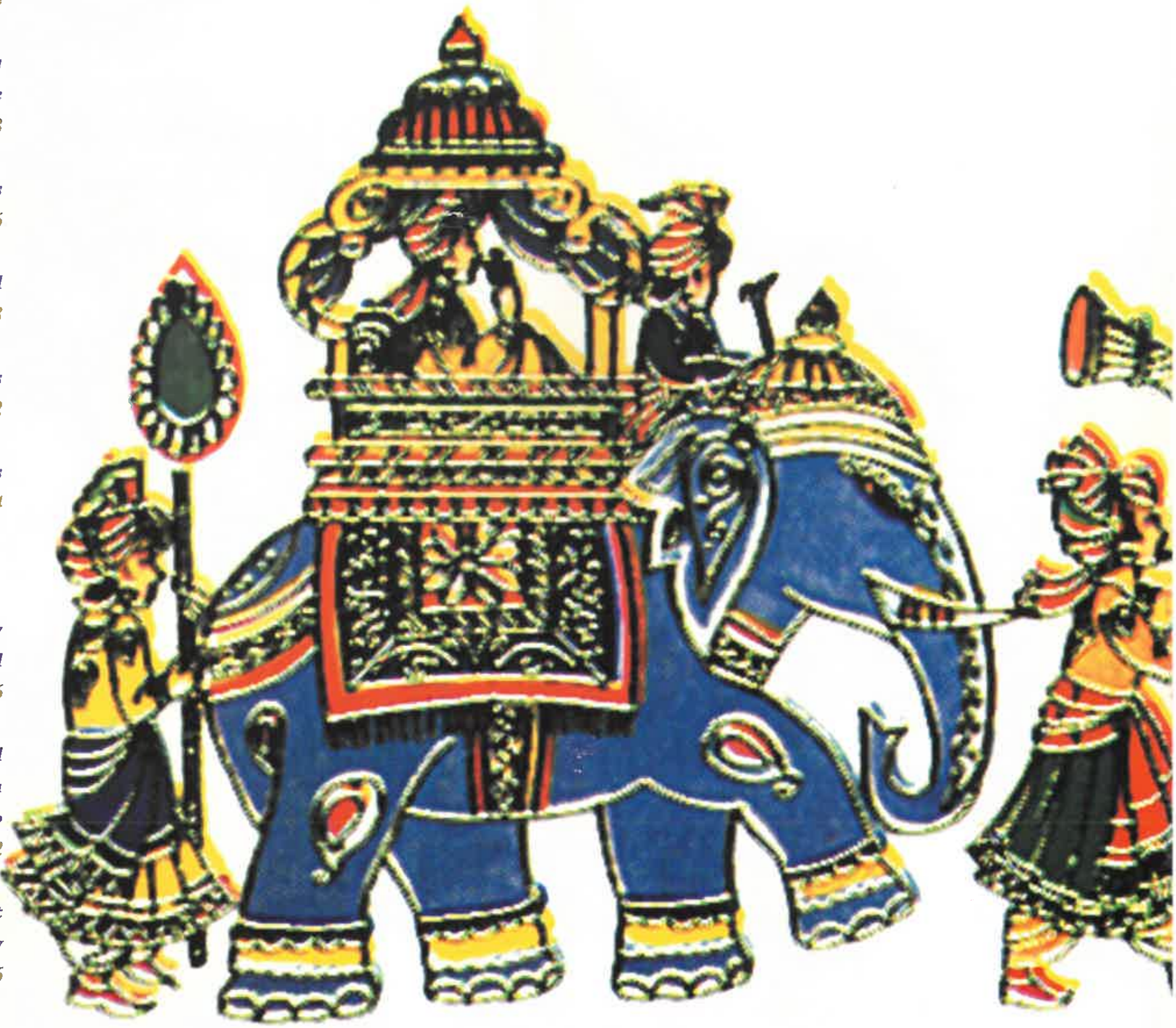
Alchemist

The London Bullion Market Association ISSUE 21 November 2000

LBMA

In this issue



Detail from an Indian wedding card
The main marriage season is currently in full swing in India. See article on page 14.

Weak Gold or Strong Dollar?

By John Reade, UBS Warburg

Gold isn't weak. It's the dollar that's strong!

The remarkable strength of the USD this year has overpowered most other currencies, causing alarm, and more recently intervention on behalf of the beleaguered EUR. This paper attempts to demonstrate that the strength of the dollar has led to weakness in the gold price denominated in USD.

The performance of gold in major currencies from January 1999

Currency Pair	XAUUSD	XAUCHF	XAUEUR	XAUAUD	XAUJPY
Change on Jan 2000	-5.9%	+7.0%	+13.2%	+14.0%	-0.9%

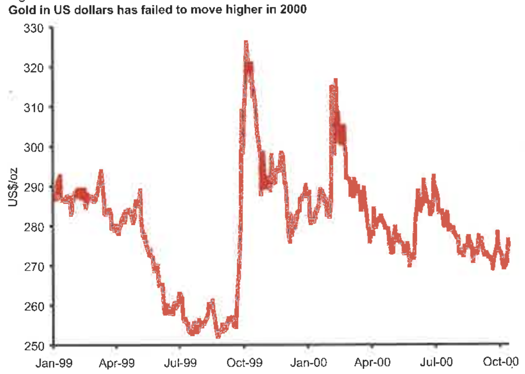
Gold ended 1999 on a relatively high note after the announcement from the European central banks that they would limit sales and lending. However, subsequently, the new millennium has been rather disappointing for gold, so far at least. Sentiment, as reflected by the gold price, peaked in February with the announcement from a number of producers that they would limit there hedging activities this year. Since then, however, the gold price has slid lower and has failed to get above US$280/oz since late July. Gold's uninspiring US dollar performance is shown in Fig 1, below left.

This performance seems counter-intuitive based on the supply/demand balance in the gold market. The key elements are summarised below;

Supply has been constrained by the following factors

- Mine production growth is low and constrained by the low spot price
- We estimate that the producer hedgebook contracted in H1-00
- The European central banks have remained within their 400 tonnes sales quota. Other central bank sales have taken place but there has been no obvious flood of central bank selling.

Figure 1
Gold in US dollars has failed to move higher in 2000



source. Reuters Graphics

Demand has been lower than forecast, but there is still positive growth

- Jewellery demand growth is up marginally on H1-99, according to the WGC
- India's 2000 Monsoon has been 'mostly normal', but official gold imports are down substantially on 1999.
- Coin demand has fallen sharply in the US compared to the Y2K demand last year
- Bids for used coins are at a discount to spot gold in the United States.

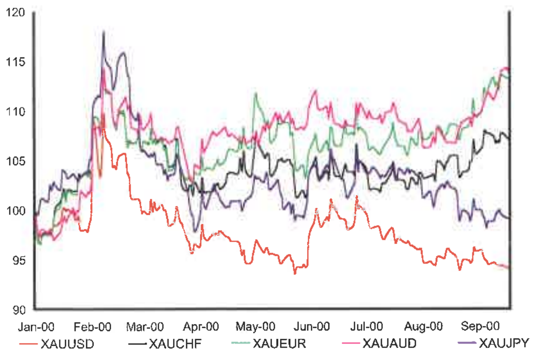
Overall we expect that identifiable supply should exceed identifiable demand by some 400 tonnes this year. Why then has the gold price not rallied? The answer is that it has, but not in US dollars. Fig 2 at right, shows the price of gold in a number of major currencies, since the beginning of the year and indexed to 100.

Gold's performance in the currencies shown above has been better than the dollar gold price performance. Since the beginning of 1999 the gold price has increased in all of the currencies shown above with the exception of the US dollar and the yen.

Is the performance of gold in these currencies important? Conventional wisdom indicates that it is, as US dollar strength is often used as the reason that gold has come under pressure in market commentary.

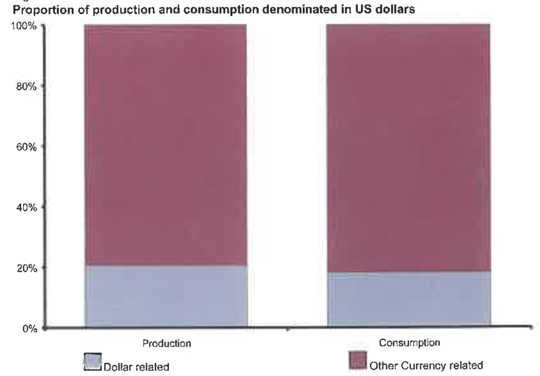
Although the US economy is by far the largest economy in the world, it is neither the most important producer nor consumer of gold. Fig 3 below shows the proportion of gold production and consumption in US dollars and in other currencies. This calculation includes not only the USA, but also countries that have pegged or maintain a tight trading range between their currencies and the USD.

Figure 2
Gold's performance in other currencies presents a more mixed picture



source: Reuters Graphics, UBSW

Figure 3
Proportion of production and consumption denominated in US dollars



source: UBS Warburg, Gold Fields Mineral Services

Approximately 20% of both production and consumption are either in US dollars or in currencies that are, for now, closely linked to the dollar. The balance of the supply and demand is spread between many diverse currencies. The conclusion from this is that although the interbank gold market trades gold in USD, the price in other currencies is an important driver of the gold price.

We see moves in the foreign exchange markets impacting on the gold price in a number of ways. Some of these issues are discussed below:

A strong US dollar impacts on supply and demand in the following manner:

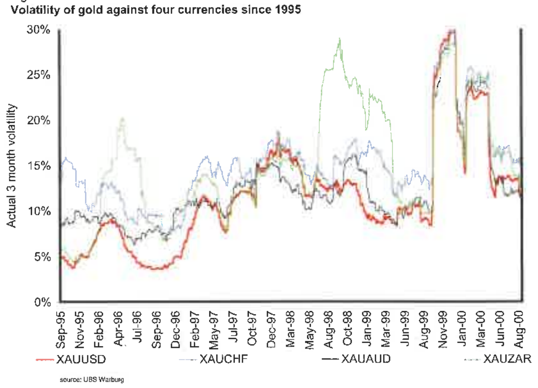
- Supply of privately hoarded gold (coins and bars) increases sharply when the European currency price of gold is high. There have been material sales of privately held gold on each wave of Euro weakness.
- Physical demand is sensitive to the local price of gold. Although these professionals are naturally aware of the US price of gold, terminal demand is at least partially influenced by local currency. This has certainly been a factor in Europe this year with the very weak euro, and Swiss franc and high rupee prices have contributed to disappointing Indian demand, although the drought earlier in the year hardly helped.
- Weak producing country currencies tend to accelerate producer selling. Although we estimate that the global hedgebook declined in the first half of this year, there is evidence that there has been some new net hedging over the past few months. GFMS forecast that the global hedge book will begin to grow again in the second half of 2000. Although we are less certain of this, certainly there have been indications of AUDXAU-related selling at times over the past few months.

Relationship between intraday moves in currencies in moves in XAUUSD

Comparison Currency	Category 1	Category 2	Category 3	Category 4	Relationship
AUD	30.8%	29.4%	19.3%	20.5%	51.4%
GBP	27.5%	26.4%	23.1%	23.1%	16.7%
CHF	25.9%	26.5%	24.3%	23.4%	10.0%
EUR	26.6%	25.2%	23.1%	25.1%	7.5%
JPY	25.3%	24.4%	25.1%	25.2%	-1.2%

Source: UBS Warburg, Reuters

Figure 4
Volatility of gold against four currencies since 1995



Another way of looking at the gold price in other currencies is to look at the volatility of gold in different currencies. The correlation between gold and the currency is inversely related to the volatility between gold and the currency. We have plotted the actual three-month volatility of gold in four currencies over the past five years. This is shown above in Fig 4.

Although this list is incomplete, it does illustrate the point quite well. Over the five-year period the average volatility of the XAUUSD cross is 10.1%, lower than the other three gold currency crosses, but as the chart above shows, there have been distinct periods when the volatility of XAUUSD has been higher than that of other crosses. Most obviously, the XAUAUD has been noticeably and sustainably lower between January and September 1998 and July and September 2000. In both cases the US dollar gold price was soft and the AUD gold price firm, an attractive set of circumstances.
Based on relative volatilities, gold does not appear to have been correlated with other currencies above for any length of time, although there have been shorter period when the volatilities of gold in Swiss francs and rands have equalled that of US dollar gold. During these periods it can be argued that the gold price was being determined as much by the Swiss franc and rand price as it was the dollar price.

We have looked at the relationship between gold and currencies in another way. We have taken intra-day prices of XAUUSD and various major currencies and compared the moves of both hour-on-hour. If there were no relationship between gold and currency moves, we would expect no relationship. There appears to be a distinct relationship between moves in the US dollar gold price and moves in other major currencies.
In order to show this relationship we divided the moves into four categories.

1. *Gold up, currency cross up (i.e., USD down)*
2. *Gold down, currency cross down*
3. *Gold up, currency cross down*
4. *Gold down, currency cross up.*

If there is a positive relationship between moves in gold and moves in currencies, then the moves will be skewed towards categories 1 and 2 and away from categories 3 and 4. The table above shows the results of the study. The final column, Relationship, is a measure of the degree of relationship between gold and the currency. This is defined as:

$$\frac{\textit{Percentage in Cat. 1 \& 2}}{\textit{Percentage in Cat. 3 \& 4}} - 1$$

(expressed as a percentage)

This indicates that during the observation period for the above exercise, May through September 2000, moves in dollar gold were closely associated with moves in the AUD. The smallest relationship in this sample during this period is with the JPY.
We have also examined this relationship over longer periods with changes measured on a daily and weekly basis. There appears to be a positive relationship, sometimes strong, sometimes weak, but in almost all cases present. In the interest of brevity, we cannot show these results but they are available on request.

Conclusion

We have attempted to show that although gold is quoted in USD, there is an identifiable relationship between moves in the dollar gold price and moves in the certain important currencies. The conclusion to this work is that part of the reason that the performance of the gold price has been disappointing since February 2000 is due to the strength of the USD. Once this strength is sustainably reversed, we believe that a period of US dollar weakness will allow the US dollar gold price to increase. To the end of 2001, UBS Warburg forecasts that the USD will weaken from current levels by around 12%, as expressed by the arithmetic average of our forecasts for the five major currency crosses in the table above. Perhaps more importantly, we forecast that the AUD will appreciate by more than 17% from current levels. This weakness in the USD and the strength in the AUD will be very supportive for gold. ■

John Reade studied Mining Engineering at Imperial College London before entering the mining industry. After spending eight years on the mines, Reade became a gold equity analyst for a stock-broking firm in South Africa. After six years as such, Reade switched to precious metals analysis based in London. He has worked for UBS Warburg and its forerunners for the past four years.

Market Moves

David Spraggs and **David Corcoran** joined Credit Suisse First Boston International ("CSFB") in July this year.

David Spraggs started his market career in 1975 with Gilt Edged stock jobber Wedd & Owen. Three of the six years there were spent as a trader on the former stock exchange floor. He then joined Johnson Matthey Bankers ("JMB") where he traded silver predominantly, with stints also as a coin and gold trader. He spent the last fourteen years with J P Morgan as their senior gold trader.

David Corcoran joined JMB in 1978 working in the back office on Far East consignment accounts for eighteen months. He then joined the front office as a trainee dealer on the silver desk. The following five years were spend in a variety of roles covering platinum, coins, gold and silver. When JMB was sold to Mase Westpac, he left to join J P Morgan. His first year was spent in New York trading and marketing gold and silver, before moving back to the London office where he remained for the next thirteen years continuing his gold and silver roles.

The two Davids are responsible for market making of gold and silver in London.

Peter Hillyard joined ANZ Investment Bank on October 2, responsible for developing and marketing commodity risk management products and services.

He began his career in precious metals twenty years ago at Philipp Brothers. In 1983 he moved to Engelhard Metals Limited to set up their European trading operation and two years later joined Chase Manhattan Bank to establish their precious metals business in Europe. In 1992 he joined Barclays Bank as Managing Director, responsible for all aspects of their precious metals activities world-wide. He worked for Bank of America from 1997 until their merger with NationsBank forced their withdrawal from the metals market.

Standard Risk & Treasury Management Services (SRTMS) now has an office in London and has appointed **Harriet Hunnable** as International Business Development Manager. Harriet began her career in the bullion market at N.M. Rothschild & Sons Ltd as a graduate in 1989. She ran the FX and Precious Metals derivatives books before moving across to international marketing working with mining companies and central banks. In 1995 she went to Merrill Lynch to set up and run their London Precious Metals sales desk covering Europe, the Middle East and Africa and was latterly Director Precious Metal Sales at UBS Warburg.

SRTMS provides independent risk and treasury management services to corporates involved in the commodities sector and has been very successful with the African gold mining industry.

Tony Falco joined Standard Bank on 5 September to manage their gold and silver options book.

He began his career at JP Morgan, where he spent his first two and a half years in the precious metals operations area. He then joined the trading desk as a junior trader, first on the spot desk, then on options, where he assumed management of the company's risk in gold and silver options. After leaving Morgan, he spent a year and a half at Gerald Metals, where he traded pgms – spot, forwards and physical business. ■

ISDA-Based Market Standard Documentation for Gold Interest Rate Swaps

Both the LBMA and ISDA are pleased to report that a market standard document, intended to cover gold interest rate swaps has been posted on ISDA's website. The website address is http://www.isda.org/whatsnew/index.html.

We would like to thank all those who were involved in the process, in particular David Benton and Emma Fleming of Allen & Overy and Bob Pickel of ISDA.

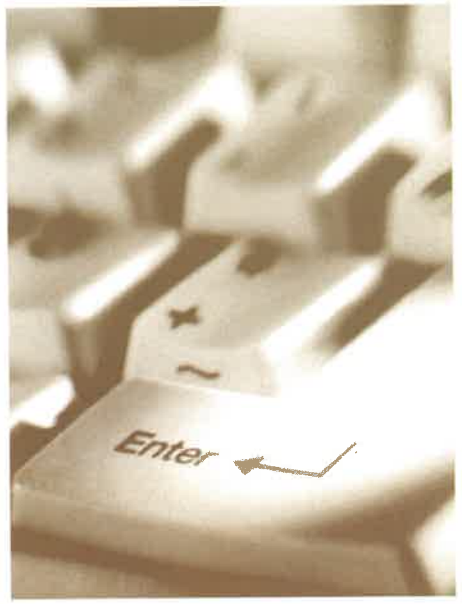
The background to gold interest rate derivatives was explored in Martin Stokes' article in Alchemist 16; the benefits of these products in reducing credit exposures and balance sheet impact are significant. We now encourage all bullion market participants both to review the standard document and to use it in their bilateral trading activities.

A document to cover gold FRAs will be published shortly.

This initiative represents another step towards the LBMA's goal of providing market standard documentation to cover all OTC bullion products. Adherence to standard documentation creates a more secure marketplace for all and saves countless hours of bilateral negotiation and lawyer time. ■

Going for Broking Systems

By Susanne M Capano, Editor



With a click of your mouse, you've just bought 5,000 ounces of loco London gold. Almost instantly, trade details appear simultaneously on your and on your counterpart's screens.

At the beginning of the year, a scenario like this in the over-the-counter precious metals markets would have been fiction. Now it is an increasingly common fact, thanks to the electronic broking systems that have come into operation over the course of the year. Their trading volumes are growing – and more platforms are scheduled to appear over the coming months.

Below, we take a closer look at three electronic systems that are up and running: EBS, Intercontinental Exchange and Trasy Gold Ex. This is followed by GFINet, which has developed a hybrid system to which it is looking to add gold next year, and enymex, which has a planned launch in the second quarter of next year. We close with some comments from market practitioners on the new systems and their impact on the market.

EBS

EBS was launched in 1993 by major market-making banks to provide an electronic system for efficient, low-cost, brokered dealing in spot foreign exchange. The EBS partners are subsidiaries of the following:
ABN-AMRO Bank, Bank of America, Barclays Bank, Chase Manhattan Bank, Citibank, Commerzbank, Credit Suisse First Boston, HSBC Bank PLC, J P Morgan, Lehman Brothers, MINEX Corporation, Royal Bank of Scotland (formerly National Westminster), S-E-Banken, UBS AG.

Spot gold and silver were added to the system in June 2000 in response to customer demand, particularly from the largest precious metals market-making banks. Daily volumes have grown to an average of $80 million/day for gold (roughly 300,000 ozs); $5 million for silver (850,000 ozs). Some market participants estimate that EBS now accounts for around 50% of the London spot precious metals market.

What are the specifics for precious metals?

Gold and silver are available to the interbank/institutional trading community. Prices are quoted in USD/ounce and are for non-physical (book transfer) settlement under 'loco London' terms. Participants must have a clearing account with one of the seven LBMA Market Makers offering clearing services in London. The minimum amount for gold is 1,000 ounces and it is traded in increments of 1,000 ounces. The minimum for silver is 50,000 ounces, with trading increments of 50,000 ounces.

Credit considerations

Each entity is responsible for its own credit allocation. It appoints an Administrator, who allocates credit per counterpart based on a list detailing all users of the system. This credit is then distributed to individual trading desks so that each trader (working within his desk limit) has specific credit limits per counterpart. When a new institution joins EBS, their credit details are 'advertised' to existing users so that they can allocate credit.

Credit granted by one counterpart to another is not reciprocated automatically – this has to be carried out as a separate action. Both sides must grant each other credit before dealers of the two counterparts see each other's dealable prices on the system.

How is a trade completed?

The EBS Spot Dealing System predates Internet dealing technology and is delivered over a proprietary network which is available 24 x 7 x 365. On average trades are completed in less than a second in a totally secure trading environment.

Users see a main display showing the best credit-screened price – bid and offer. Above that, a smaller display shows the best bids and offers available on the system, regardless of price.
It is an automated matching system, putting together those bids and offers which have acceptable credit first by price, then by time. Should an order not be filled at the first price, the system then matches all subsequent closest prices. If the order remains unfilled, the dealer can either remove it from the system or leave it in – optionally specifying certain parameters, such as a time limit.

Counterpart details are only shown once a deal is completed. A trader Deals Panel records the individual deals per trader – indicating time, whether purchase or sale, counterpart and metal – effectively producing a deal ticket. This data can be automatically despatched via an Automated System Interface to the bank's back office for processing.

To provide a market indicator, transactions are also recorded on an EBS Deals Panel, available to all users, which displays the last prices given and paid on the system in a specified 'timeslice' but not amounts and counterparts.

What does it cost?

There is a monthly charge for the workstation in the region of $1000 per month. These fees are believed to be discounted against user volumes. A flat fee of $25 per order is charged regardless of ticket size to takers of prices only, not to price makers. Where an order is filled by a number of deals, it counts as a single transaction for billing purposes.

ICE: The Intercontinental Exchange

ICE is an Internet-based electronic marketplace that was founded in March by a combination of US and European financial institutions and energy and natural resource firms.

Partners include American Electric Power, Aquila Energy (a unit of UtiliCorp United), BP, Deutsche Bank AG, Duke Energy, El Paso Energy, Goldman Sachs, Morgan Stanley Dean Witter, Reliant Energy, Royal Dutch/Shell Group, SG Investment Banking, Southern Energy Inc., Totalfina Elf, and Continental Power Exchange — which provided the trading technology and management team. Trading began with gold and silver – spot, options, and forwards –on 24 August, and energy trading was introduced on 12 October. As of 16 November, ICE has traded 15 million gold and gold equivalent ounces.

The ICE system is open to any commercial participant in the OTC commodity market. It is available globally around the clock – there are users in the Far East, in Sydney, Europe and the USA. It can be used either over the Internet or via a private network at the customer's option.

Credit Considerations

Participants download the software from the website. Prior to trading, they use a credit management module to set the degree and type of credit they want to extend to other counterparts in the system. Credit facilities may be altered at any time. When a new counterpart joins, a notice is sent out to those already on the system. A planned enhancement is a facility to show an intra-day credit limit.

Users can see all the prices in the system, including those they cannot deal on due to credit restrictions. Prices that can be dealt on appear in white tagged with either 'hit' or 'lift', whereas those that carry credit restrictions appear in red. The user may configure the screen to show only the best bid and ask, or to show all prices in the system in order to gauge the market's depth. The amount that a bid or offer is valid for is shown, but the counterpart's name is withheld until a transaction occurs.

How does a transaction get processed?

The user clicks on a price to deal, whereupon both parties immediately receive a deal confirmation with all relevant details. At any point during the day, system users within a company – including mid- and back-office personnel – can login and review all deals done. An API – Application Programming Interface – is also published, so participants can develop their own front-end order engine, if desired. Or they can use a back-end API to electronically process the transaction details and enter them into their risk-management software, thereby eliminating any delays in entry or errors that might arise from having to re-enter the information.

What does it cost?

Commissions are charged on each transaction, and all participants pay the same rates – including the initial liquidity providers. There are no charges for spot transactions, and no fees for joining the system.

Trasy Gold Ex Limited

The Trasy system was developed in-house by RNA Holdings, the Hong Kong-based precious metals trader and refiner. In 1998 RNA's trading subsidiary, Hing Fung Goldsmith and Refinery (HGFR) sought a more efficient and rapid way to handle growing client orders and price enquiries. RNA specified an Internet-based system designed to service its own group and customers, with HFGR as the sole market-maker, but soon recognised that Trasy could have wider appeal, and enhanced the specification to permit multiple market makers. The system has initially been marketed in East Asia but has global potential.

Trasy covers gold, silver, platinum and palladium, in particular for spot loco London markets. HFGR was the first principal beginning in March 2000. The system was well received by their clients – by now half of their total business by volume is conducted through Trasy. Nine other principals have joined the system since August and trading volume has quickly expanded.

How does it work?

Trasy is an Internet-based system that seeks to deliver the normal Internet benefits while avoiding the disadvantages of normal browser and web-site processes by using two technologies – designated "push" and "small packet". Price data is packaged into pieces small enough to be pushed automatically via the Internet to all users without them needing to request it. The system has the capacity to handle 500 transactions per second.

Interested parties can get information and download a test version that displays all the features from the web-site (trasy.com). If they wish to trade, they must first be accepted as clients by one of Trasy's principals – institutions

that either provide prices or introduce customers to it, or both.

Exact arrangements between principal and client are private. Once installed as a client, the end-user receives definitive trading software from his principal (with whom Trasy has a licensing agreement) together with a two-step code (login account number and password). Traffic through Trasy is inherently secure because data passes rapidly in small packets, but further protection comes from security features, including frequent code changes.

Users receive continuously updated prices on their screens, representing the best bids and offers. Orders are entered on the screen and are automatically checked against the limits that have been granted by the principal before being passed to the central server for execution. Once executed, trading and positions records of both principal and client are instantly updated on their respective screens, and revalued at current market prices in almost absolute real time. Subsequent position valuation occurs continuously and automatically as prices move.

Arrangements between Principal and clients are bilateral, including trading and settlement risk. When an end-user initiates a transaction, his contract is with his principal. If his principal does not execute the trade, a "mirror" contract is made between that principal and the principal who provided the price. Principals are responsible for the risk and settlement between themselves.

What are the costs?

Trasy provides its software without charge or up-front fees, but charges a fee on each transaction to both buyer and seller equally as follows: gold – US cents 2.5 per ounce, silver – US cents 0.125 per ounce, platinum and palladium UScents5 per ounce.

enymex

With a planned launch during the second quarter 2001 and an initial focus on energy and metals, enymex will be an Internet-based online trading platform offering new products from the New York Mercantile Exchange. It will be available around the clock, both inside and outside of normal Exchange trading hours.

It is planned that trades will clear through the Exchange's clearing house. The platform will include products that are related to, but not identical to traditional Nymex products, allowing one-stop hedging between existing and new products. Some of the new products may include variations that trade more infrequently over-the-counter and are not practical for listing on the exchange – listing them on the site will give customers the opportunity to post their interest. Over time, there may be integration between Nymex Acess and enymex. Nymex Acess is the system in use since 1993 for trading existing futures contracts as a supplement to the trading floor. It is mostly used after-hours - with a couple of exceptions for products more suited to electronic trading than open outcry.

GFInet

GFI Group, interdealer brokers founded in 1987, created GFInet to introduce a hybrid Internet-based system. GFInet services are already available in markets such as FX, Repo, Equities, European power and Telecom. The company hopes to introduce gold spot and forwards next year. The system offers both voice-assisted and online trade execution. "This system is designed to complement – not replace – our voice-based services," says Ron Levi, Managing Director of GFInet. "We feel that the expertise of our brokers enables them to offer a valuable service, while technology will increase our global capacity and market reach."

GFInet is open to wholesale market participants (typically banks, broker dealers, securities houses, fund managers, corporate treasuries and trading houses) that already have or can secure trading lines with a number of market counter-parties.

The system will display both real time bids and offers and historical trade information as well as market commentary and analytical tools, through the company's purchase of Fenics, a software company. The technology will provide features to ensure secure trading, increased liquidity and an interface to allow for automatic deal processing.

Premex

Zurich-based Premex doesn't plan to add an electronic platform, preferring to stay in contact with its customers by Reuters Dealing and/or telephone, depending on the customer's preference.

"It's become especially difficult for voice brokers to compete against the electronic platforms in day-to-day spot transactions. The market has long quiet periods, and it's very hard to justify maintaining a substantial service in this area. Your staff have to be paid every day, not just when the market moves," says Rolf Siebenmann.

He sees better opportunities for the company in options and forwards. "Of course we face competition here too, but I think people appreciate our service – we stay in contact and find out where our customers' interests lie, where deals can be put together. When it's busy, I don't think people are happy to volunteer aggressive quotes for forwards or options to an electronic system."

During quiet periods, electronic systems may have the upper hand, he concedes. They are cheaper and – at these times – can be more efficient. "But dealers will probably want to turn to voice brokers for additional liquidity when the market is busy. Until then, I think it is important to maintain good contact with our clients and maybe offer some things that can't be done on the electronic platforms."

> "I wouldn't want to see all contact between professionals disappear. In a healthy marketplace, contact is very important."

Electronic Benefits – and Drawbacks

When asked about the benefits of the new electronic systems, traders most often cite substantially reduced costs. Many houses have seen their brokerage bills climb in recent years – possibly because staff cutbacks have left limited in-house resources available when there is business to transact, leading to increasing reliance on brokers.

But cost is definitely not the only advantage. Because some of the electronic systems offer through processing, they are efficient at processing deals quickly, and they cut back on errors that might be committed by having to re-enter data.

And they are reliable. Says Andy Flotron of UBS: "If I click on a price, I like knowing that I am guaranteed to get that price." Another dealer agrees – "Any price you see on the electronic system has to be for real. It is there because it represents a clear intent of dealer interest."

Electronic platforms came into being during quiet market conditions, and many of those involved agree that these are the conditions under which they perform best – traders feel comfortable entering and dealing on prices. The systems haven't really been tested during busy market conditions yet. Many expect that during those times, voice brokers may become the preferred option.

There are some drawbacks to the new systems. "I think the new platforms can lead to fragmentation. Voice brokers tended to add to liquidity by helping to transact large volumes of business. But now that they have become less active, I think that in the future, when the market does move, it will be more volatile and less liquid," says one trader.

Many feel that while the new systems are a benefit, but it would be counterproductive if voice contact disappeared completely, not only between dealer and voice broker, but also between dealers themselves. "I wouldn't want to see all contact between professionals disappear," says another dealer. "In a healthy marketplace, contact is very important."

But will the voice brokers be there to provide that service? Perhaps not. "Within eighteen months the market may only have electronic brokers left," suggests one dealer. All concerned seem to agree on one fact – there are currently too many in the market for all to survive. "They all tend to act in a manner that's professional and ethical, but choices will have to be made. There are too many to support them all," points out Matthew Keen at JP Morgan. Others note that with more electronic platforms scheduled to come on-stream over the coming months, there may be consolidation in that field too.

"Most dealers feel they have to give electronic systems a chance. But I wouldn't cut off my nose to spite my face," comments Matthew Keen. "This is a small, personable and honourable market. And when the market is bubbling with activity, the voice brokers help make it the most efficient market in the world." ■

The Greening of Gold

AuTEK explores gold's potential to clean the environment

By Susanne M Capano, Editor

A possible new industrial use for gold is impressive in scale – at both the upper and lower limits.

If you imagine a particle of gold the size of a speck of dust, you're thinking too big. Think much smaller – one thousand millionth of a metre small.

While a speck of dust may contain up to 100,000 atoms, a nanometer-sized particle of gold is measured in tens of atoms – perhaps 20, 30, 40 atoms in size. That's the size gold needs to be to act as a catalyst. While PGMs are also broken down into miniscule particles to act as catalysts, with gold, the particles would need to be one-tenth the PGM size. A unique feature of gold is that it can accomplish its catalytic action at room temperature and in the presence of moisture, whereas other catalysts require higher temperatures and dry air streams.

Researching gold's potential as a catalyst is the primary focus of Project AuTEK, a 50:50 joint venture launched by AngloGold, the world's largest gold producer, and Mintek, South Africa's national metallurgical research organisation. Mintek has a long-standing involvement in the extraction, processing and application of precious metals and their alloys and compounds.

Forming part of AngloGold's international marketing activities, Project AuTEK is the company's first foray into research and development in areas other than the traditional mining, engineering and metallurgical disciplines. Commenting on the initiative, Dave Hodgson, executive officer responsible for the project, said, "Project AuTEK draws strength from the fact that gold has unique properties that can be utilised optimally and profitably in applications over and above jewellery production, especially in environmentally-sensitive areas."

How it could work

"All metallic surfaces attract gas molecules to a greater or lesser extent – in the case of gold, very much the lesser because it is so inert," says Dr Mike Cortie, manager of the project's research division at Mintek. Usually the surface of a metal gets completely coated with a layer of the gas molecules, which stay there. But in the case of a metallic catalyst, the various kinds of gas molecules absorbed on its surface can react to form a new kind of gas molecule – which doesn't stick to the surface as readily as the original reactant molecules did. So these molecules float off again and are replaced by fresh reactant molecules.

AuTEK's research has started by targeting how gold might catalyse pollutants such as carbon monoxide. "The concept is that individual molecules of carbon monoxide and individual molecules of oxygen settle onto the surface of the gold and then, because they suddenly find themselves cheek-by-jowl, they will react to form molecules of harmless carbon dioxide, which then float off again."

Computer graphics visualisation of nanoscale gold particles with absorbed oxygen atoms.

But why should the carbon dioxide molecules float off while other ones stick? "Chemists are still rather hazy on precise details," says Dr Cortie. "Ostensibly, the reason is that the affinity of gold surfaces for carbon dioxide molecules is rather weaker than for the carbon monoxide or oxygen molecules."

A catalytic conversion – to gold

Work in the field has traditionally been fragmented, and researchers have rarely had the opportunity to interact. That's set to change at Catalytic Gold 2001, an international conference on the industrial applications of gold. Being held in Cape Town on 3-5 April 2001, the conference is open to both researchers and possible commercial users of products. Topics will include carbon monoxide oxidation, environmental applications, automobile exhaust purification, the chemical industry and electrocatalysts for fuel cells.

The interesting catalytic properties of gold have only been known for about a decade – in this business, a relatively short time – and scientists are still rather unsure about how it works. "We can only speculate what exciting applications might be unlocked in the future once a fuller understanding of the scientific issues has been achieved," Dr Cortie explained. "Such catalysts might someday find application in office buildings, in the purification of air for the occupants of passenger aircraft and as a general solution to air pollution. There is also evidence that gold has potential application in certain types of fuel cells that provide environmentally-friendly power and that it might serve as a useful catalyst in heavy industry chemical synthesis."

If successful, Project AuTEK will produce positive results not just for AngloGold and Mintek, but for South Africa, the global gold mining industry and, ultimately, for the environment. ■

The Good Delivery Lists

Twin Pillars of the London Market

An Interview with Peter Smith, Vice President, JP Morgan

Speakers at the LBMA Precious Metals Conference 2000 raised the issue of whether the specifications for good delivery gold and silver bars in the London Bullion Market ought to be modified. The only form of gold acceptable for good delivery has traditionally been the 'large bar', which weighs approximately 400 ounces and has a minimum purity of 99.5% gold. In silver, the only acceptable form of metal is the approximately 1000-ounce bar, minimum 99.9% pure.

Should good delivery be widened to include some of the other forms of gold and silver traded in the market? What about using locations other than London as acceptable delivery points? Peter Smith, Chairman of the LBMA's Physical Committee, looks at some of the issues involved in defining and maintaining acceptable good delivery.

Why did the 400-ounce bar become the standard for London good delivery gold?

That has been the universally accepted form of metal, not just in the London market, but around the world. Today it is held in its physical form primarily by central banks and governments. Many of them maintain their gold reserves not only in their own vaults, but with other central banks, mainly the Bank of England, the Federal Reserve Bank in New York, the Swiss National Bank and the Bank for International Settlements. These gold reserves form part of a country's international reserve assets, and as such must be kept in an internationally tradable form. When a central bank lends gold to a bullion bank in this form, it expects to be paid back in kind at the end of the loan.

What about the use of other bars, such as kilos or ten-tola bars?

These forms of gold are often sold by the wholesale market to a variety of intermediary traders, who in turn sell them to private investors and jewellery manufacturers in smaller lots, or perhaps even in single bars or fractions of a bar. Many of these bars end up being made into jewellery for the retail market.

But often these transactions still begin life as a central bank loan in the form of large bars. The gold is transferred from the central bank to an LBMA clearer, who then transfers the metal to a refiner who re-refines it into smaller investment bars, often simultaneously upgrading the quality to 99.99%. These bars are then typically sold to a physical dealer in a market such as Dubai or India.

Why not accept these forms of bars as good delivery too – wouldn't that help alleviate the liquidity squeezes that sometimes occur?

To a large extent, this is a question of practicality and logistics in a wholesale marketplace that has a huge turnover of physical gold. A ton of gold in the form of 80 large bars can be stacked safely and moved easily when strapped to a wooden pallet - preparation time is relatively short and audit control is simple. A ton of gold in the form of 1,000 kilobars is much more difficult to handle – the bars must be boxed for protection (20 to a box) and issues of security and audit control become significantly more onerous. The boxes are expensive and in large quantities are unstable and potentially dangerous to stack.

Essentially, all vaulting activity must be multiplied by 12 and when one considers the huge bullion tonnage which moves in and out of London, accepting kilobars as Good Delivery would simply not be practical.

One can look at this issue as being one of wholesale and retail. Central banks, operating in the wholesale market, are prepared to lend their gold, so long as they receive back fully fungible, Good Delivery large bars at the maturity of the transaction. The pipeline of the whole physical gold business, encompassing producers, refiners, fabricators and jewellers, benefits from the liquidity provided by central banks – without this liquidity it is unlikely that the dramatic expansion of the jewellery business over the last 20 years would have occurred. However, as gold in the jewellery pipeline moves more towards the ultimate point of sale to the retail customer, the more it moves away from the fungible, large bar format. There is naturally a risk in financing fabricated stocks in this way and the central banks' requirement that their gold be returned in the wholesale form of large bars means that under extreme market conditions squeezes occasionally occur. However, on balance, the benefits of the liquidity far outweigh the disadvantages.

What are the mechanics of a squeeze situation?

When a physical dealer has 400-ounce bars refined into smaller investment bars, he assumes that there will be sufficient demand to sell these bars relatively quickly. But sometimes the market dries up for one reason or another – one of the risks in doing business.

The dealer is now faced with an outstanding loco London gold loan that he cannot easily repay without having sold the small bars. What happens if he tries to deliver the small bars against his loan? Eventually they would work their way back to the London clearer – who can't deliver them against the central bank loan, as that must be repaid in 400-ounce bars. The clearer can accept the small bars at his option, but since he is faced with re-converting the bars at his own expense, he may take them at a discount.

While 400-ounce bars are the benchmark, LBMA clearers and other market-making members of course trade other bar forms. And it is possible that, in the case above, one of them might have sufficient stocks of 400-ounce bars to repay the central bank loans, and has a potential buyer for the small bars, in which case he'll pay a premium for the small bars.

Above all, the clearers must ensure that they have sufficient stocks of 400-ounce bars to satisfy outstanding obligations to governments, central banks and other clients.

What about using locations other than London as Good Delivery points?

There is a clear advantage to London: it has proven to be a centre of excellence in determining the weight and quality of large bars. While a number of countries outside the UK weigh gold bars on electronic scales, the weight of bars sold in the UK must be still be verified on a mechanical beam balance. The Weights and Measures Authority in the UK has still not been satisfied that electronic scales can provide sufficiently consistent accuracy when a quantity of large bars is being weighed.

And there is a drawback to using other locations: the logistical difficulty in providing a regular oversight.

In the base metals market, certain locations are convenient for producers to deliver their stocks into local warehouses, however, the location may not be as convenient for the purchaser, who has to pay to ship the material back out. Those locations tend to trade at a discount to some other locations.

As with gold bar sizes other than 400 ounces, the clearers and other LBMA Market Makers don't only trade loco London. They maintain stocks at various locations around the world in order to satisfy both their needs and the needs of their clients and will quote prices for them at varying premiums and discounts to London, the benchmark.

Turning to silver, why doesn't the LBMA accept silver grain for good delivery? This form of the metal seems to be finding increasing popularity among industrial users.

The Physical Committee has looked at this issue. For the time being, we still find that there is great difficulty in determining the correctness of the assay and the exact quantity of the grain if it has been held in storage for a long time – and the investment community often prefers to hold silver over the long term. Any tampering with the quantity or quality of the silver grain in a given container might not be discovered for some years.

Of course, individual LBMA clearers and other Market Makers often trade in silver grain. When they accept grain, it generally must come from a first-class counterpart, who would make good any shortfall should the grain not meet its original specifications. Like investment bars in gold, there are fluctuating premiums and/or discounts for silver grain against the 1,000-ounce-bar benchmark.

The Physical Committee continues to work with some of the world's premier silver refiners to try to find satisfactory long-term storage methods that would ensure suitable quality and security control. So far, findings suggest that the cost of a container that was sufficiently secure to keep large quantities of silver in long-term storage is too high to be commercially viable – the types of containers available tend to work better for small- and medium-sized commercial transactions that are settled relatively quickly. But the market is continually developing new materials and new security methods, and the Physical Committee stands ready to revisit the subject.

A Tale of Two Weddings

An Inside Look at Indian Marriage Ceremonies

Indian marriage rites are much like those of other cultures – fun and fanfare commingled with pomp and tradition. And then, like all the others, they are different. Hindu or Muslim, they have some things in common: a thousand or more guests, and festivities generally lasting a week. Gifts will be widely bestowed through the extended families. The soon-to-be in laws will sing songs, poke fun (and throw powder) at each other. And on the wedding night itself, the groom's shoes might be held for ransom. Somewhere amidst the multitude of ceremonies, the couple will be wed.

The shoeless groom could go to his new wife for a loan. As one of the country's 10 million brides that year, she will have received an average of 30 grams of gold, her parents having played their part in consuming an estimated 300 tonnes of "wedding" gold.

With the marriage and festival season in India now in full swing – the peak period for gold and silver demand in the world's largest consuming nation – we take a look at what's behind the statistics.

The Seven Day Hitch

Kamal Naqvi, Macquarie Bank

Seven days. Dozens of ceremonies. Hundreds of gifts. A thousand people – mostly strangers, hugging you and pinching your cheeks. And ... our very own gold mine!

Being pushed and pulled in and out of one alien ceremony after another may not be everybody's idea of the most romantic way to get married. But it is part and parcel of an Indian wedding. Indian weddings extend far beyond the "happy couple", with relatives and friends often holding at least equally prominent roles. As such, weddings are a cornerstone of Indian society.

I should note that my wedding is just one of many examples of "an Indian wedding". India is a hugely diverse and populous nation with a myriad of languages, religions and cultures. As a result, marriages differ markedly from culture to culture and region to region.

That said, there has been considerable cross-cultural pollination over the centuries and many marriage traditions are now shared across Indian communities just with different names. My own Indian Muslim wedding shared, in many respects, more similarities with a Hindu wedding than it did with Muslim weddings in the Middle East.

SETTING

Our wedding was located in my father's home town, Amroha, in a mango and sugar cane growing area of Uttar Pradesh - India's largest, most populous and poorest state, NE of Delhi.
Status and religion are important in an Indian marriage – even in a "love marriage" such as ours (an increasing occurrence but still the exception to "arranged marriages").

From an Indian perspective, both my wife and I would be classed as 'Westernised' Indian Shia Muslims, from upper middle class backgrounds. Sabiha, my wife, is from Delhi from an Indian Airforce family, which adds to her "status". I am an "Anglo-Indian" (a detraction from mine), living in London (a positive) from a "Zamidaar" family – ex-landholders.

Rang - the day before the ceremony, a mock fight is staged with coloured water and powder.

UPTON CEREMONY

Wedding ceremonies, proper, began one week before the wedding day (Nikaah) with the Upton ceremony where Sabiha was prepared for the wedding. From that day until the Nikaah, she wore only various shades of pink and was largely confined to her house. Every day she was massaged and had balm (upton) rubbed over her body – the balm makes the skin smooth and scented. She tells me it was fantastic to begin with but increasingly boring and frustrating as the week continued.

Mehndi - painting of the hands and feet with henna - was done the night before the ceremony.

For me this period was not so peaceful, as I was busy collecting the various guests from airports and railway stations, acting as tour guide and ferrying them carefully to Amroha.

THE WEDDING – DAY 1 – *RAG JAGGA*

The day before the marriage ceremony was largely a day of gift-giving and merriment – not for the bride and groom – but for the associated relatives.

The gifts distributed are generally extensive. In our case, my father presented each of his eight sisters and sisters-in-law with a silk sari and gold earrings (agreed upon following a bargaining process) and suit material to his brothers and brothers-in-law.

The gift giving was a public exercise. Gifts were placed on a slightly raised stage area and left for about an hour to allow a viewing. The more expensive and extensive the gifts, the better for social status, as well as a reflection of wedding joy.

In the afternoon, the families play Rang ("Colour"). Perhaps the most enjoyable, if somewhat bizarre ceremony, a "fight" is staged with coloured water and coloured powder. I was not spared and got drenched!

The evening prior to the Nikaah is called Raj Jagga - Hindus have a similar function called Sangeet. The words of popular Bollywood film songs are changed to make fun of the opposite side's family. First this occurs separately at the houses of the bride and the groom. Then family and friends of the groom go to the bride's house and sing their songs - competing in terms of character assassination of the in-laws! This is not a quick process. In our case, this began about 6pm and ended at about 4am.

DAY 2 - *THE NIKAAH*

On the afternoon of the wedding, each family laid out the gifts it was giving to the bride or groom, respectively, partly to ensure that everything is there. The list is endless and regardless of need (I even got a comb, with only a small hint of irony!). Numerous people arrived to inspect and comment, always favourably in public, on the clothes, jewellery, perfume, etc, to be presented to the other side.

The gifts were then wrapped and carried by the most senior servant to the other side, where again they were displayed for people to see and comment on.
Gifts are also then displayed from your own side to you. In my case this was very little but from my wife's side this was very significant - and comprised almost entirely of gold jewellery.

Raj Jagga - a night of singing, dancing and joke-telling.

The groom is dressed for the ceremony.

Had we been intending to remain in India, some of these gifts would have been more practical. However, as we were going to be living in London, gold jewellery was seen as the most easily transportable gift.

Then began the first of a long list of ceremonies – some symbolic actions accompanied by readings from the Koran.

We went off to be properly bathed and dressed for the marriage ceremony itself. Given the extent of the clothes, particularly for the bride, considerable help was needed.
I wore a cream Nehru Jacket (a suit that extends just below your knees); silk pyjamas (a type of trouser) and traditional slip-on silk shoes.

A Golden Bounty

Jewellery Type	*Number*	*Average Weight Per Piece (grams)*	*Total Weight*
Rings *(finger & nose)*	9	6g	54g
Earrings *(pairs)*	18	8g	144g
Necklaces	12	18g	216g
Bracelets	10	15g	150g
Others *(anklets, hand pieces)*	4	12g	48g
TOTAL			**612g**

My wife's clothes and accompaniments were much more extensive and included a very intricately designed wedding dress of red silk with gold threaded embroidery. She wore as much of the gold gifted to her as possible.
Once all preparations were ready, my party then walked in a procession from my house along the streets with fireworks let off by hand along the way before arriving at the bride's home.
My party was seated outside and the Mulannah (Islamic priest) asked me what the Maher was for the wedding – this is an amount to be paid to the wife should the husband divorce her. It is almost always a cash amount and traditionally is paid immediately and kept in trust.

Then the Mulannah went inside the house to Sabiha, surrounded by all her female relatives and in-laws with a veil drawn over her face, and asked whether she was willing to marry me at the specified Maher. The local tradition is not to answer. He asked again and again she did not answer. Then he asked for the third and final time, for which silence is taken as affirmation.

He then returned to me and asked if I wished to marry Sabiha, to which I answered yes and signed some marriage papers as did my father and several witnesses.

Julwa – Traditions to do with good luck, prosperity and fertility.

Then two Mullanahs, each representing a family, read verses from the Koran, after which the Nikaah was completed.

Following an extended period of hugging and congratulations, the party moved off for a large meal, after which I was brought into the bridal house and seated on a mini-stage in the middle of a courtyard. Sabiha was brought out – head still covered by the veil – and sat down beside me.

Then the Julwa took place - a variety of fairly bizarre ceremonies, mostly taken from Hindu traditions, such as eating grains of sugar from her hand and placing rice on her head. The key moment, however, was Moo Dekhai. Her veil was placed over my head and a mirror put on the ground under her veil so that I could see her face for the first time during the wedding - in the past this was probably the first time you would ever have seen your wife! I then placed a gold wedding ring on her finger.

She was taken away, and I was seated for Salaam, where her relatives came up to me with cash and gifts and I showed them my respect by bowing and raising my hand to my head.

Finally, Sabiha was placed, with my mother, in a doli – a wooden box with handles – and carried by ten servants back to my house, where another small stage was constructed in the middle of our courtyard and Sabiha and I were sat down.

I did a Muslim prayer of thanks using Sabiha's veil as a prayer mat in front of a large crowd. Then Sabiha had her hand placed in several colourful small pots, containing sugar, rice, oil and milk - for luck, prosperity and fertility

After that, we were lead up to the flower-bedecked bridal suite. She was sat down on the bed and I ceremoniously washed her feet – and, at 4am, we were finally left alone.

Outside though, celebrations continued with a Qawali (Indian blues/jazz music) until daybreak.

DAY 3 THE WALIMA
The final day is the Walima – reception. Sabiha returned to see her family in the morning, then I followed in the afternoon bearing more gifts, which meant buying nearly 30 dresses for my bride's many cousins.

We then returned to my home where guests started arriving for the Walima – traditionally held to celebrate consummation of the marriage, but this connection is now left to snide jokes.
There was another large meal with a very heavily extended list of relatives and friends. Money was given by my close relatives and friends in order to see the bride's face – Moo Dekhai. This was generally cash, although jewellery is occasionally given.
The final function, Nikaah Baroh, occurred in the evening. The bride's family provided gifts to the groom's family and, in our wedding, we also reciprocated with presents.
Finally ... it was over. In order to escape the subsequent numerous engagements to dinner and lunch with all the relatives, we fled to Switzerland, where is the midst of beautiful snow-capped mountains, we slept solidly for three days!

The Significance of Gold in Indian Marriages

Gold has traditionally played more than one role in Indian marriages. A girl's parents begin purchasing gold for the occasion from the time she is born.

Some gold jewellery is given directly to the bride-to-be by her family. This represents her property; no one else amongst her new in-laws has the right to this gold. Traditionally, this gift was given to a woman in compensation for not being allowed to inherit a share of the family property. Laws have now been changed to give female children the right to inherit property, but the Indian Hindu woman very rarely stakes her claim. More often than not, she gives up her right favour of her brothers and her parents will recognise this by a substantial gift of jewellery and other goods at the time of her marriage.

In addition, the bride's parents may optionally gift gold jewellery directly or indirectly (via the bride, who will wear it at the wedding) to the female members of her future in-laws.

The last role that gold has played, particularly in the past, was as part of a bride's 'dowry'. Although often regarded as including the goods described above, the strict meaning of the word dowry is the settlement in goods and cash which is given to the groom or his family by the bride's father, in exchange for the groom taking responsibility for his daughter. In the past, the negotiation of the girl's dowry was central to the marriage agreement in most Indian weddings. In recent years, this traditional approach has been changing, particularly after the dowry system was made illegal in 1961, but the practise persists. It is unfortunately a fact that there are still many cases where an inadequate dowry results in the victimisation of the bride by her new husband or his family, in extreme cases leading to murder. It is hardly surprising that the dowry system has become known as the 'social evil'.

What You do for Love. And Friendship.

By Pooja Mall, Morgan Stanley Dean Witter

What's a few thousand miles between friends? When Pooja Mall's childhood friend Avanti (a London doctor) invited Pooja (a London banker) to her wedding (in India), of course she said 'yes'. It was the second Hindu wedding she would attend this year. In the photos and text that follow, she captures the pageantry and playfulness of the weeklong festivities.

It's interesting that India's Hindu marriage rite – the vivah – actually has much in common with India's Muslim version – each has borrowed freely from the other culture. One major difference, of course, is that the Hindu ceremony is often conducted in Sanskrit – the most ancient of the Indo-European languages, and about as familiar to modern Indians as Latin is to Roman Catholics.

In fact, the first ceremony I attended was of Muslim origin – the mehndi, the intricate henna painting of the hands and feet. These elaborate, tattoo-like designs signify the strength of love in the marriage: the darker the mehndi, the stronger the love.

The wedding itself was the following day under a mandap, a canopy rising above a sacred fire. The fire was itself a clean and pure witness to the ceremony – signifying knowledge, happiness and illumination of the mind. Tradition holds that only fire can separate the bond between bride and groom.

Avanti's parents performed the first ritual, the giving away of their daughter. It included washing the couple's feet with milk and water to purify them for their new life together.

During the second ritual, the hastamilap, the joining of hands, Avanti's right hand was placed on the groom's while the priest chanted holy verses. A loop of raw white cotton was then wound round the couple's shoulders 24 times, then the corner of the Avanti's sari was tied to a scarf worn by Kartikeya.

The marriage rite proper started at the time that had weeks earlier been decreed most auspicious by the pundit, who directed family members to place offerings into the holy fire. The couple then walked around the fire four times – the pheras – exchanging vows of duty, love, fidelity, respect, and hope for a fruitful union.

The pundit explained the couple's responsibilities to each other, gave them his holy blessings – the aashirwaad – and they were married. The ceremony ended with the couple touching their parent's feet to seek their blessings as a hymn of peace was sung.

Kartikeya's first act as husband was to apply sindoor, a red powder, to the parting in Avanti's hair. She reciprocated by feeding him Indian sweets. At this point, relatives came into the mandap to place red marks on the newlyweds' foreheads and sprinkle rice grains, signifying "May the heavens shower upon you all happiness and wealth." (One begins to see where the western tradition of throwing rice comes from.)
But the pundit's Sanskrit chants seemed Greek to our ears, so while the ceremony continued (it would end, as always, in tears – with the bidaai, the bride's emotional farewell to her parents), some friends and I fulfilled yet another tradition: we stole the groom's shoes and held them for ransom.

We waited at the house where they were spending the night, and when the newlyweds arrived we let Avanti into the room, but stopped Kartikeya. It was well after midnight, so after some intense negotiations, we let the tired groom off easy – some silver coins and a rendition of a Bollywood love song sung to his new wife through the closed door.

We left before the door opened.

A few hours before the ceremony, Avanti was dressed in her bridal finery, including gold jewellery – in India, an important symbol of lasting love. She then moved to the stage to join Kartikeya, the groom, for the varmala – the ceremony in which the two welcome each other into their lives with garlands..

A Paradise City with Rich Gold

Zhaoyuan hosts the Fourth Annual RNA China Gold and Precious Metals International Conference

By Susanne M. Capano, Editor

The City of Gold and Home of Vermicelli.

Rich in a variety of natural resources, Zhaoyuan made an excellent choice for the RNA Conference, which was held in association with Gold Fields Mineral Services Ltd and the Gold Economic Centre of Beijing. The city lies in the north west of China's Shandong peninsula. Flat plains of grain lie to the south and the orchards of apples, pears, chestnuts and apricots to the north. In between is a mountainous region containing one of China's most important gold deposits, with a mining history going back 2000 years.

The Conference was regarded by the town as quite an event. Banners outside the hotel proclaimed 'WARMLY WELCOME FRIENDS FROM ALL OVER THE WORLD' and 'A PARADISE CITY WITH RICH GOLD'. Brass bands and long lines of school children shouting their welcome greeted delegates as they arrived. Delegates were able to see various facets of the industry during their stay, with visits to a gold mine, a museum and a jewellery-manufacturing centre.

The underlying topic of the conference was the status and timing of the liberalisation of the Chinese gold market. While it was evident from the presentations at the Conference that the process would not happen overnight, there clearly was a strong determination to push ahead.

Speakers from within China outlined the issues being faced. According to Liu Shanen of the Beijing Research Centre for the Development of the Economy in Gold, pressure from gold producers – who in 1993 were receiving an official price less than half of international market prices – began the process of reforming the marketing of gold in China. He said that first a spot market – and then a futures market – needed to be developed, and he

Presentation of gold ore samples to the Zhaoyuan Gold Museum – Kelvin Williams representing AngloGold, South Africa

emphasised that the market should open to the outside world in progressive steps.

Wang Dexue, the Director of the Gold Administration Bureau of the State Economic and Trade Commission, targeted the need to reform the industry, the importance of opening the market to foreign investment, and the necessity of increasing development to uncover new reserves.

Emily Li of the World Gold Council listed four areas that she felt were critical: local banks must acquire more knowledge; taxation must be reduced, or smuggling will result; standards must be established so that the market knows the bounds within which it can trade; and a gold exchange should be set up.

Other speakers from markets around the world offered advice based on their experiences and suggestions for how China can interact with Western markets once they are opened.

John Lutley, former President of the US Gold & Silver Institutes, discussed how forming a mining industry trade association can benefit the industry by giving it an open forum where problems can be discussed and industry statistics can be collected in confidence. Also, such an association can be a collective voice for promoting the industry's interests to the government and the public.

Russell Smith from the Bank of Nova Scotia – ScotiaMocatta emphasised the importance of maintaining liquidity to ensure efficient market trading.

Stewart Murray, LBMA Chief Executive, described the formation of the LBMA and outlined the role it plays in London's over-the-counter bullion market. He looked forward to being able welcome the LBMA's first International Associates from China.

Paul Walker examined the difficulties facing the Chinese gold mining industry today – high costs and declining revenues – and examined ways to deal with those challenges.

D. Pendse, an economist from Bombay, described how liberalisation of the market in India was evolving and suggested some future steps that would continue the process, such as scrapping the wealth tax on gold and allowing the resumption of futures trading.

Kelvin Williams of AngloGold talked about the impact effective marketing can make on the consumption of gold, especially as a fashion item. He saw opportunities to promote gold in China both as jewellery and in bar and coin form.

In summing up the proceedings, Robert Guy of NM Rothschild & Sons emphasised that China would be able to draw on support from the Western world in its endeavours to become liberalised. He also urged a shortening of the time frame from the projected two years: "Working to a shorter time scale can sometimes work wonders."

A sentiment that many in the gold market – both inside and outside China – would agree with. ■

Obituaries

Bob Ewers
by Jack Spall

When I joined Merrill Lynch in 1961,by far the major commodity was wool and our biggest client was a Bradford company whose London man was Bob Ewers. He put the fear of God into me! As we all know, he did not suffer fools gladly and, as someone entirely new to broking, I was pretty inept. However, we gradually became friendly and when he joined Merrill we became both colleagues and firm friends. It was at about this time that Bob started his model collection, an enthusiasm fully shared by Pat, his wife, and their shared interests later embraced golf where she became very good indeed with a handicap of 10. He was very proud of her achievements.

I left Merrill in 1970 to join Sharps Pixley and, a few years later, was smart enough to persuade Bob to join me there. It was the best move I ever made. As a colleague he was unsurpassable and, if asked to do something, there was never a need to ask if it was done because it always was, and done in the most meticulous fashion. He was perhaps the most organised person I have ever known, so that when the bullion market was making its first tentative steps towards self-regulation, he was a natural to handle it for us.

Organised is not an adjective that has ever been applied to me and I think because of that, or maybe in spite of it, we made a pretty good team. Perhaps sharing the same rather sharp sense of humour helped.

When he, and then I, retired we did not see a lot of each other, only meeting for the LBMA golf day, where he won about ten years ago, and perhaps another once or twice a year. This did not matter however as we always got on as well as we had ever done, exchanging pleasantries and mild insults.

Pat and their two sons must feel a great sense of loss, especially perhaps as the first diagnosis of his illness was only two or three months ago. I am sure that all of his many Sharps Pixley, City and golfing friends feel for them all.

I will sorely miss him. ■

Julian Baring

A Loss to the Sensible Market
by Jessica Cross, Virtual Metals Research and Consulting

It is with sadness that we note the death of Julian Baring; a man fiercely supportive of gold and never reticent to say so.

His passion was such that he swiftly became the life and soul of bullion meetings, guaranteed at question time to take the floor. While managing funds for Mercury Asset Management, his reputation among analysts was awesome. Getting short sharp change from him was considered a necessary part your training and hence a basic initiation ceremony, vital in making your debut as an analyst.

Julian will be remembered particularly for his demonstration of how gold holds its value. Many have dined out on his famous analogy of a meal at the Savoy equivalent to the value of a gold sovereign. But more importantly, he will be remembered for his abhorrence of hedging in the belief that it undermined the very price on which producers were relying. Here lies a sad irony. News of Julian's death came during the very week that I maintained publicly that I thought the worst of the hedging days were over. I am sorry he was not in the audience to hear that, since I would love to have heard his reaction. I am also sorry he did not see the higher gold price I know he so vehemently believed in.

We will miss the intellectual contribution he made. Whether one agreed with him or not, his approach was totally professional and, as I experienced first hand, the debate was never personal. For that and his passion for gold, I will always have enormous respect for him. ■

A Mountain of Gold for Charity

By Matthew Keen, JP Morgan

During the Nineties, members of the London Bullion Market and their friends were successful in raising £40,000 for two small charities, Future Hope and Fragile X, by taking part in the Three Peaks Marathon.

Well, having done that twice, we feel that some of you might like to tackle something even higher – so for the hat trick, how about climbing the Eiger?

The objective this time is to raise money for research into Motor Neurone Disease (MND), also known in some countries as ALS. It is a rapidly progressive and fatal disease that can strike anyone at any age. Imagine being unable to walk, talk or feed yourself yet your intellect and senses remain intact. People with MND can still think and feel, but their muscles refuse to work.

We intend to gather a team together to make the ascent in September 2001. Naturally, the scale of this operation dwarfs our previous efforts and the training and organisation required over the next ten months will be considerable and fun. Preparations are already under way, and a website is being set up where all the relevant information will be found. This includes a list of those who have already volunteered, a rough schedule of events and further details about the charity itself.

We plan to launch the campaign with a gathering on 15 December for all those who want to be involved either as a climber or in a supporting role. The gathering will be held in the library at JP Morgan. All those interested in attending should contact me by email – keen_matthew@jpmorgan.com

The aim of the evening is to provide realistic information about the skills and training which are needed to undertake the challenge, as well as to pool resources in trying to maximise the fundraising potential of such a challenging feat. I might add here that we are not attempting the North Face! The route proposed is within the capabilities of amateur climbers. "No mountain is too high" for those with guts, audacity, nerves of steel and all the other attributes needed to be in The Bullion Market.

Further details can be found on the website, www.eigerchallenge.com. ■

Hallmarking Gold in India

Raising Customer Confidence

By Derrick Machado, Regional Director, India, World Gold Council

The launch of gold hallmarking in India on 11 April 2000 marked the beginning of a new era of quality consciousness for Indian connoisseurs of gold.

Gold jewellery rubbed against a touchstone to measure approximate purity.

Unlike other countries, in India there is an emphasis on high-carat, low-mark-up gold jewellery, which is bought by weight, not by piece. The price of a given piece of jewellery reflects two costs, the gold price and the making charges. The gold price consists of the sum total of the daily international gold price converted into Indian rupees – plus import duty and sales tax, costs which are fixed to the retailer. His margin is therefore based on the making charges, which include the cost of craftsmanship/design, fabrication and profit.

Another buying peculiarity of the Indian consumer is that he insists on having a discount or reduction in the making charges, thereby directly impacting the retailer's profit. Hence, to satisfy his clientele, the retailer is at times forced to compromise on the quality of the gold if he is to cover his costs and margins while still reducing the making charges.

It is not uncommon to see advertisements offering gold jewellery with no making charges at all. Given the inflexible cost of the gold, it is obvious that the quality must have been compromised. The Indian consumer has very often been a victim of irregular metal quality and frauds, such as the adulteration of jewellery, use of lower-caratage soldering, or use of gold or silver articles that are externally of standard fineness but have base-metal cores.

Consumers and the trade and regulatory authorities all recognised the need for a quality assurance mechanism similar to those in place for many other product categories. This would keep the consumer from becoming a victim of irregular product quality and would help develop the industry's competitiveness in exports, providing a strong impetus for exporting gold jewellery and helping the gold trade to function more efficiently.

Reaching Standards

The launch is the culmination of an initiative by the Bureau of Indian Standards (BIS – the premiere national body in India for the preparation and promotion of quality certification schemes), the jewellery trade and the World Gold Council. It started with a feasibility study conducted by the WGC in 1996 to understand how hallmarking could be introduced in India. Extending beyond the study, the Council facilitated meetings between the BIS and the trade to understand the issues and peculiarities of the Indian gold trade. These discussions were instrumental in formalising the policy and process for the Hallmarking Scheme, which has been well accepted by the trade and consumers. To date, applications from over 90 retailers have been received, out of which more than 50 have received their license and are already selling hallmarked jewellery. The number of assaying and hallmarking centres is also growing rapidly.

The hallmarking scheme was introduced on a voluntary basis under the BIS Act 1986. The BIS Precious Metals Sectional Committee (MTD 10) has formulated and published the following Indian Standards:

IS 1417 – Grades of gold and gold alloys
IS 1418 – Method for assaying gold in gold and gold alloys
IS 2790 – Guidelines for manufacture of 23, 22, 21, 18, 14,12 and 9 carat gold
IS 3095 – Guidelines for manufacture of solders for use in goldware
IS 3541 – Code of practice for manufacture of 23.3 and lower carat gold alloys
IS 8844 – Guidelines for marking purity of gold and gold articles/ornaments

BIS-recognised Assaying & Hallmarking Centres will certify the purity of gold jewellery. Jewellers certified by the BIS will have a license to get their jewellery assayed and hallmarked by any such Centre. To become accredited, centres must conform to the BIS criteria and follow international norms for sampling, assaying and hallmarking. They must also have adequate testing facilities staffed with trained and competent manpower.

The launch of this voluntary scheme is a major step forward for the Indian jewellery industry and the consumer. The consumer receives third-party assurance in a fragile market and satisfaction that they have the correct purity of gold for the price paid.

The the trade benefits through giving their customers an assurance of the gold purity and quality of their jewellery. Most importantly, it demonstrates their commitment to quality and quality management.

The move towards hallmarking of gold in India is critical to the success of Indian endeavours to emerge as a major player in the international gold jewellery markets. Not only does it fulfil its primary objective of protecting the public, but it also serves the interest of the trade itself, since it creates a favourable image of Indian gold jewellery in the international market and will allow it more acceptability and therefore freer access across borders. It will help grow the export market for Indian producers and serve as an example to other countries with a significant jewellery industry but no effective national independent national marking system.

The Hallmarking Process

Touchstone Test

First each and every piece of jewellery received by the Assayer has to pass the touchstone test. Here the jewellery is rubbed against a stone to get an approximation of the purity. The purity of each article is noted and the results of this test play an important part in deciding the number of samples to be taken from a batch.

Sampling

Next a small amount of gold is very carefully scraped or cut from articles – many of which are received in an unfinished state – to produce laboratory-sized samples for assay. (When an item has been scraped, the manufacturer can easily remove the marks in subsequent finishing operations. Many articles received as stampings and castings allow the removal of surplus material by small cuttings to produce samples).

The number of samples taken depends on the results of the touchstone test, the quantity of articles in the parcel and their nature, the number of parts each article has and the different materials from which they were made (for example, castings, sheet, wire, rod or tube).

Separate samples have to be taken as far as is practical from each category of articles (rings, brooches, earrings, bracelets, etc.) and each type of material. Composite samples can be obtained from groups of articles of the same category, pattern and type of material.

Gold Assaying

The sample is weighed to an accuracy of one hundred thousandth of a gram on highly sensitive balances. To determine the gold content, the following procedure is carried out.

The sample is assayed by a fire-refining process, which selectively removes all other metals. The weighed sample is wrapped in lead foil together with a predetermined quantity of silver, which assists with the removal of the base metals when it is subjected to heat in a furnace.

The samples are placed on special porous blocks called cupels and heated to 1100 degrees centigrade. At this temperature the cupels absorb the lead and any base metals as oxides. When cool, the sample beads, now consisting of pure gold and silver only, are flattened and rolled into a spiral called a cornet.

These cornets are immersed in nitric acid to dissolve out the silver. Annealing completes the process, leaving fine gold.

Comparing the weight of this fine gold with the weight of the original samples gives the degree of purity. A computer linked to the balance automatically calculates this difference. In India, gold has six legal standards of purity: 958, 916, 875, 750, 585 and 375, which correspond to the traditional 23, 22, 21, 18, 14 and 9 carats. ■

Stages in the hallmarking process (from top to bottom)
Sampling - scraping small amounts of gold from articles.
Fire-refining selectively removes all other metals.
Samples are heated on special porous blocks called cupels.

LBMA News

By Stewart Murray, Chief Executive, LBMA

Membership Changes

Baird & Co Limited became an Ordinary Member as of 1 September 2000.
Australia and New Zealand Banking Group Ltd became an Ordinary Member as of 1 December.
Metallgesellschaft Limited changed its name to Enron Metals Limited with effect from 18 September.

Degussa-Hüls Limited resigned on 22 August and Rudolf Wolff & Co Ltd resigned on 25 August.

The address details for WestLB, London have changed to:
51 Moorgate,
London EC2R 6AE
Tel: (020) 7628 3040.

The telephone number for Mitsubishi Corporation (UK) Plc has changed to:
(020) 7822 0018.

International Associates

Since July, applications for International Associate status were accepted from the following companies:

Australia: Macquarie Bank Ltd
Pasminco Metals Pty Ltd
Germany: dmc2 Degussa Metals Catalysts Cerdec AG
W.C. Heraeus GMBH & Co KG
Netherlands:
Schöne Edelmetaal B.V.
South Africa:
Harmony Gold Mining Co Ltd
Rand Refinery Ltd
Switzerland: MKS Finance SA
Pamp Distribution SA
United Arab Emirates:
Bin Sabt Jewellery L.L.C.
Transguard
USA: Sovereign Bank

Good Delivery List

Additions – Gold

Republic of Korea
Korea Zinc's Refinery at Onsan, from 9 August 2000

The LBMA Biennial Dinner
from left to right: Stewart Murray, Simon Weeks and Sir Evelyn de Rothschild.

Additions – Silver
Japan
Asahi Pretec Corp's Kobe City Refinery
from 17 July 2000.

Name changes: Gold and Silver
Following the cessation of production at Degussa's Hanau-Wolfgang refinery, the Degussa brand bars are now being produced at Degussa's subsidiary in the Netherlands, Schöne Edelmetaal Refinery as from 1 November 2000.

Following the sale of the SEMPSA refinery in Madrid, from Engelhard-CLAL to the Cookson Group, the new owner of the refinery is SEMPSA Joyeria Plateria SA.

Silver
Following a change of ownership, the former Enirisorse refinery at San Gavino, Cagliari in Sardinia is now owned by Portvesme S.r.l., a subsidiary of Glencore Italia.

Transfers to Former List
Owing to a cessation of production, the following refineries were transferred to the former list with effect from 7 November 2000.

Brazil: CRM's Alphaville-Baruerie refinery in São Paulo (gold)
Germany: Degussa's Hanau-Wolfgang refinery (gold and silver)
Mexico: Industrial Minera Mexico's Monterrey refinery (silver)
USA: Homestake Mining's Lead, South Dakota, refinery (gold)

Committees

Management Committee
In addition to monitoring the work of the other Committees, particularly in relation to the Biennial Dinner which took place on 21 September and next year's Istanbul Precious Metals Conference, the Management Committee has reviewed progress on a number of projects. These include the development of an Automated Transfer Matching System and the preparation of bullion annexes to be used in the Non-Investment Products code, which will be published by the Bank of England, and in the Inter-professional Code which will be published by the Financial Services Authority. The Committee is also supervising the preparation of a users guide to the OTC market, which will be published in December.

Public Affairs Committee
Most of the Committee's recent efforts have been expended on three major events. The first was the Biennial Dinner, again ably stage-managed by John Coley, which took place at Gibson Hall on 21 September with the Rt Hon Michael Portillo as chief guest speaker. The response was given by Sir Evelyn de Rothschild. Secondly, the Autumn Seminar was held in Skinners' Hall on the evening of 9 November on the subject of "What the Bullion Trade ought to know about E-Business". Speakers included David Watts of Reuters, who provided an overview of the e-trading technologies and e-commerce portals of relevance to the commodities and bullion market. This was followed by shorter presentations from Ross Norman of TheBullionDesk.com, Mehdi Barkhordar of GoldAvenue and Robert Beale of Trasy Gold Ex, Hong Kong. Thirdly, the LBMA's Precious Metals Conference in 2001 will take place in the Conrad Hotel, Istanbul on 21/22 May. The Committee has been discussing both the speakers' programme and the extra-mural events with a view to ensuring that the Conference builds on the success of the Dubai Conference held earlier this year.

Physical Committee
The Committee's main focus recently has been on the Good Delivery List and the associated documentation. Some significant changes in the rules for applicants have been introduced to increase the speed with which applications for Good Delivery listing can be processed. The Committee has also granted Approved Weigher status for gold to Via Mat International with effect from 3 October 2000.

The Committee is currently undertaking a revision of the agreements for allocated and unallocated gold which govern the holding of bullion by vaults in the London market.

Golf

– by John Coley
It is with great pleasure that I can report a victory at last in our annual match for the Foster Smith Trophy against the LME. Following the sad loss of Keith Smith, it is especially fitting that it should be this year that we finally regained the trophy and even more appropriate that ScotiaMocatta so generously sponsored the team this year. The trophy will now stay at ScotiaMocatta's offices as a final gesture to our patron.
The 'old stagers' of Doug Bull, Colin Griffith and I were joined at Kingswood Golf club by 'rookies' Peter Beaumont, Brian Burns, Martyn Dennison, Ashraf Rizvi and Geoff Rousel to produce a lunchtime lead of 3:1 that this year was converted into a 5:3 victory. As usual the match was played in the best traditions of the game – with fierce competition but great friendliness – and we look forward to trying to repeat our victory next year in June at Blackmoor Golf Club.
Well done to all concerned.

An Ounce of Invention

From Oz to Uzbekistan, entries in the "Give us your thoughts, we'll give you an ounce" competition came in from around the world with ideas for topics to be included in the LBMA Precious Metals Conference 2001. Except – thankfully – Florida, so we can announce without fear of appeal that the winner of a one-ounce Johnson Matthey gold bar is Dariusz Petrykowski, the Precious Metals Trading Director at KGHM Polska Miedz S.A. in Lubin, Poland, a new LBMA International Associate. You can find out if any of his suggestions are adopted (one was for a discussion of new uses for gold and silver) at the Conference on 21 and 22 May 2001, at the Conrad International Hotel in Istanbul.

DIARY OF EVENTS

2000

DECEMBER
4-8 December
NorthWest Mining Association – 106th Annual Meeting & Exposition
Spokane, WA
Tel: (+1) 509-624-1158
Fax: (+1) 509-623-1241
nwma@nwma.org

4-6 December
African Mining 2000 Symposium
Ouagadougou, Faso, Burkina
Tel: (+1) 202-473-3561
Fax: (+1) 202-522-2650
Mbarry2@worldbank.org

2001

JANUARY
10 January
GFMS Gold Survey 2000 – Update 2 Launch
Toronto & Capetown
Tel: 020 7539 7820
Fax: 020 7539 7818
enquiries @gfms.co.uk

24 January
LBMA Burns Night
The Brewery, Chiswell Street

29-30 January
Emerging Investment Opportunities in Algeria's Energy and Mining Sectors
Algiers, Algeria
Tel: (+44) 0207 704 6161
Fax: (+44) 0207 704 8440
sshelton@thecwcgroup.com

FEBRUARY
6-9 February
Investing in African Mining / INDABA 2001
Capetown, South Africa
Tel: (+1) 305-669-1963
Fax: (+1) 305-669-7350
iiconf@iiconf.com

7-9 February
India Minvest - 2001
Panjim, Goa, India
Phone: (+91) 11-641-0786
Fax: (+91) 11-621-7004
fedmin@nda.vsnl.net.in

14-16 February
Mexico Mining 2001
Puerto Vallarta, Jal., Mexico
Tel: (+1) 303 526-1626
Fax: (+1) 303 526-1650
hans@randol.com

26-28 February
SME Annual Meeting & Exhibit
Denver, Colorado
Tel: (+1) 303-973-9550
Fax: (+1) 303-979-3461
E-Mail: sme@smenet.org

27 February
CPM Group's Silver Survey and Silver Mining Investment Conference
New York, NY
Tel: (+1) 212 785 8320
Fax: (+1) 212 785 8325
info@cpmgroup.com

The LBMA "Christmas Party"

this year will consist of a Burns Night to be held in the Brewery, Chiswell Street on the evening of 24 January 2001. The evening, loosely focused on a celebration of Scotland's National Poet, will allow participants to sample and enjoy Scottish food, drink, music, culture and dancing. For those who wish to brush up their Scottish country dancing footwork, there will be practise sessions – including free beer – at The Counting House, 50 Cornhill at 6:30pm on 10 and 17 January.

Ticket prices for staff of LBMA members will be £20. A limited number of places will be available for non-members from organisations closely related to the bullion market.

Further details will be circulated to members in the near future. Please contact the LBMA Executive or look at the events section of the website for further details.

Deregulation – The Continuing Story

Editorial Comment by Stewart Murray

The announcement in Cairo on 1 November that the import duty on gold bullion would be rescinded represents an important step forward for the gold market in Egypt. While there are still other imposts hindering the free import of gold bullion into Egypt, the move towards a freer import regime is to be welcomed.

The process of removing such barriers has been a continuing one over the past decade, beginning with the freeing up of the Turkish market in the late 1980s and the abandonment of gold control in India in 1990. More recently, the decision by Thai authorities to permit the import of gold bullion free of VAT and the accompanying decision to apply VAT on local jewellery sales based only on the labour charge rather than the total value of the goods represent another important victory for the precious metals business. The Thai jewellery industry is now working with the government with a view to having a similar dispensation applied in the case of silver. In Indonesia, the 10% VAT on gold bullion will be removed from 1 January 2001 and at the same time VAT on jewellery will be applied only on the added value. The fact that this is now part of the constitutional law rather than simply being a presidential decree suggests that the new regime is likely to be permanent.

The elimination of such barriers and the reduction in the effective price paid by consumers has already resulted in substantial improvements in the level of offtake in such countries as India and Turkey. Perhaps even more importantly, from a long-term perspective, putting the jewellery sector on a totally official footing has led to other benefits. It has, on the one hand, allowed the business to tap additional sources of capital and on the other hand, to spend more on design, manufacturing capacity and the establishment of export channels. At the same time, there are new opportunities for local bullion dealers in such markets to set up trading links with banks and dealers in, for instance, the London market. This is one of the reasons lying behind the initiative taken by the LBMA earlier this year to allow suitably qualified foreign companies to become International Associates of the Association.

The World Gold Council is continuing to work for the liberalisation of the gold business in China where the bullion business is still within the control of the People's Bank. Recent meetings have suggested that progress is being made and that the reform process is accepted in principle by a widening range of official agencies. It is perhaps not overly optimistic to hope that in the coming year, the market may see the practical implications of the changing attitude to regulation in China, either in the form of the establishment of a gold exchange or the ability of banks and dealers in China to establish an effective over-the-counter market. If, at the same time, gold jewellery is freed from the restrictions that have prevented it from competing on a level playing field with gem-set and platinum jewellery, the benefits in the terms of increased demand could be very significant. ■

Christmas and New Year Clearing Arrangements

As there is no PM fix on either 22 or 29 December, the cut-off time for loco London clearing on both days will be 2 PM.

facing facts

By Paul Burton
Editor, World Gold

The past few months have been mixed for the gold mining industry with some major disappointments offset by more positive project developments. There has also been some sadness with the passing of some notable names.

Harry Oppenheimer, former chairman of the Anglo American and De Beers groups died in August at the age of 91. Mr Oppenheimer was one of the most influential businessmen of his time who mixed a successful career building Anglo and De Beers into world class mining companies, with outspoken opposition to the ruling National Party and its apartheid policy, which, he maintained, restricted economic growth in the country.

Another loss to the industry was Julian Baring, who died suddenly in September. Mr Baring was one of the central characters of the London gold equity fraternity for many years. His intellect, coupled with his outspoken manner, made him the scourge of gold company management and mining analysts alike. In 1993, as manager of Mercury Asset Management, he famously led the shareholder revolt that toppled the hierarchy of the former Rand Mines and helped install a radically different company structure, one that has been adopted by the whole South African gold mining industry. He was particularly scathing of mine management that employed hedging. He would, presumably, have welcomed the findings of a recent report on gold hedging and the gold derivatives market.

In August, the World Gold Council produced its eagerly awaited report on the level of usage of derivatives and their impact on the gold market. Commissioned in 1999 and authored by derivatives expert Dr Jessica Cross, the voluminous report examines the role of all those participants in the lending chain, the central enabling component of the derivatives market. The report investigates the extent of involvement of central banks and their main counterparties, the commercial banks, as well as determining the level of flows for such users of the facility as gold mine hedgers, refiners, jewellers and investors.

The report reveals the major impact that the hedging policies of the gold mining industry have had on the growth of the lending market, therefore substantiating theories that producer hedging has been instrumental in pushing up liquidity levels in recent years. Dr Cross concludes that hedging is likely to decline in coming years as producers face a number of obstacles – such as more expensive derivative products, diminishing reserves limiting ability to hedge and more stringent accounting regulations.

Two non-hedgers, Gold Fields and Franco-Nevada, who, in mid-2000, sought to merge, suffered a major disappointment in September with the news that the South African government had blocked the deal. Although Gold Fields has sought discussions with the Minister of Finance, it is unlikely that the deal can be resurrected in any agreeable form. The proposed Gold Fields International would have been well placed to take advantage of expansion opportunities with a Toronto domicile, a solid base of 73 Moz of gold reserves, 4 Moz/y of production and liquid funds of over US$700 million.

Elsewhere the industry saw further production declines in the June quarter (see table), following a drop in the March quarter. Overall the level of production of those companies monitored by World Gold Analyst fell by 3% from corresponding levels in 1999, to 12.22 Moz, the lowest level for at least two years. Total cash costs were reduced by 6%. On a regional basis the performance of the Australian companies is particularly noteworthy with production falling 6% but total cash costs being reduced by a massive 15%. Much of the fall can be accounted for by the 11% depreciation of the Australian dollar in the last year but nevertheless there was obviously a real improvement over and above the exchange rate effect.

Production from South African companies was virtually unchanged and a fall in total cash costs of only 4%, to US$214/oz, some way above the global average of US$188/oz, represents a relatively poor performance, given a 12% depreciation in the Rand over the period.

June quarter production review

Country of domicile	Production (Moz)	Total cash costs (US$/oz)	Total production costs (US$/oz)
South Africa	*3.61*	*214*	*248*
US	*2.27*	*177*	*237*
Canada	*2.90*	*168*	*246*
Australia	*2.24*	*185*	*242*
Other	*1.20*	*na*	*na*
Total	***12.2***	***218***	***8244***

Paul Burton, World Gold, October 25, 2000

Some of the regional changes in the production profile can be explained by merger and acquisition activity, but otherwise a major contributing factor was the decrease in the grade of ore worked at a number of operations.

Australia remains the focus of further merger speculation but despite this, or perhaps because of this, companies there continue to explore internal growth opportunities. The Super Pit recently commissioned an upgraded plant and management plans to expand the pit eventually. AngloGold gave the go-ahead in July for a major expansion at Sunrise Dam to form a Mega Pit. Elsewhere both AngloGold and Normandy, along with partner Newcrest, have moved the feasibility study for the Boddington Expansion project into its final stages. Goldfields has had major success in expanding its Raleigh deposit at Kundana. At the end of October joint venture partners Placer Dome and Delta Gold gave the go-ahead for the development of a mine based on the 2 Moz reserve at Wallaby that will extend the life of the Granny Smith operation by ten years.

Elsewhere, Placer's 60%-owned Cortez joint venture in Nevada is to increase production this year and next, maintaining levels above 1.0 Moz in both years. Cortez is one of the world's lowest cost mines with total cash costs in the first nine months of 2000 at US$64/oz. Total production costs were US$137/oz.

Another Canadian major, Barrick Gold, has had exploration success at its Bulyanhulu mine, being built in Tanzania, that will see production raised from the original level of 400,000 oz/y to 500,000 oz/y. Barrick has increased reserve estimates from 7.5 Moz to 10.5 Moz.

Finally, in South Africa, Avgold has moved another step closer to completing the long-running financing saga surrounding its prospective Target mine, in South Africa.

The final tranches of long-term financing are to be provided by a R500 million rights issue by Avgold, of which R300 million will be used to repay a loan from parent company Avmin, and debt funding of R600 million via a term bank loan. Full production at Target of 330,000 oz/y remains on schedule for the March 2002 quarter. ■

The *Alchemist* is published quarterly by the LBMA. For further information please call Susanne M. Capano, Editor, Stewart Murray or Stella Thompson
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