

# MINT NEWS QUARTERLY

VOLUME 1 / DECEMBER 2014



## Coins as Carriers of Diseases

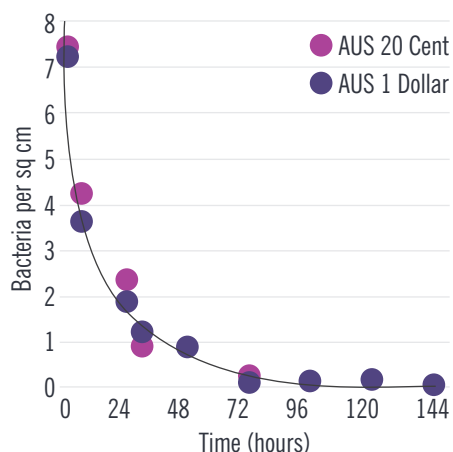
Ebola has brought it to the news again: namely currency as a carrier of bacteria. For years scientists have meticulously counted how many bacteria are to be found on which banknotes. One of them was Dr Frank Vriesekoop, who also undertook a study on bacteria on coins in 2012, which we would like to summarise in the light of current developments.

The good news is that Dr Vriesekoop concluded that not a single coin has been documented as carrying an infectious amount of bacteria that would have caused a healthy person to become ill. This is due to the material used.

Metal is a material on which bacteria can only barely survive. That is why, as a general rule, there are fewer bacteria found on coins than on banknotes. While bacteria multiply exponentially under favorable environmental conditions, they die relatively quickly on coins.

Figure 1 shows the bacteria's length of survival on Australian coins. During the process of counting coins, a group of users transmitted bacteria on every single 20 cent piece (copper-nickel) and every single dollar (aluminium-bronze).

Figure 1: The length of survival of bacteria



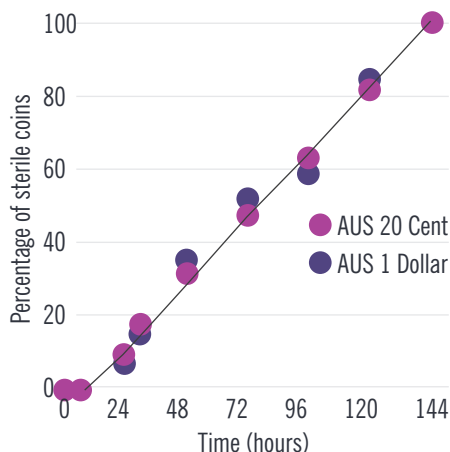
Dr Frank Vriesekoop.

During the first 24 hours, the density of bacteria transmitted dropped to only a fraction of the initial amount.

The question as to whether that was due to a lack of sustenance for the bacteria on the coins, or to the toxic effect of the metal used, was examined in a second trial. Figure 2 shows the increasing percentage of sterile coins over time after they had originally been touched by the human counters. After five days, virtually all had become entirely abacterial thanks to the substances released in the process of oxidization that had been triggered by the skin contact.

Continued on page 2 >

Figure 2: Sterile coins after touching



## Circulating Coins in Focus

A look at the websites of different mints makes you forget that the production of commemorative coins and collector coins is not actually the main task of mints. Marketing teams are always thinking about ways to win new customers but, strictly speaking, the main business of every mint is the supply of circulating coins.

And the changes which this main business is facing have never been greater. Because the prices of the raw materials have greatly increased, new materials for the lower denominations are changing at a speed unheard-of in previous decades. Many countries have already abolished the smallest denominations or are considering doing so in the near future.

At the same time, the larger mints beaver away developing new technologies to equip coins with security features that are similar to the ones known for banknotes, in order to raise the coin-banknote-value limit.

Suppliers, meanwhile are focusing on ever-faster production means while, throughout all of this, environmental protection is playing an increasingly important part.

So there is much going on in respect of circulating coins. We at Monea think these developments essential. That is why we have decided – in collaboration with the British journal Currency News and the German journalist Dr Ursula Kampmann – to publish a quarterly supplement dedicated to topics related to circulating coins.

We hope you enjoy reading the first of these supplements, and would be pleased if you would pick up one or two ideas and incorporate them into your daily routine.

Simon Bradley, Monea



The new VACUDEST XXL. (c. H2O GmbH).

## XXL Industrial Wastewater Treatment

The latest product from the company H2O allows the processing of particularly large quantities of industrial waste water, with zero liquid discharge production now becoming an option for large scale enterprises in the coining industry.

H2O, which is an expert in industrial wastewater management, has launched VACUDEST XXL, a high volume system which completes the company's portfolio of waste water treatment products. As noted by Matthias Fickenscher, one of H2O's CEOs, 'the great processing capacity of XXL is perfect for production that generates a lot of waste water such as, for example, the galvanic coating of coin blanks.'

According to H2O, the distillate quality is so high that the water processed can be reused for production, allowing zero liquid discharge production. Thus, not only can precious freshwater resources be spared, but waste management costs can be reduced by up to 99%. As a result, the costs for the vacuum evaporator system could be amortised over as little as two years.

The new VACUDEST will be available in two versions: the XXL 24.000, which processes 24,000 m<sup>3</sup> wastewater per year, and the larger XXL 30.000, which has an annual distilling capacity of 30,000 m<sup>3</sup> per year. Both systems measure c. 7.6 x 4.6 x 6 m (length/width/height). The very first is due to roll off the assembly line in Steinen/Baden in Germany, where the company is located, in 2015.

## Coins as Carriers of Diseases (Continued)

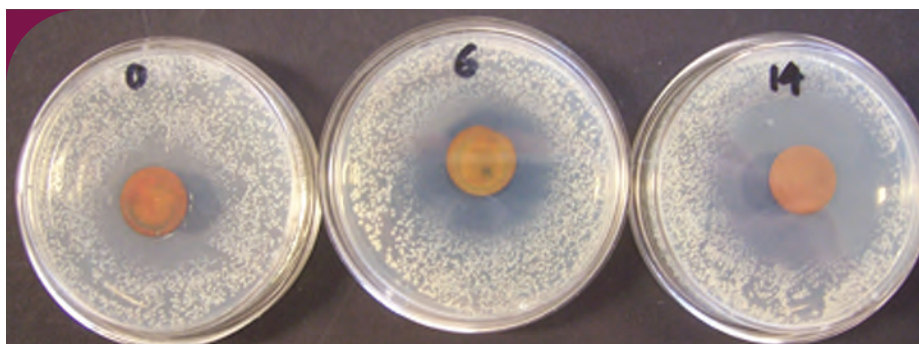
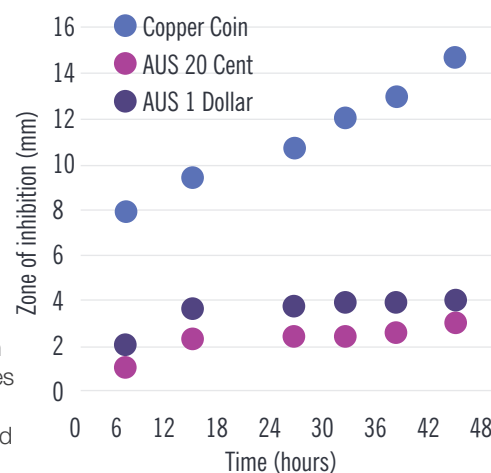


Figure 3: Petri dishes with nutrients and coins placed in. The toxic effect becomes clearer the longer the coin stays in the dish. 0 is at the time of insertion, 6 is after six hours have passed, 14 after 14 hours. The abacterial zone has clearly expanded during the period of time.

That coins can even have a disinfecting effect on their environment is proven by the experiment in which coins were placed in a petri dish filled with nutrients. Figures 3 and 4 show that the best effect is achieved by coins made of copper or with a copper surface. Likewise the Australian coins, used a couple of times, had a similar effect, with aluminium-bronze achieving even better results in this regard than copper-nickel in the long run.

This means that paying with coins is even less 'dangerous' than paying with banknotes or debit cards. Even so, washing one's hands both after having touched money and before eating is, of course, still advisable!

Figure 4: Avoidance of bacteria growth



## Best Circulating Coin of 2015

**Krause choosing its best 'Circulating Coin' for the Coins of the Year (COTY) Award for 2015 may seem a misnomer, given that what we call circulating coins – not to be confused with circulation coins – are, in fact, commemorative coins.**

They only deserve the label 'circulating coin' because they are not produced exclusively for collectors but also serve as currency in everyday life.



Winner in the category 'Best Circulating Coin' of the Coin of the Year Award.

The nominees Krause announced for the COTY's Circulating Coin category on October 3, 2014 are as follow:

- Australia, 20 Cents, KM# 2010, Copper-Nickel, Mechanisms of Mining
- Denmark, 20 Kroner, KM# 960, Aluminum-Bronze, Ole Rømer
- Finland, 2 Euro, KM# 190, Bi-Metallic, Parliament, 150th Anniversary
- Great Britain, 2 Pound, KM# 1239, Bi-Metallic, London Subway, 150th Anniversary
- Greece, 2 Euro, KM# 252, Bi-Metallic, Plato
- Giuseppe Verdi, 200th Anniversary of Birth
- Lithuania, 2 Litai, KM# 190, Bi-Metallic, Stelmuze Oak
- Singapore, 1 Dollar, KM# 314, Bi-Metallic, Lion and Flora
- USA, 25 Cents, KM# 546, Copper-Nickel Clad Copper, Mount Rushmore National Memorial

The winner was the American quarter with its extraordinary view of the monumental statues of Mount Rushmore.

# EVA Celebrates 20 Years

In 1994, EVA (the European Vending Association) was established. Back then, its main goal was to ensure that the smooth transition of national currencies to the euro also applied to vending machines. Over the last 20 years, however, the tasks of this organization have multiplied.

On February 7, 1992, the members of the European Council signed the Maastricht Treaty. An important part of the treaty was the regulation concerning a European Economic and Monetary Union that would bring the euro to the citizens of most member countries. Nearly a decade was left to draft and produce the new coins. In order to bring forward ideas and thus ensure a smooth transition from the national currencies to the euro, the European Vending Association was established.

Right from the start, EVA saw itself as a partner of the currency producing mints, and as a legitimate voice of the vending industry. As a well-informed lobby, its goal was to introduce its own agendas to those parties involved in the decision about the coins' technical specifications. Today, the vending associations of 18 states come under the umbrella of the EVA, complemented by many large companies such as Deutsche Telekom or Nestlé.

In the initial phase, the EVA was integrated into the process of developing the new euro coins and banknotes. Relations with the mints were particularly important because coins were, and still are, the most frequent method of payment in vending machines. To make sure that the validation of the new euro coins (which the machines have to accomplish in a split second) always achieved the correct result, the EVA – in cooperation with the relevant mints and the European authorities – conducted several tests before the technical specifications were finally determined.

As one of its biggest successes, the EVA cites the modification of the draft of the 50 cent piece, thanks to which the coin could be measured with a higher degree of security.

Today, many mints are involving the EVA in creating technical innovations from the outset. A case in point is the flip-flop-coin, made of multi-layer materials, which had been optimized for use in vending machines prior to their field tests.

Representatives of the EVA are currently present on the European Mint Directors Working Group (MDWG), at the European Central Bank, the European Commission Anti-Fraud-Office (OLAF), the European Technical and Scientific Centre (ETSC), the Directorate General for Financial Affairs (DG ECFIN), as well as Europol.

An indispensable tool for all mints is the Coin Design Handbook 2012, produced under the aegis of the Mint Directors Conference Technical Committee in cooperation with the EVA. Only mints and blank manufacturers, public authorities and validating equipment manufacturers as members of the EVA have access.

Since 1994, EVA has expanded, organising congresses and, since 2005, working on improving the image of the products distributed by vending machines with regard to their nutritional value. In 2006, the EVA, in cooperation with the US American National Automatic Merchandising Association, founded the Worldwide Vending Association (WVA). However, that did not survive for very long and was liquidated in 2011. What has remained, though, are excellent relations with the vending industry outside Europe.

2013 was a crucial year for EVA. Not only were manufacturers of coffee and water dispensers welcomed as new members, but there was a change in the senior management, with Erwin Wetzel taking over from Catherine Piana (who had served as Director General since 1997), together with Jan-Marck Vrijlandt, President of the EVA.

Now, in 2014, EVA is celebrating its 20th anniversary. In honour of this occasion, Mint News Quarterly would like to congratulate the EVA. Or, as a Latin mint might have put it: 'VOT XX MVLT XXX'.

## Minting of Norwegian Coins

The agreement between Norges Bank and Mint of Norway for the production of Norwegian coins expired at the turn of the year. However, following a competitive tender, in which three mints took part, the Mint of Norway was again assessed to be the winner.

Norges Bank conducted the tender, which was announced in line with Norway's Public Procurement Act, this Spring.

The three bids were assessed on price and functionality, weighted 80% and 20% respectively. Based on these criteria, Norges Bank signed a framework agreement with the Mint of Norway (which is owned 50:50 by the Mint of Finland and Samlerhuset Norge) in August for the supply of Norwegian coins for four years from 2015.

## Royal Mint Best Suppliers Award

Every year, The Royal Mint in the UK grants awards to suppliers in recognition of particularly effective cooperation, as part of its 'Working Together' Supplier Development Programme, the goal of which is to ensure a robust supply chain infrastructure.

The following companies were the recipients of the 2014 Annual Supplier Awards:

- The Royal Mint Supplier of the Year 2014: Vaultex
- Best Overall Delivery and Quality Performance: Vaultex
- Working in Partnership (Direct Materials): Vaultex
- Working in Partnership (Goods and Services): Oakwood Agency
- Best Business Service Supplier: Capital Law
- Award for Continuous Improvement: Vale (Europe)
- Most Innovative Supplier: Eagle Engineering
- Best Contribution to Environmental, Social and Sustainable Supply: Tradebe
- Best SME: Sarpak

According to The Royal Mint, recognition at regular intervals, in the form of a competition, is a good yardstick to annually measure the opportunities for and challenges of cooperation, and the supply chain can only be permanently optimised when new options for improvement are considered on a regular basis.

Or, as Adam Lawrence, Chief Executive and Deputy Master of The Royal Mint, put it on the occasion of the prize-giving ceremony: 'our vision is to be recognised as the 'world's best mint', and we will only achieve this when we have the world's best supply chain. The continued dedication and cooperation of our loyal suppliers will play a key role in helping make this happen.'



Representatives from Vaultex are presented with The Royal Mint's 'Supplier of the Year' award by Adam Lawrence, Chief Executive of The Royal Mint. (© The Royal Mint.)



# Quirky Facts: Security Roman-Style



Roman denarius with cut notches, so-called 'serratus', struck in 82 BC. From auction sale Gorny & Mosch 215 (2013), 18.

The Finnish have *CoinTune*, the British have *iSIS* and the Canadians have their *DNA*. This story tells how the Romans reacted to German mistrust of their coins.

'These Romans, they are crazy'. Asterix and Obelix weren't the only ones to think so – so did the Germanic people. Who, after all, could guarantee that the small circular discs weighing nearly 4 grams, which Roman dealers brought into the country and referred to as denarii, truly consisted of silver?

In truth, they did not always do so. There were many dealers who tried to cheat their Germanic business partners with forged coins. The Germans, ever efficient in business, could only check one way – by pulling out their knives and cutting into the coins in order to check the interior.

The Roman mint responded, from 118 BC, by producing coins with serrated edges. These particular coins were called 'serrati' or, to be more precise, 'denarii serrati', derived from serra (= saw). In his *Germania*, Tacitus tells us that the Germanic people were 'virtually wild' about the serrati.

Unfortunately, the serrati did not offer security in itself, since counterfeiters forged them as well. Moreover, it remains a matter of dispute to this day whether the Roman mints did in fact produce serrati with a core of base metal to be exported to Germany (and we certainly know of coins that have been produced with official tools but possess only a silver coating).

## MINT NEWS QUARTERLY

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## Confusion about Transnistria's Coins

**The Moldovan territory of Transnistria has issued coins supplied from Russia. They are made of an entirely new material – perhaps the material of the future. The exact nature of that material, however, remains unclear.**

In August 2014, the Russian media announced that innovative coins were about to be introduced in the Moldovan territory of Transnistria. Transnistria is a region in Moldavia, unrecognized by the international community, that has considered itself an independent state since the early 1990s and, as such, has issued its own currency – the Transnistrian Ruble (PBR) consisting of both coins and banknotes – since 1994. On the occasion of this currency's 20th anniversary, new coins were released this summer made of a wholly new material.

A spokesperson for Transnistria's central bank (TRB) explained that these coins were developed in Russia and are equipped with state-of-the-art security features. In terms of both the colourful appearance and the security features, the coins resemble banknotes. They possess a special texture with contour elements, along with micro-printing, and are equipped with additional UV and IR responsive security features.

Each denomination has its own shape – circular, square, pentagonal, hexagonal. The obverses depict historical figures such as the Russian Tsarina Catherine the Great. The reverses are diamond-patterned, with the year of issue and minting authority provided.

Transnistria used to issue coins with a nominal value of up to 50 kopecks only. The new coins with the denominations of 1, 3, 5 and 10 Rubles are intended to circulate simultaneously with banknotes of the same denominations.

It is still not clear what material the coins are made of (the official term is 'composite material'), but the English-speaking media are referring to them as plastic coins. However, Christian Kessler, head of TRB's press office, expressly rejected this in a written statement addressed to Mint News Quarterly. And upon enquiry, Vasily Gerasimov of Goznak, told us that he deemed it synthetic in combination with another material, perhaps paper. Further information might be held back deliberately.

Rumour has it, meanwhile, that if the coins stand the circulation test, Russia might use the same material for the Russian Ruble.



Transnistria's new coins.