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CLAIRE FRANKLIN WERZ

«RICHTIGES SEHEN IST NUR MÖGLICH ALS
VERGLEICHENDES SEHEN»: THE PLASTER CAST
COLLECTION OF ROMAN IMPERIAL AND PROVINCIAL
COUNTERMARKS FORMED BY ULRICH WERZ († 2023)

«*Seeing correctly is only possible by seeing comparatively*».

In Memory of Ulrich Werz, in his 60th Year

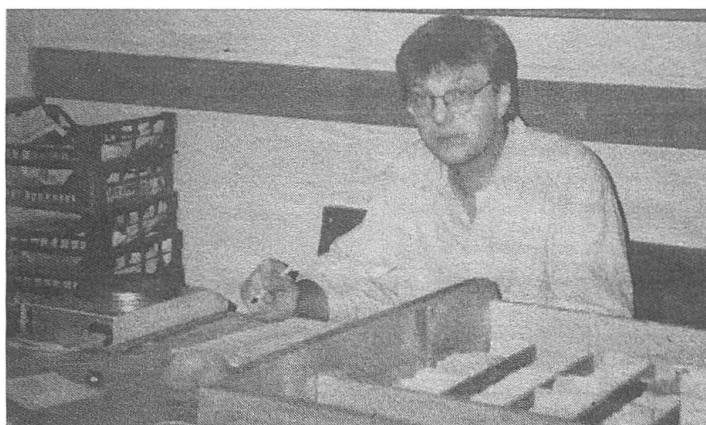


Fig. 1 The 32 year old Ulrich Werz working on his thesis in Brugg (Aargau), 1996 (Newspaper report, *Brügger Tagesblatt*, March (?) 1996, preserved as cutting in Werz' papers, photo marked su).

The German numismatist Ulrich Michael Werz was well known in academic circles for his research into Roman countermarks of the early Imperial Period. When he died of a lung infection on 14th June 2023, following many years of cancer treatment, he left behind an extensive collection of plaster casts, which were mainly, but not exclusively, of countermarked coins. He produced many of these during his doctoral studies as part of his thesis at the University of Frankfurt am Main, Hessen, *Gegenstempel auf Aesprägungen der frühen römischen Kaiserzeit im Rheingebiet: Grundlagen, Systematik, Typologie* supervised by Hans-Markus von Kaenel, which was published in Winterthur in 2009¹.

The production of plaster casts played an important role in the historical development of numismatics as a field of study; thus Werz' collection can be viewed as part of a long but mostly forgotten tradition. The collection was donated to the University of Münster, Westphalia (Universität Münster, formerly Westfälische

¹ Henceforth WERZ 2009a. The work consists of several parts; these have been marked in the references with I, II, III etc.

Wilhelms-Universität Münster) in autumn 2023 in accordance with Ulrich Werz' last wishes. The idea for the present text arose from a paper which I gave in Münster in November 2023. As Ulrich Werz' second wife (from 2017) and companion since 2009, I had numerous opportunities to speak with him about his collection, as well as having access to his extensive study notes, photocopies, scans, lecture texts and literature on the theme of countermarks². In this text I hope to offer an outline of his activities involving plaster casts; a complete catalogue of the collection is at present beyond my capabilities. The text is written in English – at the suggestion of Benedikt Zäch – in a small attempt to make Werz' work better known to non-German speakers³.

Ulrich Werz would have been 60 years old on 15th January 2024, and I dedicate this text- when slightly late – to his memory.

Starting out: why plaster casts?

Ulrich Werz was born in Stuttgart, Baden-Württemberg, Southern Germany, in 1964, where his parents ran a driving school. An only child, he was schooled at the Freie Waldorfschule in Uhlandshöhe in the city, which followed the anthroposophic educational system of Rudolf Steiner, from 1970 until his leaving exam (*Reifezeugnis*) in 1984. Werz' education at the school was in fact decisive for his later activities, since as well as developing an interest for Ancient History, he learnt a wide range of crafts and practical skills. These included bookbinding, metal-working, and sculpture in various media, including concrete. Former classmates recalled his fascination for building models: for one assignment he recreated a Roman camp⁴. In his youth he also jobbed as a landscape gardener. Following a year of basic military service (*Grundwehrdienst*) with the first Air Defence 12 (*Flugwehrregiment 12*) in Hardthelm and a grounding in Classics at the University of Heidelberg in 1985–1986, Werz started his study of Classical Archaeology, Ancient History and Near Eastern Archaeology at the Georg-August Universität in Göttingen in 1986.

² I refer to myself in the text and notes as CFW.

³ I have been helped in my research by Mary Chambers (Reading), Shenagh Franklin (Berkhamsted), Suzanne Frey-Kupper (Warwick), Benedikt Zäch (Winterthur) and David Wigg-Wolf (Frankfurt am Main); I further thank Rahel C. Ackermann (Basel/Swiss Inventory of Coin Finds), Utz Böhner (Hannover), Michael Fehlauer (Universität Münster), Henning Hassmann (Hannover), Katharina Martin (Universität Münster), Anke Matthes (Hannover), Markus Peter (Basel/Bern) and Hans-Markus von Kaenel (Frankfurt am Main), for help and advice, as well as A. Ruppel (Munich) for explaining the German education system to me. I am particularly grateful to Joachim Stollhoff (†) (Münzen & Medaillen GmbH, Weil am Rhein), for letting me complete my research when I was supposed to be working on other tasks. I was able to give two lectures on the cast collection of Ulrich Werz at the *17. Tag der antike Numismatik in Münster* (18.11.2023) and *Circulus Numismaticus Basiliensis* (17.4.2024) as well as a shorter version held in the Niedersächsisches Landesamt für Denkmalpflege, Hannover, on the first anniversary of Ulrich Werz' death (14.6.2024).

⁴ Personal communication with CFW.

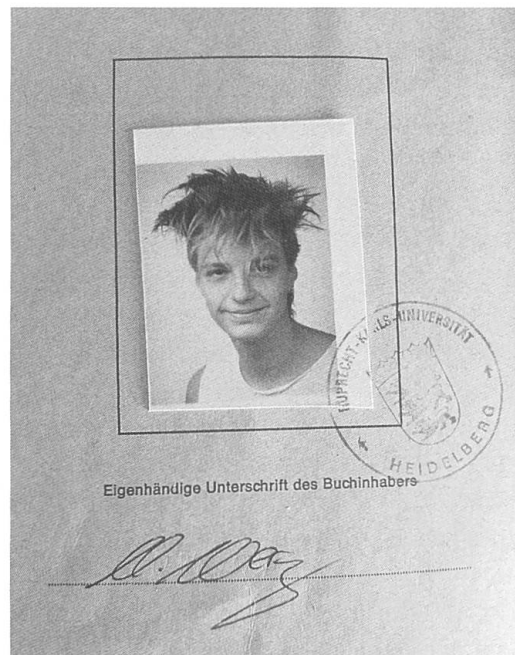


Fig. 2 Ulrich Werz' study book (Studienbuch), with stamp of the University of Heidelberg, ca. 1986 (Photo: CFW)

It is likely that Ulrich Werz' study years at the University of Göttingen played a part in the development of his interest in plaster casts and their production. He studied for a *Magister* qualification in Classics and Classical Archaeology, after which he transferred to the Johann-Wolfgang-Goethe University of Frankfurt⁵, acquiring a further *Magister* in Classical Archaeology in 1992. Unfortunately he does not appear to have kept any of his study notes for this period. The university of Göttingen houses a large collection of casts of ancient statues and coins, which was started by Christian Gottlob Heyne in 1767, and therefore counts among the oldest cast collections in the world⁶. Werz' studies there under the classical archaeologist and expert on Hellenistic and Roman sculpture, Klaus Fittschen (1936*), left him with an enduring interest in ancient art; when he continued his education at the Johann Wolfgang Goethe Universität, Frankfurt am Main in 1989, he was primarily interested in Greek and Roman sculpture.

Werz' second *Magister* dissertation, written at the University of Frankfurt am Main in 1992 and assessed by Hans von Steuben, marked his switch to numismatics. Entitled *Aphroditedarstellungen auf kleinasiatischen Münzen der römischen Kaiserzeit*, it dealt with depictions of the goddess Aphrodite on bronze coins minted in

⁵ Dates from Werz' unpublished Curriculum Vitae from March 2002, as well as his *Studienbuch*. His later CV does not mention his study period in Heidelberg.

⁶ See K.F. (= Klaus FITTSCHEN) 1989; Werz possessed a photocopy of this text. See also the description of the collection (in German) under <https://www.uni-goettingen.de/de/137334.html> (internet search 19.02.24).

the Roman provinces in Asia Minor. This was a theme he returned to for the supplementary oral examination for his doctoral thesis in 2001, where he spoke on the self-representation of cities in Asia Minor on coins (*Selbstdarstellung kleinasiatischer Städte im Münzbild*)⁷. I have not found any casts of coins with a connection to these works in Werz' collection⁸. The masters dissertation was mostly illustrated with black and white photos of illustrations taken from published works on coins, in the manner usual for student dissertations of the time, and does not use any plaster casts, although the section on research history («Forschungsgeschichte,» pp. 11–13.) displays the same curiosity about the art historical background to the subject as displayed in Werz' later investigations.

As far as I have been able to ascertain, Ulrich Werz first began to use plaster casts to document countermarked coins for his doctoral thesis, following his supplementary examination (*Ergänzungsprüfung zur Hilfswissenschaften der Altertumskunde*) in 1992, which allowed him to start his doctorate. According to his *Studienbuch*, which details all the courses he took at University, Ulrich Werz attended the course *Einführung in der Gips-Sammlung*, an introduction to the cast collection, for which he received the attendance certificate on 24.4.1992. The course was taught by Ursula Mandel (*1953). He probably learnt the method of plaster cast production from Hans-Christoph Noeske (*1947), with whom he took a course in *Einführung in die lateinischen Epigraphik* 1992, receiving the grade «gut» (2)⁹, and it is also possible that Werz received help and advice from Helmut Schubert (1943*), with whom he studied papyrology. He may have received further help and advice from his professors in Frankfurt Prof. Dr. Götz Lahusen (1944–2008) who taught Epigraphy and Classical Archaeology, und Prof. Dr. Hans von Steuben (1929–2008), who was professor of Classical Archaeology from 1973–1994, as Werz dedicated his 2009 article on casts to these two recently deceased professors¹⁰. He also picked up advice from numerous other colleagues. Among his papers were lists of materials for cast making compiled by Suzanne Frey-Kupper (now University of Warwick, UK), who had an interest in different techniques of coin production and held numerous courses on plaster casts from the late 1980's onwards¹¹. The photocopied lists are dated 10.8.1987, at which time Werz had not yet taken his *Zwischenprüfung* at university. Papers and correspondence in Werz' files, however, suggest he may have taken a course with her as late as 1997.

⁷ I have taken much of this information from Ulrich Werz' Curriculum Vitae.

⁸ I have access to Werz' personal copy of the completed masters dissertation (WERZ 1992).

⁹ I thank H.-M. von Kaenel (emails with CFW 23.–24.7.2023) and D. Wigg (email 9.7.2023) for suggestions on this issue.

¹⁰ WERZ 2009b, p. 46.

¹¹ I am grateful to B. Zäch and S. Frey-Kupper for information (personal communications; email 9.2.24).

The University of Frankfurt possesses a collection of casts, both of large-scale statues and coins¹². There was a copy of Helmut Schubert's notes for students about the coin and photography collections at Frankfurt in Werz' study papers. These included an outline of the «ca. 20,000 strong cast collection» (of coins) in Frankfurt assembled by Richard Delbrück (1875–1957) and Konrad Kraft (1920–1970), containing casts auctioned by the professional numismatist Gerhard Hirsch of Munich as well as researchers Clemens Bosch of the University of Istanbul (1899–1955), and Susanne Grunauer-von-Hörschelmann (1941–2022).

Many of those who knew Werz have suggested, however, that a large part of his skill in casts came from experimenting on his own initiative. It is evident from his notes that he investigated the topic in great detail from about 1993 / 1994, as they mention different plaster types, suppliers and casting methods. Ulrich Werz learnt practical techniques quickly; the author recalls him telling the story of how, following a bicycle accident, he removed a plaster cast from his broken arm for a job interview for Münzkabinett Winterthur, then carefully re-cast it himself, having observed the technique from his doctors¹³. The incident must have taken place around 2002.

Ulrich Werz held his own lectures and workshops on numismatic plaster casts and their production from 1996. Over time he collected a range of literature on the theme; he kept many papers as photocopies in his study notes, which were later carefully scanned to form part of the private digital library which he assembled with the author. As the range of literature on this theme is not huge, every time Werz discovered a new book or paper he was very pleased. Amongst the titles referred to in his notes were J. Ersfeld's *Formen und Giessen* («Shaping and Casting»), a handbook for art restorers and museum curators¹⁴, as well as the *Rezepte von Monte Iato*, a work by the former curator of the Münzkabinett Winterthur, Hans-Jörg Bloesch (1912–1992) named after the mountain in Sicily where he oversaw excavations from 1971, which has a section on making plaster casts¹⁵. Testimony to Ulrich Werz' sense of humour was the inclusion in his list of sources of a cartoon on a postcard by Martin Perscheid, «The secret of the plaster cast», as it amused him that the cartoonist had chosen such an arcane subject to draw¹⁶.

¹² https://www.uni-frankfurt.de/96763769/Geschichte_der_Abgussammlung (internet search 19.2.24).

¹³ Pers. Comm. UW to CFW.

¹⁴ ERSFELD 1982.

¹⁵ BLOESCH 1976, especially pp. 94–97.

¹⁶ PERSCHIED, Geheimnis des Gipsabdrucks, on Pinterest under <https://www.pinterest.de/pin/700520917032156972/> (internet search from 21.2.24).

A short Historical Background of the Plaster Cast

Ulrich Werz was keenly aware of the importance of the plaster cast in the history of art and in numismatics¹⁷. In his lectures he pointed out that plaster (*gypsum*, German *Gips*) is a naturally occurring mineral ($\text{Ca}_2[\text{SO}_4]\text{H}_2\text{O}$)¹⁸. It was named γύψος in Greek and gypsum in Latin; both names originate from a Semitic language. Plaster often occurs in nature in the form of crystals. It has been used for more than 7000 years, as finds in Çatalhöyük demonstrate, where it was used to decorate rooms due to its white colour.¹⁹

Working with gypsum has its roots in the Ancient world. It was used by the Minoans and Egyptians for decorative purposes and construction, and it is discussed in written texts such as *De Lapidibus* (on Stone Types) by Aristotle's pupil Theophrastus of Eresus (ca. 371–287 BC), where he describes its reaction when brought into contact with water²⁰. The polymath, Pliny the Elder (ca. 23–79 AD) also discusses the properties of gypsum in his *Historia Naturalis*²¹. Plaster was used to prepare moulds for metal statues and reliefs, as described by Suetonius²² and evidenced by the Roman age statue finds in Baiae on the Italian coast North West of Naples, where a workshop for plaster casts of statues was discovered the 1950's²³, as well as for architectural features, such as those mentioned by Cicero in his speech *Pro Aemilio Scauro* from 54 BC²⁴. In his unpublished lecture, *Suppe und Salatsosse*, held in 1997, Ulrich Werz outlined the history of the plaster cast: he emphasized the importance of plaster for the reproduction and dissemination of statue types, such as that of the tyrannicides Harmodius and Aristogeiton from 509 BC, the interior of Hadrian's villa in Tivoli, the Baiae finds mentioned above, and finally the «Wiederentdeckung» of the plaster cast for artworks in the late 14th and early 15th centuries²⁵.

In the opinion of Ulrich Werz, an innovation with particular significance for the development of the coin cast was the *Daktyliothek*. This was a Renaissance term denoting a display cabinet for fingerings (ancient Greek δακτύλιος)²⁶. Starting

¹⁷ In the following section I have incorporated material from Ulrich Werz' unpublished lecture texts, in particular «Suppe und Salatsosse» (a lecture held at Rheinisches Landesmuseum Bonn (now renamed LVR- Landesmuseum Bonn) on 7.12.1997 (henceforth WERZ 1997), as well as a text from 1996, «Mit Kochlöffel und Zahnbürste,» held on 2.3.1996 in Brugg, Aargau, Switzerland and later published in revised and altered form (WERZ 2009 b). The selection and organisation of the material is my own.

¹⁸ See also KNÜPPEL 2009, p. 32.

¹⁹ As noted by the Bundesverband der Gipsindustrie e. V. (Germany) on their website www.gips.de.

²⁰ Theophrastus, *De Lapidibus*, 64–67.

²¹ Pliny the Elder, *Naturalis Historia*, 15, 18 (used to render containers for storing fruit airtight).

²² Suetonius, *Nero*, 23.

²³ LANDWEHR 1985.

²⁴ Cicero, *Pro Scauro*, 2.

²⁵ WERZ 1997.

²⁶ WERZ 1997, p. 21; KNÜPPEL 2009, pp. 13–14; pp. 57–59.

in the Renaissance (and pursued with particular enthusiasm in the 18th century), there was an avid interest in collecting ancient gemstones among antiquarians. These began to be reproduced in plaster, so that they could be displayed in *Daktyliotheks*. Coins were often copied in the same way, although they seem to have played less of a role at first. Pierre Jean Mariette described the reproduction of gemstones in sulphur paste and plaster in 1750²⁷. In 1767 Philipp Daniel Lippert, a reputed artist and collector, published his *Daktyliothec*;

...das ist [eine] Sammlung geschnittene Steine der Alten / aus denen vornehmsten Museis in Europa / zum Nützen der schönen Kunste und Kunstler / in zwey Tausend Abdrucken.

[Daktyliothec] (..) that is, a collection of cut stones of the ancients, from the best museums in Europe, for the use in the fine arts and by artists, in two thousand casts.

(LIPPERT 1797, title page)

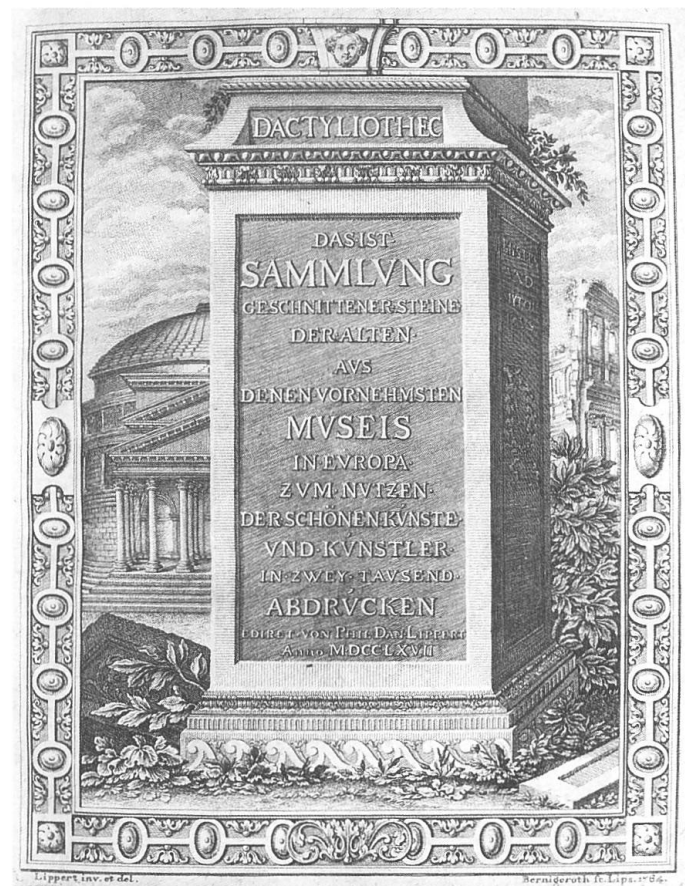


Fig 3 The front page of Lippert's work
(image: Stadtbibliothek Mainz, Wikipedia open access)

²⁷ KNÜPPEL 2009, p. 31.

Lippert's book was followed by many similar works, such as Marchant 1792, Roth 1805, Müller 1841, and Janssen 1846²⁸.

The use of plaster for coin casts came around the same period. According to Ulrich Werz,

Verantwortlich für den Aufbau von Abgusssammlungen zu Lehr- und Forschungszwecken war hauptsächlich Christian Gottlob Heyne, der Begründer der Klassischen Archäologie als Universitätsfach.

Christian Gottlob Heyne, the institutor of Classical Archaeology as a university discipline, bore the main responsibility for the formation of cast collections for teaching and research purposes.

(WERZ 1997, p. 13²⁹)

Heyne was born in Chemnitz, Saxony, in 1729, and died in Göttingen, Braunschweig-Lüneburg, in 1812. He gave his first lecture in archaeology in Göttingen in 1767 and around the same time began to assemble a collection containing cast copies as well as original coins and sculptures³⁰. These provided the basis for the university's archaeological collection (today the Georg-August Universität)³¹. Heyne was a friend of Lippert's, which undoubtedly resulted in a transfer of information³². Ulrich Werz, having studied at the University of Göttingen, places a particular emphasis on the efforts of Heyne and his view of the numismatic cast as part of artistic and historical education³³.

In the decades after Heyne and Lippert, the idea of the coin cast collection enjoyed popularity throughout Europe. This was partly aided by new ways of thinking about the past, which helped develop the archaeology as a discipline in the course of the 18th–20th centuries³⁴. Countless expeditions and archaeological investigations revealed new monuments in ancient civilizations, and plaster casts played an important role in documenting all forms of new finds, alongside other techniques such as the squeeze for copying epigraphic inscriptions³⁵.

Plaster was not the only material to be used for casts and copies: in his book from 1834 (which Werz had photocopied from the Winterthur library), Bernhard Ringelhardt distinguishes between *Abdrücke*, made by imprinting the surface of the coin into a soft substance, and *Abgüsse*, where a form of the coin in another

²⁸ All these works were scanned by Ulrich Werz for inclusion in his personal digital library, BUCU. Further bibliography is available in KNÜPPEL 2009.

²⁹ In the German quotations Werz' original spellings are used, even when they no longer represent current *Rechtschreibung*.

³⁰ See the studies in GRAEPLER/ MIGL 2007, especially GRAEPLER 2007 and BOEHRINGER 2007.

³¹ See the description of the collection by «K.F.» (FITTSCHEN, n.d.),

³² LIPPERT 1797, p. iv. GRAEPLER 2007, p. 14 ff.; p. 101 ff.

³³ WERZ 1997, p. 13.

³⁴ On this theme, see e.g. TRIGGER 1989.

³⁵ See IACCHEI 2013.

material is produced from a mould. Ringelhardt describes a wide range of possible materials from which copies of coins could be produced, including bread dough, ox horn, clay, sealing wax, and birch bark³⁶. These efforts allowed artefacts to be ordered in ways which had not been possible previously, paving the way for the scientific classifications of the late 19th century. In earlier times interesting and antique items were collected into curiosity cabinets (*Wunderkammer*) with little attempt at classification³⁷. Also noted by Werz as initiator of one of the first coin cast collections is Théodore-Edmé Mionnet (1770–1842) of the Cabinet des Médailles in Paris, who prepared and sold coin casts in sulphur paste. Thanks to his efforts in structuring and cataloguing the collection in Paris between 1806 and 1837, he is considered one of the founders of modern numismatics.

Many of the most important coin cabinets and collections in Europe were formed at the end of the 19th century; although their contents frequently came from earlier collections, it was at this time that they were systematically organised and inventoried. Vienna (Kunsthistorisches Museum), London (the British Museum), Paris (the Bibliothèque nationale), St. Petersburg (the Hermitage) and Berlin (now the Bode Museum) – to mention some of the largest collections – were all founded or arranged in this period. This enabled cast collections to take on a greater role as material collections for more detailed research purposes. As Ulrich Werz addressed the history of the plaster cast in his 1997 lecture in Bonn, he stated, «Der meines Wissens erste, der für seine Untersuchungen Gipsabgüsse in grösserer Zahl zusammenstellte war Kurt Regling (1876–1935).» – «The first [numismatist] to my knowledge who produced large numbers of plaster casts for research purposes was Kurt Regling (1876–1935)»³⁸. Regling was the author of many works about ancient coinage (including Terina, Priene, Odessos, and Tomis), covering coin finds as well as the aesthetics of coins (*Die antike Münze als Kunstwerk*, Berlin 1924). Another initiator of the large-scale use of casts was Erich Boehringer (1897–1971), whose study of the coins of Syracuse (Berlin 1929) used them for the plate illustrations³⁹.

A particularly important pioneer in the use of plaster casts in numismatics was Friedrich Imhoof-Blumer (1838–1920), who worked in Berlin and Winterthur. He favoured casts because they provided a material basis from which he could compare coin dies and search for coins struck using the same dies⁴⁰. In 1878 Imhoof first used the concept of die-links (*Stempelkopplung*) in his work on the coins of Akarnania in North Western Greece. There he wrote near the beginning of his study that obtaining many copies was necessary to order large series of similar coins according to style and chronological order: «Je umfangreicher also das Material für eine Untersuchung vorliegt, desto genauere Schlussfolgerungen lassen

³⁶ RINGELHARDT 1834, pp. 1–19. See also KNÜPPEL 2009, pp. 29–31.

³⁷ The use of the term comes largely from VON SCHLOSSER 1908.

³⁸ WERZ 1997, p. 23.

³⁹ BOEHRINGER 1929, Vorwort (preface, unnumbered).

⁴⁰ WERZ 2003, p. 6.

sich ziehen». – «The greater the breadth of material available for a study, the more likely it is that accurate conclusions are drawn»⁴¹.

When Imhoof-Blumer died in 1920, he left 80,000 plaster casts to the city library of Winterthur (*Winterthurer Stadtbibliothek*), which later served as the basis for the collection of the Coin Cabinet of Winterthur (*Münzkabinett der Stadt Winterthur*)⁴². Ulrich Werz adapted elements of Imhoof's die comparison technique (*Stempelabgleichtechnik*) to analyse countermark dies, together with methodology influenced by his doctoral supervisor, Hans-Markus von Kaenel, and by the British numismatist Robert Frederick Kenyon, who had also worked on countermarks⁴³.

In the 20th century the general interest in plaster casts as replicas of artworks diminished as tastes changed. Some collections, such as that in Göttingen, were badly damaged in the war⁴⁴, and those that remained were perceived as dusty and old-fashioned as new fashions in art arose. Although awareness in them diminished, coin casts continued to be stored and produced in numismatic contexts, and plaster continued to be used within museum contexts to restore and complete artefacts. In the late 20th–21st century new techniques of documenting the past, such as digital processing, the use of computer screens and databases and 3D printing have opened up many new possibilities in museum studies. Countermarked and cut coins which Ulrich Werz studied using casts and measurement by eye⁴⁵ have been recently re-examined using high-resolution photography and other computerized tools⁴⁶. Although today there appears to be a certain rekindling of academic interest in the plaster cast as an historical form of documentation in the field of museum studies⁴⁷, there is little public awareness of these artefacts, as shown by the threat of closure hanging over the Basel *Skulpturhalle* in recent years⁴⁸.

For Ulrich Werz, plaster casts were both a means of collecting material and an aesthetic pursuit in their own right. Although his casts of Roman countermarks were mostly of corroded archaeological finds and not particularly appealing to

⁴¹ IMHOOF-BLUMER 1878, p. 1.

⁴² WERZ 2003, p. 6–7.

⁴³ WERZ 2004, p. 12; WERZ 2009a, Part II, p. 36. The relevant texts are KENYON 1988, p. 53 ff. (see also his PhD thesis, KENYON 1992) and VON KAENEL 1991, p. 253 ff. See also WERZ 2003, p. 107–108 and n. 12.

⁴⁴ FITTSCHEN 2003.

⁴⁵ Pers. comm. CFW.

⁴⁶ See the project carried out by the Landesamt Sachsen under Johann Friedrich Tolksdorf, Rengert Elburg und Thomas Reuter, <https://www.archaeologie.sachsen.de/charonspfeilige-mit-dem-3d-streifenlichtscanner-auf-den-spuren-des-roemischen-feldherrn-varus-6425.html> (link active 21.02.2024). Werz was aware of this project.

⁴⁷ Tolksdorf et al. (cf. *supra*).

⁴⁸ See <https://www.archaeologie-online.de/nachrichten/skulpturhalle-basel-soll-geschlossen-werden-2770/> (page visited 10.10.2024) B. Hiltmann has pointed out to me that the University of Geneva still actively uses its plaster cast collection for teaching (<https://www.unige.ch/lettres/antic/unites/arqueo/collections/collection-des-moulages>).

look at, he also used copies of ancient sculptural works extensively to decorate his flat. In his last years, when illness kept him in his flat in Ahlem, he decorated the walls with copies of works such as the Medusa Rondanini, a head dating from the period of Hadrian (117–138 AD) but based on an older work, which is on display in the Staatliche Glyptothek in Munich. He acquired the copy via the Gipsgiesserei / Abgussammlung Berlin⁴⁹. Other plaster copies owned by Werz included Assyrian, Athenian and Roman friezes as well as copies of Pompeian *graffiti*.

Wertz' Production of Plaster Casts

Ulrich Wertz' own production of plaster casts is primarily connected with his doctoral dissertation, *Gegenstempel auf Aesprägungen der frühen römischen Kaiserzeit im Rheingebiet: Grundlagen, Systematik, Typologie* (Countermarks on aes Coins of the early Roman Imperial Period in the Rhine area: Foundations, Systematics and Typology), published in Winterthur in 2009. He obtained his doctorate in 2003; it was written under the supervision of Professor Dr. Hans-Markus von Kaenel at the J. W. Goethe Universität in Frankfurt am Main⁵⁰. As part of the background preparation for this work, he gathered information on the varieties of plaster (and other modelling materials) available, as well as noting the shops where he could source such products: he collected industrial catalogues for raw materials, guides to different processes connected with the commercial use of plaster, sales lists and product information. Wertz filed the information in his study notes, which show that he also obtained numerous products from dental suppliers and hobby shops; for instance, he noted in April 1999 that 1,6 kg. of Orbis dental silicon putty cost 59,– DM⁵¹. In his article «Mit Kochlöffel und Zahnbürste» for the 2009 *Schweizer Münzblätter*⁵², in which he describes how to make plaster casts of coins, Wertz included information on available products and the materials that he had found to be most suitable. He provided an even longer list to accompany his talk in Bonn in 1997 (the lists are no longer up to date).

During his employment in Winterthur, Ulrich Wertz commuted daily by train from Baden-Württemberg, Germany, firstly from Radolfzell on Lake Constance, and later, after the break-up of his first marriage, between Waldshut and Winterthur. The train journey took him across the Swiss-German border daily and Wertz was at least once caught by customs officers in possession of a bag of suspicious looking white powder, as well as a small air pump (Blasebalg). When attempts to convince the officers that the contents were only plaster of Paris failed, he was forced to demonstrate the technique of plaster cast production in front of them in

⁴⁹ See catalogue, <https://abguss-sammlung-berlin.de/wp-content/uploads/2023/07/Verkaufskatalog-2023-02-Web.pdf> (link active 10.10.2024). The Medusa Rondanini copy is described under «Kaiser Marc Aurel», p. 218, No. O 23.

⁵⁰ WERTZ 2009a. Information for Wertz' studies from his Studienbuch.

⁵¹ Note in Wertz' ringbinder marked *Formen und Giessen*. (moulding and casting).

⁵² WERTZ 2009b, pp. 46–47 and n. 3.

the customs office⁵³. The experience (and perhaps a similar one involving planes) was later noted by Werz in «Mit Kochlöffel und Zahnbürste»;

Abschliessend sei noch aus eigene Erfahrung geraten, die zuständigen Zollbehörden rechtzeitig zu informieren, wenn man mit den genannten Gerätschaften und Stoffen für die Materialaufnahme ins Ausland reist. Gerade bei Flugreisen wird nicht jeder Zöllner oder Polizist hier sofort das Handwerkzeug eines Numismatikers erkennen wollen. Verwechslungen mit Drogendealern, -kurieren oder Terroristen sind bei rechtzeitiger Ankündigung dann weitgehend ausgeschlossen.

Incidentally, personal experience has shown that it is advisory to inform the relevant customs authorities in advance when travelling abroad to collect material [i.e. make casts] with the abovenamed equipment and substances. Particularly in regard to air travel, not every customs officer or policeman can immediately identify the tools in trade of a numismatist at work. A timely notification can minimise the chance of being taken for a drug dealer, trafficker or terrorist. (WERZ 2009b, p. 57)

Ulrich Werz on the intellectual Value of Plaster Casts

Ulrich Werz was firmly convinced of the value and importance of plaster casts in numismatics, and this position can be read out of many of his written texts. These also demonstrate the amount of thought he put into the techniques he used in his work.

Der Abguss (...) bietet eine originaltreue und dreidimensionale Wiedergabe des Vorbildes. Möchten Sie also von bestimmten Münztypen deren Varianten oder Besonderheiten untersuchen und für eine wissenschaftliche Arbeit dokumentieren, ist der Abguss der Objekte ein unverzichtbares Hilfsmittel. Die Kenntnis und Fähigkeit seiner Herstellung ist daher das Rüstzeug eines jeden Numismatikers oder Liebhabers antike Münzen.

The cast (...) offers a three-dimensional reproduction that is true to the original. If you wish to study variants of particular coin types or particular features and document them for an academic work, the cast is an indispensable aide in the task. Knowing how to produce it skilfully is therefore the tool of every numismatist or ancient coin lover.

(WERZ 1997, p. 1)

Wertz found plaster casts particularly useful in that they provided a three-dimensional addition to the usual method of documenting coins through photography. He was aware of their former importance in commercial numismatics for the production of auction catalogues⁵⁴. He used both methods himself- much of the material for his thesis was also photographed and the images stored in negatives or on projector slides, which he used for lectures. Even so, he found,

⁵³ I have heard oral versions of this story from U. Wertz and B. Zäch.

⁵⁴ As noted in his unpublished papers.

Die eben genannten Besonderheiten des Abgusses kann die Photographie allein nicht leisten, da sie nur eine zweidimensionale Ansicht des Objektes liefert. Sie zeigt immer nur eine einmal festgelegte Ansicht (...) So ist das Messen von Abständen und Proportionen an Hand eine Photographie sehr problematisch, da die Ergebnisse zu ungenau sind.

The unique properties of the cast as mentioned above cannot be obtained by photography alone, as the method only produces a two-dimensional image of the object. Once defined, the same view will always be reproduced (...) This makes ascertaining distances and proportions from a photograph very problematic, as the results are too imprecise.

(WERZ 1997, p. 1)

Presenting his doctoral work at the 1996 congress on the *Varusschlacht* in Kalkriese, where he had been able to document newly found countermarks, Werz emphasised⁵⁵,

Für eine umfassende und nachprüfbare Auswertung von Schlagmarken müssen die betreffenden Prägungen zunächst genau dokumentiert werden. Am besten eignet sich dazu der Gipsabguss. Daher wurden von mir Sammlungen, die Material aus dem Untersuchungsgebiet aufbewahren, eingesehen und von den gegengestempelten Münzen Abgüsse genommen.

For a complete and verifiable evaluation of countermarks, the coins in question must be thoroughly documented. The best way of doing this is with plaster casts. With this in mind I inspected collections of material from the area under investigation and made casts of the countermarked coins.

(WERZ 1999, p. 307)

As Werz gained more experience of museum work in Winterthur, he also saw clear advantages in the use of plaster casts for museum collections as a means of reproduction and for the long-term storage of material:

Für die Herstellung von Abgüssen ist Gips als Material hervorragend geeignet. Es ist preisgünstig und leicht zu erwerben. Richtig aufbewahrt ist der Gipsabguss praktisch unbegrenzt haltbar.

Plaster is eminently suitable as a material for making casts. It is cheap and easily obtainable. Stored properly, plaster casts last almost indefinitely.

(WERZ 2003, p. 7)

Wertz addressed the topic further in his published dissertation, citing other authors on the use of plaster casts. In the course of his work, he frequently indicates that he has used casts⁵⁶. Even after the completion of his dissertation, he maintained a keen interest in different methods of documentation; for example, he continued to experiment with the photography of coin finds and badly preserved

⁵⁵ In the published version of the conference proceedings from 1999.

⁵⁶ E.g. WERZ 2009a, Part II, p. 57; p. 123; p. 638, n. 283; p. 305; p. 539; p. 549.

coins. He discussed the subject at his last conference trip abroad, and published a guide on the subject in 2018, using material gathered over a period of many years⁵⁷.

Photographic reproductions of countermarks are patently more exact than the hand-drawn illustrations in Michael Grünwald's 1946 study of the countermarks of Vindonissa, Aargau, Switzerland⁵⁸ or some of the older volumes of *Fundmünzen der römischen Zeit in Deutschland* (FMRD)⁵⁹.

Informing the Public

During the course of his doctoral research, Ulrich Werz was always willing to inform the public of his work. He held several lectures which included a practical course in plaster cast production as part of the evening. The first of these took place in March 1996, «Bringen Sie Ihre Zahnbürste mit! Zur Abformung archäologischer Kleinobjekte», which formed part of an open evening at the Vindonissa Museum in Brugg, Canton Aargau, Switzerland. The mention of the toothbrush (*Zahnbürste*) refers to its role as a vital tool for smoothing and rubbing down the casts. The evening combined the physical production of casts («abrasion on aluminium foil, creating forms with plasticine and pouring in plaster,» as the journalist from the local newspaper *Brugger Tagesblatt* described it⁶⁰), with an account of the history of plaster casts, which took place while the newly formed casts were drying. Werz made preparations for 15 participants, but more than 50 people responded, with 35 eventually taking part. The local *Brugger Tagesblatt* reviewed the event in very complimentary terms and included a short account of Werz' ongoing doctoral studies, which had brought him to Brugg: «With great patience Ulrich Werz produces plaster casts of the relevant coins and (weighs) them all. The evaluation will follow back at home in Frankfurt.» On this occasion Ulrich Werz spent a month documenting the countermarked coins in the museum of the Roman legion camp of Vindonissa in Brugg. Many of these had been published by Michael Grünwald in the aforementioned study from 1946, but Werz needed more exact data on the size and position of the countermarks.

Ulrich Werz also held a lecture in the Landesmuseum Bonn on 17th December 1997 on the history and production of plaster casts, «Suppe und Salatsosse. Abformung

⁵⁷ WERZ 2018, as well as WERZ 2018a.

⁵⁸ In particular, GRÜNWALD 146, pp. 128–138.

⁵⁹ For instance, FMRD 1962, p. 406.

⁶⁰ «Abrieb auf Aluminiumfolie, Abformung mittels Plastillin und Ausguss mit Gips». The event is described in an undated newspaper article from *Brugger Tagesblatt*, spring 1996, preserved as a cutting in Werz' papers. The photograph of Werz at work on this occasion is reproduced at the start of my study.

von archäologischer Objekte, ihre Herstellung, Bedeutung und Funktion»⁶¹. This was cited above as a source of his views on the relevance of plaster casts. The lecture provided a wide-ranging overview of the theme and its archaeological and art historical background, covering the use of plaster for reproducing gems and statues in addition to coins. It also contained an extensive description of how to make plaster casts, and bears witness to the intensity with which Werz addressed the subject, as well as to his conviction that numismatics should be viewed alongside art history. He held a lecture in Hanau at around the same time, presumably using the same text⁶².



Fig 4 Ulrich Werz' workshop and talk («Mit Kochlöffel und Zahnbürste», 2.3.1996) in the Vindonissa Museum, Brugg (Newspaper report, *Brügger Tagesblatt*, preserved as cutting in Werz' papers, photograph marked su).

Ulrich Werz in Winterthur

As research assistant (*wissenschaftlicher Mitarbeiter*) in the coin cabinet situated in the Villa Bühler in Lindstrasse 8, Winterthur from 2002 until his departure due to ill health and other circumstances in 2014, Ulrich Werz made plaster casts of coins as part of his work. These were mostly for documentary purposes, to add to the already large collection started by Imhoof-Blumer, who conducted extensive research into the Greek coins of Asia Minor and pioneered the use of die studies (*Stempeluntersuchung*)⁶³. Werz also worked on the documentation of archaeologi-

⁶¹ Cited above as WERZ 1997. This is the unpublished text from which I have taken much of my information about Werz' thinking on the history of plaster casts. In another version it was titled, «Suppe und Salatsosse. Herstellung, Funktion und Bedeutung von Gipsabgüssen» (WERZ, unpublished CV, 2002). I have a printed Word document of the text dated 1997.

⁶² WERZ 2009b:46, n.1.

⁶³ WERZ 2003:6; IMHOOF-BLUMER 1878, esp. 2 ff on «*Stempelidentität*».

cal coin finds in this period, writing an account of coin finds in Switzerland (*Fundnumismatik in der Schweiz*)⁶⁴, and was President of the *Schweizerische Arbeitsgemeinschaft für Fundmünzen* (SAF) from 2011–2014.

As a centre of numismatic research with a renowned coin collection, Winterthur could look back on a long tradition of cast making⁶⁵. As well as the ground-breaking work of Friedrich Imhoof-Blumer, his successors as directors of the coin cabinet, Adolf Engeli (director from 1920 onwards), Heinz Haffter (1939/1940–1947), Hansjörg Bloesch (1948–1982), Hans-Markus von Kaenel (director from 1982–1992) and Benedikt Zäch (director from 1993–2024), with whom Ulrich Werz worked, were able to increase the holdings of plaster casts considerably. According to Werz, the number totalled about 135,000 casts in 2003⁶⁶.

Plaster cast workshops also formed part of the coin cabinet's diverse range of educational activities. Werz invested much time and effort in the *Museumspädagogik*, offering courses and themed guided tours to the public. One of his first publications upon arrival in Winterthur was a short description of the cast collection, «Die Abgussammlung des Münzkabinetts der Stadt Winterthur», written for the internal magazine of the Winterthur museums in 2003, in which he briefly describes the significance of the plaster cast as a cultural object and the cast collection⁶⁷.

Materials

Ulrich Werz held numerous workshops on cast production, making it necessary to obtain various materials and implements for the manufacture of plaster casts. The full inventory of what he required is described in his 2009 text, *Mit Kochlöffel und Zahnbürste*⁶⁸. He stored the materials in question in Tupperware boxes⁶⁹, including plasticine, old toothbrushes and other small brushes in various materials, wooden spoons, cutlery, aluminium foil, cleaning materials, *Melkfett* (bagbalm, a type of lanolin-petroleum mixture like Vaseline or liquid paraffin for insuring that the casts came out of the moulds smoothly), adhesive and implements for forming the casts, such as plastic jar lids and cylindrical packing for vitamin tablets. Everything which might have a use was stored in the boxes. Ulrich Werz kept them stashed away, and they still lay in his storage room at the time of his death, although he had not given any demonstrations of plaster cast making for more

⁶⁴ WERZ 2010.

⁶⁵ WERZ 2003:6.

⁶⁶ WERZ 2003:6. In 1988 it was about 120,000 according to ZINDEL 1988:108 f.

⁶⁷ WERZ 2003.

⁶⁸ WERZ 2009b, pp. 46–47.

⁶⁹ Ulrich Werz told the author that these had formerly contained coin finds delivered to the Münzkabinett Winterthur for documentation. Once the coins had been studied and inventoried, there was no further use for the old tupperware boxes. Many of them found a new life in Werz' kitchen.

than a decade. Even some of the used plasticine moulds which he had produced in Winterthur were still in storage. After his death the author was surprised to find several kilos of plaster in a plastic container stored in the back of her wardrobe, which had apparently been deposited there for safekeeping a few years before.

The exact process of producing plaster casts, which is in itself relatively simple and provides scope for a certain amount of individual experimentation, will not be described here. Instead, the reader is directed to Ulrich Werz' guide, in which it is described in detail, and in a very practical manner; for comparison, Robert Göbl gives much more authoritarian and less practical instructions in his work *Antike Numismatik*⁷⁰.



Fig. 5–7 Materials for plaster cast making- brushes and toothbrushes for smoothing, tubes from vitamin tablets for forming, «Eutra» bagbalm, adhesive, ethanol and cups for holding it, as well as plasticine (manufacturer unknown) for the moulds themselves.

In the photo r. are used plasticine moulds of Roman imperial coins produced in Winterthur (Items from U. Werz' collection, photographed by the author in July 2023).

⁷⁰ GÖBL 1978, p. 279.

The Concept of Countermarks

Fig. 8–9 Examples of Roman imperial countermarks AVG and TIB (in rectangular form) on *asses* of Augustus (*as* minted by the moneyer P. Lurius Agrippa, 7 BC, RIC I², 75. 427) and Tiberius (Lyons Altar Series, RIC I², 58. 245, countermarked with Werz 2009, p. 134, 54/17 (dated 11 BC–14 AD)⁷¹ and Werz 2009, p. 192, 1/10 (dated 7 BC–16 AD)⁷² (Images: Münzen & Medaillen GmbH, Weil am Rhein, Auktion 48 (2019), 1359 (l.) and Auktion 45 (2017), 608 (r.)).

Ulrich Werz used his plaster casts not simply to copy coins, but in his student period to document countermarks on Roman coins, the subject of his doctoral thesis, *Gegenstempel auf Aesprägungen der frühen römischen Kaiserzeit im Rhein-gebiet: Grundlagen, Systematik, Typologie* (Winterthur 2009⁷³). The title refers to countermarks, small punchmarks or imprints on the obverse or reverse of a coin deliberately struck into the surface using a small punch which has been specifically designed for the purpose. The impressions formed thereby are referred to as *Gegenstempel* or *Schlagmarke* in German (English «countermark»). In his work on the collection of Konrad Bech, Werz described them succinctly as

Einstempelungen mit gemeinsamen Inhalten, d.h. Bilder / Bilderzeichen, Buchstaben / Buchstabengruppen oder Buchstaben / Buchstabengruppen mit Bildern / Bildzeichen (...)

Punchmarks with similar contents, i.e. images/symbols, letters or groups of letters or letters and groups of letters plus images and symbols (...)

(WERZ 2004, p. 11)

A longer definition, including references to earlier scholars' definitions and translations into different languages, is given in his thesis⁷⁴.

Countermarks were imprinted by the Romans into the coin's surface using punches. These have not survived⁷⁵, but a study of the impressions they left on the coins

⁷¹ WERZ 2004, p. 48.

⁷² WERZ 2004, p. 105.

⁷³ Here WERZ 2009a.

⁷⁴ WERZ 2009a, Part II, pp. 3–4. A translation of terms is given in the glossary, WERZ 2009a, Part I, p. 100.

⁷⁵ WERZ 2004, p. 12.

allowed Werz to record the individual examples, which could be grouped into types. If a punch became damaged and continued to be used, an analysis of the imprints could track the extent of the damage over time, allowing a chronological ordering of the countermarks (and therefore of the punches used), until the punch was eventually recut or replaced. Combinations of countermarks, as well as countermarks punched over each other, allowed Werz to date them relative to each other and eventually to give an overall chronological order. It also allowed him to distinguish similar but geographically or chronologically separate countermarks.

Wertz was able to group many of the countermarks into types (*Typen*) and sub-types (*Untertypen*). The types, indicated in his dissertation by numbers⁷⁶, refer to countermarks which differ from another through varying images / symbols, letters or groups of letters or letters and groups of letters plus images and symbols, whereas the sub-types indicate smaller but distinguishable differences between the different punches used. For instance, the type of a countermark can be AVC, but when this is recut in several different dies these may have letters which are slightly differently spaced in relation to one another. The overall type of the countermark can be referred to as the abstract level (*abstrakte Ebene*), which is a précis or condensation of many different sub-types making up the concrete level (*konkrete Ebene*). These can be measured and reproduced in chart form as follows:

Gegenstempel	<div>AVG</div> <div>AVC</div> (Augustus)										(abstrakte Ebene)
Typen	<div>AVG</div> <div>AVC</div>										
Untertypen	AVG	AVG	AVG	AVG	AVG	AVC	AVC	AVC	AVC		
Stempeleisen	AVG AVG	AVG AVG	AVG AVG	AVG	AVG	AVC AVC	AVC AVC	AVC AVC	AVC AVC	(konkrete Ebene)	

Abbildung 1 Unterteilung der Einstempelungen an ausgewählten Beispielen des Gegenstempels Augustus

Gegenstempel	<div>TIB</div> <div>TIB</div> (Tiberius)										(abstrakte Ebene)
Typen	<div>TIB</div>										
Untertypen	TIB	TIB	TIB	TIB	TIB	TIB	TIB	TIB	TIB		
Stempelsen	TIB TIB	TIB TIB	TIB TIB	TIB TIB	TIB TIB	TIB TIB	TIB TIB	TIB TIB	TIB TIB	(konkrete Ebene)	

Abbildung 2 Unterteilung der Einstempelungen an ausgewählten Beispielen des Gegenstempels Tiberius

Fig. 10 Diagram showing the division of two countermark types, AVG (in rectangular form) and TIB (in round form), into types and sub-types, on abstract and concrete levels (WERZ 2004, p. 12 and WERZ 2009a, Part I, p. 31).

⁷⁶ WERZ 2009a, Part II, pp. 5 ff.

In order to differentiate the types and sub-types, Ulrich Werz had to collect a large amount of material. Since the countermarks occur on Roman imperial coins as well as provincial coins and imitations, he had to examine material far outside the range of the thesis, coins circulating in the area of the river Rhine. Many of the coins he studied were found in archaeological contexts in finds across Europe and the material was spread over a vast array of museum collections. Between *ca.* 1994–2001, Werz visited many of these museums and collections in Germany, Great Britain, France, Spain and the Netherlands in order to document countermarked coins⁷⁷. It is hard to give an impression of the amount of analysis undertaken by Werz in this period. The background work for his thesis encompassed more than ten ring binders of printouts, including charts of all descriptions, documentation of the countermarked coins' find contexts, measurements, statistics on distribution ranges and other background details, and metrological analyses. Many of these documents are now stored in the University of Münster. As part of his research, Ulrich Werz copied the card index on countermarks by the British numismatist Colin Kraay (1918–1982). He also kept a card index of his own, but transferred most of the information to computerized databases over time.

Wertz frequently had to resort to living in unorthodox forms of accommodation when travelling, where he also produced plaster casts *in situ*;

Während der Materialaufnahme in Museen und Münzkabinetten, wohnte ich in Jugendherbergen, Studentenwohnheimen, Colleges, Museumswohnungen, Pensionen, Wohnmobilen, frei vermitteltem Wohnraum oder zur Untermiete in Wohngemeinschaften; dort wurden fast alle Gipsabgüsse der hier behandelten Münzen von mir hergestellt. Allen Personen und Institutionen, die mich während meiner Arbeit gastlich und oftmals sehr kostengünstig aufnahmen und die vielleicht heute noch Spuren von der Herstellung der Gipsabgüsse in ihren Räumen finden, gilt ebenfalls mein Dank.

During the collection of material in museums and coin cabinets, I lived in youth hostels, student halls, colleges, museum flats, guesthouses, privately rented accommodation or as a subtenant in shared apartments: there I produced nearly all the plaster casts which are dealt with here. I extend my thanks to all individuals and institutions who hosted me during my studies- in a very welcoming and often extremely affordable manner- and who perhaps still find traces of plaster cast production in their rooms today.

(WERZ 2009a, pp. 29–30).

At this time Ulrich Werz also visited many coin dealers and auction houses as part of his search for countermarked coins among sales wares⁷⁸. His main point of contact with commercial numismatics was in Frankfurt am Main, where he helped found a workgroup for ancient coinage (*Arbeitskreis für antike Numismatik*) and had many contacts, including Dr. Wilhelm Müseler (1952–2023) and Zlatko Pleša, but he also contacted many other coin dealers in the course of his doctorate,

⁷⁷ A full list is given at WERZ 2009a, Part I, p. 30.

⁷⁸ As pointed out to me by B. Zäch (personal communication).

including Paul-Francis Jacquier in Kehl am Rhein and the Münzen & Medaillen AG Basel⁷⁹. Werz' connections in Frankfurt led to his first published text, «Münzhandel und Münzhändler in Frankfurt nach dem Zweiten Weltkrieg,» an article about commercial numismatics in post-war Frankfurt⁸⁰.

A closer look at the Collection of Casts

Ulrich Werz did not collect coins. As a museum employee in Winterthur, collecting privately was discouraged, but he also had no personal interest in collecting, as he once told the Winterthur newspaper, *Der Landbote*⁸¹. Instead he took pleasure in his cast collection, keenly aware of its role in numismatic research. From the time when I met Uli at the *International Numismatic Congress* in Glasgow 2009, he rarely looked at the boxes containing his casts, which he had recently transported from his flat in Radolfzell, but he frequently spoke about the importance they had for him. For many years the casts were securely packed in removal cartons, and it was difficult to gain an overview of them.

The bulk of the casts were produced as part of Werz' doctoral studies; the earliest appear to date to 1993/1994. The latest are probably about 2003, although after this time he continued producing casts in Winterthur (but not of countermarked coins). A few have dates written on the boxes: casts of the countermark TIAV on Agrippa asses are marked «Feb. 98», but many other boxes are not dated at all. After 2009 Werz did not add much to the collection, other than perhaps a few casts of Roman Provincial coins which he had produced in Winterthur. Following his move to Wunstorfer Landstrasse 60 in Ahlem, near Hannover, in 2016, Werz transferred many of the cartons holding the casts into beechwood cupboards. It was not until after his death in June 2023 that I managed to view the entire collection.

The main part of Ulrich Werz' plaster cast collection consists, unsurprisingly, of casts of countermarked bronze coins of the early Roman imperial period, the theme of his doctoral studies. As far as can be ascertained, they were nearly all produced by him personally⁸². The collection also contained some casts of other items- ancient Greek and Roman provincial coins, a Phanes stater (I have not been able to ascertain which specimen this was), Roman *Aes grave*, Syrian tetradrachms, a collection of Roman mystery plaques which Werz had documented for one of his professors, and a few ancient gemstones. These cannot be described at greater length here, but they show Werz' wide range of interests.

Because the countermarked coins mostly came from coin finds and excavations, and had been in circulation for a long time or exposed to harsh environmental

⁷⁹ Information from J. Stollhoff and U. Werz (personal communications).

⁸⁰ WERZ 1994.

⁸¹ LANDBOTE 2008.

⁸² WERZ 2009a, Part I, pp. 29–30.

conditions, they were frequently in a worn and corroded state. Werz emphasised, however,

Keineswegs kann über den Abnützungszustand der Münze auf die Umlaufdauer oder den Zeitpunkt ihrer Gegenstempelung geschlossen werden.

In no circumstances can the grade of wear on a coin be indicative for the length of its circulation or the time at which it was countermarked.

(WERZ 2004, p. 13).

Due to the nature of the material, and in stark contrast to the majority of cast collections, this is no «aesthetic» collection of attractive coins, but rather a scientifically orientated study ensemble.

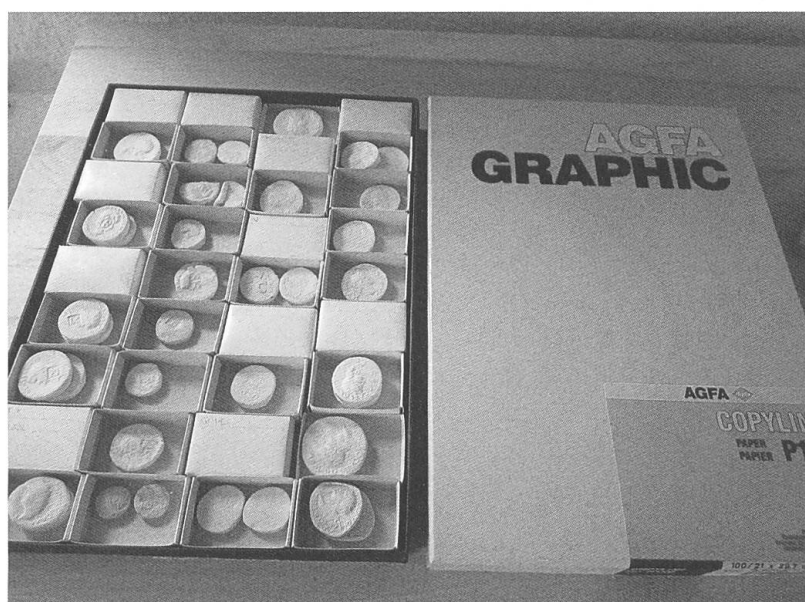


Fig. 11 A typical carton (containing countermarks beginning N-Q). Note the use of upturned matchboxes as divides, on which the names of the countermarks are noted (photographed by the author in Hannover, summer 2023).

The main part of Werz' countermark collection filled the shelves of three and a half wooden cupboards and were stored in flat «AGFA» cartons for «Copyline» photographic paper. When I examined the collection in summer 2023⁸³, I count-

⁸³ I made my main investigation of the cast collection in the weeks following Ulrich Werz' death on 14th June 2023, when I was staying in Hannover, and took notes and photos. Because of other responsibilities, it was not possible to examine every carton fully. The present overview cannot therefore record every item of interest in the collection; it is a general description and not an inventory.

ed 213 photocartons, each subdivided through the insertion of old matchbox cartons (Werz was a heavy smoker when young, although he gave up later in life; as he often sat in pubs to write his thesis due to uncomfortable student living conditions⁸⁴ and had a tendency to collect unused or discarded objects which could be of use to him, he probably gathered them there).

Each carton took about 36 matchboxes, although some casts were too big to fit in a matchbox, and some empty matchboxes were upturned and used to divide the countermark types as well as acting as labels for them (Werz wrote the type on the upturned box). Each matchbox contained one or two specimens, according to whether the coin which had been copied was countermarked on one or both sides – sometimes both sides were cast, sometimes just the countermarked side. I was not able to count every coin exactly, but I estimated that the entire collection (plus the «other» casts of Greek, Provincial and un-countermarked coins) came to about 7,668 casts (counting obverse and reverse as one cast). However, this number may be proven to be wrong when a more thorough documentation of the collection takes place. A box with more than 70 casts of un-countermarked Provincial coins was found later in the flat-clearing process, but these have no relation to the countermark collection. In the catalogue of Konrad Bech's collection, the number of plaster casts made by Werz for his doctoral research is stated⁸⁵ by Bech to be 7,250.



Fig. 12 Subtypes of the countermark QVAL (Werz No. 641) on badly worn bronzes of Claudius I. (41–54 AD), in matchboxes marked with inventory numbers (photographed by the author in Hannover, summer 2023).

The plaster casts of countermarks are roughly in alphabetical (rather than e.g. geographical) order, insofar as this was possible. For example, all specimens of IMPAVG, an early Tiberian countermark type which has several subtypes and

⁸⁴ Personal communication.

⁸⁵ BECH 2004, p. 7.

which Werz dated from 14–16 AD⁸⁶, were stored together with numbers A427–A428. Casts with the countermark of Germanicus, CAE⁸⁷ (Werz 2009a, Part II, p. 309, No. 62, Werz 2004, pp. 54 ff.) were similarly placed together. Some countermark types formed larger groups within the cast collection. The countermark TIB (Werz No. 193) occurs in many lightly varying sub-types on copper *as* coins, in rectangular as well as round form⁸⁸. The type was used by Ulrich Werz to illustrate the concept of sub-types in the chart (reproduced earlier in the text) as so many variants are discernible⁸⁹. The row illustrated above comes from a carton containing countermarks with the initial letters M–Q, including specimens of a countermark QVAL, a countermark of the Claudian period⁹⁰, which occurs with many varied subtypes.

The casts are, as so often the case, produced from highly worn and corroded coins. The alphabetical ordering means that coins with different provenances and find spots, but which are of the same type, are stored next to each other. The numbers written on the reverses allow individual coin casts with countermarks to be identified⁹¹. Each cast has an inventory number, often noted in the card index with the addition of a,b, or a/b according to which sides of the coin have been copied. The casts were not all produced at the same time, but were made at different points in Werz' research and often in the field⁹², and are visibly cast using different types of plaster: some are white, some have a yellowish tint (often due to the inclusion of sulphur), while others have a pinkish or bluish tinge.

*

In the course of his research, Ulrich Werz compiled a card index catalogue on the countermarks and the coins on which they were punched, later transferring the information into digital databases. The cards supply information on individual countermarks including find spot, storage location, find type, RIC number, weight, die axis, grade of wear, and publication status. The position of the countermark on the coin on the obverse or reverse is noted (*Anbrng* = *Anbringung*).

The illustration (*Fig. 13*) shows an example of a file card containing information on a Roman *as* of Augustus minted by the moneyer P. Lurius Agrippa, RIC I², 75. 427. It is stamped with an unclear countermark on the obverse (to which Werz comments, «not mentioned on the coin envelope»), and three rectangular countermarks on the reverse: TIB IM twice, plus TIB AVC (WERZ 2009, subtypes of nos. 196 and 113). The coin was found in Vindonissa and was one of those

⁸⁶ WERZ 2009a, Part II, p. 421, no. 113; WERZ 2004, pp. 76–77.

⁸⁷ WERZ 2009a, Part II, p. 309, no. 62; WERZ 2004, pp. 54 ff.

⁸⁸ WERZ 2009a, Part II, pp. 641 ff.; WERZ 2004, pp. 105–109.

⁸⁹ See the discussion in WERZ 2009a, Part II, pp. 652–674.

⁹⁰ Werz no. 641, WERZ 2009a, Part II, pp. 546–547.

⁹¹ In practice the present author found this a difficult procedure.

⁹² WERZ 2009a, Part I, pp. 29–30.

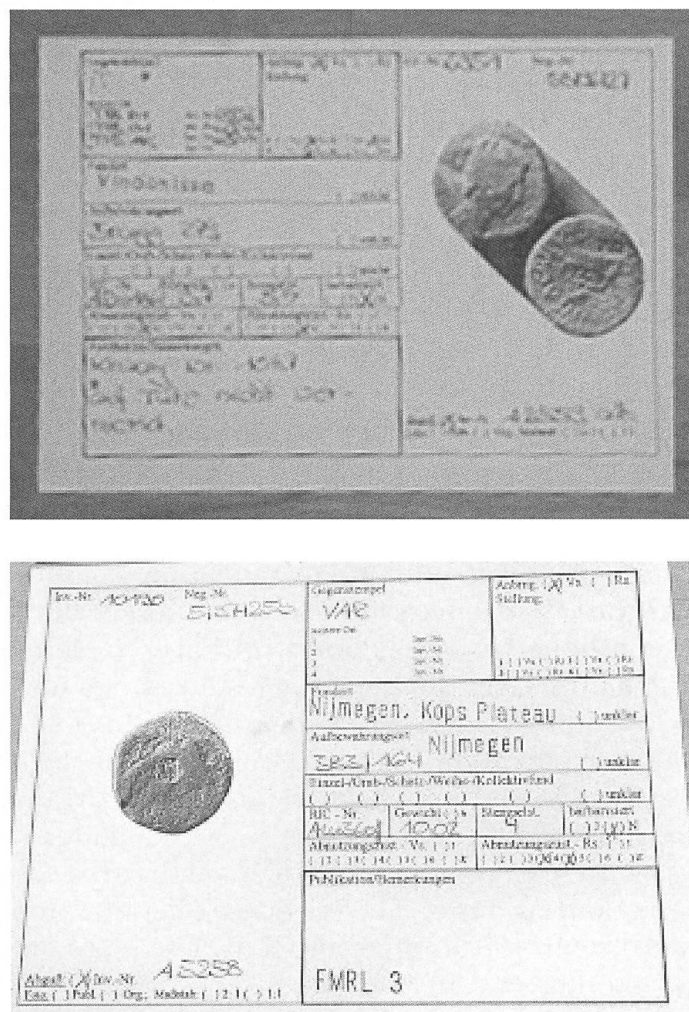


Fig. 13–14 One of Werz' file cards featuring an as of Augustus from Vindonissa with three countermarks and another one illustrating a Varus countermark (photographed by the author in Hannover, summer 2023).

published by Colin Kraay (as noted on the card: Brugg 279, Kraay 1087)⁹³. There are different inventory numbers for the object and the cast, which bears Werz' inventory number A2259a/b (shown bottom right). The negative number for the photographic documentation is also noted. The cross next to *Abguß* (also bottom r.) denotes that the coin was included in Ulrich Werz' plaster cast collection (despite all his efforts, it was not always possible to obtain permission to make casts, or he lacked the time to do so)⁹⁴. Werz used rubber stamps for the names of frequently occurring find spots, such as here for Vindonissa.

⁹³ I.e. Published in KRAAY 1954–1955 and KRAAY 1962.

⁹⁴ E.g. WERZ 2009, Part II, p. 638 n. 283.

A second example of a file card (*Fig. 14*) documents a countermark of Varus (VAR) found at the Kops Plateau, Eastern Nijmegen, which was the site of a Roman fort during the campaigns of Drusus⁹⁵. The layout of the card is slightly different to the first example shown. In the illustration, the coin has been turned to reflect the position of the countermark.

Ulrich Werz and the Varusschlacht
(*Battle of the Teutoburg Forest / Clades Variana*)⁹⁶

Through his documentation of countermarks connected to Publius Quinctilius Varus, who notoriously perished at the hands of the German Cherusci under Arminius (later known as Hermann) in the Battle of the Teutoburg Forest in 9 AD⁹⁷, Ulrich Werz entered into a debate of particular public interest. The question of the exact location and extent of the battle had fascinated historians for centuries. It had been suggested in the past by scholars, including Chantraine in 1982 and Giard in 1988, that the countermarks bearing the abbreviation VAR as well as a number of other types had a connection with Varus⁹⁸. Numerous geographical locations for the battle itself had been suggested, which was recorded by the ancient historians Cornelius Tacitus and Velleius Paterclus in Latin, and Cassius Dio in Greek⁹⁹. The exact location of the site remained unclear, but antiquaries in the 17th century, such as Philipp Clüver in his work, *Germaniae antiquae libri tres* of 1616¹⁰⁰, situated the battle in the Osning, a wooded area near Kalkriese by Osnabrück (Niedersachsen, Germany), and re-named the area «Teutoburger Wald» in reference to the ancient accounts. The historian Theodor Mommsen discussed the question of the battle in 1884, suggesting Kalkriese as a suitable location¹⁰¹.

New investigations of the site of Kalkriese-Niewedder Senke by the British officer and metal detectorist Major Tony Clunn (1946–2014) in 1987–1988 brought many

⁹⁵ LENDERING 2008. Although the citation is to the older *Fündmünzen der römischen Zeit in Luxemburg* (WEILER 1972), the main publication used by Werz for the coins is MAC DOWALL *et al.* 1992.

⁹⁶ This topic has attracted great public interest, and has been widely discussed, particularly in Germany. As it tends to arouse passionate reactions – particularly in online social networks – and I am no expert in the field, this section has been deliberately kept short, focussing on Ulrich Werz' use of countermarks. The interested reader is invited to follow up the literature in question (such as BERGER 1996a and the studies in WIEGELS 2000) for a wider overview (lists can be easily found on the internet, and some links are given in the bibliography).

⁹⁷ There are many works of popular history which cover the episode.

⁹⁸ CHANTRAINE 1982; GIARD 1988; Discussed in BERGER 1996a, p. 51; BERGER 1999, pp. 274 ff.

⁹⁹ Tacitus: *Annales*, I.59–68, XII, 27; Velleius Paterculus: 2, 71, 1; Cassius Dio 60.8.7; See also Suetonius, *Augustus*, 23.

¹⁰⁰ CLÜVER 1616. On the historical background see also www.kalkriese-varusschlacht.de.

¹⁰¹ MOMMSEN 1884.

Roman coins as well as evidence of conflict, such as lead sling shots, to light¹⁰². These finds led to the systematic archaeological investigation of the site. Ongoing excavations and metal detection work over more than 20 years have unearthed more than 3000 new finds¹⁰³, with new objects continually appearing¹⁰⁴. The bulk of the coin finds were analysed by Frank Berger and published in 1996¹⁰⁵, and later analysed by David Wigg-Wolf in Schlüter & Wiegels 2009¹⁰⁶.

The excavators were faced with a problem; how could they be sure that the site was testimony to a single event, a conflict dating to 9 AD? The presence of numerous countermarked Roman *aes* coins led to Ulrich Werz' involvement with the site; as a young doctoral candidate, he was just embarking on his investigations of the relevant types. As coins constituted the most closely dateable archaeological finds from the excavations, the identification of Kalkriese with the site of Varus' defeat hung on the exact dating of those found at the site; it was quickly recognised that Ulrich Werz' dating of the countermarks could be of immense value. The presence of countermarks on particular coin issues and the manner in which they were combined -they were often stamped over each other, allowing Werz to ascertain which countermark had been struck first and was therefore earlier- suggested the possibility of finding a much more accurate date for the archaeological site. Werz already had copious data of the find spots of countermarked coins within other Roman settlements with secure chronologies.



Fig. 15–17 Ulrich Werz as a 34 year old participant of the International Kalkriese Congress, Frankfurt am Main, September 2nd–5th, 1996 (Photograph: F. Berger, NNB, p. 24, November 1996), and a plaster cast of VAR countermark on Lyons Altar Series Augustus As, RIC I², 57. 230, from Werz' collection (cf. WERZ 2004, Pl. 10, 481, not this coin) (photographed by the author in Hannover, Summer 2023). To r. one of the many varieties of the VAR countermark documented by him (WERZ 2009a, Part II, p. 832, 227/14).

The relevance of his doctoral work to the issue led to Werz' participation in the International Kalkriese Congress, held in Frankfurt am Main in September 1996. He was singled out for mention in the *Numismatische Nachrichtenblatt* in Novem-

¹⁰² See, e.g. BERGER 1996b.

¹⁰³ BERGER 1996b: 256.

¹⁰⁴ See, e.g., WERZ 2018c on the find of eight gold aurei in June 2016.

¹⁰⁵ BERGER 1996a.

¹⁰⁶ WIGG 2009.

ber 1996: «Erste Ergebnisse der Gesamtaufnahme der Gegenstempel auf Kupfermünzen des Augustus im Rheingebiet legte Ulrich Werz aus Frankfurt vor.» (Ulrich Werz from Frankfurt presented the initial findings of his comprehensive recording of the countermarks on copper coins of Augustus in the Rhine area).

Following his attendance in 1996, Ulrich Werz retained strong ties with Kalkriese. The proceedings of the symposium were published by Schlüter and Wiegels in 1999, and Werz was to write several other papers on the countermarks found at the site¹⁰⁷. The connection with Varus captured the public imagination (even when there were some scholarly objections); his identification of the VAR countermarks with Varus, discussed in his thesis¹⁰⁸, became more widely known through their inclusion in the publication of the Bech collection¹⁰⁹.

Wertz' contribution to the field was his analysis of the VAR countermarks, some of which are clearly readable as VAR, and some of which display considerable variation in the form and intelligibility of the letter combinations. He argued that the countermarks should be read as VARi in the genitive case and should be understood as meaning «gift of Varus,» to be understood in the context of distributions of money to the soldiers¹¹⁰. He was not able to say which occasion this might be, due to lack of sources. Werz analysed the VAR countermarks through his die comparison techniques, and dated them to 7–9 AD; the period just before Varus' defeat¹¹¹. He also ascertained that they occurred most commonly struck on Augustan moneyer *as* coins¹¹². He based his analyses on finds of VAR countermarks from a wide range of geographical areas¹¹³.

At the Kalkriese symposium on 15th–16th April 1999, Werz, together with Frank Berger, defended his interpretation of the countermarks and the theory that Kalkriese had been the site of the *Varusschlacht* in the face of objections and counter-arguments raised by numismatist Reinhold Wolters and historian Peter Kehne (1953–2022). Kehne¹¹⁴ put forward alternative readings to the countermarks, including LAP, URA, VARL, XXP and QVAL¹¹⁵. Werz demonstrated his theory that through the over- and undercutting of different countermarks which had been struck next to each other on the coins that there was a chronological order to the system and that the VAR countermarks dated to 7–9 AD. He also showed through detailed die analysis that there were several different subtypes of the VAR countermarks.

¹⁰⁷ Including WERZ 2016a–e, WERZ 2019

¹⁰⁸ WERZ 2009a, Part I, pp. 955 ff.

¹⁰⁹ WERZ 2004, pp. 140–143.

¹¹⁰ WERZ 2004, p. 142.

¹¹¹ Die comparison: WERZ–BERGER 2000, p. 245 ff., with summary in WERZ 2004, pp. 11–14.

¹¹² WERZ 2004, p. 142.

¹¹³ WERZ 2004, pp. 140–143.

¹¹⁴ KEHNE 2000.

¹¹⁵ WERZ–BERGER 2000, p. 254.

Werz wrote that in the course of his research he had collected 533 examples of the countermark VAR, of which 313 cases were not further definable, and remaining 220 came from 119 dies. He divided these into three types¹¹⁶. In his thesis, he later explained that from all the specimens that he had examined, he had found more than 20 subtypes of the VAR countermark (Werz No. 227)¹¹⁷. One of these subtypes, Untertyp 227.1/1, was found 4 times in Kalkriese. This is a common type, occurring more than a hundred times in other finds. The other subtypes are mostly badly preserved and difficult to distinguish. Of the other different different variants, none occurred in the Kalkriese finds. The variants are listed in his thesis (WERZ 2009a, Part III, pp. 955–997). Two other VAR countermarks from Kalkriese were also noted as not belonging to any identifiable type («von keinen bestimmten Typ»)¹¹⁸.

In Werz' plaster cast collection, it was only possible to identify a small number of VAR countermarks. The majority of them were too badly corroded to be clearly distinguishable by an amateur. Among those to which I could find matching index cards, none came from the archaeological site Kalkriese, but perhaps a more thorough analysis of the material will be able to fully clear the matter up.



Fig. 18 Very badly preserved VAR countermarks from Werz' collection (one on a halved Nemausus *dupondius*, probably 61.36.1/3 from Neuss mentioned at WERZ 2009a, Part III, p. 997) (photographed by the author in Ahlem, Hannover, summer 2023)

¹¹⁶ WERZ-BERGER 2000, p. 254.

¹¹⁷ The subtypes of the VAR countermarks are listed in WERZ 2009, p. 12.

¹¹⁸ WERZ 2009a, Part II, pp. 824–829. See also *ibid.*, Part III, pp. 995 ff.

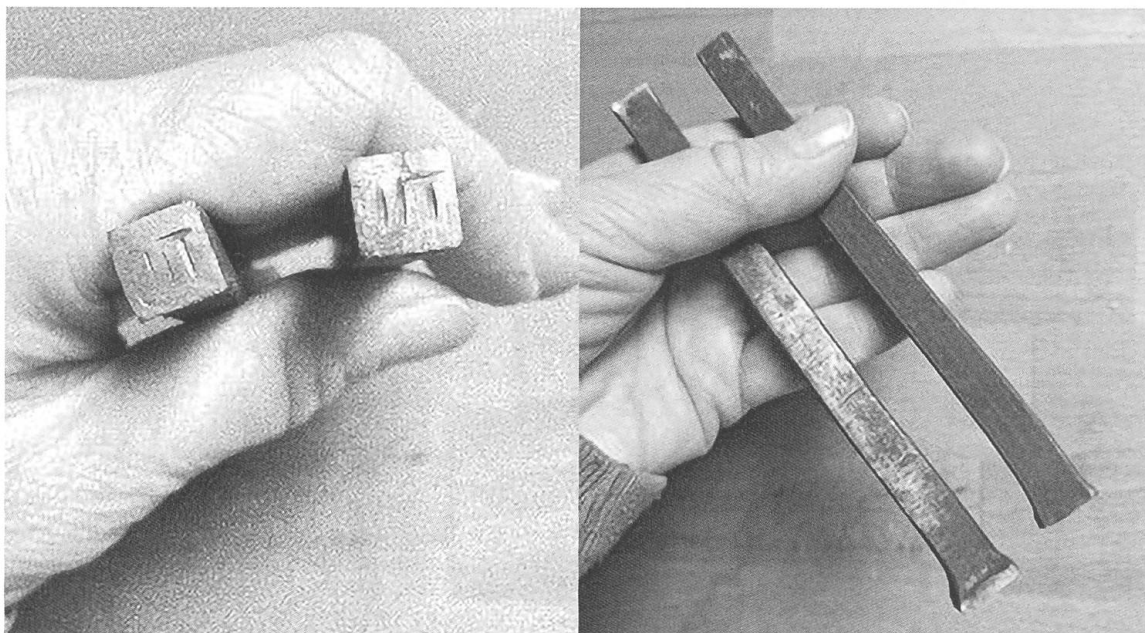


Fig. 19–20 Modern metal punches for striking TIB countermarks (front and side views), from Ulrich Werz' collection (photographed by the author in Ahlem, Hannover, summer 2023).

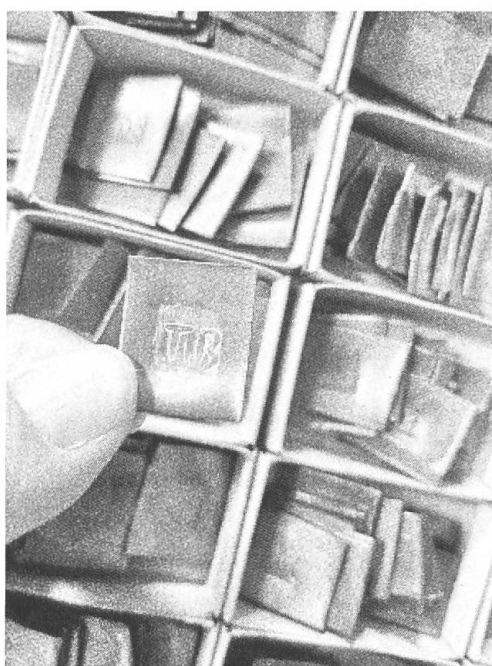


Fig. 21 Copper plates (*Messbeispiele*, «measuring probes»), struck with TIB punches, from Ulrich Werz' collection (photographed by the author in Ahlem, Hannover, summer 2023).

Experimentation with countermark production

In order to acquire a better understanding of how countermarks were produced, how they were struck and how the wear on the punches used affected the impressions on the coins, Ulrich Werz made his own punches and practiced striking his own countermarks. His first attempts used wooden punches, into which he carved a type of a «countermark» – for example the letters TIB – and practiced hammering them into a «flan». At first he used plasticene «flans» to observe how the angle at which a punch was struck affected the impression produced. Later he tried punching countermarks into actual coins of various types. In a larger experiment, he then prepared small plates, about 3 cm square and 2 mm thick, and made from unannealed¹¹⁹ copper, which he referred to as measuring probes (*Messbeispiele*). Werz used metal countermark dies (he refers to them at one point as «Gegenstempelstempel») to strike the copper plates in a variety of ways, in order to follow how the countermarks were formed. He also tried deliberately damaging the punches in order to observe how this affected the impressions. Ulrich Werz described the insights derived from his experiments in a lecture he held at the congress, *Rom, Germanien und die Ausgrabungen von Kalkriese*, a symposium centred on the newly discovered finds in Kalkriese, in September 1996. He later published an account of the experiment as part of a study (WERZ 1999). The countermarks he had produced- punched with TIB after the real countermark type TIB in rectangle, which was dated to 7 BC–16 AD – allowed him to demonstrate the process of wear on individual punches, and the effect this had on the countermarks struck with them¹²⁰. He stored the copper measuring probes in matchboxes in his flat; they were still there at the time of his death.

The experiments allowed Ulrich Werz to chart the manner and the rate at which the countermark punches wore out more fully¹²¹. In his published study, *Die Gegenstempel auf Kupfermünzen des Augustus im Rheingebiet. Vorbericht über eine neue Aufnahme* (WERZ 1999), he concluded,

Als Ergebnis lässt sich festhalten, dass sich die Proportionen der Buchstaben zueinander sowie ihre Stellung im Feld mit zunehmender Abnützung des Stempelsens nur unwesentlich ändern und kaum Messbar sind. Je nachdem wie Tief die Buchstaben in das Eisen geschnitten wurden, wurden sie im Laufe der Einstempelungen langsamer oder schneller Unscharf»¹²².

As a result, it can be stated that the proportions of the letters to one another and their position in the field change only insignificantly as the punch becomes more worn: this

¹¹⁹ German *nicht ausgeglüht*: the metal had not been treated with heat to oxidize the surface and make it harder, and so remained pliable See [https://en.wikipedia.org/wiki/Annealing_\(materials_science\)](https://en.wikipedia.org/wiki/Annealing_(materials_science)) (viewed 14.10.24).

¹²⁰ WERZ 2004, pp. 105–109 (Bech Coll. Nos. 45–46); WERZ 2009, Part I, No. 193–194 (pp. 673–675).

¹²¹ WERZ 2009a, Part I, p. 32.

¹²² WERZ 1999, p. 308.

can hardly be measured. Depending on how deeply the letters were cut into the iron, they lose their clarity at a slower or faster rate in the course of the striking process.

Details of the results are also mentioned in Werz' final dissertation, such as WERZ 2009a, Part I, pp. 33–34.

The final Years

After 2009 Ulrich Werz conducted less research into countermarks. He grew tired of the theme, especially with the constant discussions and questions concerning the *Varusschlacht*; members of the public contacted him continually with questions and new theories. The question of coin circulation in the early Roman Empire, however, as well as the use of Roman Aes coinage and the behaviour of coin finds, continued to interest him. He once told the present author that individual coins, however beautifully made, did not interest him: what interested him were the statistics which could be used to group coins as mass produced items. He invested much time in producing databases, in the development of digital methods of documenting coins, and also continued to publish on the theme of coin photography. Werz remained fascinated by technological developments: in 2019 he returned to theme of countermarks in his study of the coin supply in Haltern and Kalkriese, showing the results of 3D scans and computer tomography on the countermarked coins found there¹²³. He also continued to collection information on plaster casts (for example through museum visits or internet searches), although he rarely discussed the theme and hardly produced any more casts after he left Winterthur.

The move from Waldshut to Hannover in 2016 and the chance to work on a reduced basis (*ehrenamtlich*) for the Archaeological Service of the German Bundesland and Lower Saxony (*Niedersächsisches Landesamt für Archäologie*) in Hannover gave Werz a new spurt of life. At this time he was already gravely ill- a cancerous GIST tumour in the duodenum had been diagnosed several years before and he was receiving medication and therapy for metastases in his liver. The drugs frequently had unpleasant side effects, leaving him increasingly housebound, despite his best efforts to improve his fitness. In spite of his medical problems, Ulrich Werz remained highly productive as a researcher, completing papers on a wide range of themes such as material on photographing coins¹²⁴, which he also presented at the NOMISMA conference in Valencia in 2018 on one of his last trips abroad. At around the same time he arranged weekend courses for metal detectorists, so that they could develop a better understanding of what they were digging up, and proved a highly efficient cataloguer of the coin finds in Niedersachsen (Lower Saxony). He took pains to remain up to date with new finds in Northern Germany and was involved in the evaluation of the newly discovered Roman camp at Wilk-

¹²³ WERZ 2019b, pp. 15–17.

¹²⁴ WERZ 2018 and WERZ 2018a.

enburg South of Hannover; all this resulted in a flurry of publications¹²⁵. From his desk at home in the Hannover quarter of Ahlem, Werz remained in contact with numismatists and archaeologists all over Europe, and he was always willing to answer their enquiries. Werz also took pains that all his publications were readily accessible online, taking part in online forums and uploading his material on the website Academia.edu.

With his premature death from cancer at the age of 59 years and six months, Ulrich Werz left a huge amount of material which stands as testimony to a life of constant study and inquiry. Even in the month before his death, on 14th June 2023, he strove to finish find reports for the archaeological services. Ulrich Werz was not an easy man. He frequently pushed himself to his limits and he expected others to do the same. He often felt himself to be misunderstood and lamented that his work was ignored, but it is clear that he left a lasting mark on research into Roman countermarks. Werz was very proud of his plaster cast collection, although it remained packed away for many years, regarding it as his contribution to academic research. In his will, and in conversations which took place several years before his death, he stated that the collection should go to K. Martin and A. Lichtenberger to be kept at the University of Münster. This was an institution where he had often held workshops and lectures; he was also a frequent participant at the annual *Tag der antike Numismatik* there. The collection was handed over last summer, and the occasion led to the preparation of the current study. It is to be hoped that the cast collection continues to play a role in numismatic research in the years to come.

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Lörrach, 16th October 2024.

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¹²⁵ See the publications WERZ 2018a–d and 2019b completed in this period.

Abstract

The German numismatist Ulrich Werz (1964–2023) was well known for his work on countermarked Roman coins of the early imperial period. As part of his doctoral studies at the University of Frankfurt am Main, he assembled a large collection of plaster casts of countermarked coins, which was bequeathed to the University of Münster in his will following his death in 2023. The present text is an overview of the collection, which is too large to be described in its entirety, with especial reference to the history of its formation and the reasoning behind it; Ulrich Werz was convinced that plaster casts played an essential role in the the history of numismatics, and engaged with them on a practical level as well as an intellectual one.

Zusammenfassung

Der deutsche Numismatiker Ulrich Werz (1964–2023) war bekannt für seine Arbeiten zu gegengestempelten römischen Münzen der frühen Kaiserzeit. Im Rahmen seines Doktoratsstudiums an der Universität Frankfurt am Main trug er eine große Sammlung von Gipsabgüssen gegengestempelter Münzen zusammen, die nach seinem Tod im Jahr 2023 der Universität Münster testamentarisch vermacht wurde. Der vorliegende Text gibt einen Überblick über die Sammlung, das zu umfangreich ist, um in seiner Gesamtheit beschrieben zu werden, insbesondere unter Berücksichtigung der Entstehungsgeschichte und der dahinterstehenden Überlegungen; Ulrich Werz war davon überzeugt, dass Gipsabgüsse in der Geschichte der Numismatik eine wesentliche Rolle spielten, und beschäftigte sich sowohl auf praktischer als auch intellektueller Ebene mit ihnen.

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¹²⁶ An almost complete bibliography of Werz' publications was published with my obituary: FRANKLIN-WERZ 2023. The list here refers solely to works which are cited in the present study. A few publications appeared after his death and are not included in the list. These are accessible on his Academia.edu page. For fuller bibliographies on Roman countermarks, the reader is advised to use WERZ 2004:160–172, or for a complete list, WERZ 2009, Part I, pp. 159–188.

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