and so on.*

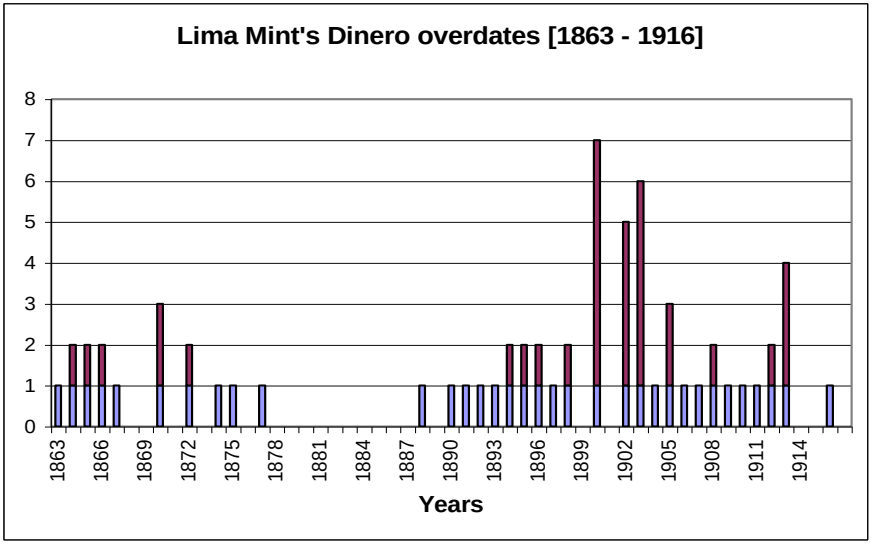
From the inspected sample of 44 Half-Dinero coins, 29 coins have evidence of die cracks (65%) and 24 coins have strong evidence of date changes (54%).

THE ONE DINERO COIN

As seen on Graph 5, a steady increase in minting activity is shown from 1891 until 1907, with unusual spikes in 1890, 1896-97, 1900 and 1903. Towards 1916, the quantities were picked up.



Graph 5 – Mintage of the Lima Mint's Dinero coin from 1863 to 1916



Graph 6 – Thirty-Two occurrences of overdates for the Dinero coin from 1863 to 1916

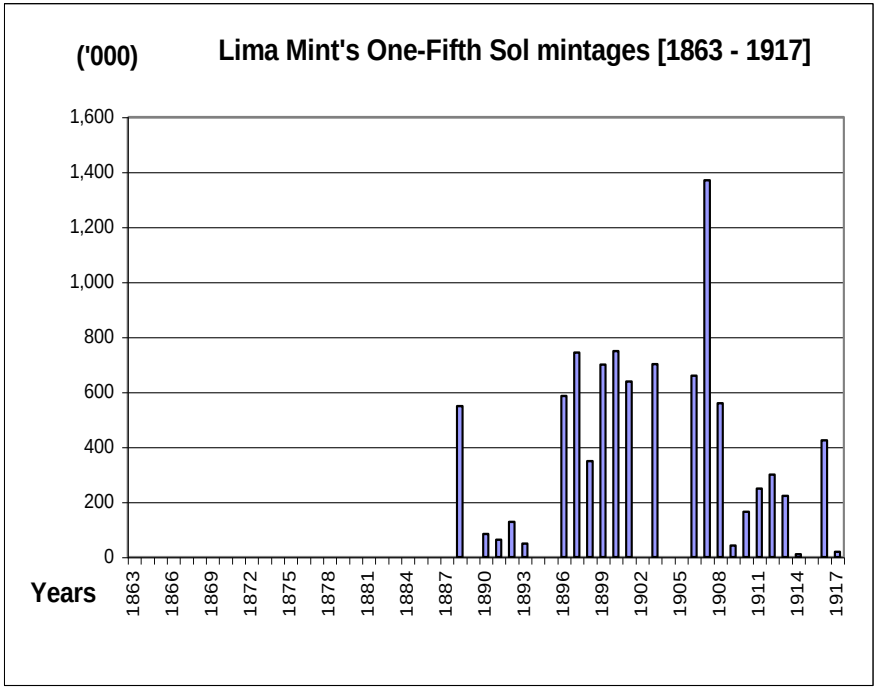
Important note: *The 'overdates' numbers on the graph should be decreased uniformly by one. This is because in order to record minting activity for a year and to be shown graphically, an entry of 'one' had to be added, irrespective of if an overdate striking occurred in that year. For example, a figure of 1 indicates that coins were struck for that year but with no overdate. If the figure is 2, again, coins struck for that year have a record of one overdate, and so on.*

Graph 6 shows 32 instances of overdates recorded and are concentrated from 1896 until 1903. This time segment falls well into the increased minting activity and seems to match that activity.

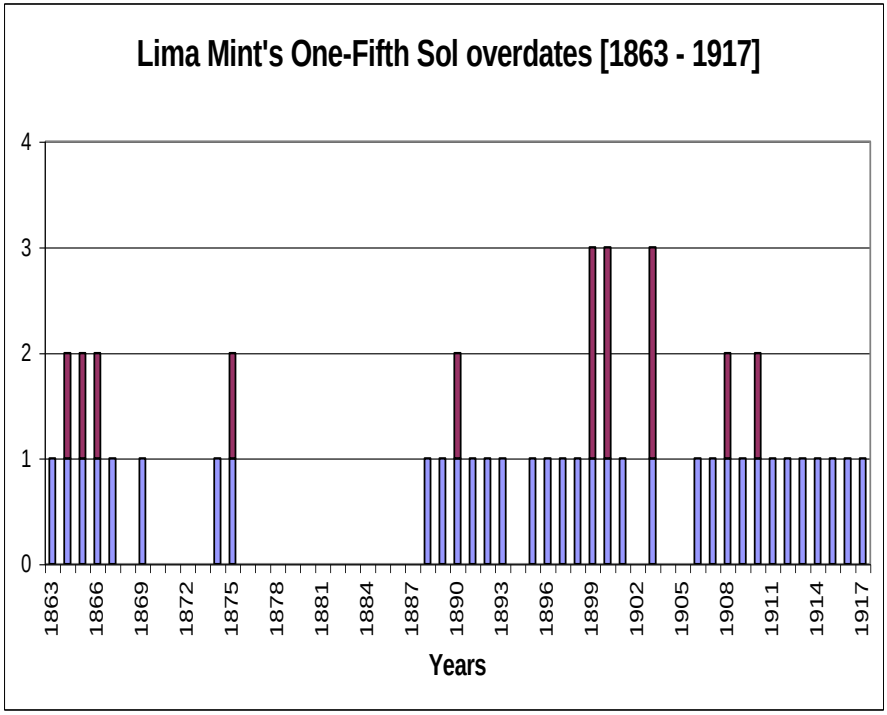
From the inspected sample of 10 Dinero coins, six have evidence of die cracks (60%) and only one coin has strong evidence of date changes (1%).

THE ONE-FIFTH SOL COIN

Graph 7 presents a steady minting activity is shown from 1897 until 1907, with unusual spike in 1916. In 1909, the quantity dropped but moved up gradually, reaching a peak in 1912 and dropped again.



Graph 7 – Mintage of the Lima Mint's One-Fifth Sol coin from 1863 to 1917



Graph 8 – Thirteen occurrences of overdates for the Lima Mint's One-Fifth Sol coin from 1863 to 1917

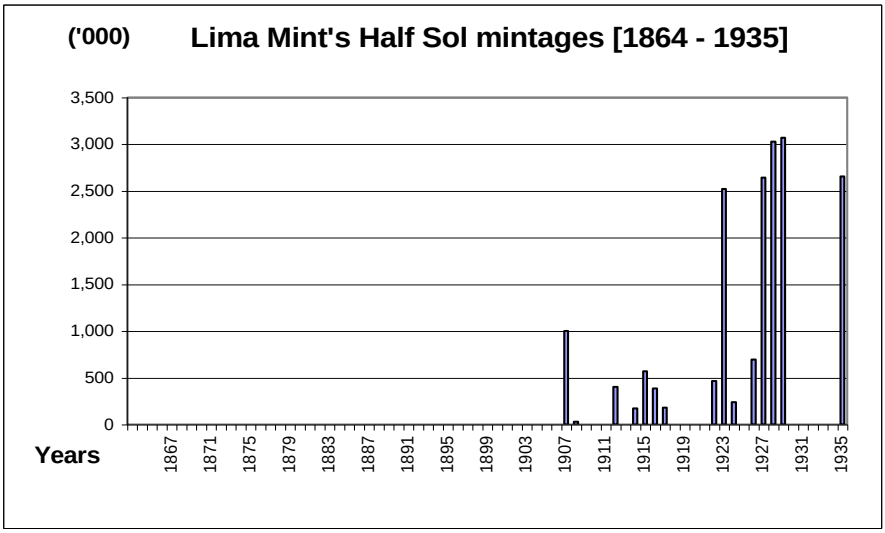
Important note: *The 'overdates' numbers on the graph should be decreased uniformly by one. This is because in order to record minting activity for a year and to be shown graphically, an entry of 'one' had to be added, irrespective of if an overdate striking occurred in that year. For example, a figure of 1 indicates that coins were struck for that year but with no overdate. If the figure is 2, again, coins struck for that year have a record of one overdate, and so on.*

As we can see on Graph 8, 13 instances of overdates have been recorded so far and if the early ones are excluded, the 1899-1900 and 1903 overdates fall well into the corresponding minting activity. For the early overdates, we cannot comment, as minting information is unavailable.

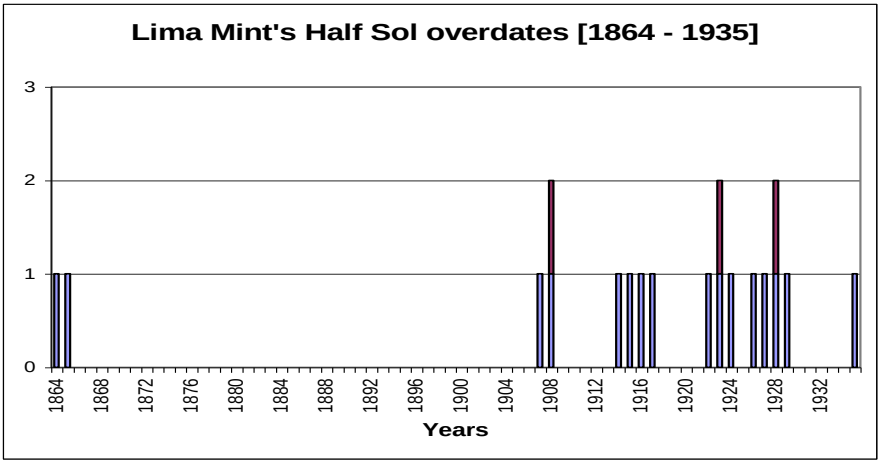
From the inspected sample of 6 One-Fifth Sol coins, four have evidence of die cracks (66%) but no coin has any strong evidence of date change (0%).

THE HALF SOL COIN

Graph 9 shows a steady minting activity is shown from 1912 until 1926, with production gaps and unusual spikes in 1923 and 1927-29. In 1935, the quantity spiked again after a five year absence in activity. This was the last year of minting.



Graph 9 – Mintage of the Lima Mint's Half Sol coin from 1864 to 1935



Graph 10 – Three occurrences of overdates for the Lima Mint's Half Sol coin from 1864 to 1935

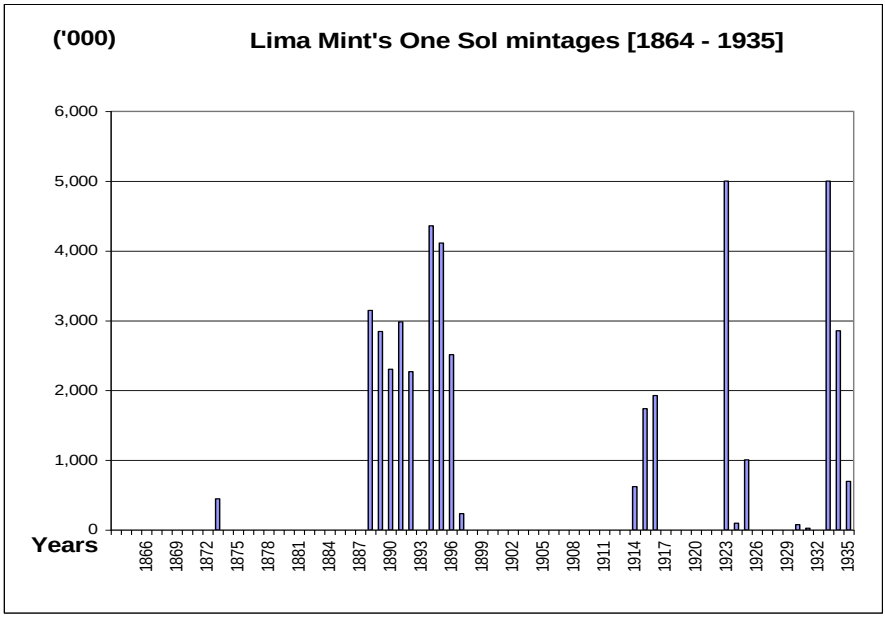
Important note: *The 'overdates' numbers on the graph should be decreased uniformly by one. This is because in order to record minting activity for a year and to be shown graphically, an entry of 'one' had to be added, irrespective of if an overdate striking occurred in that year. For example, a figure of 1 indicates that coins were struck for that year but with no overdate. If the figure is 2, again, coins struck for that year have a record of one overdate, and so on.*

Again, Graph 10 shows three instances of overdates that have been recorded so far. The 1908 overdate does not match any significant minting activity, compared to the years of 1923 and 1928.

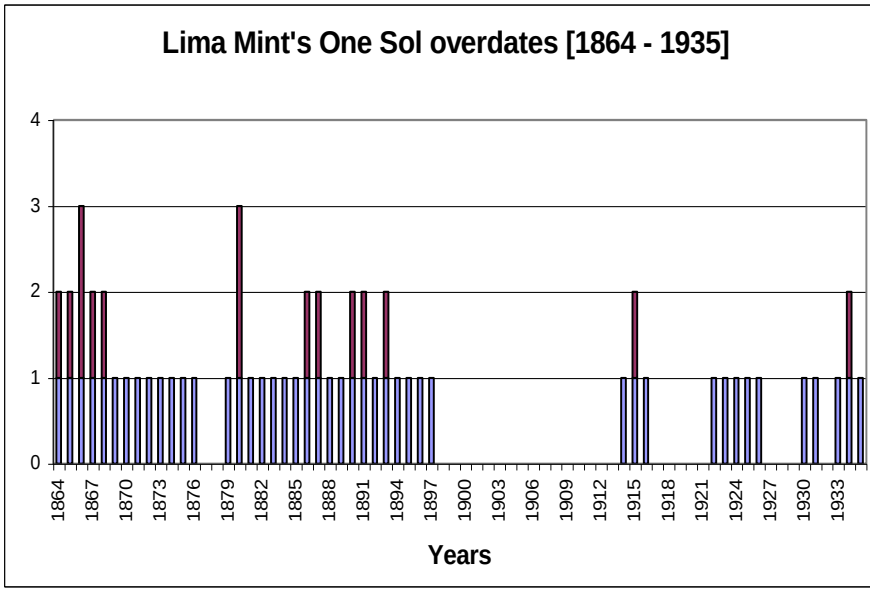
From the inspected sample of seven Half-Sol coins, two have evidence of die cracks (28%) and no coin has any strong evidence of date change (0%).

THE ONE SOL COIN

Graph 11 cannot support the gap between the early 1870s and the shown concentrated spikes from 1888. Production dropped in 1896, but activity started between 1914 and 1916. Production gaps are then noticed except the 1923 spike and 1933-1934 activity. In the last year of minting (1935) production was phased out.



Graph 11 – Mintage of the Lima Mint's One Sol coin from 1864 to 1935



Graph 12 – Fifteen occurrences of overdates for the Lima Mint's One Sol coin from 1864 to 1935

Important note: *The 'overdates' numbers on the graph should be decreased uniformly by one. This is because in order to record minting activity for a year and to be shown graphically, an entry of 'one' had to be added, irrespective of if an overdate striking occurred in that year. For example, a figure of 1 indicates that coins were struck for that year but with no overdate. If the figure is 2, again, coins struck for that year have a record of one overdate, and so on.*

From Graph 12, 15 instances of overdates have been recorded so far. The concentration of them falls into the 1864–68, the 1880, the 1866-67 and 1890-91 and do not match with any increased minting activity.

To make matters worse for our main argument, on the other side of the spectrum, the overdate of 1915 does not match any increased minting activity for the same year, and the 1934 matches a solid increase in minting activity, but not like that in 1923 and 1933.

So, we cannot reach a solid conclusion here.

From the inspected sample of a single Sol coin, there is evidence of die cracks (100%) and no evidence of date changes (0%).

SUMMARY AND CONCLUSIONS ON OVERDATES AND QUANTITIES

Table 5
Production Trends of Lima Mint (1863 – 1935)

	Years of Production	Peak Production Periods	Occurences of Overdates	Occurrences of Key Overdates	Match Rate (*)
Half Dinero	28	1890, 1895-96, 1898 - 1907, 1910-11, 1913, 1916	36	1900-06, 1914, 1916	53 %
	Conclusion: There is a strong evidence of linking the increase in overdated dies used for the growing coin production				
Dinero	34	1896 - 1907	32	1870, 1902-03, 1905, 1913	50 %
	Conclusion: While the match rate is lower, in general, the graphical pattern of the overdates (1898 - 1906) matches with the coin production pattern and fits with our theory.				
One-Fifth Sol	34	1897 - 1907	13	1899 - 1900, 1903	100 %
	Conclusion: While the match rate is lower, in general, the graphical pattern of the overdates (1898 - 1906) matches with the coin production pattern and fits with our theory.				
Half Sol	16	1923 - 1929	3	1908, 1923, 1928	66 %
	Conclusion: The overdate of 1908 (1908/7) matches the increased coin production of 1907, as not many 1908 coins were made. The 1923 and 1928 overdates, while not many, match with the increased minting activities.				
One Sol	45	1894 - 1895, 1923, 1933	15	1866, 1880	0 %
	Conclusion: The significant minting activity in 1933 matches the occurrence of the 1934 overdate (1934/3). Still, early overdates cannot match any minting activities due to lack of mintage information, hence the low match rate.				

Conclusion: There is a solid correlation between the quantities of coins struck and the number of overdates recorded, especially for the lower-denominated coins.

VARIETIES ON COINAGE OF PERU (1863 – 1935)

Now, we'll examine the coin varieties among the sample of coins we have in our possession for this study. The following images are in denomination order and will not only tell us about the fascinating varieties of these silver coins, but to also establish the following aim:

Aim: Let us link our sample's number of occurrences of die cracks with the recorded overdates.

HALF DINERO COINS

Table 6
Examination of Details Found on the Half Dinero Coins

Date	Observations
1863 YB	Reverse: design of Lady (younger), laurel on monument does not have ribbons, denomination on a circular line below the Lady Obverse: laurel on top of shield has ribbons.
1892 TF	Reverse: design of Lady (older), laurel on monument (reverse) has ribbons. Obverse: laurel on top of shield does not have ribbons, double lettering in parts, die crack across digit 1, lettering and date wider and fuller.
1895 TF	letter N of DINO is small and not of the style of the other letters.
1897 JF	Lettering and date smaller and thinner. Die crack between U and B (REPUB).
1898 VN, 1898 JF	JF: Die crack from lower end of left branch.
1899 JF	Legends appear rounded (earlier die filled), last digit re-done over a wider digit (1898?).
1900 / 890 JF	From 1890 dies, date is wide, legends rounded.
1900 / 890 JF	From 1890 dies, date is narrow, legends rounded.

Date	Observations
1901 / 801 * JF	Digits 0 and 1 are sharp with virtually no background dates. From 1801* dies? Impossible, thus from 1891 dies. Legends rounded.
1901 / 891 JF	Digits 0 and 1 are less with evidence of background date change on digit 0, more profound on digit 9 (ex 8). Thus, from 1891 dies. Legends rounded. Die crack across digit 1. Another coin has die crack across E (REPUB) and N (PERUANA). Another coin shows only die crack across the middle of digit 9.
1902 / 89? JF	Wide digits 9 and 0 were used to cover background dates of 8 and 9 respectively (from 189? dies). Background of digit 2 is hard to distinguish, perhaps the digit 7. Legends rounded. Die crack between D: and F
1903 / 893 JF	From 1893 dies. Date is wide. Rounded legends. Die crack along base of assayer's initials and across its letter F. Also hairline crack between 1 and 9 of date. On another coin, cracks across N (FINO), across E (REPUB) and on obverse, hairline crack across A (LA). On another coin, across left outline of D (Decimos), same of E (PERUANA) and through the middle of a digit filled 3.
1903 / 893 JF	From 1893 dies. Date is narrow. Legends sharper. F and E of FELIZ are weakly struck. Minor die crack across N (FINO).
1904 / 894 JF	From 1894 dies. Background dates (8, 9) appear wide and digit 4 looks like the original wide format. Legends weak and rounded.
1905 /893 JF	From 1893 dies with background evidence of digits 8 and 9, and with unusual filling near the digit 5. Hairline die crack between digits 1 and 9 of date. Legends weak and rounded with evidence of letter filling.

Date	Observations
1905 / 895 JF	Digit 5 of date is sharp with no background digits, compared to digits 9 and 0 over the older 8 and 9. Legends sharper in areas but evidence of double striking or legend restoration there (assayers initials). Still, hairline die cracks between I and N (FINO), across laurel to rim on right of A (PERUANA).
1906 / 896 (?) JF	Legend letter Y (obverse) shows evidence of hairline cracks. Hairline crack from left of shield to rim and from hat to rim. On obverse, die crack across left outline of digit 0. With faint background digits of 8 and 9, all this suggests that it's an overdate (1896 die).
1906 / 896 JF	Reverse: Minor die crack across M (FIRME) and O (POR). Obverse: hairline die crack across from bottom tip of right branch, retouches of assayer's initials. Die crack between D: and FINO. Designs are weak.
1906 / 896 JF	Another 6 coins show numerous cracks across the assayers initials, L / M (LIMA), P / E / E (REPUB), 9 (purity number), R (PERUANA) and from date's digit 0 towards the rim. On reverse, while the legends are weak or rounded, no evidence of die cracks was observed.
1907 / 18?? [1897?] FG	Legends are better but still rounded on obverse. The digit 9 has ome evidence of overdating but as digits 0 and 7 are sharp. This could be an overdated coin. Die crack from end of F (assayer's initials) and the following full stop.
1908 / 18?? [1898?] FG	Legends are much sharper. Digits 1 and 9 has some evidence of double striking or overdating compared to the digits 0 and 8. Perhaps it's an overdate on 1893 or 1898. Hairline die crack between digits 1 and 9 of date.
1910 FG	Die crack across full stop after assayer's initials. Suspect overdate (digits 9 and 0).
1911 FG	Faint traces of overdates but not certain.
1912 FG	Faint traces of overdates but not certain.
1913 FG	Reverse: Die cracks from left of shield and across first N (UNION). Obverse: Die cracks towards the rim between N and O (FINO), P and U (REPUB) and between digits 9 and 1.
1914 FG	Weak legends.

Date	Observations
1916 FG	Die crack across outside line of R (REPUB) and through the middle of A (LIMA). On another coin, hairline crack across F of assayer's initials and between the initials and F (FINO).
1916 FG	Error (legend) coin: 'FERUANA'. Sharp strike. Hairline die crack on low part across R (POR).
1917 FG	Sharp strike.

Die cracks have appeared on reverse (Lady Liberty) and on obverse (Coat of Arms) on five and twenty-two occasions respectively.

Figure 8 – Half Dinero coin: 1900 over 1890 JF: Overdate strikes and date variations (wide and narrow digits)

Figure 9 – Half Dinero coin: 1903 over 1893 JF (wide and narrow digits)

Figure 10 – Half Dinero coin: Underlying date changes behind '9' and '0' on 1906 over 1896 JF

Figure 11 – Half Dinero coins: examples of die cracks

Figure 12 – Error coin 'Feruana' instead of 'Peruana'

ONE DINERO COINS

Table 7
Examination of Details Found on the One Dinero Coins

Year	Observations
1863 YB	Reverse: design of Lady (younger), laurel on monument does not have ribbons, denomination on a circular line below the Lady Obverse: laurel on top of shield has ribbons. Coin is sharp with minor hairline die cracks. One main die crack across the left outline of the letter R (REPUB). Legends are narrow.
1866 YB	As above but with no die cracks at all. Legends are flat in some areas, despite that the rim is sharp and raised.
1897 VN	Reverse: design of Lady (older), laurel on monument (reverse) has ribbons. Obverse: laurel (top of shield) doesn't have ribbons, denomination on a circular line below the Lady. Lettering and date wider and fuller. Double-engraving of assayer's initials, and R (REPUB) has weak top.
1903 / 893 JF	From 1893 dies. Weak legends, and in some areas re-engraved. Die crack from left outline of digit 0 towards the rim.
1905 JF	Double outline of digit 1 but no evidence of overdating. Lettering and date narrow. Hairline die cracks on obverse (POR LA).
1906 JF	Reverse: Some surface spotting – evidence of die corrosion? Hairline die crack along the date and across F of the assayers initials. Light blobs along the outlines of the date's digits.
1907 FG	Light die crack across letter G of the assayer's initials. Evidence of re-engraving the letter F of the initials.
1910 FG	Light die crack along the bottom of the date, and blobs on the outline of the assayer's initials.
1913 FG	Weak legends in some areas. Evidence of re-engraving the letter F of the initials.

Year	Observations
1916 FG	Weak evidence of re-engraving the letter F of the initials.

Die cracks have appeared on reverse (Lady Liberty) and on obverse (Coat of Arms) on one and five occasions respectively.

Figure 13 – Underlying traces indicate likely overdate of 1903 JF over 1893

ONE-FIFTH DINERO COINS

Table 8
Examination of Details Found on the One-Fifth Dinero Coins

Date	Observations
1874 YJ	Reverse: design of Lady (younger), laurel on monument does not have ribbons, denomination on a circular line below the Lady Obverse: laurel on top of shield has ribbons. Legends are narrow.
1907 FG	Reverse: design of Lady (older), laurel on monument (reverse) has ribbons. Obverse: laurel on top of shield does not have ribbons, denomination on a straight line below the Lady. Lettering and date wider and fuller. All 3 such dated coins in the sample show evidence of re-engraving of legends, especially on reverse and with the engraver's initials. The digit 7 of the date is also re-engraved. On 2 of the 3 coins, blobs appear on the left branch and a die crack extends towards the letter A (PERUANA). The remaining one has hairline die crack on reverse (Y and FELIZ).
1916 FG	Evidence of re-engraving of legends on reverse and on date's digit 9.
1917 FG	Minor die crack across R (REPUB) and a solid crack across the filled letter A (LIMA).

Die cracks have appeared on reverse (Lady Liberty) and on obverse (Coat of Arms) on one and three occasions respectively.

Figure 14 – One-Fifth Sol coin: Coat of Arms Design variety (1874 YJ and 1907 FG)

Figure 15 – One-Fifth Sol coin: Liberty Design variety (1874 YJ and 1907 FG)

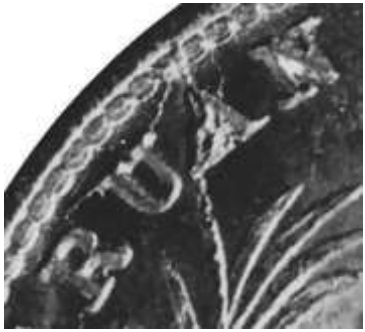


Figure 16 – One-Fifth Sol 1907 FG's spectacular crack (extending from a laurel's leaf to the letter 'A' of "PERUANA")

HALF SOL COINS

Table 9
Examination of Details Found on the Half Sol Coins

Date	Observations
1916 FG	No comments
1923	Evidence of re-engraving legends on obverse, including the date. The date's digit 3 is a flat top 3.
1929 GM	The engraver's initials are engraved on the cuts of the branches on either side of the coat of arms. Some evidence of re-engraving legends on obverse. Die crack along the re-engraved date. Circular die crack along the lower edges of the legends on reverse.
1935 AP	The engraver's initials are engraved on the cuts of the branches on either side of the coat of arms. Some evidence of circular die crack along part of the legends on four coins (obverse) and along the date on two coins.

Die cracks have appeared on reverse (Lady Liberty) and on obverse (Coat of Arms) on four and two occasions respectively.

Figure 17 – Half Sol coin: Legend variety (1916 FG and 1929 GM)

Figure 18 – Half Sol coin: Liberty Lady & 'LIBERTAD' variety (1916 FG and 1929 GM)

Figure 19 – Half Sol coin: crack across the 1929 date (see digits 2 and 9)

Figure 20 – Half Sol date variety: 1923 Flat top '3' over rounded '3'

ONE SOL COINS

Table 10
Examination of Details Found on the One Sol Coins

Date	Observations
1869 YB	Evidence of hairline die cracks across the legend REPUB, and on the left of the engraver's initials.

Die cracks have appeared on reverse (Lady Liberty) and on obverse (Coat of Arms) on none and one occasion respectively.

Figure 21 – The One Sol coin dated 1869 YB

Conclusion: There are 33 occurrences/observations made of die cracks on obverse (shield) and 11 on reverse (Liberty). This is a ratio is 3 to 1.

Note: *Numerous die cracks showing on a coin's side is considered as one occurrence only.*

EPILOGUE

The following deductions can be made on the subject:

Due to the coin minting standards of the times at the Lima Mint, a miscalculation of the striking pressure applied on the dies may have been possible. This may have resulted to some deterioration of the working dies and, as of consequence, such evidence is reflected directly on these Peruvian coins, some of which are in our sample.

For some specific years, minted quantities have increased dramatically. This may have been a result of monetary reviews on the circulation of these coins. Nevertheless, this may also have been a contributing factor to the deterioration of working dies. Why? Simply, the Mint may have utilised some perfectly made working dies beyond their normal operating capacity for completing the order.

By knowing about the quantities required, the Mint would have estimated the needs for more working dies. If not enough new working dies were prepared, the Mint may have resorted into utilising older dies with their dates altered.

As soon as a current-dated working die was beyond use, the Mint would compensate for the damaged die by using an altered one. Hence, the additional expense of preparing brand new dies could have been reduced.

Did Peru experience an economic slump just before the beginning of the 20th century and beyond? And, is it possible that this was the cause for the withdrawal of silver coinage later? It's quite possible. Was the Mint forced to economise and prepare a much smaller number of working dies? Perhaps the answer again is yes.

Did dies become defective in years when required coin quantities were lesser? If this is the case, then a question of adequate treatment of the working dies must be posed.

In summarising, here are some explanations as to the probable causes of die deteriorations and coin overdates appearing on these Peruvian coins:

1 Insufficient preparation of the dies causing deterioration during normal or excessive striking pressure.

2 Excessive pressure applied by the dies would be absorbed by the coin (planchet) up to a certain point. Beyond this, some of the excess pressure would have been transferred back to the dies.

3 If the normal operating parameters have breached, the stable lower die (the trussel) will be affected less than the upper die (the pile). Existing literature[14] confirms that the upper die may have a higher occurrence of breaking down, compared to the lower die. In medieval times, this was estimated from 2:1 to 4:1 and so, the practice of preparing complex designs was done on the trussel; and for the simplified designs on the pile.

[14] Hanson, p.12-13

4 Observations of die cracks from our sample strongly suggest that in total, die cracks are shown three times more on the obverse (Coat of Arms) than on the reverse (Lady Liberty). This concurs with the third explanation and, by deduction, the upper working die (the pile) must be the one that has the design of the 'Coat of Arms' / 'Date'.

5 Some mints may have used the dies beyond their operating capacities, in order to extract more use out of them for completing the job.

6 In some years, the Mint utilised older working dies by redated them, in order to economise and reduce the cost of manufacturing more brand new working dies.

In closing this article, with no authentic records and definitive publications available at the time of research within the limited time parameters, the opportunities in expanding this fascinating but complex subject are there.

Certainly, further study should shed more light into the activities of the Lima Mint from around the second half of the 19th century, especially on the usage of the working dies.

A separate but more detailed analysis into the operation and methods of coin striking of these days may provide further technical insight into the deterioration of the working dies for many mints around the world.

In comparison to the working dies, there is no doubt in my mind that the romanticism, beauty and style of these silver coins of Peru will never deteriorate in many years to come.

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LAJOS KOSSUTH

By Frank Robinson, NAV 713[1]

Lajos Kossuth was born in 1802 in Monok, Hungary as eldest of four children. His father was a Slovak and his mother was a local German; the Kossuth family was an ancient, but lower, noble family, and not wealthy. His father was an attorney for local landowning families.

As a young man, Lajos Kossuth was employed by Countess Andrássy (one of his father's clients) as a steward and agent; one of his duties was as her voting representative in the county assembly. Later he represented Count Hunyady at the National Diet in Pozsony[2] [then capital of Hungary] from about 1832 until it was dissolved in 1836.

At this time the new generation of Hungarian reformers was beginning the struggle for independence from Austria; this led to Kossuth developing his political and social philosophy of advanced radicalism.

Kossuth was not entitled to join in debates; however he decided to issue letters describing the proceedings of the Diet (in reality, this was very biased reporting in fluid and colourful language). At this time proceedings of the various parliaments were not published and the general public usually had no knowledge of what went on. (The Austrian Government had banned publication of the debates for fear of a public uprising.)

After the National Diet was dissolved in 1836, Kossuth was invited to write similar proceedings for Pest county assembly, but this time he was not protected by parliamentary privilege and was arrested in May 1837. After 18 months detention, he was then jailed for 3 years, but was released in an amnesty in 1840.

After his release, he continued writing, as editor of *Pesti Hírlap*, in a fluent and beguiling style that alarmed the Austrian authorities, Hungarian conservatives, and moderate Hungarian reformers. He also upset Croats and non-Magyars by his insistence of Magyar supremacy. As a result, he was dismissed in 1844.

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1 Frank presented this paper to NAV meeting 950 on 19 September 2008

2 Pressburg (German), now Bratislava, capital of Slovakia; this is also the city where NAV member Max Stern was born.

Kossuth then founded a society to promote Hungarian industry with the objective of economic independence.

EUROPE IN 1815

The Austrian Empire had been created by the Congress of Vienna in 1815 following the final overthrow of Napoleon; it effectively replaced the Holy Roman Empire which Napoleon had dissolved.

Figure 1 – Europe in 1815 after the Treaty of Vienna[3]

During the Turkish occupation of Hungary in 16th and 17th centuries, Hungary's capital was moved from the occupied heartland to Pozsony.

1847

In 1847, the County of Pest elected Kossuth to next Diet where he assumed leadership of the "national opposition" which had agreed on an extensive program of political and social reform. The reformers had made a little progress in subsidiary fields, but deadlock had been reached on the central issue of political control.

3 Palmer, p25

1848 – THE YEAR OF REVOLUTIONS!

On 23 February 1848, revolution occurred in Paris (France). When this news reached Hungary, Kossuth felt that his opportunity had come. On 3 March he made a speech "of extraordinary power" in which he demanded the removal of Viennese absolutism as only way to safeguard Hungarian liberties.

Kossuth demanded the following reforms[4]:

- Abolish censorship (ie freedom of the press)
- A Hungarian Ministry
- An annual Diet, elected by universal suffrage
- Equality of all before the law
- Formation of a national guard
- No tax exemption for the nobility or clergy
- Suppression of feudal rights
- Elected juries for criminal cases
- A national bank
- Creation of a national army
- Release of political prisoners
- Unite Transylvania with Hungary.

On 13 March there was a revolution in Vienna. Kossuth expanded his demands and led a deputation to Vienna where the panic-stricken court accepted them.

Two days later, on 15 March, Count Lajos Bathyány (the new Hungarian Prime Minister) appointed Kossuth as Finance Minister; this was a dangerous decision as control of finance (as well as the military) was the chief bone of contention between Austria and Hungary.

When news reached Pesth[5], the famed poet Sándor Petõfi read a list of demands and recited his fiery poem "National Song". 15 March is now celebrated as Hungary's National Day.

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4 www.hungaria.org/vadasz/1848-49/48mar3.html

5 At this time, Pesth was the commercial centre and administrative capital while Pozsony was still the legislative capital. Pesth (on the east bank of the Danube) later joined with Buda (the military citadel on the west bank) to become Budapest.

On 11 April, at a Diet in Pozsony, the Emperor assented to the "April laws" which mostly incorporated Kossuth's demands of 3 March; this effectively was a new constitution which recognised Hungary's wish for independence.

The main issues were[6]:

- The King to exercise power through a responsible minister;
- The bicameral Diet to be convoked annually at Pesth, the members being elected for three year terms;
- The King may dissolve the Diet, but obliged to convoke a new one within three months;
- No dismissal until next year's budget approved;
- The two elements were the Chamber of Deputies and Chamber of Magnates;
- Those franchised to vote were citizens who paid taxes and those with secondary or higher education;
- Official language to be Hungarian, save Latin in some instances.

Although Kossuth was answerable to Bathyány and the Diet, he often acted without consulting fellow ministers (and often in defiance of agreed decisions). He appealed, via his own journal, to the general public. The government could not dismiss him as his nationwide popularity was their greatest asset!

ETHNIC TENSIONS

At this time, Hungary consisted of various racial groups and the borders were very different to today. (When looking at a map, one needs to take note of the date the map refers to.) The northern area was mainly Slovakian and the southern area was mainly Serbian and Croatian. In the east was Transylvania which had been the original heartland of the Magyars (ie Hungarians), but now had a large population of Vlachs (or Wallachs, now called Romanians) as well as a significant number of Saxons (Germans).

While Kossuth was happy for the various ethnic groups to be part of an independent Hungary, he was not willing to allow them to go their own way. He also believed in the supremacy of the Magyar people.

6 www.hungaria.org/vadasz/1848-49/48mar3.html

SLOVAK DEMANDS

In 1848 the ethnic Slovak population of Hungary was estimated at 1.6 million, or 12.4%.

On 10 May a Slovak assembly met at Liptószentmiklós and approved 14 claims. These included[7]:

- Land ownership for all
- Freedom of the press
- Release of Slovak prisoners
- Flying the red and white Slovak flag next to the Hungarian tricolour
- A regional parliament with elections based on nationality
- A Slovak militia with Slovak officers
- National administration and education, including a Slovak university.

The movement was fractured due to a number of reasons including a failed Czech revolt against Austria, a gap between the leaders (mainly Protestant clergy) and the predominantly Roman Catholic Slovak peasantry.

SERB MOVEMENT

The leader of a Serbian delegation to Pozsony on 8 April wanted the Serb areas in the southern border areas to be allowed to secede and join Serbia. Kossuth replied "In that case let the sword decide between us". As well as political autonomy, they also demanded official use of the Serbian language. A revolt started in the border regions which lasted for almost a year.

TRANSYLVANIA

This eastern border area was the original area where the Hungarian tribes settled. The Vlachs (now known as Romanians) settled there later. Transylvania had its own Diet, but it only included Hungarians. As they feared that the reforms would undermine their power, they refused to act.

With the Transylvanian Diet unwilling to act, the Vlachs convened a mass congress at Blaj from 15 to 17 May and drew up their own "National Petition" which was presented to Ferdinand V on 10 June; however he referred them to Batthyány.

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7 www.hungaria.org/vadasz/1848-49/48may10.html

On 30 May the Transylvanian Diet voted unanimously for reunion with Hungary. In Pesth their delegation was told that this could only be met to the extent that they enjoyed the rights of Hungarian citizenship. Saxons in Transylvania were also apprehensive about loss of their culture if they became part of Hungary.

The end result was Transylvania allied itself to Austria against Hungary.

1848 REVOLUTION

When Vienna wanted Hungary to send troops to Italy (to quell the rise of nationalism there), Kossuth tied their despatch to political conditions that were unacceptable to Vienna. At the same time, on 11 July, he called for a national defence force (Honvéd) to defend Hungary from Serbs and Croats.

On 11 September an Austrian inspired Croat army (led by Jellaçiç) invaded Hungary. Bathyány resigned and the Diet appointed a Committee of National Defence with Kossuth as its head. Kossuth was now the virtual dictator of Hungary. Jellaçiç was defeated by the Hungarians at Pákozd.

On 3 October Ferdinand V dissolved the Hungarian National Assembly, declared martial law, and threatened those disobeying with treason. Kossuth responded with a counter-proclamation asserting Hungarian independence.

In the next months, Kossuth displayed his great strengths and weaknesses: his magnetism and courage, his intolerance and lack of realism, his wanton provocation of insuperable difficulties and his genius in overcoming them. He gave his people the heart to face overwhelming odds which were increased by his intransigence and his meddling in military affairs. Kossuth appointed Artur Görgey as commander of the National Defence Council (he would later twice dismiss him and twice reappoint him).

During October, another uprising occurred in Vienna and again the Emperor and the Imperial family fled the capital. This was crushed by Prince Windischgraetz and Jellaçiç on 28 October. Also on 28 October, a Hungarian force crossed the border and advanced towards Vienna; however a counterattack by Windischgraetz caused them to flee back to Hungary.

On 2 December, Emperor Ferdinand V abdicated (or was "persuaded" to do so by Windischgraetz, who was now the new Austrian strongman and commander of the army) so that Austria could escape from the laws and agreements that Ferdinand had committed to; he was succeeded by his

18 year old nephew Franz Joseph. Kossuth immediately persuaded the Diet not to recognise the abdication. Emperor Franz Joseph revoked all the concessions that had been granted in March and outlawed Kossuth and his colleagues. An all-out war was now inevitable.

1848-49 WAR

In December, Windischgraetz invaded Hungary from the west and Görgey decided on a strategic retreat down the Danube valley and rely on fortifications, such as Komárom, to slow the Austrians. Meanwhile, other Austrian armies in the north and east were also threatening the Hungarians.

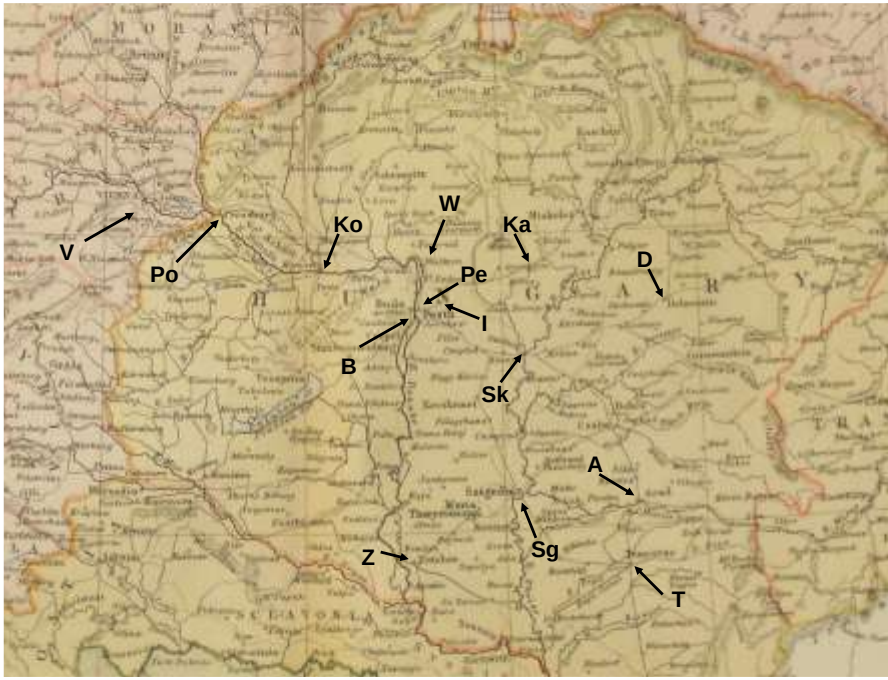

Figure 2 – Map of Hungary (1878[8])

A - Arad, B - Buda, D - Debreczin, I - Isaszeg, Ka - Kapolna, Ko - Komárom, Pe - Pesth, Po - Poszony, Sk - Szolnok, Sg - Szeĝedin, T - Temesvár, V - Vienna, W - Waitzen, Z - Zomber

8 *The Library Atlas*, map 20

In January, Buda and Pesth were evacuated and the government moved to Debreczin (in eastern Hungary, 200 km east of Pesth). While the Austrian forces stayed in the vicinity of Buda and Pesth, the Hungarian forces had the opportunity to recruit.

In Transylvania, General Bem was winning against the Austrians. Arad, a strong fortress in central Hungary, was placed under siege by the Hungarian forces for eight months.

In late February the Austrians advanced towards Debreczin[9] and defeated the Hungarians in a two day battle at Kapolna, however the Austrians failed to follow-up their success and the Hungarians were able to regroup and successfully counterattack at Szolnok. The Hungarians followed up with an advance on Pesth. The next big battle was at Isaszeg (25 km east of Pesth) in early April with success to the Hungarians.

The Hungarians followed this with a successful attack on Waitzen (on the Danube River 32 km north of Pesth on 9 April). The way to relieving Komárom and taking Pozsony, with the possibility of an attack on Vienna, was now open.

At this point, Kossuth (who wanted Hungary to be an independent nation) and Görgey (who believed that they were really fighting for the deposed Ferdinand V, and the reforms that he introduced, against Franz Josef II and his suppression of the Hungarians) argued. Kossuth won the argument.

On 14 April 1849, Kossuth persuaded the Diet, meeting in Debreczin, to proclaim the dethronement of "the House of Habsburg-Lorraine, perjured in the sight of God and man, had forfeited the Hungarian throne". Kossuth was then elected "Governor" of Hungary by the Diet. This had the effect of changing the cause of the war from the ancient one of Hungarian independence to the modern one of French democracy or, to put it another way, it had changed from being a national cause to a social cause. This change in spirit and object of the war has been blamed for the collapse of the Hungarians.[10]

The immediate result in the next few weeks was for many Poles, Italians, French, and Irish to join the Hungarian army. The Austrian government needed help, however England kept a cold neutrality (although its people supported the Hungarian cause), France was having its own revolutionary

9 now Debrecen

10 Alison, p478

problems, and Prussia (the dominant northern German state) had long seen Austria as its major rival in the German Confederation and was enjoying Austria's woes. The only other power that Austria could turn to was Russia who saw that if the Hungarians were successful, they could be next with another revolt by the Poles (who were under Russian domination). Despite the humiliation, Austria requested assistance from Russia. On 8 May, Russia issued a proclamation ordering its troops to assist Austria.

Meanwhile, the Hungarian army pushed west up the Danube River and relieved the siege of Komárom (21 April). With the likelihood of being cut off, the Austrians evacuated Pesth on 21 April which the Hungarian army occupied the following day. With the exception of the fortresses at Buda, Arad, Temesvár[11], Carlstadt, and Deva and the city of Pozsony, the Austrian army was forced to leave Hungary.

The Hungarian army placed Buda under siege on 4 May and took the fortress on 22 May. Dissention again rose between Kossuth and Görgey and resulted in a delay in Görgey following up these victories. This delay gave time for the Russian forces to enter the fray.

COMBINED AUSTRIAN AND RUSSIAN OFFENSIVE

A combined Austrian and Russian army attacked Görgey's forces near Komárom on 16 June and forced the Hungarian army to retreat. The following day, Russian forces commenced their march on Hungary from the north crossing the Carpathian Mountains. This army took Debreczin on 6 July.

After several more battles near Komárom (during which Görgey received a head wound), the Hungarians were forced to retreat further.

On 12 July, Kossuth deemed that Pesth was no longer safe, and moved the Government to Szeĝedin[12] (on the west bank of the River Theiss). The Austrians occupied both Pesth and Buda the same day.

In the south, a very even battle on 20 July between another Russian corps and the Hungarians resulted in the Hungarians retreating towards Szeĝedin.

Until June, the Hungarians had enjoyed the advantage of being in the centre with direct lines of communication to all fronts. By late July the Austrians and Russians were driving wedges between the several Hungarian armies

11 now Timişoara in Romania

12 now Szeged

and the end was inevitable. Another battle at Debreczin gave the Russians control of that city and forced Görgey's army south towards Arad.

Meanwhile, on 1 July Russian forces entered Transylvania. In a series of battles throughout July and early August, the Russians pushed Bem's Hungarian army back until it was finally forced to retreat to Temesvár.

On 2 August, Haynau's Austrian army reached Szeĝedin which the Hungarians evacuated; however an attempt by the Hungarians under Dembinski to hold the river crossing was defeated on 4 August and both armies headed for Temesvár which they reached on 9 August. Temesvár was still held by Austrian forces and besieged by Hungarian forces.

Haynau attacked the Hungarians on 10 August outside Temesvár and the action was at a stalemate when Bem arrived with the remainder of his forces and briefly turned the tide in favour of the Hungarians before the Austrian s gained the upper hand. In a desperate cavalry charge late in the day, Haynau broke through the Hungarian lines and relieved the siege which had lasted for 107 days.

The Hungarian leaders now realised that their cause was lost and, thinking that Görgey might be able to strike a better deal with the Russians, Kossuth resigned in favour of Görgey on 11 August. Kossuth and Dembinski then headed south towards the border. Bem, after unsuccessfully attempting to persuade Görgey to continue to resist, headed east towards Transylvania.

Görgey surrendered to the Russian General Count Rudiger on 13 August. He then issued orders for the other Hungarian forces to surrender. The fortress of Arad surrendered on 17 August, but Komárom held out until 4 October when they became they last Hungarian force to surrender.

Although Görgey requested clemency for his officers and men, and the Russians interceded on their behalf, the Austrians were determined on revenge after nearly losing their Empire and have been humiliated in asking for Russian assistance to save them. Fifteen officers were court martialled and executed. On 17 August Kossuth fled to the Balkans (which was then part of Turkey – see figure 1) and declared himself a private citizen.

MONETARY SYSTEM

HUNGARY

At the time of the revolution, the monetary system in Hungary was:

60 krajczar	=	1 forint
2 forint	=	1 convention thaler

AUSTRIA

At this same time, the monetary system in Austria was:

60 kreuzer	=	1 florin (gulden)
2 florin	=	1 convention thaler

HUNGARIAN PAPER MONEY

PRE-REVOLUTIONARY

Prior to the revolution, Hungary had issued two series of notes. These were:

- Iparmütári Alapitvány Jegy
- Interest-Paying Legal Tender Treasury Bills

Iparmütári Alapitvány Jegy

Dated 1 January 1847, only one note is listed; this had a denomination of 5 pengö forint.

Kamatos Utalvány (Interest-Paying Legal Tender Treasury Bills)

There were three issues of Interest-Paying Legal Tender Treasury Bills in 1848, each issue having denominations of 50, 100, & 500 forint.

The first issue were larger size notes (232 x 130 mm) with different handwritten dates in 1848; they were issued for a six month loan. These notes had interest tables on the back.

The notes of the second issue had a reduced size (185 x 130 mm) and again had different handwritten dates in 1848. These were issued for a 12 month

loan and have coupons (47 x 130 mm) on the right hand side which were to be removed after six months. They also had interest tables on the back.

The third issue were similar to the second issue, but these notes (138 x 130 mm) do not have coupons.

[In July 2008, four of these notes were in an Austrian auction[13] with estimates of €1700 each for three notes (PS101, PS102, and PS104) and €1000 (PS108); all remained unsold.]

REVOLUTIONARY

On 5 August 1848, the Hungarian Government commenced a forced circulation of paper money which, after ten months, resulted in a national debt of 110 000 000 florins (£11 000 000) – approximately three times that of Great Britain or France. [This equates to an exchange rate of 10 florins = 1 pound (sterling)].[14]

In early 1849, Kossuth decreed that Austrian paper money was not a current medium of exchange in Hungary; however he offered, on behalf of the government, to accept it in exchange for Hungarian paper money. Kossuth then used this Austrian money to purchase arms and ammunition from Great Britain and Belgium.[15]

During the revolution, Hungary issued four series of notes. These were:

- Hungarian Commercial Bank
- State Notes, Finance Ministry
- State Treasury Notes, National Army Defence Committee
- State Treasury Notes, Finance Ministry

Magyar Kereskedelmi Bank (Hungarian Commercial Bank)

The Hungarian Commercial Bank issued notes in denominations of 1 and 2 forint which were redeemable in silver. These undated notes were issued in 1848. Notes with a face value 4 million were issued.[16] The 2 forint has a vertical format; all other notes discussed here have a horizontal format.

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13 Frühwald Auction 83, lots 1277 – 1279
14 Alison, p456
15 Alison, p471
16 Schafer & Bruce, p675

Figure 3 – Magyar Kereskedelmi Bank, 1 forint, (1848) (shown at 60%)

These notes have the signatures of Lajos Kossuth (Finance Minister), Ferenc Volgyi (Chief of State Treasury), Janos Rogler (Bank Cashier)

Figure 4 – Back of Magyar Kereskedelmi Bank, 1 forint, (1848) (shown at 60%)

The text on the back of these notes, in five languages [Hungarian, German, Slovak (?), Croatian (?), Serbian (?)[17]] gives a warning against counterfeiting with a punishment of eight years gaol.

German text is "Die Verfälscher und Nachahmer dieser Noten werden mit Kerker bis zu acht Jahren bestraft." This translates as "The forger and counterfeiter of these notes will be punished to a maximum of eight years prison."

[17] I am not completely certain which languages are used.

Penzjegy (State Notes, Finance Ministry)

These State Notes were issued by the Finance Ministry (Penzjegy) to help finance the war effort. There is no obvious title for the issuer of these notes, however a reference to Penzjegy does occur in the first line of text under the denomination. They are dated 1 September 1848, Buda-Pest and have denominations of 5, 10, and 100 forint. The only signature is Lajos Kossuth as Finance Minister.

There were apparently two printings of the 5 forint note as the printing of one variety is a red-brown on a dark grey background and the other is brown on a light grey background.

The warning, on the back, against forging and counterfeiting is now a punishment of 15 years (fünfzehn Jahren) prison for these notes.

Figure 5 – Penzjegy, 5 forint, 1.9.1848 (shown at 60%)

Kincstári Utalvány, Orszagos Honvedelmi Bizottmany (State Treasury Notes, National Army Defence Committee)

The National Army Defence Committee issued notes of 15 and 30 Pengö Krajczárra to relieve a shortage of small coins in circulation. Dated 1 January 1849 at Budán (ie Buda), they have the printed signature of Ferenc Volgyi (Chief of State Treasury).

The warning against forging and counterfeiting is 8 years (acht Jahren) prison for these notes.

Figure 6 – National Army Defence Committee, 30 Pengö Krajczárra, 1.1.1849 (shown at 60%)

Kincstári Utalvány (State Treasury Notes, Finance Ministry)

After Hungary declared its independence on 14 April 1849, the Finance Ministry issued notes for 2 and 10 Pengö Forintra; they are dated 1 July 1849 at Budapesten (ie Buda-Pest). On this issue, the royal crown was deleted from the crest of the state arms.

Utalvány – Magyar Ország közjöredelmeire

Specimens (formular) are known of notes for 1, 2, 5, 10, 100, & 1000 forint; the 5 forint specimen is dated 1.3.1849.[18]

SIEGE NOTES

Arad

Arad is in the Banat (then in the southern part of Hungary, but now in Romania).

The Austrian garrison in Arad (under General Berger c d Pliesse) had been under a loose blockade from autumn 1848 and was then besieged by Hungarian forces from 12 October 1848 until 20 June 1849 when it was captured. Forty five days later, the garrison was again under Austrian control.

During this period, the Austrians issued a number of siege notes. Fractional notes were issued as small circular notes in denominations of 1, 3, and 6 kreuzer, small rectangular notes of 6 and 10 kreuzer, and larger size rectangular notes of 18 and 20 kreuzer; all these notes are undated.

[18] Frühwald Auction 83, lots 1284, 1285

Undated notes were also issued in denominations of 1, 5, and 10 gulden, the higher denomination notes include impressed seals on them. There are also notes of 5 and 10 gulden dated 20 April 1849.

The denomination of some notes were also included a reference to "Convention Money" (usually in abbreviated form). "Convention Money" alluded to coins struck to the 1753 Convention standard where one Convention thaler was equal to one-tenth mark of fine silver by weight.[19]

Figure 7 – Arad Siege note, 5 Gulden, (1848-49) (shown at 60%)

Temesvár

SCWPM[20] lists these notes as a Hungarian issue while under siege by the Austrians (Haynau). However for the higher denominations, the text is in German, the denomination is Austrian, and the date (1 May 1849) is during the period that the town was besieged by the Hungarians.

Defended by an Austrian garrison; Temesvár was under siege for 107 days from 25 April 1849 until relieved by Haynau on 10 August 1849.

Notes were issued for 1 and 3 kreuzer (undated), 6 and 8 krajcár (dated 19 March 1849), and 5 and 10 gulden (dated 1 May 1849). I have not seen the lower denominations and am uncertain of the circumstances of their issue, particularly of the krajcár notes.

19 Craig, p31
20 Schafer & Bruce, p680

Figure 8 – Temesvár Siege note, 5 Gulden, 1.5.1849 (punch cancelled) (shown at 60%)

Komárom

Halfway between Vienna and Buda-Pesth, Komárom was by-passed during the Austrian advance in December 1848. The town was under siege until 21 April 1849, and again from 16 June until 4 October 1849; this was almost two months after the rest of the Hungarian forces surrendered.

There were two issues of notes by the Hungarians in Komárom. The first issue were undated notes for 1 and 2 kraiczár and a note for 8 pengö kraiczár dated 6.4.1849.

The second issue is dated 13.7.1849 and there were notes of two denominations – 5 and 10 pengö kraiczár.

Figure 9 – Komárom Siege note, 5 and 10 Pengö Kraiczár, 13.7.1849 (shown at 60%)

There are supposed to be three varieties[21] – two are shown in Figure 9. The difference is in the size of the text for the denomination name – small and

[21] Schafer & Bruce, p680

large. The 5 pengö kraiczár note shown has small text whereas the 10 pengö kraiczár note shown has large text.

HUNGARIAN COINAGE

Coins of five denominations were issued by the Hungarians during the war of independence. These are detailed in Table 1.

Table 1
Hungarian Coins of 1848 and 1849

Denom	Metal	Date	Mint	Obverse	Reverse
Egy (1)	Copper	1848 1849	Kremnitz NB	Crowned arms	Denomination
Harom (3)	Copper	1849	NB	Crowned arms	Denomination
Hat (6)	Silver	1849	NB	Crowned arms	Denomination
10	Silver	1848	KB	Ferdinand V	Madonna
20	Silver	1848	KB	Ferdinand V	Madonna

KB is mintmark for Kremnitz, NB is mintmark for Nagybanya

The three lower denominations (1, 3, and 6 krajczár) have the crowned Hungarian arms on their obverses while the reverses have the denomination (in words) and the date.

The obverses of the two higher denominations (10 and 20 krajczár) have the head of Ferdinand V facing to the right (a cause of the break with Austria was the "forced" abdication Ferdinand V) and their reverse depict the Madonna and child; these are the same designs that had been used on the Hungarian coinage since 1837, however the legends have been changed.

The three silver coins all have different alloys – the 6 krajczár coin is.220 fine, the 10 krajczár coin is.500 fine, the 20 krajczár coin is.583 fine[22]. The 6 krajczár may be better described as "billon".[23]

[22] Krause & Mishler (1801 – 1900), p537
[23] Craig p39

EXILE

After fleeing from Hungary to the Balkans in August 1849, both Austria and Russia wanted to extradite Kossuth from Turkey; however the Western powers put pressure on Turkey to refuse the request. He was interned for two years in Anatolia.

The USA government invited him to visit America and he was allowed to leave Turkey in September 1851. He stopped in England on the way where he addressed a series of mass meetings. He received unprecedented public support in both England and USA, but not official support.

He returned to England where he settled in London.

In 1859 as French Emperor Napoleon III prepared for war with Austria, he invited Kossuth to organize a revolt in Hungary. The plans fell through when France and Austria concluded an armistice.

After that, Kossuth spent the rest of his life in Turin, Italy where he died in 1894.

He proposed a Confederation of the Danube (downstream from Austria), but it never eventuated. He disapproved of the establishment of the dual monarchy of Austria-Hungary in 1867.

HUNGARIAN FUND RAISERS

After the failure of the 1849 Revolution, Kossuth attempted to raise funds for another revolution. To help finance this revolution, he issued a number of promissory notes which were not payable until after the establishment of an independent Hungarian state.

Turkey

During the time he was in Turkey, Kossuth issued Nyugtatvány (National Loan) Receipts for various handwritten amounts; these are all dated 1 September 1851 and have a black counterfoil at the left side.

USA

After arriving in the United States of America, he was encouraged by the popular support that he was receiving to raise money for another revolution. His first effort was to issue "**Hungarian Fund**" notes. These are in English and are mostly dated 2 February 1852, have Kossuth's signature, and were printed in black on thin white paper by Danforth, Bald & Co of New York

and Philadelphia. These notes were issued in five denominations – 1, 5, 10, 50, and 100 dollars.

The one dollar note has Hungaria with sword over fallen crowned figure (top centre), the standing figure of Kossuth (lower left), and the standing figure of Liberty (lower right). They are known as issued notes (with a handwritten serial number), sheets of three notes, and unissued remainders.

Figure 10 – Hungarian Fund, 1 Dollar, 2.2.1852 (shown at 60%)

The five dollar note has the Hungarian arms in a cartouche with flags, cannon, and cannon balls (top centre), the standing figure of Kossuth (lower left), and a different the standing figure of Liberty with Hungarian shield (lower right). There are two varieties – handwritten date (series A) and printed date with large FIVE underprint (series A and B). The handwritten date appears as "Febr. 2nd 1852" and the printed date as "2nd February 1852".

The 10 dollar note has seated figure of Liberty with two other women with the Hungarian arms (top centre), the standing figure of Kossuth (lower left), and a seated female figure with a globe (lower right). There are two varieties (similar to the five dollars) – handwritten date and printed date with large TEN underprint, both are series A.

The 50 dollar note has the framed head of Kossuth (top centre), the standing figure of Liberty with Hungarian shield (lower left), and a seated woman with USA shield (lower right); there is large FIFTY in the underprint. There are two different dates – 2nd February 1852 and "July 1 1852". As

there are both series A and B, it is likely that series A are all February and series B are all July.

The 100 dollar note again has the framed head of Kossuth (top centre) with a seated woman on either side; there is large 100 in the underprint. There are two different dates – the first being either 1st January 1852 or 2nd February 1852, and the second being "July 1 1852". Both are series A.

While in the USA, Kossuth also issued **Penzjegy** (Finance Ministry) notes in Hungarian. These undated notes were printed in 1852 by Toppan, Carpenter, Casilear & Co of Philadelphia in three denominations – 1, 2, and 5 forint. These unissued remainders are known as both single notes and sheets of four (1 and 2 forint) or three (5 forint).

The one forint note has Hungaria standing over a fallen crowned figure in a cartouche with flags, cannon, and cannon balls (centre), three standing women (left), and a woman representing industry (lower right).

The two forint note has Liberty with Hungarian shield (centre), Justice (left), and Athena (right).

Figure 11 – Penzjegy (Finance Ministry), 2 Forint, (1852) (shown at 60%)

The five forint note has an arm with hammer (centre), Agriculture (upper left), and Commerce (upper right).

Figure 12 – Penzjegy (Finance Ministry), 5 Forint, uncut sheet, (1852) (shown at 50%)

Great Britain

In 1860-61, Kossuth had a series of Penzjegy (Finance Ministry) notes printed in London by Day & Son. These undated uniface notes, in Hungarian, have a watermark of arms, and the printed signature of Kossuth "in the name of the nation". The text includes the word "resurgo" (revolt against). The denominations were 1, 2, and 5 forint.

At the request of Austrian Emperor Franz Joseph II, these notes were confiscated by the British Government, taken to the Bank of England, and burned. Only a very few were saved.

Italy

Kossuth's final series of revolutionary notes were Kincstár Utalvány, Kincstár Jegy State Treasury Notes) which were printed in Torino, Italy, and are dated 1 July 1866.

These notes were prepared by Lajos Kossuth's sons. No original notes exist, only reprints from the original plates are presently known. The denominations are 2 and 10 valto garas and 1 forint; all are dated 1 July 1866.

MAGYAR NEMZETI BANK (HUNGARIAN NATIONAL BANK)

At the end of World War I, the Austro-Hungarian Empire was dismantled and Hungary lost about two thirds of its territory and a large portion of its population. After a short, and unstable, period of republican, and then communist, governments, the monarchy was restored in 1920 with Admiral Horthy as regent of a kingdom without a king. This lasted until World War II when Hungary fell under German dominance.

In 1945, the Soviet army drove the Germans out of Hungary; they then allowed the communist minority to seize power. A Soviet type "Peoples Republic" was established in 1949. A Hungarian uprising in 1956 was crushed. With the fall of communism in Eastern Europe in 1989, Hungary became an independent republic.

Lajos Kossuth is regarded as a hero of Hungarian independence. As a result, his portrait has appeared on a number of notes issued by the Magyar Nemzeti Bank (Hungarian National Bank). These notes have been issued during the Regency, the Russian occupation, the Peoples Republic, and the current republic. Table 2 lists these notes with Kossuth's portrait.

Table 2
Notes issued with Kossuth's portrait

1926	20 Pengö
1930	20 Pengö
1945	1 000 000, 10 000 000 Pengö
1946	1 000 000, 10 000 000 MilPengö 1 000 000, 10 000 000 B.-Pengö
1947	100 Forint
1949	100 Forint
1957-89	100 Forint
1990-95	100 Forint

The first note was for 20 pengö (húsz pengö) and is dated 1 March 1926. Kossuth is portrayed in civilian clothing (right) with the crowned Hungarian arms (lower left). The predominant colour is brown on green.

Pengö Series

A new 20 pengö (húsz pengö) was issued in 1930 (dated 2 January 1930). This time Kossuth is shown in his Hussar's uniform (right) with the crowned Hungarian arms (upper left). The predominant colour is blue on green.

Figure 13 – Hungarian National Bank, 2.1.1930, 20 Pengö (shown at 60%)

At the end of World War II, Hungary suffered severe hyperinflation. During this period, notes were issued in units of pengö, milpengö[24], and B.-pengö[25]. The notes of the milpengö series, and the B.-pengö series, used the same designs as the pengö series, but in different colours. Kossuth's civilian portrait appears at the right on both the one million (egymillió) and ten million (tízmillió) notes. The ten million has the crowned Hungarian arms with angels as supporters at the left.

These notes and their predominant colours are:

- one million pengö dated 16.11 1945 blue on brown and green
- ten million pengö dated 16.11 1945 dark green
- one million milpengö dated 24.5 1946 brown on yellow
- ten million milpengö dated 24.5 1946 brown on blue
- one million B.-pengö dated 3.6 1946 brown
- ten million B.-pengö dated 3.6 1946 violet

Figure 14 – Hungarian National Bank, 3.6.1946, 10 million B- Pengö (shown at 60%)

Forint Series

After Hungary's currency was stabilized in 1946, the new unit was again the forint. From 1947 until 1995, the 100 forint note has a portrait of Kossuth in his Hussar's uniform (right) with the Hungarian arms (upper centre).

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24 milpengö means million pengö, ie one milpengö is one million pengö

25 B.-pengö means billion pengö, ie one B.-pengö is one million million pengö (as this is the European billion not the American billion)

There have been four different issues which relate to the different political status of the country. These issues may be distinguished by the arms:

- 1947 Kossuth's Hungarian arms
- 1949 "Rákosi badge" (star above hammer and wheat ear)
- 1957-89 "Kádár badge" (Hungarian tricolour)
- 1990-95 crowned small coat of arms

While the 1947 and 1949 notes were only issued with one date each, the other two issues have a range of dates.

Figure 15 – Hungarian National Bank, 10.1.1989, 100 Forint (shown at 60%)

Kossuth's Hungarian arms

Rákosi badge

Kádár badge

Crowned small coat of arms

Figure 16 – Arms on 100 Forint Notes

MODERN HUNGARIAN COINAGE

Since the establishment of a republic in Hungary after World War II, a number of coins have been struck with the portrait of Lajos Kossuth. These are detailed in Table 3.

After the Russians established a republic in Hungary at the end of World War II, and the hyperinflation had been brought under control, a new currency was issued denominated in "forint" and "filler" (with 100 filler equal to 1 forint). The standard design for the reverse of the 5 forint coin was a portrait of Lajos Kossuth.

Table 3
Coins with Kossuth's portrait

Denom	Year(s)	Metal	Obverse	Reverse
5 Forint	1946	0.835 Ag	Arms	Kossuth
5 Forint	1947	0.500 Ag	Arms	Kossuth
5 Forint	1967-68	Cu-Ni	Arms	Kossuth
5 Forint	1971-82	Ni	Kossuth	Arms
5 Forint	1983-89	Cu-Ni	Kossuth	Arms
5 Forint	1990	Cu-Ni	Kossuth	Arms
500 Forint	1994	0.925 Ag	Value	Kossuth
100 Forint	2002	Bimetallic	Kossuth	Value

The initial issue of the 5 forint, dated 1946, was struck in 835 fine silver[26], weighed 20 g, and was struck on a thick planchet; just under 40 000 pieces were struck. In 1947, the fineness was reduced to 500[27]and the thickness of the 32 mm diameter planchet was reduced resulting in a coin weighing only 12 g; ten million were struck.

The next issue of the 5 forint coin was in 1967 when the metal was changed to cupronickel and the diameter was reduced to 27 mm. The arms on the obverse are now those of the communist Peoples Republic. 20 million were struck in 1967 with a further 29 000 in 1968.

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26 ie 835 parts silver out of 1000 parts, or 83.5 %

27 ie 500 parts silver out of 1000 parts, or 50.0 %

Figure 17 – 5 Forint coins, 1967 (left) and 1981 (right)

Further changes were made in 1971: the metal was changed to nickel, the diameter was reduced to 24.3 mm, and the designs were changed. The portrait of Kossuth has been reduced in size and moved to the obverse. The reverse has a large numeral "5" with a small coat of arms above it. This coin was struck each year from 1971 to 1982 with mintages ranging from a low of 50 000 to a high of 20 million; the total mintage was 58.2 million.

In 1983 the metal reverted to cupronickel; however the design remained the same. This type was struck every year from 1983 to 1989 with mintages ranging from a low of 30 000 to a high of 39 million; the total mintage was almost 110 million.

With the fall of communism in Hungary, a transitional coinage was struck in 1990 using the communist designs but with a new legend denoting the new republic. Only 10 000 pieces of the 5 forint were struck. When the new coinage was introduced, completely new designs were used and Kossuth disappeared from the regular coinage.

A 500 forint coin was issued in 1994 to mark the centenary of the death of Lajos Kossuth. This featured a ¾ right bust of Kossuth, with his signature, on the reverse. This coin was struck from .925 fine silver[28] and is approximately 38 mm diameter.

In 2002, to commemorate the bicentenary of the birth of Lajos Kossuth, a proof bimetallic 100 forint coin was struck with a stainless steel centre in a brass plated steel ring. The obverse has the same portrait of Kossuth as used on the 5 forint coins and the reverse has the denomination. This coin has a diameter of 23.7 mm.

[28] ie 925 parts silver out of 1000 parts, or 92.5 %

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Peru one fifth sol, 1907 with various diecracks (see pages 61-62)

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