Introduction
This select bibliography focuses on the most important books covering various aspects of gold and silver. It is not intended to be a complete listing of books, but instead a crème de la crème list of important works for each subject. The experts listed below have kindly provided recommendations from their specialities, including a short paragraph on each explaining why they have chosen the title.

All books are listed by author, publisher, date of publication and ISBN number or Library of Congress catalogue card, when available. While books may be out of print, they are often available in libraries such as The Bank of England Library, The Worshipful Company of Goldsmiths’ Library and the London Library. Almost every book listed is also available second-hand on abebooks.com or abebooks.co.uk.

The LBMA would like to thank all of the experts who took part, and of course to Timothy Green who both proposed and co-ordinated this work. Comments on this first edition and suggestions (with details and comments) for other books to be included in future editions - or additional subject areas – would be welcomed. These should be sent to the Chief Executive.

Special recommendations by:

Michael Allchin, Chief Executive, The Birmingham Assay Office, and Assay Master

David Beasley and Eleni Bide Librarian, and Assistant Librarian respectively at Goldsmiths Company, London

Paul Burton, Managing Director, Thomson Reuters GFMS

Dr Kevin Clancy, Director, Royal Mint Museum, Llantrisant

Dr Chris Corti, COReGOLD Technology Consultancy, London

Neil Courtis, Former Executive Editor, Central Banking Publications

Mike DiRienzo, Executive Director, The Silver Institute, Washington DC

Barry Eichengreen, Professor of Economics and Political Science, Department of Economics, University of Berkeley, California

Sam Etris, Technical Consultant, The Silver Institute, Washington DC

Mark Grimwade, Metallurgical Consultant to The Worshipful Company of Goldsmiths and Professional Member of the Institute of Materials, Minerals and Mining, UK

Dippal Manchanda, Chief Assayer, The Birmingham Assay Office

Shayne McGuire, Managing Director, Head of Global Research, GBI Gold Fund, Teacher Retirement System of Texas

Frederic Panizzutti, Senior Vice President, Global Head of Sales & Marketing, MKS Finance SA, Geneva

Jonathan Spall, Director of Commodities, Barclays Capital, London
The top 15 recommendations of useful books

**Assaying & Hallmarking**

**Bank of England/Central Banks**

**Coins/Mints**
- C. E. Challis (editor), *A New History of the Royal Mint*, 1992

**Gold/General**
- Susan La Niece, *Gold*, 2009

**Gold/Investment**

**Gold/Metallurgy**

**Gold & Silver Jewellery/Art & Design**
- Clare Phillips, *Jewelry from Antiquity to the Present*, 1996

**Gold & Silver Jewellery/Technical**

**Gold Standard**

**Gold Rushes**

**History/Parliamentary Reports**
- Report of the House of Commons Select Committee on the High Price of Gold Bullion, 1810

**Markets**
- Ernest Seyd, *Bullion and Foreign Exchanges*, 1868

**Mining/Modern**

**Precious Metal Money**

**Science/Technology**
- Christopher Corti & Richard Holliday, *Gold _ Science and Applications*, 2010
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Assaying & Hallmarking


ISBN 1152050052

This is a practical book aimed at the ‘beginning assayer’ and pays particular attention to the fire assay of mining and ore samples. While some of these procedures are quite old they can still be followed today using inexpensive basic equipment available to the would-be assayer. The principles are clearly explained and if you apply a modern touch, you can still achieve really excellent results using this text as a basis. Edward E. Bugbee’s book deals with the basic principles of Fire Assaying and outlines the scientific reasons for many of the phenomenon that occur, as well as the rationale of each process and detail of manipulation. The author has drawn extensively from his own wealth of firsthand experience. This book contains almost all aspects of the techniques used in fire assay and smelting. Worth reading to improve your understanding of this subject. (MA/DM)

ISBN 1146909160

This book is aimed at students and so goes into great detail. The assaying of silver and gold in alloys, ores, concentrates and other materials are generally determined by the classical lead-based fire assay method, also interestingly platinum group metals such as Pt, Pd, Rh, Ir, Ru and Os are often separated or concentrated by the fire assay process. This book outlines the basic concept involved in this proven methodology and related aspects in a clear and convincing manner. Included are the sources of error associated with the fire assay technique, and this information can be the basis for intelligent improvements to fire assay in the future. Also included are descriptions of techniques for determination of the noble metals, with particular focus on the separation of analysis of platinum group metals. This book deserves to be carefully studied by all assayers in the precious metal field; they will be rewarded for their efforts. (MA/DM)

Other recommendations by Timothy Green:

(Shortened version as Hand Book of Silver and Gold Marks, Wordsworth Editions Ltd, 1989.
ISBN 1853269344 / 1-85326-934-4)

The first edition of Chaffers’ classic Hallmarks on Gold & Silver Plate came out in 1883, and was expanded at regular intervals until his death; this 10th edition being edited by C. A. Markham. The basic principle was simple, as set out in 1363, “every goldsmith should have a mark for himself, which was set on his work, after it had been assayed and the surveyor had set on it the King’s mark”. All this under the watchful eye of the Worshipful Company of Goldsmiths, who added its own rules and regulations. The diversity of articles to be hallmarked ranged over ecclesiastical plate, chalices, flagons, alms dishes, coronation plate, corporation plate (for the City of London), corporate plate, domestic plate, standing cups, beakers, porringer, standing salts, spoons, forks and candlesticks. The mark, of course, was the guarantee of purity. The added Gilda Aurifabrorum (Guild of Goldsmiths) traces individual goldsmiths back before 1000 AD and shows by 1200 a well-organised Guild with its own Statutes and Ordinances. All told, a classic piece of research into the gold trade in London for a thousand years. (TG)
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**Review**

John Forbes, a former Deputy Warden of the London Assay Office, spent seven years on this definitive history on seven centuries of assaying and hallmarking. The Assay Office won its first Royal Charter in 1327. Firm standards were set and maintained for gold and silver assays. The Assay Office was central in the testing (Trial of the Pyx) of new gold and silver coins, plus the hallmarking of plate. The annual weights and number of silver articles handled by the Office are recorded from 1560 and gold from 1773, with the distinct hallmarks for each year from 1478-1999 reproduced. An extensive glossary explains specific terms from Assay to Worse or Better (expressing the fineness of gold or silver alloys by reference to a particular standard). An abundance of illustrations shows touchstones and touchneedles, silver and gilded cups and salt cellars. Truly, a unique book. (TG)

Arthur Grimwade has diligently traced 3,910 goldsmiths and silversmiths working in London through the 18th century as gold supplies increased dramatically from mining in Brazil, while the gold price remained fixed. They were carefully registered at Goldsmiths’ Hall, with their own individual marks and divided into Largeworkers and Smallworkers, according to their speciality. So we find them busy with everything in gold or silver from teaspoons and candlesticks to table bells, pairs of sugar nippers, tea caddies, children’s mugs, small bleeding bowls (for blood letting), snuff boxes, inkstands and salt cellars. Intriguingly, Grimwade then compiled The Biographical Dictionary of Makers, each with a little review of their working lives. (TG)

This bilingual guide to makers’ marks is prefaced with a short history on the hallmarking of gold, silver and platinum in the Netherlands. As in England, by the 13th century, goldsmiths and silversmiths applied their own stamp of origin to each article. By 1275, Philip the Bold was obliging them to add the symbol of the town or city where they worked. Little of their work has survived, with the oldest known mark dated 1382. Initially, assaying was erratic but, in 1502, an order required gold to be 19 carat and 3 grains, with gold filigree at least 22 carat. Silver had to be 11 derriners, 8 grains. The marks of several hundred gold and silversmiths are listed after 1814. (TG)

Early colonial silver makers had no formal hallmarking system, so often marked their wares with a stamp containing the first initial of their given name and surname in a shaped device such as a square, heart or rectangle. By 1725, the maker’s name was often stamped in full or with imitations of English hallmarks, but did not include a date stamp, so assigning these specific years is difficult. Baltimore had an Assay Office from 1814-1830, which did copy English style. But until the 1840s silversmiths worked as individuals working directly for their buyer. Only then did the manufacturing of silver by companies begin, and not until 1896 did the magazine Jeweler’s Circular publish ‘Trade Marks of Jewelry’. That has not thwarted Dorothy Rainwater, who tracked down more than 1,500 companies, with their names and hallmarks, and what they made. So George C. Adams was a Baltimore silversmith in 1864, Cattaraugus Cutlery Co., in Little Valley, New York, made Yukon Silver cutlery at 98-100 fine by 1876, while Tiffany had already introduced English sterling silver in 1852. This is a useful directory for anyone seeking to track the origins of their family silver. (TG)

Since the collapse of the Soviet Union and Russia’s entry on the world art market, silver articles have turned up increasingly in auctions, prompting a need for verification of marks. As Geoffrey Watts admits, “buyer beware”. To help matters, he has traced almost 4,000 goldsmiths and (mostly) silversmiths and their marks. Prior to 1700, the marking of silver was haphazard. Each large monastery had a silver workshop making plate and religious trinkets, which the priest or patriarch blessed. Peter the Great changed all that in 1700 by ordering standard fineness at 875 fine (84 Russian zolotniks) and assay offices in major cities. Trade guilds were encouraged from 1722. In practice, St Petersburg became the centre around the court of the Tsar, to which European gold and silversmiths migrated. The first prominent maker was Jean-Pierre Ador from Switzerland. The repertoire reflected court life – dream jugs, bonbon dishes, elaborate coffee pots and silver cigarette cases inlaid with gold. All this stopped abruptly with the Revolution in 1917, but the legacy is preserved in western auctions today. Check the hallmark in this book. (TG)
# Bank of England and Central Banks

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<td>Liaquat Ahamed, <em>Lords of Finance</em>, The Bankers Who Broke The World, Heinemann, London, and The Penguin Press, New York, 2009. ISBN 9780434015412</td>
<td>Ahamed Liaquat, a New York investment manager advising hedge funds, sat writing this book in the autumn of 2008 as the financial world collapsed in the greatest crisis since the Great Depression. A timely moment to be reflecting on what he calls the Lords of Finance, the key central bankers in the decades running up to the crash of 1929 and the collapse of the gold standard shortly afterwards. The four principals were Montagu Norman of the Bank of England, Émile Moreau of the Banque de France, Hjalmar Schacht of the Reichsbank in Germany and Benjamin Strong of the Federal Reserve Bank of New York, who sought to reconstruct international finance after World War I and a return to the gold standard, which had been left in limbo by the war. Watching this drama from the wings was the perky figure of John Maynard Keynes, always a dissenter on the gold standard. Montagu Norman was leader. “Monarch of an invisible empire,” said the New York Times, with the Bank of England “the citadel of citadels”. It ended in tragedy, not only in financial collapse of banks and the propped-up gold standard, but in a nervous breakdown for Montagu Norman. Ahamed Liaquat has written a challenging account of the interplay between the five men as the world of the gold standard slipped through their hands – and it won him a Pulitzer Prize. (NC)</td>
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<tr>
<td>Richard S. Sayers, <em>Central Banking Under Bagehot</em>, Oxford University Press, Oxford, UK, 1957. ISBN 0-198281269</td>
<td>The Bank of England was at the centre of the gold standard system – Keynes called it “the conductor of the international orchestra”. Understanding how the gold standard worked therefore requires understanding how the system was perceived within the Bank. Sayers’ close scrutiny suggests that the gold standard was a more fragile construct than portrayed in broad-brush accounts. The Bank of England in fact struggled to influence the direction of gold and capital flows. Its influence over the operation of the system was less in practice than sometimes suggested by many earlier observers, including Keynes. (BE)</td>
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## Other recommendations by Timothy Green:

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<td>James C. Baker, <em>The Bank for International Settlements, Evolution and Evaluation</em>, Quorum Books, Westport, Conn. and London, 2002. ISBN 1-56720-518-6 Library of Congress 20001049184</td>
<td>The Bank for International Settlements in Basle, Switzerland, founded in 1930, is the oldest existing international financial institution. It is a reclusive organisation, but the heart of regular meetings by major central bank governors. From the start, it handled gold transactions for central banks, managing their purchases, sales, exchanges and transportation of gold between markets. In the run-up to World War II, it shipped much gold from European central banks to the United States. These operations continued during the war, especially for the Reichsbank in Germany, which, uniquely, avoided Germany defaulting on its loans, making it the only finally stable European nation during the war. These activities, revealed years later as the Nazi Gold Scandal, are detailed in a major section of this book, complete with statistics on all secret transactions. (TG)</td>
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Review

This latest volume of the Bank’s history by Forrest Capie, Professor of Economic History at the Cass Business School, gives fresh insights into its marketing of South African gold, its determination to encourage the development of the London Gold Market, and the setting-up, dealings of and eventual collapse of the Gold Pool from 1961.

On the South African front, internal memos reveal how the Bank fought to prevent the Bank for International Settlements getting some South African production for its own vaults. And it was at the heart of the struggle to maintain the gold exchange standard, inaugurated by the Breitton Woods Agreement of 1944, which depended on the US Treasury standing ready to buy and sell gold at $35 for other central banks which, in Europe, were increasingly building their gold reserves, and depleting those of the US, while the gold price itself crept upwards. Capie cites distinguished economists discreetly telling the Bank that the dollar price would eventually increase.

Attempting to defend $35 gold, the Bank inaugurated the Gold Pool in 1961: essentially, a secret selling consortium of central banks matched by a buying syndicate of central banks. It worked behind the scenes for a few years but, with increased demand by the French under President Charles De Gaulle and growing private offtake for jewellery and investment, the Pool became a net seller of gigantic proportions, draining the US gold reserves, and the Pool collapsed in March 1968. The fight to hold gold at $35 was over, and the price was henceforward floated on the international market. All a fascinating insight into perhaps the most crucial decade in gold’s history and that of the London Gold Market. (TG)

The definitive history of the Bank, written at its invitation by the great economic historian, sets in context the evolution of the gold standard, with its fixed price for over 200 years. The Bank’s creation came just as major gold discoveries were made in Brazil. Much of that gold came to Britain to pay for exports of wool, and ended up in the young bank’s vaults, essentially creating the first central bank reserves and enabling the Bank to issue bank notes fully backed by gold. Most important to the London Gold Market was the creation of an alliance with the Bank, through whose Bullion Office gold flowed for generations, giving it a unique understanding of the gold trade never matched by any other central bank. (TG)

Good introduction to the world of central banking, which evolved so rapidly in the 20th century, that also shows how gold maintained its niche in central banks’ reserves. (TG)

This paper examines the evolution of central bank gold reserves in the wake of the gold rushes in the mid-19th century when, for the first time, gold really became a widely circulating monetary metal in the pockets of millions of people worldwide, while also being held by central banks and treasuries. Tables list the stocks of central banks/treasuries 1845-1998. (TG)


**Review**

Ralph Hawtrey was an ‘in-house’ economist at The British Treasury from 1905-1945, thus assured a ring-side seat at the impact of world War I, the initial collapse of the gold standard it brought about, and the attempts to revive it in the 1920s and its final fall in Britain in 1931. He was an ardent supporter of the gold standard, up against a sceptical John Maynard Keynes. This book should be read in context with four editions of his book *The Gold Standard in Theory and Practice*, published between 1927 and 1939, as each edition was overtaken by events. The added value here is a study of French monetary policy as the Banque de France built up gold stocks in the late 1920s and early 1930s. This is followed by a major section, the ‘Art of Central Banking’, which reviews the Bank of England’s role as a major central bank in the 19th and early 20th centuries. From his desk at the Treasury, he had a unique view of the special responsibilities the Bank had. (TG)

Professor Sayers picks up the Bank’s history in the 20th century. On the gold front, the most useful material is in the Appendices of Volume 3, which prints Bank and Treasury memoranda on the changing environment for gold from the outbreak of World War I in 1914 through the temporary suspension of the gold standard, its restoration by Winston Churchill in 1925, and its collapse in 1931. The documents provide an inside perspective on the final years of the standard’s unique history. (TG)

To celebrate its centenary, the Swiss National Bank rounded up a team of international bankers and economists to tell its story, not least on gold. Apart from the Bank of England and, perhaps, Banque de France, no other central bank has so much experience in the metal – from the first day, the Bank was obliged to exchange Swiss banknotes for either gold or silver and held most of its reserves in gold. With the gold standard collapsing in 1931, the Bank maintained its faith in gold, selling its sterling and French franc balances for gold, which then accounted for over 95% of its reserves. World War II brought Switzerland, a neutral country, into the controversial handling of German gold and, post-war, it kept its distance from the Bretton Woods Agreement and fixed exchange rates. But it did join other central banks in the London Gold Pool in 1961, set up to maintain the price at $35. Meanwhile, its gold stock remained high compared to other central banks – the feeling being that the Swiss franc should be truly gold-backed. Not until the 1990s did the Swiss National Bank gingerly join the vogue for making gold loans into the market and, ultimately, plucking up courage to sell half its reserves, between 2000 and 2005 (at prices that today question its wisdom). A thorough, useful book that lifts the veil on a famous central bank and its gold operations. (TG)
# Coins/Mints

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<td><strong>Davies, G.,</strong> <em>A History of Money from Ancient Times to the Present Day</em>, Cardiff, 1994. University of Wales Press. ISBN 0708312462</td>
<td>An economic historian of some distinction, Glyn Davies towards the end of his career drew on his immense knowledge of currency matters and economics to produce a commanding work of breadth and ambition. For one man to tackle a subject area as vast as a complete history of money has the distinct advantage of allowing perspectives to be formed covering many hundreds of years. Patterns can be discovered and explained that might not otherwise be discernable through a collection of contributions from different authors. What is required to succeed, though, is an academic with the confidence, breadth of knowledge and energy not to be daunted by the challenge and with a lifetime of research, writing and teaching behind him, Davies was ideally placed. From the invention of coinage to the modern world, his handling of the material is sure-footed throughout and he is particularly strong in taking on big and often controversial issues, such as monetary unions. To have an impressive body of learning on the history of money in one place makes for an extremely useful source of reference. (KC)</td>
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<td><strong>Dyer, G. P. (ed.),</strong> <em>The Royal Sovereign</em>, Royal Mint, Cardiff, 1989. ISBN 1869917030/1-869917-03-0</td>
<td>Published on the occasion of the 500th anniversary of the first issue of the gold sovereign, the book is an admirable tribute to a coin that has played a major role in British currency history. Made up of a number of specially commissioned essays by respected authors on distinct aspects of the sovereign, the book piece by piece unlocks the history of the coin. The timing and symbolism of its appearance, the resonance of its designs, the scale and quality of its production, the remarkably international character of its usage, as well as the personalities influencing its many different guises, are explained with authority and presented in a very attractive format. The dramatic use of images is indeed no small part of the appeal, making it a book to be enjoyed as a respectable academic contribution to the literature but also a thing of beauty in its own right. (KC)</td>
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<tr>
<td><strong>Fearon, D. (ed.),</strong> <em>The Sovereign: The World’s Most Famous Coin</em>, Hilldens, Hertfordshire, 2001 ISBN 1-874371-14-8</td>
<td>The gold sovereign was famously described by Clapham as “the chief coin of the world” and yet there are very few well-written or well-researched books on the coin. It had its origins under Henry VII and after a 200-year absence, the British coinage was revived towards the end of George III’s reign, thereafter cementing its pre-eminent position in British currency history. Drawing on a number of previously published sources and handsomely illustrated throughout, the book succeeds in making accessible in one place an extremely useful collection of material. In particular, it includes a section advising collectors, which covers the coin-grading terminology in use in the trade, information on rarity and a comprehensive price guide. Daniel Fearon has been a coin and medal dealer for many years and was therefore well placed to see the need for such a book, serving as it does as a reliable repository of stories, facts and figures about this most important of gold coins. (KC)</td>
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Review

There are quite simply no other books that treat coins as works of art quite like Sutherland’s *Art in Coinage*. It was at the time of its publication singularly the most important contribution to the literature on the aesthetics of money and remains a work to be admired. The coverage is from ancient Greece to the mid-20th century and, from his position in the Heberden Coin Room at Ashmolean Museum, he was well placed to exercise such a broad perspective. What is most arresting about the studied treatment of the material, evident on almost every page, is the way he engages with the coins themselves as an art historian would a painting or sculpture. As a result, what might seem static features or familiar compositions, take on a life and personality, and are placed properly in the artistic currency of their time. The most powerful expressions of numismatic art are more often than not to be found on gold and silver coins, the qualities of the metal on occasion adding to the aesthetic appeal. *Art in Coinage* stands as a challenge to us all to look at the works of art we carry around in our pockets and purses every day, and to take the time to appreciate them as such. (KC)

The work examines the reform of the British gold and silver coinage in 1816-17, looking in detail at how the reforms were implemented. Early chapters look back to late 17th and 18th century currency history to provide a context for understanding the economic and social forces influencing the supply of and demand for coinage. The impact of the reforms in the 20 or so years after they were implemented is surveyed to assess the success of the undertaking. Key questions concerning why it took so long for the government to reform a silver coinage that for many years was in a wretched condition and in short supply, and also why the formal adoption of the gold standard was delayed until 1816 are addressed. It is therefore an economic history, and in part a political history, that seeks to explain the currency settlement of 1816-17, a moment of change on which the currency stability of the next 100 years was founded. (KC)

Book specially recommended by Shayne McGuire, Head of Global Research, GBI Gold Fund, Texas:


In *Double Eagle*, Frankel tells the story of what happened to the last gold coins minted in 1933 by the US Mint after private gold ownership was made illegal. The author walks through the monetary events of the 1930s, discussing the thinking in Washington that distinguished bullion gold from collectable gold. (SM)

Other recommendations by Timothy Green:


This is the definitive book on coinage and mints in Britain stretching from AD 600 to 1985, from a team of distinguished historians led by Christopher Challis of the University of Leeds and G. P. Dyer, a former librarian and curator at the Royal Mint. In the early years between 600 and 1158, a quiltwork of local mints (114 have been traced) spread across the land, making erratic coinages in silver, copper and tin, but rarely gold. Then, between 1158 and 1464, as silver and gold mining increased, minting became more centralised in major cities. The most famous mint, within the Tower of London, was in place by 1279, and remained central to the coinage for 700 years until the Mint moved to
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<td><strong>Nigel Desebrock</strong>, <em>The Industry Catalogue of Gold Bullion Coins</em>, Grendon International Research, East Fremantle, Western Australia, 1999. ISBN 0-9577495-0-3</td>
<td>Nigel Desebrock has been involved in bullion coin marketing since the 1980s, particularly South Africa’s Krugerrand. In this detailed volume, sponsored by The World Gold Council and various international bullion banks, he sets out full details of gold, and silver, bullion coins from 10 nations. The coins are designed for the investor and are mass produced to meet demand, at prices marginally over the gold price of the day. Some countries issue the gold coins at 99.99 fine, others at 91.67 fine. The annual coin sales of each country are listed for two decades, with the ‘best sellers’ each year indicated. South Africa’s Krugerrand led the field from 1970-1984, and since then the Canadian Maple Leaf, Gold American Eagle, Vienna Philharmoniker and Kangaroo Nugget have wrestled for first place. The best-selling silver bullion coin was usually from Mexico, followed by the US Mint and the Royal Canadian Mint. All round, a guide to the bullion coin phenomenon. (TG)</td>
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<td><strong>Eduard Kann</strong>, <em>The Currencies of China: An Investigation of Gold &amp; Silver Transactions Affecting China</em>, with a section on copper. Kelly &amp; Walsh Limited, 1926.</td>
<td>This book could only have been written by someone such as Eduard Kann, who spent his working life as a member of the Shanghai Exchange Brokers Association in the late 19th and early 20th centuries. Its 500 pages are packed with every detail on the gold and silver business in China a trader could need. This is the book to read if you want to know the early history of gold coins, the weight of Yunnan Gold Dollars, the movements of gold to and from China for 30 years, the shapes of gold bars, production province by province (not forgetting Chinese Turkistan), along with telegraphic transfer rates to London and New York and every aspect of the tael. Repeat that for silver, which Kahn points out, “is of paramount importance to the country’s foreign trade”. The Chinese loved silver and China was the single great nation not to go on the gold standard, always staying with silver. Kann reports, too, on the London, New York, Indian and Hamburg silver markets and their relationship to China, not forgetting world silver production and consumption, and the price back to the Middle Ages. You also get the regulations of the Shanghai Gold Stock Exchange and a glossary of banking terms. <em>Currencies of China</em> challenges Ernst Seyd’s <em>Bullion &amp; Foreign Exchanges</em> (qv) as one of the essential books on precious metals markets in the 19th and early 20th century. (TG)</td>
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### Review

**E. M. Kelly**, archivist at the Bank of England for many years, ostensibly covers less than two decades during the Napoleonic Wars when the Bank of England suspended payment in gold coin against its banknotes, but supplemented domestic coin circulation with Spanish silver dollars, which it overcountered with its own mark and by issuing its own silver ‘collars’ as tokens. Actually, it is an education in the history of silver coinage as he covers a broader canvas. He reminds us of the debasement of the coinage by Henry VIII in the 16th century, and leaps forward to the last great debasement in 1946 when, for Britain, the only means of repaying the United States’ 88 million ounces of silver advanced during World War II under the Lend-Lease Agreement was to remove it from the coins. Henceforward, Britain had no silver coinage. Kelly also gives us the progeny of the silver dollar. It owes its name to the famous coins, the *joachimsthaler*, made of silver from the Saxony mine of Joachimsthal, the most productive in Europe from 1516. The coin was copied as the *thaler* by German mints, which became the *daalder* in the Netherlands, dollaro in Spain and dollar in England. Essentially, the silver dollar was the euro of its day, accepted internationally. The education in silver continues with tables of silver production and prices through the centuries, notably that 60% of world output came from the Valencia mine in Mexico in the 18th century as the crisis at the Bank of England broke in 1797. A book that tells us much more than the title suggests. (TB)

Venice emerged as the centre of the bullion trade in medieval and Renaissance Europe, shaping the development of money, banking and trade throughout Europe and the Mediterranean. Professors Lane and Mueller spent a lifetime investigating how the famous golden ducat and silver groat were valued, private contracts, book-keeping and public decrees – a monumental contribution to economic history. They piece together the development of banking, foreign exchange and the bullion trade between 1250 and 1500. They set out the detailed workings of the Assay Office, which checked all incoming gold and silver, the daily gold and silver price fixings on the Rialto, and the exacting requirements of the Mint, whose gold ducat, launched in 1285, remained weight and fineness unchanged for 500 years. The Mint’s output and charges are recorded, and the shifting relationship between its gold and silver coins (especially in the silver ‘famine’ of the 14th century). This book stands out as one of the most important in the history of both metals. (See also Eliyahu Ashor, *Venetian Supremacy in the Levantine Trade.* ) (TG)

Dr Ming-Hsun Li was born in China, studied at the London School of Economics, then worked for the Bank of China for many years and was managing editor of *Economic Review*. He also researched this detailed study of the recoinage of English currency between 1696-9, when Sir Isaac Newton was Master of the Mint. “It was,” he argues, “an event of long-lasting importance in British economic history.” In short, almost by accident, it changed England from a largely silver-based coinage to gold. The gold standard, which would endure for 200 years, was born out of a slight rebalancing at the Mint of the prices offered for gold and silver in the recoinage process. This made gold more valued (and thus brought in for recoinage), while cheaper silver went abroad, mainly to India, where it was more highly priced. As Dr Li says: “By undervaluing silver, England became the first country in the world to adopt a gold standard,” His own commentary is backed up by contemporary essays.
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<th>Author, Book Details</th>
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<td>Clara Semple, <em>The Story of the Maria Theresa Thaler</em>, Barzani Publishing, Manchester, and Stacy International, London, 2005, ISBN 0-9549701-0-1</td>
<td>The silver ‘Empress’ Maria Theresa Thaler was first coined in Vienna in 1780. It weighed 28.0668 grams, at 883.3 fine. Although it has long since ceased to be an official coin in Austria, it remains widely known throughout North Africa and, in the broadest sense, Arabia. Indeed, the high silver price in 2011 has brought thousands back into circulation. The fact is that the Maria Theresa established itself by the early 19th century as the currency of business and trade in the Middle East. In 1837, the British tried to buy the port of Aden for “eight thousand thalers”, but were rebuffed. The Thaler became the “Silver Passport” of all great travellers in Arabia and Africa. Sir Samuel Baker found them welcome in exploring the upper reaches of the Nile in what is now Sudan; Bernard Thomas found them indispensable as he led his camel into the “Empty Quarter” of Arabia. And, as Clara Semple reports, “the thaler bought many travellers out of tricky situations”. An African explorer noted in 1883: “Along the Blue Nile there is but one coin current – the Maria Theresa Thaler.” This charming book is illustrated with contemporary watercolours of Arabian markets with the thalers worn as ornaments, and the end papers bear ancient maps of the regions in which they circulated. The Maria Theresa, it seems, is the silver coin for all seasons, even today. (TG)</td>
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<tr>
<td>Peter Spufford, <em>Money and Its Use in Medieval Europe</em>, Cambridge University Press, 1988, ISBN 0 521 30384 2</td>
<td>This is the work of a great academic detective, Professor Peter Spufford of Queen’s College, Cambridge, on the evolution of gold and silver mines, mints, coins, markets (and trade fairs), bullion flows and bullion famines, across Europe throughout the Middle Ages. Indeed, it stands as the pilot for any gold or silver survey today. He tracks the arrivals of African gold across the Sahara, the output of new gold mines in Hungary in the 1320s that led to a gold coin boom and new silver mines throughout central Europe. He investigates the fineness of coinage at new mints (listing more than 200 different coins) and the weight of silver bars they received. He charts gold-silver ratios from Venice to Egypt and laments the scourge of debasement. Thirty-five maps steer us along Viking silver trading routes, pinpoint the location of silver mines and mints striking coins across the Middle East from Constantinople to Aleppo, Basra, Baghdad, Samarkand and Tashkent. He rounds off with the flows of gold and silver around the Mediterranean from 1465-1500. Professor Spufford’s book is a complete picture of the worlds of silver and gold in the Middle Ages. (TG)</td>
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| Don Taxay, *The US Mint and Coinage: An Illustrated History from 1776 to the Present*. Arco Publishing Company Inc., New York, 1966. Library of Congress Catalog 66-18413 Reprinted in 1983 by Arco Publishing. ISBN 0915262681 | Don Taxay’s thorough history of the US Mint in Philadelphia begins with the first steps of the ‘continental’ paper currency after the Declaration of Independence. Then, in 1777, Congress declared that: “Any person who will bring gold and silver to the Mint may have it coined on their own account.” The true birth of a national precious metal currency came in 1792, when the Philadelphia Mint was authorised to issue the Gold Eagle of $10, Half Eagle of $5 and Quarter Eagle at $2.5, together with the Silver Dollar at $1, Half Dollar at 50¢, Quarter Dollar at 25¢ and Half Dismi at 5¢. Thereafter,
the new United States was firmly bimetallic, with a mainly silver currency until the California Gold Rush of 1848. As Taxay titled his chapter, ‘The Gold Interest Takes Charge’. The Double Eagle at $20 was introduced in 1849. Gold was now in the ascendant, until ‘The Silver Crusade’ to maintain bimetallism in the 1870s. That battle, the heart of the book, lasted until the Presidential Election of 1896, with the US finally adopting the single gold standard in 1900. It was a short episode, World War I and the Depression undermined it, and the US Mint minted its last gold legal tender coins in 1933, consigned to less glamorous coins thereafter. (TG)
Gold General

Author, Book Details

Book specially recommended by Frederic Panizzutti, Senior Vice President, Global Head of Sales & Marketing, MKS Finance SA, Geneva:

ISBN 10872803-377

Other recommendations by Timothy Green:


and
Walker & Co., New York
ISBN 0-8027-0692-4

ISBN 0-297-87575-3 (hardback)
ISBN 0-2977-85761 (paperback)

Review

Timothy Green is a well-respected and well-known author in the gold market, having written several books on the subject. *The Gold Companion* is the A-Z of mining, marketing and technology. This gold dictionary is meant to provide the answer to any question related to the gold market. If you don’t know what a Goldbeater is, open the Gold Companion at page 67. A must-have on any gold trader’s, investor’s or analyst’s desk. (FP)

Excellent introduction to gold written by Susan La Niece, a senior metallurgist in the British Museum’s Department of Conservation and Scientific Research. She explains its brilliance, colour and unique properties of resisting corrosion and reflecting light that have made it a symbol of status and power through the ages. Dedicated chapters on its role as money, the art of the goldsmith (ancient and modern), jewellery and adornment, brought vividly to life by 120 colour illustrations from the British Museum’s own collections, themselves a short walk through the history of gold. A practical guide to gold, supported by an excellent bibliography recommending more detailed appraisals of gold’s metallurgy, goldsmiths’ techniques and its role as adornment. (TG)

The inside story of who mines, who markets, who buys gold, based on extensive research, not just in the London market, but travels to Zurich, Paris, New York, Tokyo, Hong Kong/Macao, Bombay, Dubai, Beirut and South Africa. The first of Timothy Green’s reports on the gold business, to be updated over the next 40 years in successive editions. Translated into French, German, Italian, Spanish and Japanese. (LBMA)

This is a completely revised edition of the original 1968 book focusing on the gold events of the 1970s and early 1980s, as the market went global with round-the-clock trading and opening up of the American market, with Comex trading futures and options. The growth of the Hong Kong, Singapore and Tokyo markets is also reported, based on annual visits to all markets. (LBMA)
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<tr>
<td>Timothy Green, The Prospect for Gold: The View to the Year 2000, Rosendale Press Ltd, London, 1987. ISBN 0-950-9182-45 Also published: Lowry Publishers/ Media House Publications, Johannesburg, South Africa ISBN 0 9470 422 96</td>
<td>As the gold mines experienced their greatest revolution in 100 years, Timothy Green visited new mines on the Arctic Circle in Canada, Brazil, Nevada, Western Australia, China and Venezuela, and many markets and central banks to see how they were coping. He looked forward to the evolution of the price by the end of the century. (LBMA)</td>
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<tr>
<td>Richard Harrington, Chris Stanley and Robert Syman, Gold, The Natural History Museum, London, 1999. ISBN 0-565-09141-7.</td>
<td>This booklet by the staff of the Mineralogy Department of the Natural History Museum in London is a practical briefing for newcomers to gold. They outline the main aspects of the metal, from its physical properties, mineralogy, gold in ancient sediments, sedimentary rocks and volcanic environments. They also introduce exploration, exploitation, extraction, fabrication and technical uses. Good colour illustrations of gold deposits and ornamentation. Useful if preparing an essay or speech. (TG)</td>
</tr>
<tr>
<td>Brian Kettle, Gold, Graham &amp; Trotman, London, 1982. ISBN 0-86010-151-7</td>
<td>Comprehensive academic study on gold as money, and its role in the international monetary system and as investment. Also appendices on prices, gold bonds and list of gold coins through history. (TG)</td>
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# Gold Investment

## Author, Book Details

**Book specially recommended by Frederic Panizzutti, Senior Vice President, Global Head of Sales & Marketing, MKS Finance SA, Geneva**

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## Review

**Christopher Eibl**

In his book *The Money Making Power of Gold – Timeless Strategies for Profits*, Christoph Eibl, CEO of Tiberius Asset Management AG and stated expert in commodities, provides the reader with an easy entrance into the multifarious world of international gold trade. From the point of view of a professional gold trader, Eibl gives a thorough overview of the different gold products - from the bullion to the gold loan to the gold futures markets. It may be used as an excellent reference for all interested in the gold market, from beginners to experts alike. (FP)

**Shayne McGuire**

Shayne McGuire created the first gold fund within the US pension system. The global economy remains hesitant in its recovery and uncertain; challenges such as deep unemployment, depressed growth and volatile markets are some of the many other arguments enumerated by Shayne McGuire that should prompt any investor considering holding part of his wealth outside the financial system by allocating some of it into gold. *Hard Money* is a factual book with rational explanations; statistical data is amply provided, leaving no theory to the hazard and it is at the same time a pleasant read and an interesting source of information about gold’s role in the current market situation (2011). (FP)

**Pierre Lassonde**

Practical introduction explaining gold and the monetary system, whether gold is a prudent investment today, what you should buy, gold equities, the life cycle of a mining share, what’s hot, what’s not, the scams, and silver: the poor man’s gold. The book is dated now, but Pierre Lassonde took his own advice and ended by running the Newmont Gold mining empire and as chairman of The World Gold Council. (TG)

**Jeffery Nichols**

Jeff Nichols became one of the best known gold ‘gurus’ of the last 30 years and is still a champion of its prospects. He learned his trade at Goldman Sachs in the blossoming gold world of the 1980s. This hands-on guide explains technical analysis, bullion coins, gold bullion, gold-mining equities, futures and options to the new investor. Backed up by market statistics and a good list of other useful books. Although the market has since become more sophisticated, it remains a handy background introduction. (TG)

**Paul Sarnoff**

Veteran trader Paul Sarnoff, Director of the Metals Consultancy, offers a basic introduction to gold trading (including several caveats), setting out where gold comes from, where it goes before and what the prospects are. He explains trading physical versus paper gold, before tackling futures and options, the need for a trading plan and pricing models. He also focuses on the wider range of new gold mining shares in North America and Australia that became available in the 1980s. The book has now rather been overtaken by events. (TG)


This up-to-date book by Jonathan Spall, who has spent the last 25 years living all the changes in the gold market and is now director of commodities at Barclays Capital, offers the ideal window on today’s world of gold. He sets out the background of mining and refining before homing in on the key elements of gold mines and hedging, lenders and borrowers of gold, bullion banks, gold exchanges, exchange traded funds and physical gold. He advises on getting exposure to physical gold and rules for trading. He adds useful appendices with a Glossary of Terms, the properties of gold and bar weights. This is a pocket book for everyone in gold, trader or investor. (TG)

In a fast-moving market, Jonathan Spall, Product Manager for Precious Metals at Barclays Capital, has updated and expanded his earlier book *Investing in Gold* (see this bibliography) to add a major section on ‘Professional Tips and Strategies for Today’s Ultimate Safe Haven Investment’. He also advises on simple and complex gold trading processes, the pivotal role central banks play in the gold market and the boom in gold exchange traded funds (ETFs), and explains how spot gold is traded. He also sets out why gold mining companies have traditionally hedged and why they no longer do so. He adds useful appendices on ‘Rules’ for Trading Gold, Frequently Asked Questions and a Glossary of Terms. Drawing on his 25 years’ experience in the precious metal market, Jonathan Spall has provided a practical handbook for the world of gold today. (TG)
Gold Metallurgy

Author, book details


Review

Thomas Rose wrote the first edition of this classic book in 1894, which had been updated in seven editions by 1937, when it was revised by W. A. C. Newman. Both men worked at the Royal Mint. Although the book is entitled *The Metallurgy of Gold* and there are three introductory chapters on the physical and chemical properties of gold, gold alloys and the chemistry of gold compounds, the bulk of the book is concerned in great detail with the occurrence and distribution of gold ores, mining operations, extraction and refining processes. The book is completed by chapters on the testing and assaying of gold ores and gold bullion. There have been many developments in this field since 1937 and some of the processes described are now obsolete. Nevertheless, this book remains a valuable source of information on mining, extraction and refining of gold throughout the 19th and 20th centuries. (MG)
Gold & Silver Jewellery/Art & Design

Author, book details


Review

J. F. Hayward spent many years at the Department of Metalwork of the Victoria and Albert Museum in London before undertaking this monumental study of goldsmiths across Europe from 1540-1620 (for Sotheby Parke Burnet). His book has 748 pages, with 24 in colour and 740 monochrome photographs of goldsmiths’ and silversmiths’ designs and actual works. He sees the 16th century as a period of dramatic shifts in design and metalwork techniques, first in Italy, then moving north of the Alps to France, Flanders and, above all, to Germany. His goldsmiths were inspired by the ideas of masters of painting, sculpture and engraving in the flood tide of the Renaissance. He gives short profiles of nearly 250 leading craftsmen, discussing their source material, patrons (mostly at great courts), the accumulation of treasure by these Princes, Guild regulations and the methods of production, with illustrations of their workshops from Florence to Augsburg. The result is a unique panorama of an exciting century in precious metals helped, not least, by significant new sources of both metals in Europe and the Americas. A word of warning: this is a heavy book – it weighs 3.5 kilos – and best read at a lectern. (TG)

Graham Hughes, Art Director of the Worshipful Company of Goldsmiths in London, traces the evolution of jewellery design civilisation by civilisation. From the beginnings in Mesopotamia (Iraq), Egypt, Troy, Minoan Crete, Mycenae, Greece, Rome, India, Africa, the Americas (think Incas), to Ireland, the Vikings, and on to modern Art Nouveau. He is equally at home describing goldsmiths’ growing techniques and the contributions of Schliemann at Troy, Sir Arthur Evans at Knossos in Crete, and Howard Carter in the tomb of Tutankhamun in Egypt unveiling the splendours of ancient craftsmen. This is a comprehensive review of 5,000 years in gold jewellery, brought to life with scores of colour and monochrome illustrations. (TG)

When Rachel Maxwell-Hyslop died in 2011, aged 97, she was remembered as one of the foremost scholars of western Asiatic art and archaeology of her time. Western Asiatic Jewellery c.3000-612 BC was her best-known work. In The Guardian obituary, antiquities expert Richard Falkiner called it, “a bold, erudite attempt to get together in a single volume everything important that was known on the subject. Still the standard reference work, it establishes what is characteristic about the jewellery of the near Middle East … and relates it to the jewellery of neighbouring Egypt and Greece”. And this reporter found Western Asiatic Jewellery invaluable in researching his book *The Ages of Gold*, especially on the earliest sources of gold used by goldsmiths. (TG)

Clare Phillips, a curator in the Metalwork, Silver and Jewellery Collection at the Victoria and Albert Museum, London, has assembled an admirable introduction to the evolution of jewellery from the simple shell beads worn 30,000 years ago to the magnificent gold ornaments of Sumer, Egypt and Troy by 2,500 BC through to modern jewellery. She analyses jewellery’s changing fashions, explores its social context and how it has been worn by men and women as goldsmiths and silversmiths improved their craft. The 174 illustrations (54 in colour) come from museums, galleries and private collections around the


**Review**

world. An extensive bibliography points to further reading on gold and silver craftsmanship, changing fashions from the ancient world to the Renaissance, the Baroque era and jewellery of the 20th century. (TG)

“To call Fabergé the last of the great goldsmiths,” Kenneth Snowman observes, “is possibly to strike too pessimistic a note, but … the advent of a rival to that proud title … does not appear to be imminent. He was entirely at home with his materials – gold, silver, precious stones.” Fabergé is remembered particularly for his exotic Easter Eggs for Russia’s Tsars, but his great workshops in St Petersburg turned out everything from silver table bells, gold and royal blue enamelled picture frames, rose enamelled bell pushes in engraved silver, gold enamelled scent bottles, replicas in gold of Scythian bangles, a red gold hatpin set with a large Mecca stone, along with a silver replica of the Tsar’s paddie steamer and a miniature grand piano in enamelled silver. Many of these items are shown among the 27 colour and 380 black and white photographs. Carl Fabergé was both a craftsman and a showman. (TG)

The aim of Hugh Tait, a Deputy Keeper at the British Museum, is to “bring together jewellery from all the major phases in man’s history”. This lavish volume reproduces more than 600 jewellery items (all in the British Museum) from civilisations ancient and modern. Illustrations from Mesopotamia and Egypt to Greece and the Etruscans, Rome, Byzantium and China to Mayan and Inca treasures and Renaissance creations track the growth of the goldsmiths’ art. The main theme is jewellery for personal adornment, described in 19 essays by British Museum Curators on topics from amulets and beading to cameos, finger rings and lockets. A helpful glossary explains everything from bezel, chasing and enamelling to filigree and torches, while the extensive bibliography paves the way for further reading. (TG)

The Finnish-American goldsmith and writer Oppi Untracht (who died in 2008) first travelled in India on a Fulbright scholarship to study Indian arts and crafts from 1957-59. Thereafter, he spent much time on the subcontinent focusing on jewellery and its makers in the villages and towns. He admired what he called ‘Regal and rural jewellery’, and this book is his tribute to those craftsmen. He noted: “Gold and silver – the first according to Hindu belief, a sacred metal symbolic of the warm sun, the other suggesting the cool moon – are the quintessential metals of Indian jewellery … pure gold does not oxidise or corrode with time .. perhaps this is why Hindu tradition associates gold with immortality.” In one section, he goes through the distinctive goldsmiths’ techniques, in another he ponders the perennial problem of marriage and jewellery. He even has time for traditional Indian jewelers’ tools, materials and vernacular terms. Anyone who has travelled in India will recognise this loving appreciation of Indian craftsmen. (TG)
# Gold & Silver Jewellery/Technology

## Author, Book Details

Books specially recommended by Mark Grimwade, Metallurgical Consultant to Worshipful Company of Goldsmiths and Professional Member of the Institute of Materials, Minerals and Mining, UK:


The book is based on the handbooks of George E. Gee. It is a guide to traditional craftsmanship and modern developments (up to 1968) in alloys, process and materials. (MG)


The book, first published in 1961 is intended for jewellers and metalsmiths in studio workshops. The author is clearly very knowledgeable as demonstrated in the early chapters on the physical, chemical and metallurgical background, and then in the later chapters on handworking skills and small-scale processing that are described in great detail with many illustrations. Throughout the book are worked examples of the types of calculations that goldsmiths may have to undertake during the course of their work. Professor Brepohl is to be commended on this successful balance between theory and practice. (MG)


This book, written by an Italian metallurgical consultant and teacher of jewellery technology, is intended for students and manufacturers and provides useful theoretical and practical knowledge. It is wide-ranging in that it considers all aspects of manufacture such as equipment, methods of processing, the metallurgical and chemical background, effects on the environment, occupational health and safety, and business management. There are a number of theoretical statements that are either wrong or at least debatable, but these are relatively few and some may have been due to mistranslation. It is clear, however, that the author does have a wide knowledge of the industry and of the metallurgical and chemical background. (MG)


This was one of the first books aimed at relating basic metallurgical knowledge to the practices employed by jewellers and silversmiths. There is valuable information on the compositions and physical and mechanical properties of carat gold alloys. In addition, there is helpful detail on casting, working, annealing, soldering, enamelling and finishing processes. (MG)

### Other recommendations by Timothy Green:


The Finnish-American Oppi Untracht (1922-2008) was a polymath on jewellery. This is his magnum opus, weighing in at almost three kilos (it needs to be read on a lectern) and contains 900 colour and black and white photographs and as many drawings and diagrams. “It is hard to see how any single writer could have done better,” wrote one reviewer. “It will become a standard work.” The book explains in detail every technique that jewellery craftsmen the world over use now and have used in the past. Their techniques are explored in depth. He opens with the message of jewellery and why we wear ornaments, then looks at metal as the jeweller’s raw material, the basic techniques, sheet metal, wire, tubing, surface techniques, casting and metal finishing. This is a tour de force, a life’s education in the craft of jewellery. (TG)
Gold Standard and Monetary Gold

### Author, Book Details


### Review

A collection of essays concerned with the role of the gold standard in the Great Depression of the 1930s. The essays in question contributed importantly to the post-1980 literature that advanced the ‘international interpretation’ of the Depression, according to which the fixed exchange rates of the gold standard were a transmission belt for financial crisis and prevented central banks and governments from responding in stabilising fashion. Also important for shining light on what our most important contemporary central banker sees as the lessons of gold standard experience. (BE)

Dedicated students of the actual existing gold standard, as opposed to the mythical gold standard of the textbooks, start here. Bloomfield details how the pre-1913 gold standard worked: how the gold standard statutes of central banks operated; the gold ‘import and export points’ that constrained policy; the role of international capital flows; and the instruments used to manage gold and capital flows and to maintain the convertibility of currencies into gold. His account is grounded in the reports and accounts of contemporary central banks. It was very influential for its demonstration that central banks did not always play according to the so-called gold standard ‘rules of the game’. (BE)

This brilliant if not always accessible monograph makes three oft-neglected points about the operation of the pre-1914 gold standard. First, the gold standard was a political as well as an economic system; it worked as smoothly as it did only because of the existence of a distinctive set of political and economic conditions. Second, the international gold standard was a set of interlocking parts; in particular, Britain’s maintenance of gold convertibility depended critically on the monetary support it received from its Indian colony. Third, the system was increasingly fragile in the final years leading up to World War I, rendering how much longer it would have lasted an open question. (BE)

An economist’s (as opposed to an economic historian’s) ‘take’ on the operation of the gold standard. Rather than taking a global view, Dick and Floyd provide a close study of a small open economy, Canada’s, in the gold standard years. Canadian experience suggests very fast adjustment to balance-of-payments disturbances under the gold standard regime. The book makes vigorous use of economic theory and takes seriously the task of testing that theory against the best historical statistics on offer. (BE)


Gold, Dollars and Power provides a window into the monetary economics of the last decades leading to the closing of the gold window at the Federal Reserve in 1971. Concerns about the dollar, as Gavin makes clear, have been present for many decades and the search for a strong monetary foundation for the global economy is a recurring theme. (SM)

Palyi defends the gold standard at a critical time in US and world financial history – Nixon’s closing of the gold window at the Federal Reserve in 1971. In *The Twilight of Gold*, the author questions the key arguments of those claiming that adherence to the gold standard contributed to the severity of the Great Depression and defends gold as a monetary foundation. (SM)

Other recommendations by Timothy Green:


A highly professional technical study by 21 leading international economists, edited by Tamin Bayoumi, senior economist at the IMF, Professor Barry Eichengreen of the University of California, and Mark Taylor, Professor of Economics at the University of Liverpool. The underlying theme is that the pre-1914 gold standard is an obvious challenge to the notion that capital markets are sources of instability because, between 1879 and 1914, the major currencies were stably linked at fixed rates of exchange.

Four key sections discuss:
- The operation of the gold standard
- The stability of the gold standard and the evolution of the international monetary system
- Money demand and supply under the gold standard in the United Kingdom from 1870-1914
- Lessons from the gold standard for European monetary unification. (TG)


This collection of essays by Professor Michael D. Bordo, Professor of Economics and Director of the Center for Monetary and Financial History at Rutgers University, New Jersey, and his associates, covers a wide spectrum of the classical gold standard and related regimes based directly or indirectly on gold convertibility.
- The gold standard theory
- Effects of the Australian gold discoveries from 1851-73
- The classical gold standard as a commodity standard
- The gold standard as a ‘Good Housekeeping Seal of Approval’
- Historical case studies: British and French finances during the Napoleonic Wars
- The Bretton Woods International Monetary System – an historical overview. A major section of the book discusses whether there is a good case for a new Bretton Woods International System. (TG)


Papers by 22 international economists reflecting a wide range of views on the merits and weaknesses of the gold standard and whether restoring it could help cure inflation, high interest rates and low productivity. Includes a review of the literature since the 18th century on the gold standard and studies of the experience with gold in England, Germany, Italy, Sweden and Canada. An exhaustive and highly technical professional study. (TG)


Dr William Busschau, economist and chairman of Gold Fields of South Africa, was the champion of gold’s role in the international monetary system from the 1930s to the 1960s, when South Africa produced 70% of the world’s gold. “The gold standard may not be perfect,” he once said, “but it is the best system humanity has devised.” The book is a collection of five lectures in Europe in 1960 on ‘The Flow of Credit in Relation to Gold in the International Monetary System’, delivered
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Library of Congress 72-85830

**Review**

when the crunch point on holding the gold price at $35 per ounce was about to arrive. His arguments are backed up by appendices on world production, non-monetary and monetary absorption, central bank stocks and prices. A valuable record of the ‘pro-gold’ arguments for monetary gold, from the standpoint of the major producer. (TG)

Excellent introduction and guide to the international monetary system from 1850 to the present day. Professor Eichengreen of the University of California, Berkeley, has aimed his book “at students in economics, students in history, and general readers interested in monetary reform”. He looks first at the gold standard in the mid-19th century after the gold rushes, the dilemmas of bimetallism, how the system worked and its stability. Then he explains the instability of the system from 1914 to 1931 and its ultimate disintegration, followed by the Bretton Woods Agreement of 1944, the gold exchange standard, floating exchange rates and Special Drawing Rights, leading to the European Monetary System. Finally, a ‘Brave New World’ with the advent of the euro. A practical glossary of terms in the monetary and gold world provides a useful introduction to lay readers. (TG)

“The gold standard is the key to understanding the Depression,” argues Professor Barry Eichengreen of Berkeley University. “The gold standard of the 1920s set the stage for the Depression of the 1930s by heightening the fragility of the international financial system.” He suggests that, while the standard worked in the late 19th century, World War I led to the disintegration of the political and economic foundations of the pre-war system, yet kept in place binding constraints that prevented policy-makers from averting the future of banks and containing the spread of financial panic – hence his title, *Golden Fetters*. Initially, he sets the pre-World War I classical gold standard in context, then assesses the destabilising effects of war, and the aftermath of hyperinflation. Attempts to resurrect the gold standard foundered as the façade was already deeply cracked. The inter-nation and inter-central bank co-operation that previously stabilised the gold standard had gone. It descended into confusion in the early 1930s, as nations, and nation gave it up, and American citizens were even forbidden to hold gold (the essence of the standard). Finally, Eichengreen looks to the Bretton Woods meeting of 1944 that sought to bring new structures in a neutered gold exchange standard. (TG)

These two books by Dr Paul Einzig, economist and financial commentator, were written 43 years apart. They provide a bridge between the world of gold under the uneasy gold standard of the late 1920s and the emerging round-the-world, round-the-clock market of the early 1970s, no longer strapped into a fixed price. In both books, Einzig’s faith in gold is clear. The first in 1929 is a guide to the motives for and practicalities of large-scale gold movements between nations and central banks, and the subtleties of ‘gold points’ based on freight rates that determined whether a movement was profitable. His appendices give detailed examples of air versus sea transport and the international imports and exports of many nations. Thus it is a useful market guide to the late 1920s. *The Destiny of Gold* laments the end of gold’s domestic monetary role, is sceptical of the gold exchange standard, the Bretton Woods System and the London Gold Pool’s efforts to hold down an artificially low price in the 1960s. Einzig was always for a substantial rise in the price (which was between $60-$70 when the book was written, but $850 eight years later). Together, these books give one commentator’s thoughts over almost half a century. (TG)
Author, Book Details


Review

“There is nothing about money that cannot be understood by the person of average curiosity, diligence and intelligence,” says Professor Galbraith in this easily readable, accessible book. He focuses, in particular, on the blossoming of the Bank of England in the 18th century as a unique issuer of bank notes fully backed by gold, and calls the debate provoked by the 1810 Bullion Committee’s report on the High Price of Gold “the most famous … in all history on money and its management”. (TG)

Professor Gregory of the London School of Economics had difficulty keeping up with the rapid changes in gold in the early 1930s. The first edition of this book came out just after the gold standard collapsed in 1931, the second six months later, “bringing the subject matter up to date”, while this third edition has a fresh second half with new chapters on “the march of events” in Great Britain and the USA. Thus it is dispatched from the monetary front line – and is valuable for that very reason. This is the inside thinking of the mid-1930s. To begin, however, Professor Gregory sets out the workings of the gold standard in its heyday before 1914, the disruption to it by World War I and the difficulties trying to resurrect it afterwards, which led to the 1931 breakdown. He then analyses the state of play in Great Britain and the USA thereafter and the prospects. He argues: “One of the great justifications of the international gold standard was precisely that it was an international standard.” And that is hard to resurrect. He concedes, too, that it has become “a less useful instrument of economic progress”. In particular, he writes: “There is a very strong case against the independent return to the gold standard by Great Britain alone.” Appendices contain useful tables of government and central bank gold stocks worldwide. (TG)

Ralph Hawtrey was an ‘in-house’ economist at the British Treasury from 1905 to 1945. He was an ardent supporter of the gold standard throughout and protagonist of John Maynard Keynes. He was at the heart of the fast-changing gold standard fortunes and his book kept being overtaken by events. The four editions were published between 1927 and 1939, each successively longer. He did regular battle with Keynes. He admitted in his first edition: “Mr Keynes’ arguments constitute a formidable frontal attack upon the gold standard, and no supporter of the gold standard can afford to leave them unanswered.” He pitched in, first, on behalf of gold miners. “The loss to communities depending on gold mining for their existence would be overwhelming,” he argued (not surprising since South Africa was part of the British Empire, and its gold was marketed in London under the watchful eye of the Bank of England and the Treasury). He added: “The preference of most countries for gold is … an indisputable fact, and stability of rates of exchange on gold standard countries necessitates a gold standard. The logic of facts has disposed of Mr Keynes’ proposals. Gold is de facto the international currency and this country must do as others do and adhere to it.” The collapse of the standard in the 1930s did not change his views in his 1939 edition (which gives a thorough account of events.) “Gold,” he said, “had retained its function as the medium of settlement for international balances … there is a very real convenience in … metallic reserves … Gold is an anonymous asset.” Hawtrey was a true gold bug. (TG)

This revised edition of the original book by the late Professor Jastram of the University of California has a commentary by Jill Leyland on the evolution of prices in recent decades. Essentially, Professor Jastram reviewed the relationship of gold to commodity prices over 400 years. He focused on seven price inflations in England and six inflations and
Gold Standard and Monetary Gold

**Author, Book Details**

Update of the first edition of 1977, with additional material by Jill Leyland and actual gold prices 1344-2007 by Timothy Green.

**John Maynard Keynes, A Tract on Monetary Reform, Macmillan, London, 1923.**

**Review**

In the thick of debates about reviving the gold standard in the early 1920s, John Maynard Keynes clearly set out his stall in this famous tract. A return to the World War I gold standard was a non-starter. “The restoration of the gold standard (whether at the pre-war parity or some other rate) certainly will not give us complete stability of international prices and can only give us complete stability of external prices if all other countries restore the gold standard,” he wrote. He chided the advocates of gold who contended that a currency not grounded in gold would come to grief, denying any magic in the metal that enjoyed “too much prestige for its smell and colour”. While he admits that its stability of value in the 19th century was remarkable, that was down to a flush of new mines, but they could not go on forever. And you could not have a reliable monetary system based on the premise that new gold mines or better technology would turn up. “It is too much to expect that a succession of accidents will keep the metal steady,” he warned. He chastised Asian hoarders and central banks which were storing up gold, arguing: “The costly policy of burying in the vaults of Washington what the miners of the Rand have laboriously brought to the surface, so gold now has an artificial value. The actual value of gold will depend on the policy of three or four of the most powerful central banks, whether they act independently or in unison.” Fundamentally, the withdrawal of gold from actual circulation in World War I destroyed one of the elements of reality. “In truth,” declared Keynes, “the gold standard is now a barbarous relic.” (TG)


“An authoritative history of money over four millennia and across different cultures ... maps and illustrations of coins and notes ... bring the history of money alive.” (History Today review). Excellent overview that sets gold’s monetary role in perspective. Published to mark the opening of the HSBC Money Gallery at the British Museum, which itself displays a unique collection of gold bars and coin, ancient and modern. (TG)


Rankers, economists and gold miners from North America, Europe and South Africa (then by far the largest producer) debate the establishment of adequate international reserves and balance-of-payments adjustments. The conference, coming just three years before the breakdown of the fixed $35 price, shadowed the changes to come. As one participant put it: “The present price of gold is kept arbitrarily by the US government at 35 dollars an ounce, thus maintaining an unstable international monetary situation in danger of collapse.” Essentially, the last great debate before the gold price was freed to float in the market in 1968, though central banks swapped with each other at $35 until 1971. (TG)


Keynes was at the heart of the debate on the pros and cons of returning to the gold standard in the 1920s, with his crucial Tract on Monetary Reform in 1923, which was against return. But, as his biographer, Skidelsky, shows, he tried without success to get Chancellor of the Exchequer Winston Churchill not to go back. The battle is excellently set out in the Gold & Marriage section of this important book. And

Library of Congress Catalog 61-11398

**Review**

when the gold standard did collapse in 1931, Keynes felt vindicated, “chuckling like a boy who has just exploded a firework under someone he doesn’t like”. (TG)

Professor Robert Triffin of Yale University was in the vanguard of the anti-gold school of economists in the 1960s, who argued for drastic reform of what he called “the world money maze” in which gold would play a lesser role. Indeed, he saw our continuing addiction to the metal as a major part of the problem (just as Keynes called it “a barbarous relic”). “Nobody could ever have conceived a more absurd waste of human resources,” he wrote, “than to dig gold in distant corners of the earth for the sole purpose of transporting it and reburying immediately afterwards in other deep holes especially excavated to receive it and heavily guarded to protect it.” He argued, too, that an upward revaluation of the price would bring haphazard benefits. Countries with high reserves would benefit most, while the two major producers, South Africa and the Soviet Union (a political pariah) would be major beneficiaries. His solution was “to give all countries the choice of keeping in the form of international, gold convertible, deposits at the IMF, any portion of their reserves which they do not wish to hold in the form of gold …. The deposits would have exchange rate guarantee … and would earn interest.” Furthermore, the deposits would be liquid as gold and usable in all international payments. (In fact, they were a forerunner of Special Drawing Rights (SDRs) first issued a decade later.) (TG)
Gold & Silver Watches

Author, book details

ISBN 978-0-7141-5055-0

Review

David Thompson, Curator of Horological Collections at the British Museum, charts the evolution of watches from gilt-brass cases in the 16th century to radio-controlled quartz gold-cased timekeepers today. The 77 colour illustrations are mostly of gold and silver watches. The early homes of watchmakers were in Germany, France and England, where Robert Grinkin in London was perfecting a simple gold verge watch by the 1630s. Gold and delicate enamelled cases were soon developed. In Geneva, the vogue was silver watches of exquisite design by the 1650s. The twin skills of watchmaker and goldsmith advanced the trade in the 18th century with finely chased designs, in a period when hallmarking in London accounted for more gold use than in jewellery. The gold watch was the status symbol of the era. Taste has not changed; a gold Omega or Rolex is just as in vogue today. This book is an articulate walk through the history of the watch. (TG)
Translation and update of his L’Or du Monde, 1995, translated by Owen Leeming.

Marc Flandreau specialises in the history of the international monetary system. He is now Professor of International Economics and International History at the Graduate Institute of International & Development Studies, Geneva, and President of the European Historical Economics Society. Here, he concentrates on a crucial period as France sought to move from a bimetallic currency system to the new gold standard. In the immediate aftermath of the California and Australia gold rushes, the French Mint coined much more gold than either the United States or Britain. And the Bank of England and the Banque de France fought a subtle arbitrage war, with Paris and London gold traders in the middle. Flandreau notes how arbitrageurs were able to play off France’s bimetallic system, swapping gold for silver and vice versa. This is a unique inside view of international arbitrage as gold replaced silver as the prime coinage. Barry Eichengreen labelled it “A revolutionary book”. And the late Charles Kindleberger (long Professor of Economics at MIT) noted: “France’s crucial role in the world’s conversion from bimetallism to the gold standard … is brilliantly set forth.” (TG)

The rising silver price in recent years has prompted on-demand reprints (the original being out of copyright) of this classic defence of silver in the midst of the US Silver Lobby campaigns of the 1880s for the bimetallic gold and silver system to be retained. Dana Horton was reporting from the front line, having been a delegate of the United States to the International Monetary Conferences of 1878 and 1881, which looked at the plight of silver, then being brushed aside by gold coinage after the gold rushes, and whose price was tumbling. He saw the survival of silver coinage as ‘on trial’, with its descent beginning with the Restoration of Charles II in England in 1660 and the introduction of the gold guinea, which rapidly took over as the main currency. He lamented “the Abandonment of the Silver Pound” at the hands of Sir Isaac Newton and sundry politicians. He backed this up with Treasury Papers, letters from John Locke, Mint Reports, remarks by Adam Smith, comments from Alexander Baring (the banker) and Sir Robert Peel. Silver lost out, of course, but this is a fine polemic to see it retained. (TG)

Excellent history of bimetallism in the United States from 1792-1895 explaining the endless arguments between bimetallists and monometallists as the California gold rush changed the balance of coinage in the United States from being largely in silver to largely in gold. The rearguard action by silver-producing states to maintain the dual currency finally ended in 1896. The special merit of this book is its worldwide sweep taking in the demand for silver in India, Germany’s replacement of silver with gold in the 1870s, France and the Latin Union with its own tentative single currency, and the ultimate collapse of the silver price in the 1890s. The special merit of the book is the appendices giving the production of gold and silver from 1493-1895, gold-silver ratios over centuries, monetary regulations in the United States and Europe, the coinage of gold and silver in the United States, France, Belgium, Italy, the United Kingdom, Germany and Russia, plus statistics on silver flows to the East and the consumption of gold and silver in the arts. (TG)
**Author, Book Details**

ISBN 0521 57091 3

**Review**

This history of bimetallic monetary systems by Angela Redish, Professor of Economics at the University of British Columbia, Vancouver, tracks the evolution of joint gold and silver coinages since the days of Charlemagne in the 8th century. She describes how the physical technologies for producing coins interacted with the operating rules imposed by Charlemagne and later rulers on their mints throughout the later Middle Ages. Charlemagne set his silver denarius at 1.9 grams of pure silver, but achieving that fineness and avoiding counterfeiting was the challenge. The common method of assaying was with touchneedles and touchstones (the book has fascinating early illustrations of them). The hurdles by the 14th century were larger coins in silver and gold from new mining operations, then the changing gold-silver ratios brought on by the gold and silver discoveries in Germany and the New World, and new presses for coinage and the introduction of milling round the rim to thwart counterfeiters. Ultimately, the gold rush in Brazil from 1700 and the rushes of the 19th century transformed the scene as gold coinages took over from silver. The accounts of transitions in France and the United Kingdom to the gold standard are accompanied by tables of changing fineness and prices. A practical book.

(TG)
History/Gold Rushes

**Author, book details**


**Review**

Pierre Berton, the great Canadian writer and historian, was born in Whitehouse, Yukon. His father had joined the gold rush to the Klondike in 1898 (and his mother went to Dawson City in 1907 as a school teacher), and no one, therefore, was better qualified to look back, half a century later, on that last great gold rush of the 19th century. It is a real adventure story of prospectors making the long haul up from the port of Skagway over the Chilkoot and White Horse passes and down the Yukon River to Dawson. A harsh journey, Berton wrote. He reckoned that, of the 100,000 who set out for Dawson, 30,000 to 40,000 actually arrived. Of these, perhaps 5,000 searched for gold; a few hundred got rich. He quotes a North West Mounted Police Officer saying, "such a scene of havoc and destruction can scarcely be imagined. Thousands of pack horses dead along the way. Up in Dawson, there was little law. The police did not even arrest a man unless he had his own provisions." The gold rush was short – three brisk years, during which perhaps 2.5 million t.oz. of gold was recovered, but one of the most spirited in gold’s history. (TG)

This classic book by Professor Boxer of King’s College London analyses the gold rush in Brazil in the first half of the 18th century, which doubled world output, providing the gold on which the UK gold standard was underpinned as Britain went over from a silver to a gold coinage and the young Bank of England built its reserves. He tracks the mining booms of Minas Gerais and Matto Grosso, which drew an army of prospectors and thousands of slaves to the open-pit diggings. Output reached over 500,000 t.oz. annually by 1750, two-thirds of world output. Appendices on production, mining of coin and tax revenues are particularly useful. (TG)

A deeply moving account of the rush to California in 1849 built around the diary of William Swain, who left Buffalo, New York in April to trek across the plains and over mountains with 30,000 other prospectors to reach the ‘diggings’ in late November. There Swain tells of the monumental efforts of miners to extract gold from the rocks and gravels of Sierra streams. Unequalled as a daily diary of the greatest gold rush in history. A few got rich, most succumbed to the hard life and temptations of San Francisco, which blossomed from a tiny harbour to a major port opening up the American West. (TG)

The definitive book bringing together the major gold rushes of the 18th and 19th centuries, which transformed the world of gold and underpinned the heyday of the gold standard. Professor Morrell’s comprehensive study tracks all the major discoveries from Brazil in 1700 to Alaska and the Klondike in the 1890s, by way of Siberia, California, Australia, New Zealand and Western Australia. He discusses, too, the significance of the gold rushes in American history in opening up the West. In all, a unique briefing on a major era in gold’s history. (TG)
Author, Book Details


Library of Congress 70-77972

Review

This charming, illustrated, 200-page guide from the front line of the gold rush in Alaska and the Yukon is a gem. It is crammed with maps, cross-section drawings of miners’ cradles, sluice boxes and Tom and Riffle Boxes, along with profiles of prospectors such as Clarence J. Berry who, with his partner, scoured out $130,000 of gold in his first season. Anyone who picked up a copy of this paperback en route to the goldfields might feel well equipped. It even has a chapter on ‘The Law & The Miner’, illustrated with drawings of the Canadian Mounted Police on the job. The registering of claims and the marking of locations is explained. Try to find a copy on Abebooks.com. (TG)

Popular account of the California gold rush from ‘The Gathering of People’ as the world made its way to California overland and by sea in 1848–9, drawn from the diaries and memoirs of those who made the journey (but not necessarily their fortune). Daily life on the goldfields is portrayed in their words, as is the mushrooming of San Francisco as a great seaport on the Pacific by those who arrived by sea or came down from the ‘diggings’ to squander their gold in its bars and gambling joints and on its women. Meanwhile, back in Washington, politicians were forced to take serious notice of their western territories and ultimately open them up by railway. This is very much a people’s story. It does not consider the impact of a new dimension of gold production on world markets or coinage with the ushering in of the gold standard. However, an extensive bibliography points the way to further reading. (TG)

South African writer and historian Eric Rosenthal looked back in 1970 (the year South African gold production peaked) to tell how it all began. Expectations of gold discoveries were rife in Southern Africa after Pieter Mareis, just back from three years at the California gold rush, found gold in the Dwars River on the Rand in 1854. But little turned up; no one realised the gold was not in streams, as in California or Australia, but in deep reefs plunging down into the Witwatersrand. It was the discovery of diamonds on the banks of the Vaal River in 1870 that opened a new era, bringing not just prospectors, but financiers on the scene, who would ultimately be the makers of the gold rush. Even then, it was 16 years before the first gold claims were pegged at Langlaagte Farm near today’s Johannesburg that gold fever took off. “Johannesburg went from camp to city,” says Rosenthal. But it was not the traditional ‘diggers’ who made it, but the diamond merchants and financiers who realised the potential and were able to drum up the finance – and start the great mining finance houses. The story is told from diaries, newspaper articles and many contemporary accounts through the first mines, the hiatus of the Boer War and the emergence of the world’s largest mining nation by 1914. Not the gold rush of California or Australia, but of an entirely different nature – a gold rush none the less. The excitement is in the financing and technology quite new to mining. (TG)
History/Mining/Gold & Silver

Author, book details

Library of Congress 78-158553 (hardback).


Review

This is a scholarly investigation into the evolution of silver mining in the districts of Zacatecas and Sombreroete 350 miles north-east of Mexico City after a small band of Spanish soldiers, camping for the night in 1546, were shown rocks rich in silver veins by local Indians. Bakewell unveils the gradual growth of mining in the community over the next decades, which made Zacatecas one of the richest sources in Mexico and transformed its people’s lives. He focuses on three themes: the impact on locals and the lot of miners, the absolute need for quicksilver (mercury) to separate out the silver and production from the mines themselves. Mining was totally dependent on the arrival of quicksilver, which the Spanish government had to round up and ship to the Americas (although it was helped out by mercury from Huancavelica in central Peru from 1564). Indeed, the politics of mercury supplies became a major headache; no mercury, no silver. The arguments over what got shipped where were intense. Bakewell lists not just the output of silver, which had to be (or should be) presented for taxation, but the allocations of mercury to New Spain and, of that, what went to Zacatecas. This is an important record of the birth of Mexico’s silver-mining industry, which has become the standard reference for later researchers, notably in Jaime J. Lacueva Muñoz’s *La Plata Del Rey Y Sus Vasallos*, which is listed in the Spanish language sector of this bibliography. (TG)

After his first acclaimed book on silver mining at Zacatecas in colonial Mexico (see separate review), Professor Bakewell turned his attention to the silver mines of Bolivia in *Miners of the Red Mountain*, on the first hundred years of the great Potosí deposit. He spent two years in Bolivian archives investigating the evolution of the mine, the local labour systems, the rising production and the silver prices. All this is supported by maps and contemporary drawings of the great mine site. A decade later, he followed this up with *Silver and Entrepreneurship in Seventeenth-century Potosí*, in which he set out how this remote region came to yield almost half of the vast amount of silver flowing out across the world from the Spanish American colonies between 1550 and 1650. All told, Professor Bakewell’s three books present a unique review of the mines that transformed the world of silver in the 16th century. (TG)

The definitive book on gold and silver mining and metallurgy around the Mediterranean from c. 500 BC to the fall of the Roman Empire. Beginning with early placer and open-cast mining, it moves from underground with the great Laurion silver mines just outside Athens, on which the city’s early prosperity was founded, to the gold mines of Philip II of Macedon, which gave Greece a gold coinage and financed the initial expedition of Alexander the Great. Later the Romans took up the challenge of mining both metals in Spain and gold in France (Gaul), Britain and Dacia, north of the Danube. Mining and refining techniques are amplified by illustrations, plans of mines, and illustrations of ancient equipment and underground galleries. Maps pinpoint the mine sites of the two great empires. Assaying technology and the manufacture of alloys are also covered. This is a highly professional record of the early world of gold and silver output. (TG)
Modern visitors to Las Medulas in north-west Spain, where up to 300,000 t.oz. of gold was mined for almost 200 years, are still overawed by the grand scale of open-cast mining gold mining operations. As Alfred Hirt writes, “the massive impact of Roman engineering on nature is still strikingly visible … the control over metal resources was of high significance to Rome”. So how did the Romans manage operations at gold and silver mines in far-flung locations in Spain, Britain (Wales) and Dacia, north of the Danube? The answer seems to be almost a hands-off policy, provided they got the gold or silver without too much being siphoned off to others. They put a legion in place to keep order and appointed local ‘procurators’ with mining experience. “The guiding principal,” Hirt argues, “was to keep imperial involvement to a minimum without renouncing control of these ventures.” Essentially, the mine sites were secured and the miners left to get on with their large-scale operations with extensive use of water power in complex aqueducts. A quilt work of maps locates all the mining sites. In Dacia alone, more than 20 gold operations are pinpointed, while the layout of the Dolaucchi deposit in Wales is mapped out down to the last bath-house. Overall, a painstaking study of the sources of Rome’s wealth. (TG)

This is a thorough investigation of all aspects of the production of silver in Mexico from the 1550s to 1700, from the first mines at Zacatecas to the later discoveries at Guadalajara, Durango, San Luis de Potosí and Sombrerete, not least the amounts of silver officially declared for taxation to the King (hence the title of Jaime Lacueva Muñoz’s book). Muñoz, of the University of Seville (whither much of the silver was shipped) begins with the technical processes of extraction, the grinding and crushing of the ores, and the all-important supplies of mercury (quicksilver) for separating out the silver. Indeed, mercury played a key role in the mining equation; the King needed silver to finance his empire, but at the same time, had to buy up mercury, mainly from European sources and ship it to Mexico. The supplies of mercury and its relationship to the royal finances were crucial. And Muñoz lays out in statistical tables the quantities of mercury and whence it came, along with the growing production of silver and the revenues to the King. Zacatecas went through a rough period after 1600, but fortuitously other deposits turned up through the 17th century to keep the traffic flowing. This book updates and expands on Peter Bakewell’s Silver Mining and Society in Colonial Mexico, also listed in this bibliography. (TG)

Professor Salmon, supported by the Ministry of Mines, celebrates the first 100 years of gold mining in New Zealand. From a trickle of alluvial gold found in the 1850s on the back of the Australian gold rushes, the first real rush on the Tuapeka and Waitahama rivers of the South Island in 1861, produced nearly 200,000 t.oz. in 1861, rising to 735,000 t.oz. by 1866. Professor Salmon emphasises the importance of these discoveries on the evolution of the New Zealand economy and society. The industry expanded in the latter part of the 19th century through the introduction of batteries, dredges and hydraulic elevators. The book contains useful maps of mining areas and an essential appendix on the annual exports of gold from 1857-1960. (TG)
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<th>Author, Book Details</th>
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<td>Benjamin White, <em>Silver, Its History and Romance</em>, Waterlow &amp; Sons, London, 1917 (First Edition), 1920 (Second Edition). Now printed on demand by Nabu Press (<a href="mailto:hello@nabumedia.com">hello@nabumedia.com</a>)</td>
<td>Benjamin White worked in the London Silver Market from 1884 for almost 40 years and he observed: “No modern writer has taken silver for his subject as to its history, mining, refining, its use for manufacture and currency and its markets.” So he wrote this volume. He goes back to ancient Greek and Roman mining, then to silver mining across Europe through the Middle Ages, to the discoveries in Bolivia and Mexico in the 16th century that transformed supply. Mining in Central and South America get dedicated chapters, as do the United States and Canada. Then he provides essays on assaying and refining, all forms of manufacture from melting to wire drawing, granulation and stamping, jewellery and plate. Major mints and their coin output are reported and the London Silver Market is explained (with good detail on the ‘fixing’, and assayers and refiners listed). Silver flows to India and China and prices are carefully logged, along with multinational stocks of gold and silver. The language is a little flowery, but as a source of information on the silver scene in the late 19th and early 20th centuries, it is invaluable. (TG)</td>
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History/Parliamentary Reports

Author, book details

Report, together with Minutes of Evidence and Accounts from The Select Committee on the High Price of Gold Bullion; ordered by the House of Commons, to be printed, 8 June 1810.

Select Committee of the House of Commons on the depreciation of Silver, 1876.

Royal Commission on Gold and Silver, "to enquire into the recent changes in the relative values of the precious metals shown in the gold price of silver", London 1886-88.

Review

The famous 1810 Bullion Committee was set up to investigate the rise in the price of gold by 20% following the Bank of England’s suspension of cash payments of bank notes with gold coin in 1797, in the early days of the Napoleonic Wars. It was the first wide-ranging investigation into gold, with every word transcribed and published, together with extensive statistics on gold and silver flows, coining and other uses. Essentially, it was the first ‘gold survey’. The Committee called 29 witnesses from the Bank of England’s governor and the head of its Bullion Office to bullion dealers and refiners in the London Gold Market. Gold importers told how much they were receiving from West Africa. The first witness was Aaron Asher Goldsmith, partner in Mocatta & Goldsmith, the oldest members of the London market (now ScotiaMocatta), explaining how it all worked and prices were set. Then came bankers and merchants who used gold in their business. The debate declared J. K. Galbraith was “the most famous in all history on money and its management”. It was also the first insider’s report on the gold trade – a unique document. Its conclusion was that the Bank of England had been printing too much paper money since the suspension of payments in gold coin, although the real cause had more to do with the market pressures from supplying gold coin to keep British armies in the field in Europe. The 115 pages of accounts, giving statistics on all aspects of gold and silver are, in themselves, a treasure chest. (TG)

The 1870s were a crisis period for silver as first Germany and then most other European countries switched from silver-based currencies to gold, eliminating at a stroke the prime consumption of silver for centuries. The price had fallen by 12% when this House of Commons Committee was set up “to consider and report upon the causes of the Depreciation of the price of Silver and the effects of such Depreciation upon the Exchange between India and England”. The enquiry was practical: there were no arguments about bimetallism. The prime concern was statistical. Three leading members of the London silver market turned up with files on silver production (rising), coining (declining), Germany (selling), India (taking 60% of output), price (falling). Between them, they provided a comprehensive picture of the silver scene (the first great silver survey). Robert Giffen, The Economist’s statistical expert, remarked on the evidence of Sir Hector Hay of Mocatta & Goldsmith: “(His) was the first general estimate, covering the whole period from 1851, of the production of gold and silver.” In short, this report is a unique archive of precious metal statistics in the wake of the great gold rushes of the mid-19th century. (TG)

The Commission was chaired by Arthur Balfour, a future Prime Minister, and included on its panel Samuel Montagu, the founder of the bullion dealing house. Among the witnesses were Sir Hector Hay of Mocatta & Goldsmith, Stewart Pixley from Pixley & Abell, and Henry Raphael of the banking firm and refinery. While the Commission debated long about the pros and cons of bimetallism, the heart of the information (as in the 1876 Silver Report) was the battery of statistics provided by Sir Hector Hay and Stewart Pixley. Sir Hector had been marshalling gold statistics for over 30 years, with the diligence of a modern gold analyst. He got his information from Wells Fargo, who couriered most North American gold production, the US Mint and the
Consuls in London of many countries (even the Russian Consul-General obliged him with figures). Stewart Pixley had to hand statistics on demand for small gold bars in Indian bazaars and even brought along a ten-ounce bar of 998 gold, which was the favourite. Arthur Balfour questioned him closely on Indian hoarding. In the context of today’s annual gold surveys, this could be called Gold 1888. While on the bimetallism issue, the Commission inclined to a single gold standard, not surprising given that the British Empire had gold from Australia, Canada and (just) South Africa. (TG)
History/Silverware & Plate

Author, book details

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Review

These twin volumes, the first on New England, the second on the Middle Colonies and the South, present a comprehensive portrait of American silver in more than 500 black and white photographs of silverware of every kind going back before 1700. In this array of salt cellars, cups, bowls, porrings, tankards, knives, forks, spoons and ladles, you see the changing styles and growing sophistication of the American silversmith. The first volume is on New England, where it all really began. The second on Middle Colonies and the South embraces the work from New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, South Carolina, Alabama, Louisiana and on to California. As the nation expanded over 300 years, the craft of silver went with it. (TG)

This is a thoughtful approach to silver by Timothy Schroder, not conceived as a survey of objects or stylistic development, but more concerned with the role the plate played in the lives of its owners, the reasons they had for acquiring it, plus the financial commitments involved. He points out, too, that little of the silver is still in the great houses for which it was commissioned, but in museums, churches or City Livery Companies. He is interested, too, in the metal and the craftsmen who worked it: chasers, engravers, makers of cast ornaments, gilders and wire pullers. He quotes from The London Tradesman of 1745: “Goldsmith (silversmith) employs several distinct workmen, almost as many as there are in different Articles in his Shop … he employs besides … many hands outside.” He reflects that their techniques had changed little since the Middle Ages or earlier. Then he carries on to changing times – the robust Tudors, the Elizabethan Age, the vivacity of the Restoration, the impact of the Huguenot refugees from France around 1700 as 50,000 craftsmen fled to England, and on to the Rococo period, Neo-Classicism and the Victorian era. He concludes with 44 short biographies of leading goldsmiths/silversmiths from Robert Adams, goldsmith to Henry VIII to David Willaume, a Huguenot refugee who was goldsmith to the Dukes of Devonshire, Portland and Buccleuch; and all their works shown in crisp black and white photographs. (TG)


D. E. Strong, a keeper of Greek and Roman Antiquities at the British Museum, compiled this thorough introduction to the early ages of gold and silver plate, complete with 126 black and white photographs and 40 detailed drawings, from many sources besides the British Museum. He notes that “long before they appeared as media of exchange, gold and silver were used for making objects of luxury, the possession of which … were a symbol of power and authority … which were taken to the grave”. The survey begins with the sources of precious metals in antiquity, the metallurgy which evolved over 4,000 years ago, the techniques of the craftsmen and their trade. Strong then follows the evolution through Anatolia (Turkey), Crete, Mycenae, to Classical Greece and on through the Roman Empire to the end of the 5th century AD. Throughout the brilliance of engraving, repoussé and gilding on great bowls, drinking cups, amphora, mirrors and cosmetic caskets is astonishing. (TG)

This is a distinguished book that, as Claude Blair says: “Does something never attempted in English before: it provides in a single volume, a survey of the development of silver – and to a lesser extent gold – plate in Europe and European America from the earliest time to the present day. He adds: “The range and authority … reflect that it has been written by a team of people who are specialists in their field.”

They include contributors from the Victoria and Albert Museum (where Blair himself worked), the British Museum, the Los Angeles County Museum of Art, and Graham Hughes, Art Director of the Goldsmiths Company in London.

They trace the earliest uses of silver in sophisticated vessels from graves in Mesopotamia and Anatolia (Turkey), the cradle of metalworking, with a mastery of most techniques still used today. From the ancient world, the writers trawl the Middle Ages, the Renaissance, Baroque silver of the 17th century, the later Rococo and Art Deco styles, and Contemporary silver. All this is illustrated in black and white or colour on every spread. The book concludes with essays by Claude Blair on ‘The Craft of the Silversmith’, and John Forbes, Assay Master of the London Assay Office, on ‘Metals, Hallmarking and Methods of Assay’. This is a manual for all seasons and a visual feast of silversmiths’ (and goldsmiths’) creations over four millennia. (TG)
## History/Treasures

### Author, book details


### Review

This remarkable exhibition unveiled a host of artefacts in gold, silver, bronze, ivory, limestone, even clay, found at ancient sites in Afghanistan 30 or more years ago, that were courageously hidden by archaeologists and museum officials through decades of war – and now revealed. They begin with a hoard of gold and silver bowls found by farmers in 1966 at a mountain site known as Tepe Fullol dating from 2200-1900 BC. They were successfully hidden by the National Museum of Afghanistan during the wars, but now are revealed. Even greater treasure from four burial sites at Tillya Tepe, the Hill of Gold, by a Russian team in 1978/79. They include a wonderful gold ‘Man with Dolphin’, ornate daggers with a gold image of a Bactrian camel, a golden boot, amulets, necklaces, a splendid golden ram, and a crown of multiple gold leaves and clasps showing Dionysus and Ariadne. In all, a treasure of masterly goldsmiths’ creations as memorable as those in the treasure of Troy. All this is accompanied by articles by the archaeologists who found, and then literally rescued, them from wars.

**Heracles to Alexander the Great: Treasures from the Royal Capital of Macedon, a Hellenic Kingdom in the Age of Democracy.** Catalogue of the exhibition of the Ashmolean Museum, Oxford, in 2011, in collaboration with the Hellenic Ministry of Culture and Tourism. Main text by Dr Angeliki Kottaridi, 250 illustrations.

Opening this exhibition of treasures from the tomb of Philip II of Macedon (father of Alexander the Great) and other burials at Aegae, the Oxford historian and biographer of Alexander, Robin Lane Fox, said: “This is the greatest exhibition of classical Greek art in my lifetime.” He also singled out a gold myrtle wreath adorned with 112 gold flowers found in Philip’s tomb as “the most beautiful piece of ancient Greek jewellery known to us”. This story begins in 1977 when the late Professor Manolis Andronicus discovered Philip’s tomb beneath a great tumulus at Vergina (Aegae), the ancient capital of Macedonia. Philip was assassinated in 356 BC and his son, Alexander, supervised the burial, placing his father’s ashes in a golden casket. Nearby were a golden helmet and a gold quiver, complete with 74 arrows covered in gold sheet. Since then, extensive excavations led by the archaeologist Dr Angeliki Kottaridi have yielded more treasures. The exhibition at the Ashmolean unveiled to the public for the first time more than 500 artefacts, not just in gold and silver, but in bronze, ivory, pottery, sculpture and even a frieze of Philip and Alexander hunting wild boar. In gold, a shimmering gold oak and acorn was found in 2008, while the tomb of a woman known as ‘The Lady of Aegae’ contained all her jewellery of gold chains, pendants, brooches, hair pins and a quilt work of gold discs stitched to her long-rotten funeral dress. The Macedonian kings’ love of banquets is revealed in drinking vessels, plates, a silver gilded strainer, a ladle with a bird’s head and a delicate perfume bottle. All a rare insight into the world of Philip of Macedon and Alexander the Great. (TG)


The discovery of Tutankhamun’s tomb in Egypt in 1922 was a landmark in archaeological history, the most important finds in the Valley of the Kings, untouched for more than 3,000 years. This is Howard Carter’s original account of the discovery and opening up of the tomb’s astonishing gold treasures, with the added benefit of new colour photographs taken in the Cairo Museum 50 years afterwards. (TG)
Author, Book Details

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ISBN 0-8109-6695-6

ISBN 1-86064-527-5
(Published in Germany as *Die Schätze der Pharaonen*, Battenburg Verlag, Augsburg.)

Review

This collection of West African gold was assembled by Josef Müller between the 1920s and 1970s. He revealed that in wealthy West African kingdoms, with plenty of alluvial deposits at their disposal, goldsmiths created bold styles of their own, quite unlike those of the Mediterranean world. Indeed, the striking feature of the treasures illustrated here is the scale of their work. In ancient Greece, gold artefacts may weigh 10, 20, even 30 grams. Here, they weigh in at 300 to 500 grams. So we see West African kings sitting enthroned on golden stools, their hands draped with finger-rings, their costumes lined with pierced nuggets, their ears hung with four-lobed earrings. They are surrounded by golden lions as a symbol of power and threatening gold crocodiles. The women, too, have basket-shaped earrings of 300 grams. In Mali, some have granulated ornaments of 500 grams that still retain a delicate air. More macabre are jawbones cast in gold. The only disappointment is that most of the ornaments are relatively new (unlike ancient Greek or Scythian treasures), because the ornaments are recycled regularly. When one king died, his ornaments were melted to make symbols of power for his successor. (TG)

This catalogue of gold, silver and gems from the collections of the State Museums of the Moscow Kremlin displays more than 100 objects of fine and decorative arts, and splendid jewellery reflecting the cultural and religious life of Russia for the last 1,000 years, assembled over the centuries from the Black Sea region, Central Russia and the Moscow Kremlin. The accompanying essays set these treasures in their cultural and political history, going back to the Mongol-Tartar domination of Russia from 1237. Even before that, the heritage was rich, with the opening illustrations of braided gold bracelets from the 4th century. Then, from the 11th century comes an eight-sided shrine from Byzantium in gold, silver, gold chasing and engraving, and silver gilding, followed by a 12th century reliquary in gold, silver, enamel, gold engraving, silver casting and cloisonné enamelling. So it goes on – filigree bracelets, golden crosses, a gold crown set with sapphires, garnet, emeralds and pearls, golden vessels and silver dishes. Later come gold wine tasters, snuff boxes and tureens, silver teapots and creamers, and a gold cigarette case, with gold chasing, and the unique creations of Carl Fabergé. In all, an astonishing display of the art of goldsmiths and silversmiths through a millennium. (TG)

This joint enterprise by Hans Wolfgang Müller, Professor of Egyptology at the University of Munich, and photographer Eberhard Thiem, himself a specialist on ancient Egyptian jewellery, must rate as the most splendid visual record of the achievements of goldsmiths in Egypt starting 5,000 years ago. The quality of photography and reproduction is impeccable. Double-page spread after double-page spread of sharp, close-up photographs are unrivalled. The detail of the golden panels of Tutankhamun and Ankhes-en-pa Amun are caught in every rich detail. The focus of Egyptian gold is often on Tutankhamun, but here are scenes from goldsmiths at work before their crucibles, using long blowpipes to concentrate the heat and, nearby, two gold foil beaters. All the basic goldsmiths’ techniques are on view. The jewellery itself, including necklaces, multi-coloured pectorals and floral crowns, scarab rings and even golden funerary sandals, dazzles. So it goes on through the dynasties from c. 3000 BC to the Ptolemites in 305 BC. A unique window on the world long ago. (TG)
**Author, Book Details**


**Review**

Dr Ellen Reader Walters, Curator of Ancient Art at the Walters Art Gallery in Baltimore, both assembled this unique show of Scythian gold and wrote most of the text. It brings together the finest collection of Scythian objects in Ukrainian museums to tell the story of a nomadic people, who acquired extraordinary wealth in the 4th century BC by providing grain from their lands on the steppes to Greek markets around the Black Sea. The Scythians’ culture was, in turn, enriched by those Greek contacts. The treasures, both gold and silver, come mainly from burial sites around the north-west of the Black Sea and were created in the city of Pantikapaion, a Greek enclave, with Scythian goldsmiths. They range from bow and quiver cases (gorytos) with gold panels of war, to a gold helmet embossed with scenes of combat. By contrast, a huge pectoral (a breast-plate almost) has pastoral scenes of Scythians on farms with cows, lambs, foals and goats, and with birds flying overhead. An exceptional snapshot in gold of rural life over 2,000 years ago. (TG)

This catalogue, produced for the unveiling in Moscow in 1996 of the gold found by Schliemann (but lost in World War II) is a treasure in itself. Here are brilliant photographs of scores of gold items – diadems, rings, earrings, ornate hairpins, strings of gold beads, bracelets, flasks, a gold sauce boat, even five slim, notched gold bars from around 2500 BC. They reveal the high skills of the goldsmiths at Troy, the great trading centre in north-west Turkey. The largest diadem, a cascade of golden leaves cut from sheet metal, with more than 4,000 ‘leaves’ and more than 12,000 tiny rings, weighs 193 grams. The collection is described by the metallurgist Mikhail Treister, supported by an essay on Schliemann at Troy by Vladimir Tolstikov. Moreover, the treasure itself remains on display in a dedicated gallery at the Pushkin Museum for anyone visiting Moscow. (TG)

The exhibition ‘Greek Gold’, combining the treasures of The State Hermitage in St Petersburg, the Metropolitan Museum of Art in New York and the British Museum in London, brought together perhaps the definitive display of almost 200 gold ornaments from the Greek world between 500 BC and 300 BC. Every one of them is reproduced in this volume. In an opening essay, Dyfri Williams of the British Museum sets the scene of whence the gold came (from Siphnos, Macedonia and the conquests of Alexander the Great) and the techniques of the goldsmiths who worked with a minimal repertoire of tools, relying on time and skill to produce their wares, often enhanced by filigree and granulation. Then Williams and Jack Ogden describe each object intimately. But the star of this catalogue is the gold itself, gleaming out from every page. (TG)
Markets/Trading

Author, book details


Review

Practical guide to the evolving North American gold exchange scene in the mid-1980s by leading gold trader at Samuel Montagu in London. (TG)

Jessica Cross assessed the impact of new derivatives in futures, options, swaps, warrants and other exotic instruments, which brought a new dimension to the gold market in the early 1990s. She reported the impact of the revolution on miners, market-makers, investors and speculators and explained the uses of derivatives in the market. The usefulness of gold loans, futures, exchange and OTC options, spot differed, forwards and gold-backed paper were considered, along with the pros and cons of hedging. (TG)

A major study of the market’s size, scope, operation and effect, embracing central banks, bullion banks, gold-mining companies and hedge funds. This was the most comprehensive and detailed review of the gold derivatives market at the time. (TG)

Practical guide to India’s great gold market, which was fully liberalised in the 1990s. Initially, Desebrock sets out the role of the Indian government in this new and expanding market. But the heart of the book is the imports of gold, originally just ten tola bars, now more kilo bars, and the banks and bullion dealers who handle them, along with major refiners and a quilt work of small units across the country. The bulk of the business is jewellery, seen both as adornment and investment, and accounting for most fabrication, although there is a small industrial sector. Voluntary hallmarking is also growing. Regional jewellery styles and the growing number of branded retail chains are described. Mumbai prices from 1925-2001 compared with London are listed. An essential handbook for any newcomer to the Indian gold market. (TG)

Investigative journalist Stephen Fay tells “how two of the world’s richest families, the Hunts of Texas and the House of Saud, tried to corner the silver market”. Their efforts pushed the silver price in a matter of months from $7.50 per ounce to peak at $52.50, on the Chicago Exchange in January 1980, before a spectacular collapse to under $15 in weeks. The tale, told like a detective story with interviews with all key players in Dubai, London and New York, pieces together how this pyramid was built and promptly collapsed. The scheme was put together largely in a tiny office on a rooftop in the souk in Dubai, with Bunker Hunt on the sofa trying to woo two of Dubai’s most legendary traders, who saw what Hunt was up to and made their own plans accordingly. There had been previous attempts to corner the silver market by Indian traders in the early 20th century, but nothing on this scale. Within days, as the price slid down again, Hunt could not meet his margin calls. The strength of this account is that Stephen Fay approached the affair knowing little about silver, so had no preconceived ideas and turned in a detailed reporter’s account. It is, without doubt, the best investigative book ever written about a single event in the history of silver – or gold. (TG)
**Author, Book Details**


**Review**

Dr Hoang, an Assistant Professor of Finance at Montpellier Business School, has undertaken a wide programme of research into the financial operations of the Paris Gold Market over several decades. These two papers distil her conclusions. The first one, ‘Risk-Return Analysis 1950-2003’, about investment in gold assets quoted in Paris concludes that its risk-return is very inferior to other financial assets (stocks and bonds). Capital of 100 new francs invested in gold Napoleon coins in December 1949 would have given a real rate of return of -1% per year to 2003. Dr Hoang’s second paper, covering 2004 to 2009, comes to a similar conclusion, although gold is more efficient in stock portfolios than bond portfolios. She is now making a study of the ‘life and death’ of the gold market in Paris during the 20th century. Her publications are also in French. (TG)

Useful survey of the market worldwide, including market agents and instruments, such as futures, options, warrants, physical stock and flows, bullion markets, trading and price setting, paper markets and prices, and Soviet gold output. (TG)

Robert Sitt put 30 years’ experience as one of Hong Kong’s gold traders into writing the story of its sophisticated market. He traces its history from the original Gold & Silver Exchange Society to its emergence as a major re-export centre, with China on its doorstep, and a trading forum used by international bullion banks to quote a parallel market in loco London gold during Hong Kong’s opening hours. This bilingual guide provides basic information that any trader or investor needs to know. (TG)
Mining/Modern

Author, Book Details


Review

Dr Close, a recognised gold industry expert and former geologist, banker and corporate manager, presents a comprehensive account of how the Australian gold industry transformed itself from one that was on its last legs in the late 1970s to being one of the world’s largest gold producers. The Great Gold Renaissance looks at this remarkable transformation and documents how higher prices, new technology and Australian ingenuity led to a 20-fold increase in gold production and how Australia led the world in innovative financing and marketing methods. (PB)

A former mining analyst and city veteran, Michael Coulson is a true ‘insider’ and brings a vast amount of experience to explain both the rewards and the pitfalls of investing in mining shares. The prospect of instant riches gives the mining sector an obvious glamour. And when the mining sector begins to run, it can be an awesome sight. But due to the counter-cyclical nature of many mining stocks, they can also offer a valuable refuge when stock markets turn down. Mr Coulson’s book provides a study of the history of mining – focusing particularly on the significant booms and busts – looks at the latest, biggest importers such as China and India, and argues convincingly that mining should form a core sector for all investors. (PB)

Introductory Mining Engineering outlines the role of the mining engineer throughout the life of a mine, including prospecting for the deposit, determining the site’s value, developing the mine, extracting the mineral values and reclaiming the land afterward. This second edition is written with a focus on sustainability, managing land to meet the economic and environmental needs of the present while enhancing its ability to also meet the needs of future generations. Coverage includes aboveground and underground methods of mining for a wide range of substances, including metals, nonmetals, and fuels. New chapters include coverage of: environmental responsibilities; regulations; and health and safety issues. The text is supplemented with more than 200 photographs, drawings, and tables. (PB)

Gold Fields was the first of the mining finance houses that were to characterise the South African gold-mining industry’s organisation for many generations. It was formed in 1887 by Cecil Rhodes and Charles Rudd as a London company to hold properties they had acquired on the Transvaal’s Witwatersrand gold fields. Historian and political commentator, Paul Johnson, has written a fascinating study of a unique venture. The author catalogues the expansion of the company into other geographic areas such as Australia, West Africa and the US. Illustrated with numerous black and white and colour photographs. (PB)

This book covers not only the nature of mineral exploration but also considers other factors essential to successful exploration, from target evaluation to feasibility studies for extraction and production. It includes six detailed case studies, selected for the range of different problems and considerations they present to the mineral explorationist. The second edition features a new chapter on handling mineral exploration data. (PB)
### Author, Book Details


### Review

This history of one of the world’s great gold companies was written by insider, Jack Morris, a former vice president of Investor Relations at Newmont and previously a *Wall Street Journal* reporter. The book traces the company’s history from the turn of the 20th century creation by a wealthy Wall Street executive to a modern, global gold company and the second-largest gold producer in the world. (PB)

This practical guide to the mining industry in Ghana by the former chief executive of the Ghana Commercial Bank, T. E. Anin, aimed “to stimulate interest in the … development of Ghana’s gold endowment”. Given that annual output was 12 m.t. in 1986 when the book was written and is now over 90 m.t. annually, it may have had some effect. After a swift run-through of the history of production on the Gold Coast from 1460-1945, Anin tracks the steady growth of the Ashanti operations that evolved into serious mining by the mid-1980s. He then gives a detailed geological survey of Ghana’s gold deposits, setting the scene for expansion, which was aided by a new Mining and Minerals Law in 1986. Thus, Anin caught Ghana on the cusp of becoming a major gold producer. (TG)

Alan Patrick Cartwright, journalist and editor, became the historian of the South African gold fields from the first claims pegged on the Main Reef at Langlaagte Farm three miles from Johannesburg in 1886, to their supremacy in the 1960s when the mines produced over two-thirds of world production. He writes on the entrepreneurs J. B. Robinson, Alfred Beit, Ernest Oppenheimer and Guy Carleton Jones, who founded the great mining houses that could provide the capital to explore and develop the complex deep reefs of the Witwatersrand Basin. So here is the story of the ‘West Wits Line’, the Klerksdorp field, the Orange Free State field and, latterly, Kinross in the Transvaal. This is a reporter’s account of the heyday of the richest gold deposits the world has yet seen. (TG)

Picking up from his earlier chronicle, *The Gold Miners,* A. P. Cartwright focuses on the first 80 years of Gold Fields of South Africa, the mining house that Cecil Rhodes and his partner, Charles Rudd, established in 1887. Their first mines, Simmer and Jack, followed by Robinson Deep Mine, marked them out as the mining house to watch (before Ernest Oppenheimer came on the scene). The momentum was maintained by the next generation when Guy Carleton Jones, the consulting engineer, backed a German prospector, Dr Rudolf Krahmann, in the early 1930s with the first use of a magnetometer in the search for deep reefs west of Johannesburg. His pinpointing of the West Wits Line set Gold Fields course for many decades. (TG)

Vivian Danielson & James White of Canada’s *Northern Miner,* piece together the story of BRE-X Minerals’ Busang project in Indonesia which, in the mid-1990s, went from being “the world’s largest gold deposit” to the biggest gold swindle in mining history, deceiving analysts and investors. Even major mining companies such as Barrick Gold and Placer dome were tempted, as ‘slated’ drilling cores were turned in for analysis. The saga ruined many reputations in the Canadian mining industry and remains a cautionary tale. (TG)
### Author, Book Details

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<tr>
<td>R. P. Foster (Ed.)</td>
<td><em>Gold ’82, The Geology, Geochemistry and Genesis of Gold Deposits.</em> Forty papers presented at a symposium organised by the Geological Society, 1982</td>
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<td>Paul Johnson</td>
<td><em>Consolidated Gold Fields: A Centenary Portrait,</em></td>
<td>Weidenfeld &amp; Nicolson, London</td>
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<td>A. King</td>
<td><em>Gold Metallurgy on the Witwatersrand,</em></td>
<td>Technical papers by 17 metallurgists and geologists, Transvaal Chamber of Mines</td>
<td>1949</td>
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### Review

**The Mineracao Morro Velho gold mine in Mineas Gerais province of Brazil opened in 1835 and is the world’s oldest continually worked, deep shaft mine. The original company, formed in 1830, was St John d’el Rey Mining Company and output began in 1835. Marshal Eakin has tracked the growth of the company as one of the earliest examples of industrial capitalism venturing into a remote rural area, transforming the lives of the people. From the start, the company marketed most of its gold in London, with investment from the market there and Percival Norton Johnson, founder of Johnson Matthey, working out how to refine its tricky ores in the 1830s. In the early decades, slave labour was used, but that evolved into a paid workforce in the 1880s. Eakin sets out the geology of the deposit, with its deep ores, requiring much mine planning. The mine was greatly aided by the new technology that came from South Africa in the 1890s on the tapping of deep reefs and new refining techniques. And it is not surprising that Morro Velho was eventually taken on by South Africa’s Anglo American in the 1970s and is now operated as AGA Mineracao, with production around 300,000 t.oz. annually. (TG)**

**These highly technical papers were presented in Harare, Zimbabwe in 1982 to 200 delegates from 28 countries. The symposium was the first held by the Geological Society of Zimbabwe. The main themes were: Gold in Crustal Rocks, Gold in Hydrothermal Fluids, Stratabound Gold Deposits, Non-stratabound Gold Deposits, and Regional Setting and Controls of Gold Mineralization. (TG)**

**Sir Ernest Oppenheimer was the last of a line of South African mining entrepreneurs such as Cecil Rhodes, Barney Barnato and Guy Carleton Jones, who had the courage to stake their reputations on the potential of a new gold field. While his early life was in diamonds rather than gold, with the creation of De Beers as the world’s largest producer, he founded Anglo American Corporation in 1917, which was to become the largest gold miner in South Africa through the second half of the 20th century. Hence, the title of Sir Theodore Gregory’s book on Oppenheimer’s role as a buttress of the South African economy (Gregory himself was Professor of Economics at the London School of Economics and Professor of Social Economics at Manchester University). On the gold front, Oppenheimer’s major achievement was backing the discovery of new gold fields in the Orange Free State in the late 1940s, which yielded four of the industry’s seven ‘super’ mines over the next few decades. ‘The Orange Free State was a gamble,’ the chairman of a rival mining house once said. ‘No one would start a mine today on the basis of the information available on Free State in 1946.’ This is an essential book on the role of gold mining in South Africa, with production figures and share of world output, 1887-1960. (TG)**

**Brisk history of Consolidated Gold Fields from its founding in 1887 by Cecil Rhodes and Charles Rudd to a global mining house a century later, with stakes in coal, copper and platinum, along with its leading role in gold through Gold Fields of South Africa. (TG)**

**Mr King, himself a consulting metallurgist prominent in the advancement of gold metallurgy, gathered together technical papers by many of his fellow metallurgists and geologists to present this extensive volume on the Witwatersrand’s gold deposits. Topics span the basic geology, sorting and crushing, tube-mill and ball-milling, recovery of gold by gravity concentration, sand and slime treatment, precipitation**
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<td><strong>Ken Lefolii</strong>, <em>Claims: Adventures in the Gold Trade</em>, Key Porter Books, Toronto, 1987. ISBN 1-55013-000-5</td>
<td>Bullion Johannesburg was the original telegraphic address of the Chamber of Mines of South Africa, where John Lang worked for many years before writing its history to mark the centenary of the gold discoveries in South Africa in 1886. The Chamber itself opened as the Witwatersrand Chamber of Mines in 1889 “to promote and protect the mining interests and industries of the Witwatersrand Gold Fields”. Essentially, it held the ring between miners, government and unions as South Africa grew into the world’s largest producer, accounting for over 75% of all new output by 1970. South Africa, for a while, was gold production and the Chamber was the heart of that operation, surrounded by the mining houses, with its own Rand Refinery turning out up to 1,000 m.t. of gold annually. The Chamber’s marketing arm became more aggressive in the 1970s, launching the one ounce Krugerrand, favoured by investors worldwide. And it sought to keep detached, if possible, from the growing political and racial tensions of the 1980s. This is a highly professional history. As Professor Burridge Spies of the University of South Africa, a consultant on the book, put it: “It has something to say to the mining specialist, the student of history and the general reader.” (TG)</td>
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<td><strong>Owen Letcher</strong>, <em>The Gold Mines of Southern Africa: The History, Technology and Statistics of the Gold Industry</em>, published by the author, Johannesburg, in conjunction with Waterlow &amp; Sons Ltd, London, 1936.</td>
<td>An insider’s account of the confrontation in the Supreme Court of Ontario, Canada between two mining companies, Lac and Corona, over the rights to properties on the Hemlo gold field in Northern Ontario, which had revived Canada’s gold industry in the mid-1980s. Blow-by-blow account of the courtroom battle, which Lac won, although at considerable cost. An object lesson in the complexity of mineral rights in opening up a new gold field. (TG)</td>
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<tr>
<td><strong>John D. Littlepage and Demaree Bess</strong>, <em>In Search of Soviet Gold</em>, George Harrap, London, 1939.</td>
<td>Massive volume of stocktaking on the 50th anniversary of gold discoveries in South Africa. Owen Letcher goes right back to gold discoveries in southern Africa even before the crucial 1887 pegging on the Main Reef. Thereafter, he has anecdotes, cartoons, photographs, cost and production detail of the blossoming mines, flow sheets of tube milling plants, and maps of the Witwatersrand Goldfields shown, mine by mine, in 1936. He also publishes the balance sheets, with share holdings, output and ore reserves. A treasure trove of information for researchers seeking detail on the first half-century of South Africa’s gold. (TG)</td>
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<tr>
<td><strong>John D. Littlepage and Demaree Bess</strong>, <em>In Search of Soviet Gold</em>, George Harrap, London, 1939.</td>
<td>Intriguing account of an American mining engineer from Alaska who was wooed by the Russians to help in the opening up of their alluvial and placer deposits in Siberia in the 1920s and 30s. Stalin was fascinated by the impact of the Californian gold rush of 1849 in opening up the Far West in America. So he sought to tempt Russians to trek to Siberia. From 1928 to 1937, Littlepage travelled the length and breadth of the Soviet Union supervising the creation of 90 steam and electric dredges in alluvial deposits on rivers and power houses, mechanical joists, crushers and cyanide plants in lode mines. Yet he never revealed how much gold was produced by this boom, although Soviet output grew significantly. (TG)</td>
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<td>Author, Book Details</td>
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<td><strong>Salvador Lopez</strong>, <em>Isles of Gold: A history of mining in the Philippines</em>, Oxford University Press, Singapore, 1992. ISBN 0 19588965 7</td>
<td>This book, commissioned by the Chamber of Mines of the Philippines, is billed as “the definitive history of mining in ... a country long known as ‘The Isles of Gold’”. Salvador Lopez spent seven years writing it, undertaking a thorough job. He starts with the mineralisation of the islands as a distinct geologic unit, which historically attracted China, Japan and, above all, Spain as a source of gold, long mined in placer and lode operations (clearly designated by maps). Annual production, mine by mine, and exports are charted from 1899-1937, with further detailed coverage of the gold-mining revival of the 1970s and 80s in newly discovered gold-copper deposits. A special section is devoted to gold-panning and small-scale mining which yields significant quantities. An essential book for anyone seeking to familiarise themselves with mining on the islands. (TG)</td>
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<tr>
<td><strong>Ouro</strong>, <em>Govern do Estado de Minas Gerais, Metais de Minas Gerais SSSA</em>, Belo Horizonte, Brazil, 1981 (in Portuguese).</td>
<td>This book, put out by the mining industry in Minas Gerais province of Brazil in 1981 in the midst of the local gold rush prompted by the high international price in 1980, is a useful introduction to gold mining in Brazil during the last three centuries. Although in Portuguese, it is readily understandable, with clear descriptions of the mining areas and mining companies. Gold output is tracked, both in the early 18th century gold rush and from 1900 to 1980, with the all-important distinction between gold mines and unofficial garimpo production. A quick way to learn the mining background of Brazil (with the benefit of wonderful colour reproduction from the early days). (TG)</td>
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# Precious Metal Money

## Author, Book Details

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<tr>
<th>Review</th>
<th>Book specially recommended by Frederic Panizzutti, Senior Vice President, Global Head of Sales &amp; Marketing, MKS Finance SA, Geneva</th>
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<tr>
<td><strong>Peter L. Bernstein</strong>, <em>The Power of Gold: The history of an obsession</em>, John Wiley, New York, 2000. ISBN 0-471 25210-7</td>
<td>Peter L. Bernstein combines the zest of a historian with the meticulous analytical powers of an economist. This book reads as a journey through centuries, it evokes how gold shaped human history but also how it possessed mankind rather than being possessed. An impressive historical work ranging from very ancient times to modern history, where gold often gets attributed addictive and obscure forces. A perfect lesson about gold history and perhaps what to retain from it! (FP)</td>
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## Review

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<th>Review</th>
<th>Book specially recommended by Sam Etris, Technical Consultant, The Silver Institute</th>
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<tr>
<td><strong>Alexander Del Mar</strong>, <em>A History of the Precious Metals</em>, Cambridge Encyclopaedia Company, New York, 1902. Republished: Augustus M. Kelly, New York, 1969. Reprints on demand now widely available from several sources, see Abebooks.</td>
<td>Alexander Del Mar was a political economist, historian and author, who wrote several books on money in the late 19th century, including this comprehensive volume on the history of precious metals, complete with maps, charts and statistics. It has become something of a classic and, now being out of copyright, is widely printed on demand. Original copies are harder to come by. (SE)</td>
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## Other recommendations by Timothy Green:

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<th>Review</th>
<th>Book specially recommended by Timothy Green:</th>
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<tr>
<td><strong>Eliyahu Ashtor</strong>, “The Venetian Supremacy in Levantine Trade”, <em>Journal of European Economic History</em>, III, Rome, 1974, pp. 5-53 and “The Volume of Levantine Trade in the Middle Ages (1370-1498), <em>Journal of European Economic History</em>, VI, Rome, 1975, pp.573-612.</td>
<td>These two articles by Professor Ashtor complement the work of Lane &amp; Mueller in their monumental book on Venice. He tracked the schedules of the galley fleets from Venice to Beirut and Alexandria every year from 1380 to 1496 to buy olive oil, cloth and base metals, which they paid for with 200,000 or 300,000 gold Venetian ducats. A unique early 'gold survey’. (TG)</td>
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<td><strong>K. N. Chaudhuri</strong>, <em>The Trading World of Asia and the English East India Company 1660-1760</em>, Cambridge University Press, 1978. ISBN 0 521 217164</td>
<td>K. N. Chaudhuri, of the School of Oriental and African Studies in London, was the great investigator of the English East India Company and its trade with the East in the 17th and 18th centuries. That trade was financed primarily in silver, to a lesser degree in gold. Chaudhuri explains: “The trading world of Europe and Asia was cast in new dimensions by the discovery and workings of the Spanish American mines in the 16th century, which set in motion a worldwide movement of precious metals. Those metals largely ended up in the East, either directly across the Pacific from Acapulco to Manila and thence China and Batavia (Indonesia), or by the annual <em>flota de plata</em> from Vera Cruz to Cadiz in Spain and on to the English and Dutch East India Companies. “Asia,” he writes, “absorbed prodigious amounts of precious metals.” He has a map of world silver flows from 1650-1760 that would do credit to any such survey today. The main destinations for the East India Company were Bombay, Madras and Batavia, with the silver mostly as bullion, which was then coined in Asia. In return, came raw silk, saltpetre, black pepper, indigo, coffee, chinaware and porcelain, tea and textiles. Chaudhuri sets it all out with tables on gold and silver prices and ratios, the quantities of precious metals shipped, and the weight and standards of coins, whether silver Spanish dollars, gold Indian Pagodas or silver rupees. The book is a window on the world of the precious metals trade 300 years ago. (TG)</td>
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The Ages of Gold describes the metal’s history from the first goldsmiths punching patterns of animals on gold sheet before 4000 BC to its role today in electronics. Building on 40 years’ research into gold, Timothy Green has sought out its origins in Mesopotamia, Egypt, Troy, Minoan Crete, Greece, Rome, Byzantium and Pre-Columbian South America. He charts the Phoenicians’ voyages for West African gold. He explains the crucial chemical breakthrough (addition of salt) that enabled gold to be refined to a consistent fineness, so that Croesus of Lydia could mint gold coins. He describes the gold ‘fixings’ on the Rialto in Venice, where the Mint had its own recipe for refining its ducats, which were acceptable throughout the Mediterranean world. The climax was the gold rushes of the 19th century to California, Australia and South Africa that underwrote the worldwide gold standard. Finally, he describes gold’s role in this age of high technology in mining, markets and metallurgy. Gold’s unique ductility and conductivity have placed it at the heart of today’s electronics, as versatile on earth as in space. Thirty-two pages of colour pictures illustrate gold’s beauty in adornment and importance as coin. (LBMA)

The dedication of this book is “To Sita, who crossed the Atlantic at the age of six weeks and rambled over Spain the next two years on the trail of old papers”. The old paper that this young Harvard research student sought, in the Archivo General de Indias on the waterfront in Seville, was manifests and bills of lading of the first Spanish ships returning from the New World with gold and silver. Hamilton’s achievement was to piece together the import of both metals, year by year, from 1501-1650. The statistics chart the rising inflow of gold between 1501 and 1550 as the Spaniards got their hands on Inca gold ornaments and melted them down. The imports surged in 1534-35 with the defeat of the Incas by Pizarro, then trailed off. There was no real mining at this stage; it was all looted treasure. Silver’s turn came after 1560, when the amalgamation process of silver with mercury boosted output in Bolivia,

This is both a diligent and charming investigation into the history of gold and silver, which William Jacob put together over 25 years, encouraged by such diverse politicians such as William Huskisson, William Pitt, Sir Robert Peel and David Ricardo, anxious to learn more about the effect of gold and silver on the production of wealth and its distribution. It represents perhaps the first major history of the metals on a worldwide basis. Jacob starts with biblical evidence, goes through Croesus, Darius in Persia, Greece (not least Laurion silver mines), the Roman Empire and mining in medieval Europe, followed by the first gold and silver from the Americas, leading to new coinages in both metals. He focuses particularly on the impact of silver from Potosí and the overwhelming supplies from Mexico and later gold from Brazil (the biggest gold rush when this book was written; California and Australia were 20 years away). He sets out gold and silver consumption in his own time with details of coinage (the biggest user), hallmarking statistics of watches and jewellery and the offtake for the East. He rounds off with useful appendices on mining output, coinages and silver flows from Britain to India and China. A fascinating insight into pre-Californian and Australian gold. (TG)


The impeccable and stimulating story of the rise of the City of London as the world’s leading financial centre provides a framework for understanding how the gold market itself played a key role. Nathan Meyer Rothschild strides through its pages, while Mocatta & Goldsmid, Samuel Montagu and Pixley & Abel are in and out of the Bank of England’s Bullion Office. (TG)


Second volume of David Kynaston’s majestic story of the City sets in context the evolution of gold-mining finance for the new mines in South Africa, the heyday of the gold standard, as every major nation, save China, was on it. Then, in the run-up to World War I in 1914, came a preoccupation with gold reserves and the shift from gold coin in people’s pockets to gold in central bank vaults. (TG)


This remarkable book, edited by Colin McEwan, Curator of the Latin American collections at the British Museum, brings together 13 distinguished archaeologists and metallurgists from the British Museum itself, the Gold Museum in Bogota, Colombia, the Institute of Archaeology in London, the Center for Archaeological Materials, Massachusetts, Institute of Technology and the Archaeology and Palaeoecology at the Smithsonian Tropical Research Institute in Panama. They embrace the great gold legacy of Peru, Bolivia, Chile, Colombia and Central America and the Caribbean, before the Spanish conquests, which largely destroyed those ancient societies with their amazing skills in working gold. Welcome to the creations of the Nasca, the Chimú, the Moche and the Inca in Peru, the Quimbaya, Tolima, Zenu and Muisca of Colombia, and the Cochlé in Central America. All this in a blend of scholarly essays and colour illustrations. This is a complete education in the world of Pre-Columbian gold. (TG)
Ernest Seyd, *Bullion and Foreign Exchanges*, Effingham Wilson, Royal Exchange, 1868.
(Abebooks print on demand, ISBN 1436794307)

This is the best book on all aspects of the gold and silver market in London in the 19th century (and arguably the best ever). The original edition is a collector’s item, but facsimile versions are now available. Seyd opens with detail on the malleability and ductility of gold, explaining that one gram of gold can be drawn into wire 600 feet long. Then he is off on definitions of gold and silver in blocks, bars, ingots, pieces, and coins. He even estimates that total world production of gold to 1868 was 300 million ounces. He describes the technology of assaying, refining and the pattern of weights and prices. The role of the bullion brokers and the shipping of bullion, with freight rates, is meticulously explained. So if you need to ship gold from London to Paris or silver to Bombay (via Marseilles), here are the procedures, with sample invoices. You want to import gold bars from California, here are sample invoices and shipping costs. The minting of gold coins is examined, while the Bullion Office of the Bank of England, the heart of the market, gets a thorough tour. Actually, no other book on gold and silver has ever been such a fountain of information. (TG)
## Refining & Bars

### Author, Book Details

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<th>Author</th>
<th>Title</th>
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<tr>
<td>Nigel Desebrock</td>
<td>Gold Refiners and Bars Worldwide</td>
<td>Grendon International Research, Fremantle, Western Australia</td>
<td>1991</td>
<td>0 646 3150 3</td>
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<tr>
<td>Andrew Ramage and Paul Craddock</td>
<td>King Croesus’ Gold: Excavations at Sardis and the History of Gold Refining</td>
<td>British Museum Press, London</td>
<td>2000</td>
<td>0-7141-0888-X</td>
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### Review

Having worked in the chemical engineering industry for many years, Loewen gained an interest in the design and production of jewellery, first as a hobby and then as a part-time business. From that, he developed techniques for small-scale refining of jewellers’ waste and scrap for gold, silver, platinum and palladium. This book describes methods and the equipment required in very practical terms together with sufficient chemical and metallurgical background information. Considerable attention is paid to safety and pollution matters, and there is an extensive list of references and further reading. (MG)

This industry-wide guide, sponsored by the World Gold Council, listed the products and services of 50 gold refiners in 23 countries accredited to the LBMA, COMEX and TOCOM. Each refinery’s history and details of their gold bars, with photographs, is covered at length. This is backed up with articles by technical specialists, including Dr William Rapson of the Chamber of Mines of South Africa on gold-bearing materials and gold refining methods, Dr Reginald Murray-Smith on gold assaying methods and Prof. Dr Christoph J. Raub on gold products for electronics and decorative golds. Although many new refineries, especially in Asia, have been accredited since publication, it remains a standard reference work on the activity of refiners. And up-to-date information is provided by the website: www.goldbarsworldwide.com. (TG)

This is a companion volume to Nigel Desebrock’s earlier Gold Refiners and Bars Worldwide, published in 1991 and listed in this bibliography. Information and illustrations in colour on more than 700 bars from more than 100 refiners and melters in 28 countries, from grams, to tola bars, kilo bars and good delivery bars are provided. The book is both an education and useful reference to anyone in the gold trade worldwide. See also web site: www.goldbarsworldwide.com. (TG)

Our knowledge of the gold of King Croesus of Lydia, c. 550 BC, and the refining and coining at Sardis is built on decades of excavations at Sardis by archaeologists from Harvard and Cornell in tandem with the Department of Scientific Research at the British Museum. This account is by Professor Andrew Ramage of Cornell and Paul Craddock, head of the Metals Section at the Department of Scientific Research at the British Museum, whose most notable discovery was the first gold refinery from the ancient world. It reveals an indispensable look at the technical breakthrough of separating and purifying gold and silver, without which distinct gold and silver coinage could not have been introduced, because the ability to refine and assay precious metals is central to the whole concept of coinage. Their account of the refinery excavations and hearths made it possible to reconstruct the process. Also set out in this comprehensive report are a scientific examination of Lydian coinage...
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<td><strong>Ronald E. Wilson</strong>, <em>Two Hundred Years of Precious Metals: A History of The Sheffield Smelting Company Limited 1760-1960</em>, Ernest Benn Ltd, London, 1960.</td>
<td>For the London Market, the Good Delivery system is, together with the London Fixings and the Clearing System, the cornerstone of the trading platform known as the over-the-counter bullion market. The List confirms the equivalence of all tradeable bars. This new report tracks the Good Delivery system for gold back to 1750, when the young Bank of England’s Bullion Office would accept only the bars of one refiner preparatory to the gold being made into coin at the Royal Mint. This privilege lasted until after 1850 when the flood of gold coming into London from the California and Australian gold rushes demanded new accredited refiners. The list was further broadened in the 1930s to accept bars of select European refiners, as many central banks and investors sold their bars to profit from the new US commitment to buy all gold offered at $35 per troy ounce. In recent decades, the changing pattern of gold mining has resulted in many foreign refiners in North America and Asia gaining Good Delivery acceptance in London. The Appendix by Stewart Murray, chief Executive of the LBMA, gives details of the history of bar specifications and application procedures. Essential guidance for refiners seeking to gain Good Delivery status. (LBMA)</td>
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<td>Sheffield Smelting, founded in 1760, was a pioneer in precious metal smelting and refining in England for over two centuries, but it never really sought the prestige of Good Delivery Gold status (and did not get it until 1949). Its preferred role was buying up gold and silver scrap and refining it into products for the gold jewellery and silver plate industries, in Sheffield, London and Birmingham. Nevertheless, it was always highly regarded, working with other early pioneers of gold refining such as Robert Cox and the assayer Percival Norton Johnson, father of Johnson Matthey. Sheffield Smelting also pioneered buying up gold and silver waste in Europe before the French Revolution (ahead of any London refiner). This book, with detailed accounts of annual transactions, is a unique snapshot of a key player in the gold and silver trade over the centuries. (TG)</td>
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Science/Technology

Author, Book Details

Books specially recommended by Mark Grimwade, Metallurgical Consultant to Worshipful Company of Goldsmiths and Professional Member of the Institute of Materials, Minerals and Mining, UK:

Christopher Corti & Richard Holliday (editors), Gold – Science and Applications, CRC Press (with the support of the World Gold Council), Boca Raton, USA, 2010.

This is an important book that not only updates an earlier book Gold Usage by Rapson and Groenewald, 1978, but also presents more recent developments in the science and applications of gold, notably in catalysis and nanotechnology. After an introductory chapter that sets the scene by discussing gold supply and demand, there are 16 further chapters written by leading experts in their field including two from the editors themselves. Many of the chapters are concerned with chemical aspects such as gold catalysis, luminescence, surface electrochemistry and biomedical applications. The development of nanotechnology has produced a number of diverse applications because of the unique physical and chemical properties of gold at nanoscale dimensions. A chapter on the metallurgy of gold leads on to others concerned with manufacturing processes in metal joining, jewellery production, electroplating, bonding wire, dentistry, thick film pastes and decorative gold materials. Each chapter is an excellent review of its particular subject and is backed up with extensive references for those requiring specific detailed information. (MG)

ISBN 0-12-581250-7

When this book was published, it was considered to be the most comprehensive presentation of scientific and technical knowledge of gold usage in a variety of industries. In particular, there are major chapters on the metallurgy of the carat gold alloys and their use in jewellery production, on electroplated golds, and on instrumental and engineering applications. Demand, supply and distribution patterns are reviewed together with the use of gold for investment. There are shorter chapters on dental golds, bonding of gold to other materials, and other forms of gold coatings. There are more than 1,300 references and this is a testament to the depth of knowledge revealed by the authors. (MG)

Books specially recommended by Chris Corti, COREGOLD Technology Consultancy, London:


The Santa Fe Symposia, held each May in Albuquerque, New Mexico bring together the world experts in the theory and practice of jewellery manufacture, including presentations on metallurgy, new alloys and technologies and jewellery processes. Gold and silver topics tend to feature strongly at each symposium. The proceedings are published annually (each has a different but related ISBN number) and contain written versions of each presentation. The series as a whole is an unrivalled collection of technical papers by the experts from both academia and industry on the materials and processes involved in jewellery manufacture, as well as related topics such as assaying and recycling/refining, and serve as the benchmark to the world industry on latest best practice and innovations. The early books are edited by D. Schneller, and the later ones by E. Bell. A few years, 1992-4, have not yet been published as proceedings. [www.santafesymposium.org] (CC)


The science of gold catalysis has undergone a major metamorphosis over the last two decades, starting with significant scientific breakthroughs in 1987 made independently by Profs. G. Hutchings and M. Haruta. Since then, the science has grown enormously and major commercial
### Author, Book Details

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<tr>
<td>C. W. Corti and others (editors), Gold Technology, World Gold Council, London, 1990-2002 (3 issues per year, Nos. 1-36). ISBN 1364-7415</td>
<td>This gold jewellery technical journal was published in several languages besides English and contains technical articles by world experts related to gold jewellery technology, including alloy data sheets, new materials, metallurgy, processes and especially lost wax/investment casting. The complete set of issues serves as a major reference source of gold jewellery technologies. [Copies of articles in all back issues can be obtained free from World Gold Council (<a href="http://www.gold.org">www.gold.org</a>) as electronic files in both English &amp; Italian editions.] (CC)</td>
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<tr>
<td>C. W. Corti and others (editors), Gold Bulletin, World Gold Council, London, (published quarterly), Volumes 1-44 (continuing), 1967-ongoing. ISBN 0017-1557.</td>
<td>This unique scientific journal is focused on publishing the latest science, technology and applications of gold, the latter focused mainly on industrial and medical applications although jewellery and dental also feature. As such, the archive contains an unrivalled collection of scientific papers and reviews on gold by world experts and is thus a unique collection of scientific innovation over the years. Now published electronically, all papers can be accessed and downloaded free from the archive on its website, <a href="http://www.goldbulletin.org">www.goldbulletin.org</a>. Since 2011, it is now published free electronically by Springer on behalf of World Gold Council. (CC)</td>
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| C. W. Corti (editor), Series of Handbooks and a Technical Manual on Gold Jewellery Manufacture, World Gold Council, London. | These handbooks are unique in being practical guides on the science and technologies involved in various aspects of modern jewellery manufacture, written by leading experts. The later ones also contain lists of equipment and consumable suppliers. [Electronic files of each may be obtained on request from World Gold Council, London (www.gold.org).] The series includes:  
- D Ott, Handbook on Casting and Other Defects in Gold Jewellery Manufacture, 1998  
- V Faccenda, Finishing Handbook, 1999  
- M Grimwade, Handbook on Soldering & Other Joining Techniques, 2002  
- V Faccenda, Handbook on Investment Casing, 2003 (CC) |
| Degussa AG (editors), Edelmetalle Taschenbuch (Precious Metal Pocket Book), Hüthig GmbH, Heidelberg, Germany, 1995 (2nd edition). In German. ISBN 3-7785-2448-8. | Written and published by leading experts in Degussa AG, this handbook covers the whole gamut of the science and application technology of gold, silver and the other precious metals. It contains numerical data on the basic properties and characteristics of gold and silver and their alloys – atomic, physical, chemical, mechanical, etc. – that is not found anywhere else in one volume. It is, thus, a unique reference book. It contains chapters on history, primary extraction and recycling of scraps, refining, purities and commercial products, market economics, properties, powders, chemical compounds, processing (mechanical, composite layers, coatings, including electroplating, thick film pastes, etc) and application technologies, including glass processing, catalysis, electrochemistry, electrical and electronic, sensors, jewellery, coins and |

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**Science/Technology**
**Author, Book Details**


**Review**

silverware, dental, medical, photography, and brazing & soldering. There are also chapters on chemical analysis and testing (mechanical, corrosion and metallography) and health and safety. (CC)

This is the second edition of Grimwade’s book, updated and extended from the first edition published over 20 years ago. This is the book on the basic metallurgy, properties and application written especially for the non-metallurgist, particularly for the craftsmen in the jewellery industry. It is very readable and covers all the non-expert will want to know. The complex metallurgy of gold, silver and other precious metal alloys are presented in a way that goldsmiths can easily comprehend. The book comprises 17 chapters, covering basic properties, the occurrence, extraction and refining of the metals, an understanding of alloying behaviour, specific chapters on gold, silver and the other precious metals, and followed by practical chapters on melting, casting and processing, including electroplating, powder metallurgy, surface decoration and assaying and hallmarking. (CC)

As its title implies, this is a basic reference book for metallurgists containing all of the significant phase diagrams of binary gold alloy systems, critically reviewed by the experts. It serves as a basic reference book in understanding the constitution of binary gold alloys. Its contents are applicable to the major industrial and jewellery sectors, including dental, electronics, decorative, brazing and soldering. (CC)

Also a basic reference book of all significant phase diagrams of ternary gold alloys, critically reviewed by the experts. It serves as an important reference source in understanding the constitution of ternary gold alloys, many of which have relevance to the industrial and jewellery applications of gold. (CC)

This English translation of a Russian book gives access to much scientific information on the science and applications of gold and silver (as well as the other precious metals) in Russia. It covers jewellery and industrial application technologies. There are chapters on principal ores and minerals, extraction and manufacture of semi-finished products, properties of liquid metals and alloys, properties of solid metals and alloys, phase diagrams and applications in the jewellery, dental and industrial sectors. Appendices include Russian standards for precious metals and alloys, and electrolytes and etching solutions for metallography. (CC)

This book is based on the presentations given at the first gold conference, held in Hanau, Germany in 1996. With 21 chapters written by leading experts, it covers all sectors of gold science (with two notable exceptions – catalysis & nanotechnology, which had not yet been recognised as mainstream gold themes) with heavy emphasis on gold chemistry. Presented in three parts, the first covers the history and progress in gold technology with chapters on coinage, economics & geology, extraction from ores, jewellery alloys, refining and recycling, decoration of glass and ceramics, dentistry, electrical engineering and electronics, and thin film technology. Part 2 comprises one chapter on gold biochemistry and Part 3 comprises 11 chapters on chemistry. This book serves as a classic reference book on the state of gold science in 1996. The conference itself probably kick-started the resurgence of
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*Book specially recommended by Sam Etris, Technical Consultant, The Silver Institute:*

The silver section of this immense work of 22,950 pages covers a broad spectrum of applications of silver and silver alloys, made possible by silver’s outstanding properties that are essential to most advanced technologies. For silver, its single electron provides the best conductor of electricity, the highest electrical transmittance, highest light reflectivity and the second-highest infrared reflectivity. And in the last decade, analytical techniques have become available to resolve the mystery of the catalytic action of silver. (SE)
### Silver General

#### Author, book details

ISBN 978-0-7141-1815-1

#### Review

Useful introduction to silver written by Philippa Merriman, a professional silversmith and director of Merriman Silver Ltd. She sets out its 6,000-year history in ancient cultures as diverse as the Vikings and the Bedouins of North Africa (who accorded special status to silversmiths) and its great legacy in silver plate for rituals and adornment in the Middle Ages. As a working silversmith, she describes how easy it is to work and even polish to a mirror finish, while it has myriad applications in modern technology and even medicine. Silversmiths’ techniques are set out, along with sections on assaying, hallmarking and the silversmith’s tools. This is backed up by 120 illustrations from the British Museum and a comprehensive bibliography of more than 60 books on every aspect from assaying to metals technology. A practical guide in starting to understand silver ancient and modern. (TG)
Silver India

Author, book details


Review

S. L. N. Simha spent 35 years in the Research Department of the Reserve Bank of India, specialising in the regulation of gold and silver trading on the subcontinent before writing this comprehensive account of India’s love affair with silver. As he says: “I do not know of many other publications … that give so much factual data on silver over so long a period.” He begins with a history of silver in ancient coinage, bimetallism and the gold-silver ratio in Europe, America and India from the 18th century. Then he explains the decline in the silver price from 1850 and the commissions looking at its future, noting India and China remaining firm friends of the metal. The revival of silver’s fortunes after World War II and India’s own market and consumption are reported. Over 3 tables of statistics on production, prices in major markets, India’s imports and world consumption make this book a basic source. (TG)