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REVUE BELGE DE NUMISMATIQUE  
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# MÉLANGES – MENGELINGEN

## Musical Roman coins. An hypothesis

**F**OR AGES COINS HAVE BEEN USED FOR NON-MONETARY PURPOSES. THEY HAVE been melted down to make cutlery, pierced to be worn as pendants or used as washers, transformed into spoons, jewelry, etc. <sup>[1]</sup> But quite often coins show signs of deliberate deformations that remain without satisfactory explanation. In this short note we will offer a suggestion for one type of secondary use of some Roman coins.

Several Roman sestertii have been transformed by hammering part of the rim into a small point. Although it is difficult to ascertain when this was done, the patina on several specimens strongly suggests that, at least in some if not in all cases, this happened during Roman times <sup>[2]</sup>.

*CLAUDIUS (41-54)* <sup>[3]</sup>



Sestertius – Rome – 41/42 – Ø 36,4 mm (flattened sides 30,8 mm) – 26,36 g – ↑↓ – small crack at 2 h.

A<sub>v</sub> Laureate head of Claudius to the right  
TI CLAVDIVS CAESAR AVG [PMTRP ] IMP PP

R<sub>v</sub> Within an oak wreath, on four lines: EX SC | P P | OB C[I]VES | SERVATOS

Two opposing sides of the coin have been flattened by hammering making the coin look somewhat like an irregular oval but respecting the imperial portrait. Although the original patina has been largely lost and it is therefore difficult to judge the quality and the age of the coin when it was transformed, one has the impression that the coin doesn't show traces of long circulation.

<sup>[1]</sup> H. MAUÉ & L. VEIT, *Münzen in Brauch und Aberglauben. Schmuck und Dekor – Votiv und Amulett – Politische und religiöse Selbstdarstellung*, Mainz am Rhein 1982, gives a general idea on some aspects of secondary uses of coins.

<sup>[2]</sup> All coins discussed here are kept in a private German collection.

<sup>[3]</sup> C. SUTHERLAND & R. CARSON [C. SUTHERLAND rev.], *The Roman Imperial Coinage. 1. From 31 BC to AD 69*, London 1984, p. 128, nr. 112.

*TRAJAN (98-117)*

Sestertius – ? – ? – Ø c. 33,3 mm (with point 40,2 mm, flattened sides 30,5 mm) – 24,67 g – ?

A<sub>v</sub> Laureate head of Trajan to the right

Legend: no visible traces

R<sub>v</sub> No visible traces

The coin was provided with a flattened point and two sides were hammered slightly flat. Traces of the hammering on the point show that the coin was placed on a flat surface such as an anvil with the reverse side down. The hammering of the point and of the sides was done without damaging the imperial bust. The coin would have been in circulation for a long time at the moment when it was transformed. The reverse is now completely blank and no traces of the legend remain neither on the obverse nor on the reverse.

The attribution to Trajan is solely based on the general outline of the imperial portrait.

*LUCIUS VERUS (161-169)*<sup>[4]</sup>

Sestertius – Rome – Dec. 161/Dec. 162 – Ø 34,1 mm (with point 37,9 mm) – 27,52 g – ↑^

[4] H. MATTINGLY & E. SYDENHAM, *The Roman Imperial Coinage. III. Antoninus Pius to Commodus*, London 1938 (rep. 1968), p. 318, nr. 1308.

- A<sub>v</sub> Bare bust of Lucius Verus to the right  
IMP CAES L AVREL / VERVS AVG  
Dotted circle.
- R<sub>v</sub> Marcus Aurelius and Lucius Verus, both togate, standing facing each other, clasping right hands; the scene is flanked by the letters S / C  
[CONCO]RD AVGVSTOR TR P II, in the exergue [CO]S II  
Dotted circle.

The coin was provided with a flattened point. Traces of the hammering show that the coin was placed on a flat surface such as an anvil, face down. The exact spot on which the hammering was done, seems to have been carefully chosen to limit the damage to the imperial bust. The coin shows limited traces of circulation and the patina is consistent with an 'old' transformation.

It is clear that both the sestertius of Trajan and of Lucius Verus have been transformed for the same purpose. Taken on its own the transformation of the sestertius of Claudius may seem to be somewhat haphazard but the similarity with the sestertius of Trajan suggests a similar purpose. Corrosion and patina obliterated all traces that could eventually help us in determining the secondary use of these coins. To make some educated guess we have to rely entirely on our imagination and on parallels. One of the possibilities is that of a screwdriver. But two things make us doubt that identification: the thinness of the point and its round edge. Furthermore a small screwdriver means small and hence metallic screws which are, until now, not attested in classical antiquity<sup>[5]</sup>.

Another hypothesis seems much more likely, that of a plectrum or a pick used to pluck or strum stringed musical instruments such as a lyre or a kithara.

The word plectrum itself has a Greek origin (*πλεκτρον*) and plectra are well known from ancient Greek times onwards both by iconographic evidence as well as by texts<sup>[6]</sup>. The use of plectra continued during the Roman period as illustrated e.g. by a *denarius* of August (27 BCE – CE 14) minted in Lyon with on the reverse Apollo Citharoedus of Actium standing slightly to the left, holding a plectrum in his right hand and a lyre in his left, and by a large bronze of Caracalla and Plautilla from Alinda (Caria) that also represents Apollo Citharoedus in a similar position.



*Denarius from August (RIC I, p. 53, nr. 171a)  
Collection Cabinet des Médailles, Brussels*

[5] W. RYBCZYNSKI, *One good turn. A natural history of the screwdriver and the screw*, New York c. 2000, *passim*.

[6] For example K. SCHNEIDER, *Plectrum*, in K. SCHNEIDER (ed.), *Paulys Real-Encyclopädie der classischen Altertumswissenschaft. Neue Bearbeitung [...]. Einundvierzigster Halbband. Plautina bis Polemokrates*, Stuttgart 1951, col. 187-189 and V. IVANOFF, *Plectrum*, in S. SADIE & J. TYRRELL (eds), *The new Grove dictionary of music and musicians. 19. Pa-liashvili to Pohle*, [London & New York, 2002<sup>2</sup>], p. 916-917.

Contemporary plectra come in all shapes and materials. But in Western tradition most plectra are tear shaped or roughly triangular with rounded edges. They used to be made of crow, eagle or ostrich feathers, hard wood, bone or ivory etc. Nowadays most plectra are made of celluloid or some other synthetic material which in combination with metal strings has a positive effect on the lifetime of the strings. But some contemporary musicians prefer metallic plectra and even coins for that matter<sup>[7]</sup>.

Johnny Joris from Hasselt (B), a guitar builder and a professional musician, kindly agreed to give the coins of Trajan and of Lucius Verus a try as plectrum on his guitar. Both produced a very pleasant and specific sound which makes it all the more probable that they were indeed used as plectra by Roman musicians. Unfortunately metallic plectra have a negative effect on the lifetime of organic strings. This may well be one of the reasons why the use of metallic plectra was not widespread in Roman times.

Walter NEUSSEL\* & Raf VAN LAERE\*\*

À la recherche d'un demi-gros *jangelaer* de Jean de Bavière,  
prince-évêque de Liège (1389-1418) \*\*\*

UNE MONNAIE CURIEUSE QUI SE PRÉSENTE COMME UN DEMI-GROS *JANGELAER* DE la fin du XIV<sup>e</sup> ou du début du XV<sup>e</sup> siècle fut récemment découverte au centre de Malines, mais malheureusement dans un sol perturbé. Étant donnée la qualité exceptionnelle de sa facture, nous croyons que la pièce mérite une publication en dépit de son caractère énigmatique. La monnaie a été soumise pour étude à plusieurs spécialistes du monnayage médiéval mais a résisté à toute tentative d'identification.



A<sub>r</sub> Une aigle de face, la tête tournée vers sa droite, tient deux écus légèrement inclinés l'un vers l'autre dans ses griffes ; dans la droite celui de Bavière écartelé et dans sa gauche un écu au lion grim pant à dextre  
Légende : **IOHES : DVX : [..] : BO : CO[M]S : PAL**

R<sub>v</sub> Croix pattée coupant la légende et cantonnée des lettres **H / L / T / D'**  
Légende : **BNDICT / O : VENIT / IN : NO[M] / NE : DNI**

[7] W. HOOVER, *Picks! The colorful saga of vintage celluloid guitar plectrums*, San Francisco 1995, illustrations pp. 7, 73, 94.

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La monnaie, légèrement ébréchée et fendue, pèse 0,788 g, a un diamètre de 19 mm et une orientation des axes à 9 h (↑←). Elle semble être frappée en billon de bonne qualité mais une analyse serait nécessaire pour savoir si sa couleur blanchâtre n'est pas plutôt due à un étamage qu'à une argenture.

La légende du droit pose quelques problèmes de lecture et surtout d'interprétation. Le début – JOHES DUX – ne pose aucun problème. Le mot, ou plutôt l'abréviation de deux lettres qui suit, est illisible. On hésite à lire la dernière lettre comme un E car elle est endommagée par une petite fêlure et rendue peu lisible par le reflet de la croix du revers. Puis suit BO ou – moins probable – RO, suivi à son tour par ce que nous lisons COMS mais dont il faut admettre que le M est assez curieux et ressemble un peu à un N inversé (И). Le dernier mot PAL est clair mais entre ce mot et le bec de l'aigle, on semble pouvoir reconnaître un trait onduleux difficile à interpréter mais qui ressemble à une lettre C. Le tout se laisse traduire comme *Jean duc [de]... comte du Palatinat*. Chose curieuse car selon les traditions de chancellerie, le titre le plus important précède dans les légendes monétaires. On s'attendrait donc ici à ce que le titre de *comte du Palatinat* précède, exceptionnellement, le titre ducal. Le manque de lisibilité empêche d'identifier de quel duché il s'agirait. Il serait trop audacieux de vouloir reconnaître dans la légende une référence au duché éphémère de Straubing(-Holland) où Jean de Bavière a régné entre 1404 et 1417/1425. Car de toute évidence la monnaie précède cette période dans la vie tumultueuse de Jean de Bavière.

La légende du revers ne pose aucun problème de lisibilité et d'interprétation. On peut la compléter comme *Benedictus qui venit in nomine Domini* (Béni soit qui vient au nom du Seigneur) tirée du Psaume 118:26a et des Évangiles de Luc 13:35b et Matthieu 21:9. Au XIV<sup>e</sup> siècle, on la trouve dans nos régions non seulement sur plusieurs types de doubles gros et gros mais aussi sur plusieurs types de monnaies d'or.

Le type est très similaire au gros *jangelaer* ou *voetdrager* de Jean de Bavière, prince-évêque de Liège (1389-1418), dont Dengis précise à juste titre qu'il est inspiré par des exemples flamands et hollandais<sup>[1]</sup>. On le rencontre pour la première fois en Flandre en 1386 dans la troisième émission créée sous le règne de Philippe le Hardi (1384-1404). La série du *jongelaer* ou *voetdrager* est composée d'un double gros, d'un gros et d'un demi-gros<sup>[2]</sup>. Jeanne, duchesse de Brabant, veuve (1383-1406) a dû prendre très vite l'initiative pour la frappe de doubles gros *jongelaers* brabançons car Philippe le Hardi s'en plaint dès 1389<sup>[3]</sup>. Jusqu'à présent on ne connaît ni gros ni demi-gros brabançons de ce type.

C'est en 1393 qu'Albert de Bavière, comte de Hollande (1389-1404), reprend le type du *jangelaer*, mais il élargit la série en y ajoutant un quart de gros et un

[1] J.-L. DENGIS, *Les monnaies de la principauté de Liège. II. De Jean d'Enghien à Robert de Berghes (1274-1564)*, Wetteren 2006 (*Collection Moneta* 54), p. 61-62, n° 607.

[2] L. DESCAMPS DE PAS, *Essai sur l'histoire monétaire des comtes de Flandre de la Maison de Bourgogne et description de leurs monnaies d'or et d'argent*, in *Revue numismatique* 1861, n° 6, p. 31-32, pl. VII, nos 13 et 14 publie le double gros et le gros ; J. DE MEY, *Les monnaies des comtes de Flandre (1384-1556)*, Bruxelles 1986 (*Numismatic pocket* 40), p. 13-15, nos 232-248 y ajoute le demi gros.

[3] A. DE WITTE, *Histoire monétaire des comtes de Louvain, ducs de Brabant et marquis du Saint Empire Romain. I.*, Anvers 1894, p. 177, n° 420.

huitième de gros dont le droit montre l'écu de Bavière dans une épicycloïde tandis que le revers reprend la longue croix pattée cantonnée des lettres H / L / A / 'D, sans aucun doute pour HoLIAnDia(e). La première série a été émise avant le 15 mai 1393. Une seconde série, dont le gros se distingue par une rosace entre les écus, a été émise après cette date<sup>[4]</sup>.

Cette seconde série a dû servir de modèle pour l'émission liégeoise qui montre, elle-aussi, une rosace entre les écus. Ceci nous fournit donc une date *post quem* pour les pièces liégeoises : mi-mai 1393. Le fait que la série liégeoise a été inspirée par l'émission hollandaise est confirmée par les lettres qui cantonnent la croix du revers : H' / L / T / 'D qui sont plus proches des pièces hollandaises que des pièces flamandes avec F / L / A / D', pour FLAnDria(e). On peut hésiter sur la signification de certaines lettres – H pour Huy ou Hasselt, T pour Tongres ou Thuin – mais le sens général est clair : elles représentent le pays de Liège.

Les gros *jangelaers* liégeois posent plusieurs problèmes, entre autres par la titulature de Jean de Bavière qui se voit appelé sur certains exemplaires *episcopus* sans jamais avoir été évêque de Liège. Dengis semble favoriser une datation après la bataille d'Othée qui eut lieu le 23 septembre 1408. Cela nous semble un peu tard car Albert de Bavière ordonne en Hollande déjà en 1395 une nouvelle émission qui inclut un nouveau type de gros et demi-gros, les *herengroten* ou *hendrik-ottenzoongroten* sur lesquels l'aigle est remplacée par un heaume et la rosace entre les écus par la lettre A et qui porte un écu bavarois sur la croix du revers<sup>[5]</sup>. Tout porte donc à croire que les *jangelaers* liégeois datent de la dernière décennie du XIV<sup>e</sup> siècle, probablement même entre 1393 et 1395.

En ce qui concerne les *jangelaers* liégeois, deux questions restent ouvertes :  
 1. Est-ce que Jean de Bavière a imité à Liège toute la série des *jangelaers* émise par son père Albert en Hollande ou la série liégeoise ne comprenait-elle effectivement que des gros et des huitièmes de gros ? Le manque de sources écrites nous empêche à distinguer clairement les différentes émissions monétaires de Jean de Bavière au pays de Liège. Quand on parcourt son monnayage, on a du mal à distinguer des séries monétaires claires au point de vue typologique. La plupart des types imite l'une ou l'autre émission d'un proche voisin sans pour autant reprendre des séries entières. Mais le fait que la série des *jangelaers* est représentée par des valeurs assez éloignées l'une de l'autre – gros et huitième de gros – est assez inhabituel. On s'attendrait au moins à une valeur intermédiaire : le demi-gros ou le quart de gros. — 2. Est-ce que Jean de Bavière a imité la série avec rosace seulement ou aussi la série précédente sans rosace ? La présence d'une rosace sur le gros *jangelaer* liégeois indique que la pièce est inspirée de la seconde série de gros *jangelaers* hollandais. Il est impossible de confirmer que le huitième de gros *jangelaer* hollandais appartient à cette seconde série ou s'il fait partie de la première série. Le huitième de gros *jangelaer* n'est donc pas utile à déterminer si les *jangelaers* liégeois ont imité la première ou la seconde série hollandaise.

[4] J. GROLLE, *De muntslag van de graven van Holland tot de Bourgondische unificatie in 1434. 1. Inleiding en catalogus*, Amsterdam 2000, p.135-136, n<sup>os</sup> 18.3.2 en 18.3.3. Selon l'A. le demi gros de la seconde série n'a pas été retrouvé et le huitième gros ne semble pas avoir été émis dans la seconde série ou, en tout cas, n'a pas été reconnu comme tel.

[5] GROLLE, *op. cit.* [n. 4], p. 138-139, n<sup>os</sup> 18.4.2 et 18.4.3 ; le demi-gros reste à trouver.



La facture de la monnaie publiée ici est de haute qualité. L'aigle du droit et le tracé des légendes trahissent une main experte qui ne doit en rien céder au graveur des pièces officielles. La pièce imite soigneusement la série des *jangelaers* liégeois mais elle ne présente pas de rosace et elle est clairement un demi-gros, pièce qui jusqu'à présent, n'est pas attestée à Liège. Si on accepte que la nouvelle pièce soit une imitation fidèle d'une monnaie liégeoise, il faut admettre que Jean de Bavière ait non seulement copié la seconde série de *jangelaers* 'à la rosace' mais aussi la première et qu'il ait, au moins pour cette première série, émis des demi-gros.

Il faudra donc aller à la recherche de *jangelaers* liégeois sans rosace pour confirmer cette hypothèse qui permettrait en même temps de dater avec plus d'exactitude au moins une émission monétaire de Jean de Bavière.

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### Twice fooled: a metallotherapeutic and a galvanotherapeutic medal analyzed

STUDENTS AND COLLECTORS OF *MEDICINA IN NUMMIS* OFTEN DO NOT SEEM TO BE very inquisitive about therapeutic medals<sup>[1]</sup>. Defining therapeutic medals is not an easy task since there is considerable overlap with other types such as devotional medals. In this short note we use the expression 'therapeutic medal' for medals that claim to have healing powers *sui generis* without referring to a religious context. Therapeutic medals are generally considered to belong to the field of quackery, meaning that mainstream health care doesn't accept their healing powers above the placebo effect<sup>[2]</sup>. But even quacks are supposed to be honest in dealing with their patients. The theoretical foundation of a healing method may be fallacious but that does not mean that the products used by their adepts should not be what they pretend to be. That is the small divide between quackery and medical imposture.

Two therapeutic medals were selected to be analyzed by the *Institute for Inorganic Chemistry* of the Leibnitz University at Hannover to find out if they could have been effective within the framework of their erroneous medical principles.

For the metallurgical analysis X-Ray fluorescence (XRF) was used. This method is based on the stimulation of fluorescence radiation by X-ray irradiation. Each element has a characteristic fluorescence radiation which not only makes it possible to identify the element but also gives information on the concentration of the

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[1] H. EMMERIG, *Bibliographie zum Thema 'Medicina in Nummis'*, Stand 26/III/2010 [http://numismatik.univie.ac.at/fileadmin/user\\_upload/inst\\_numismatik/pdf\\_Dateien/medicina\\_in\\_nummis\\_11.pdf](http://numismatik.univie.ac.at/fileadmin/user_upload/inst_numismatik/pdf_Dateien/medicina_in_nummis_11.pdf) (consulted 15/XI/2011).

[2] For a short introduction on the relation between coexisting medical theories during the Modern Period see e.g. W. ECKART, *Therapeutische Konzepte*, in F. JAEGER (ed.), *Enzyklopädie der Neuzeit*. 13, [Darmstadt 2011], Kol. 531-534.

elements in the sample that is analyzed <sup>[3]</sup>. By using micro-XRF 2D-maps the distribution of different elements can be visualized <sup>[4]</sup>.

### *Metallotherapeutic medal*

Metallotherapy has a respectful age and its history can easily be traced up to the Middle Ages and even older periods. There is a strong astrological component in its theoretical framework that links metals to the traditional seven planets which include sun and moon <sup>[5]</sup>. The most popular theories accept that these planets have a sympathetic influence on the ‘astral’ body of a person and as such his health. Illness is considered to be the result of an unbalance of the astral influences. This unbalance can be redressed by metals that can be taken internally or applied externally *e.g.* by wearing a ring, a bracelet or a medal made of a specific metal or – to improve one’s general health – of an alloy of all seven planetary metals. From the end of the 17<sup>th</sup> century onwards, the humoral theory on which metallotherapy heavily depends, was increasingly discredited by mainstream medicine relegating it to the domain of quackery. Nowadays, metallotherapy survives in a modified form as a therapeutic practice in anthroposophic medicine propagated by the followers of Rudolf Steiner (1861–1925).



<sup>[3]</sup> The atoms are stimulated by weak X-rays, generated by an X-Ray-Tube with *e.g.* a Rh-target. This stimulation results in the loss of an electron in the inner electron shell of an atom. Instantly an electron from a nearby outer shell fills up the generated gap. This process results in the emission of so-called fluorescence radiation, which is detected by a Si-Li-semiconductor-detector. Because the distance between two shells is characteristic for each element in the periodic table, the detected energy is specific for each element. The intensity of the radiation correlates with the concentration in the analyzed sample.

<sup>[4]</sup> In this analysis an ‘Eagle 3’ XRF or ‘Roentgenanalytik’ was used. The excitation voltage was 40 kV; the electric current in the X-ray-tube 250  $\mu$ A; the number of measuring points (pixel) of the element distribution map was 256  $\times$  200, the distance between two points nearly 150  $\mu$ m, the testing time for each 50  $\mu$ m wide measuring point 1000 ms, the total testing time for one medal nearly 24 h and the resolution was 144 eV. The element distribution maps were generated for the elements sodium (corrosion products / organic layers component), silicon (soil), sulfur (corrosion products, oil layer), chlorine (corrosion products, perspiration), tin (metallic component), calcium (corrosion products), manganese (soil, metallic component), iron (soil, metallic component), nickel (metallic component), rhodium (density-marker), copper (metallic component), and zinc (metallic component, trace of salves).

<sup>[5]</sup> See *e.g.* W.-D. MÜLLER-JAHNCKE, *Iatroastrologie*, in F. JAEGER (ed.), *Enzyklopädie der Neuzeit*. 5, [Darmstadt 2007], Kol. 753-757.

Round, 0,7 mm thin medal with a loop; Ø 23,9 mm (26,6 mm with loop); 2,55 g, annulet included; position 12 h (↑↑).

A<sub>v</sub> An hermeneutic circle of a radiant sun within a circle, surrounded clockwise by ☼ · ☿ · ♀ · ♀ · ☉ · ♂ · ♃ · ♁ · ♄ · ☾ · [6]

Legend between two circles: **DIESER TALER IST V. DENEN 7. MINERALIEN  
PREPARIERT**

R<sub>v</sub> Below in the field a small helmeted shield of unclear design; above in six lines: **VOR | FLÜSKRAMPF | UND ROTLAUEF | WAN ER BEY | DEN MENSCHEN |  
GETRAGEN WIRD**

Legend between two circles: **DIESE MINERALISCHE V. MERCVRIALISCHE  
MATERI DIENT**

The effigies and the legends are in hollow relief. The composition of the legends is very sloppy. The letters are not of the same height and the space between the letters is far from being constant. In at least two instances, a letter punch left a double imprint on the reverse die. The coat of arms lacks sufficient detail to be identified.

The medal shows barely traces of wear not even on the suspension loop and is very difficult to date, but the ‘baroque’ style points to the 17<sup>th</sup> or 18<sup>th</sup> century. The archaic language and the general shape of the coat of arms are consistent with the 18<sup>th</sup> century.

It remains unclear whether the medal is indeed as old as it pretends to be or if it is a later – 19<sup>th</sup> or even 20<sup>th</sup> century – copy or creation for a credulous modern public. The presence of an artificial chloride patina seems to indicate a modern origin as well as the hollow relief which is very hard to achieve with traditional dies and has but very few parallels in older medals. Although it is impossible to identify the workshop where the medal was produced, it is clearly intended for the German market.

In spite of the fact that an alloy composed of the seven planetary metals should be a panacea according to metallotherapeutic theories, this medal claims only to be useful in cases of *Flüskrampf* and *Rotlauf*. *Rotlauf* is normally identified with erysipelas, a skin condition indicating an acute streptococcus bacterial infection that can have fatal consequences. However, it is much more probable that the expression here refers to red or bloody flux, or dysentery, a much feared disease that killed thousands before the advent of modern antibiotics. The meaning of *Flüskrampf* – the last letters are somewhat blundered – remains unclear [7].

Analysis reveals that the potentially complex and interesting alloy of the medal consists of nothing more than 80% copper and 20% zinc, an alloy consistent with

[6] These symbols represent the seven planetary metals separated by dots: ☼ = gold = sun, ☿ = mercury = Mercury, ♀ = copper = Venus, ☉ = gold = sun, ♂ = iron = Mars, ♃ = tin = Jupiter, ♁ = lead = Saturn and ☾ = silver = moon (with gold appearing twice).

[7] Here *Flüß* is probably connected with abdominal cramps related to diarrhea, see e.g. BARGHEER, *Fluss*, in H. BÄCHTOLD-STÄUBLI & E. HOFFMANN-KRAYER, *Handwörterbuch des deutschen Aberglaubens*. 2, Berlin & Leipzig 1930 (repr. Berlin & New York 1987), Kol. 1694-1695.

historical latten <sup>[8]</sup> and similar to contemporary 'low brass'. The analysis clearly demonstrates that the material of the medal does not correspond with the alloy described on the medal itself. As such this medal is not so much a product of quackery but of medical imposture.

### *Galvanotherapeutic medal*

Electrotherapy gained popularity at the end of the first half of the 18<sup>th</sup> century, when all kinds of electrical experiments became *en vogue*. Although at that point the theoretical framework for electrical phenomena was far from clear, some physicians started using electricity as a cure for a broad spectrum of symptoms. Although the therapeutic successes of these treatments were highly mediatized and as such highly influential on medical research into electrical phenomena, most academic physicists of that period considered electricity to be of little interest.

Experiments by the physician and physicist Luigi Galvani (1737-1798) and his followers seemed to prove that electricity was one or indeed the life power of all living organisms. During the same period magnetism also became popular in different therapies which reached a climax in mesmerism <sup>[9]</sup>. When a link was discovered between electricity and magnetism a cross-fertilization took place <sup>[10]</sup>. Electrotherapy hit its peak at the end of the 19<sup>th</sup> century when innumerable electro- or magnetotherapeutic devices were developed by physicists or engineers without much medical knowledge. These were often meant to be used by therapists working outside mainstream medicine or for self-help <sup>[11]</sup>. Nowadays a broad range of electrotherapeutic devices is still used both in academic medicine and in alternative therapies.

Composite octagonal medal with two loops; Ø 40 mm (49 mm with loops); 16,90 g; position ↑↑.

A<sub>V</sub> + R<sub>V</sub> Both sides are identical and show a bearded bust, probably meant to represent Hippocrates, to the left.

Legends in hollow relief: Inner: **MEDAILLE ELECTRO MÉDICALE / E. OSSELIN** — Middle: *La Santé pour tous* | **DÉPOSÉ / EO** (in a lozenge) — Outer: **ASSAINIT LA BILLE GUÉRIT LES DOULEURS ET LES RHEUMATISMES PURIFIE LE SANG**

[8] M. MITCHINER, *Jetons, medalets & tokens. I. The medieval period and Nuremberg*, [London 1988], p. 74-75.

[9] O. HOCHADEL, *Mesmerismus*, in F. JAEGER (ed.), *Enzyklopädie der Neuzeit*. 5, [Darmstadt 2008], Kol. 387-390.

[10] O. HOCHADEL, *Elektromedizin*, in F. JAEGER (ed.), *Enzyklopädie der Neuzeit*. 3, [Darmstadt 2006], Kol. 196-199 & IDEM, *Galvanismus*, in F. JAEGER (ed.), *Enzyklopädie der Neuzeit*. 4, [Darmstadt 2006], Kol. 137-139.

[11] *The turn of the century electrotherapymuseum* in West Palm Beach (Florida, USA) is entirely devoted to these devices; see [www.electrotherapymuseum.com](http://www.electrotherapymuseum.com) (consulted 15/XI/2011). With thanks to Frank Jones for his valuable suggestions on the composition of the medal and additional information on the use of this type of medals e.g. Richardson's magneto-galvanic battery.



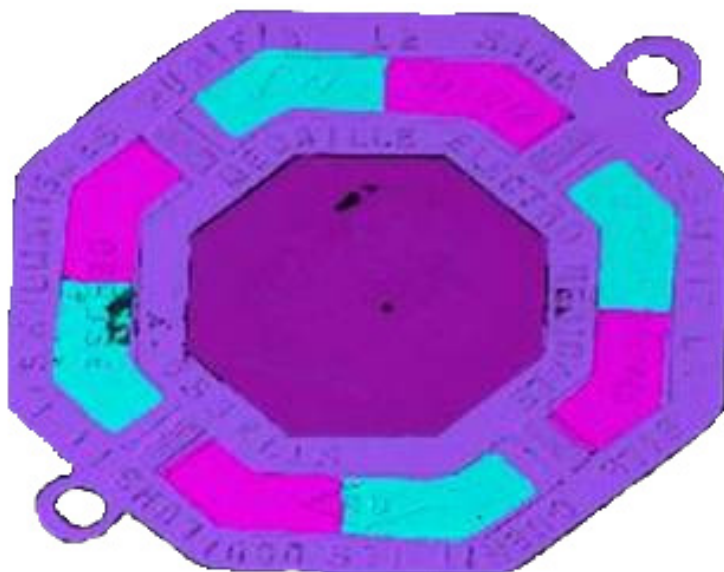
The medal is assembled from several parts that were prepared separately, which makes it very interesting from a technical point of view.

The central part consists of an octagonal disc – Ø 19,5 mm – which is made from an unusual combination in which an iron disc was heavily coated with tin before being plated with nickel. To improve the cohesion between the tin and the outer nickel layer, the tin was first coppered, a practice still in use nowadays. The border consists of a brass (80% copper, 20% zinc) grid with inserts of copper and zinc. The pieces of zinc are protected by a thick varnish.

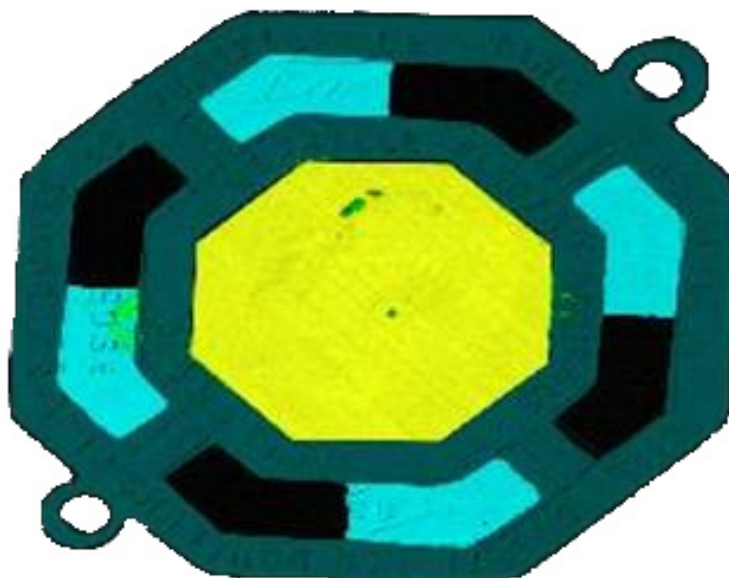
The inner legend and in a more obscure way the middle legend identifies the producer of the medal as E. Osselin about whom we were unable to find much information <sup>[12]</sup>. According to the middle legend he patented this medal. This must probably have been in the late eighties or early nineties of the 19<sup>th</sup> century since Osselin was condemned on the 27<sup>th</sup> March 1888 for having illegally copied a *médaille électro-magnétique* produced by Ferdinand de Boyères and patented by him on the 30<sup>th</sup> December 1887 <sup>[13]</sup>. We assume that Osselin patented the medal, that is analyzed here, shortly after his condemnation.

<sup>[12]</sup> The only information we were able to trace is that in 1883 E. Osselin was called *Fabricant breveté de bagues électro-magnétiques, Rue de la Maine 3, Asnières (Seine)* (F).

<sup>[13]</sup> *Annales de la propriété industrielle & littéraire. Journal de législation, doctrine et jurisprudence françaises et étrangères* [...] 35 (t. 34), n° 1 January 1889, p. 216-218, article 3326 consulted at [www.gallica.bnf.fr](http://www.gallica.bnf.fr) (15/XI/2011). Osselin was no longer allowed to use the same type of medal as De Boyères nor to use the expression *médaille électro-magnétique*. We were unable to find much information on Ferdinand de Boyères but it seems that a street is still named after him in Mortagne-au-Perche (Orne, F). In a supplement to the *L'indicateur de la Savoie* of Saturday the 17<sup>th</sup> October 1891, De Boyères warns for cheap imitations that cost less than his *médaille électrique* which can be bought for 5,- francs. The backside of this leaflet gives a selection of the 50.000 (*sic*) people that were cured by the use of the medal, and incidentally mentions that there is no danger to wear the medal during a thunderstorm or when pregnant. Consulted at [www.memoireactualite.org](http://www.memoireactualite.org) (15/XI/2011).



*Element distribution map for zinc (blue) and copper (red).  
Brighter areas mean higher concentration of an element. Darker areas mean less concentration. Increasing blue means higher zinc content, increasing red more copper; violet means an alloy of copper (80%) and zinc (20%).*



*Element distribution map for zinc (blue) and nickel (yellow).  
In the centre of the medal is an inset with a core of nickel coated tin.  
The pale blue areas represent inserts of pure zinc, dark blue the grid with a zinc content of 20% and a copper content of 80%.*

We were unable to trace a manual for the Osselin medal but instructions for the use of Richardson's magneto-galvanic battery, that is based on the same principles, indicate that the medal has to be worn on the chest, next to the skin. Adult should wear the medal day and night at least a month after the patient is cured. Children under six however should wear the medal only at night. In extreme cases it is recommended to wear two medals, one on the chest and one between the shoulders and in no case should the same medal be used by two different persons.

The medal is basically a galvanic cell and generates a small electric current, especially under the influence of moisture, *e.g.* perspiration. Every electric current creates an electromagnetic field which in this case would be feeble and difficult to measure but nevertheless existent. Recently the problem of the influence of magnetic fields on biological systems has been studied intensively in connection with the use of mobile phones, which generate much stronger electromagnetic fields. We now know that magnetic fields of a certain intensity are indeed harmful but also that weak magnetic fields can stimulate biological systems. However the intensity of a magnetic field created by medals of this type is, even under optimal circumstances, so low that it is highly improbable that they have any biological effect. In this case the therapeutic theory on which the medal is based proves to be solid but the medal itself ineffective.

Robert LEHMANN\* & Raf VAN LAERE\*\*

## Coins from Roman Antwerp

### 1. INTRODUCTION

**T**O DATE, SOME FORTY SETTLEMENTS WITH TRACES OF ROMAN PRESENCE HAVE been found in the province of Antwerp. Though many of them are only known in a very fragmentary way, the mere existence of the settlements has sufficiently taken the edge off the assumption that the region of Antwerp was a no man's land in Roman times <sup>[1]</sup>.

Recent archaeological research, however, sheds new light on Roman Antwerp, traditionally considered a small-scale rural settlement near the River Scheldt. Excavations in the 1950s and 60s led by A.L.J. Van de Walle in the medieval *burg* area revealed the first scientific evidence for local Roman occupation. Considerable amounts of ceramics, among them many imported wares, were found beneath a

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[1] For a recent overview of the settlements, each with map and relevant bibliography, see G. CUYT, *Schaven aan het verleden. Op verkenning in onze archeologie*, Antwerpen & Rotterdam 2007, p. 143-147. See also G. CUYT, *De uithoek van een Imperium. Het Antwerpse in de Romeinse tijd*, in F. BRENDERS & G. CUYT, (ed.), *Van beschaving tot opgraving. 25 jaar archeologisch onderzoek rond Antwerpen door de Antwerpse Vereniging voor Romeinse archeologie*, Antwerpen 1988, p. 63-102.