Bricks in the central part of Austria-Hungary. Key artefacts in historical archaeology

Summary

Ordinary wall bricks have tended to be neglected in the historical archaeology of Central Europe up to now. The article discusses the “brick region” (common format and technology), which existed in the central part of the Austro-Hungarian area from the Late Middle Ages until 1918 and describes the development of brick formats. This region was strengthened by the expansion of the fortress system in the 16th century. A central feature of these bricks were raised brickmakers’ marks, which were engraved into the base of the moulds and which were largely replaced by negative marks in the course of the industrial period. Brick marks were a central part of mercantilist-period regulation, which also included format and quality control. In the 19th century the Wienerberger company emerged to become dominant across the area before the collapse of the Habsburg monarchy in 1918. The article further indicates the uses of bricks for archaeologists and describes the networks of brick enthusiasts, which exist in Austria, Hungary and Slovakia. It closes with a call for further projects and trans-national cooperation.

Zusammenfassung

Introduction

Many archaeologists in Central Europe freely admit to neglecting the bricks they find in the course of their excavations. All too aware of warehouses full to bursting with finds, among them identical bricks and tiles gathered haphazardly and never analysed, overworked colleagues react by ignoring ceramic building material altogether – walls and other objects contain bricks, whose format never finds its way on to a recording sheet, brickmakers’ marks are neither collected nor photographed. In fact however valuable information is being lost by our refusal to come to terms with the very ordinary brick for bricks not only help us date our phases – very vaguely in the medieval period, sometimes to within a few years in the 19th and 20th centuries – but can also tell us about the organisation of the building site or the background of the developer. Their wider history, that is over and above the level of the individual excavation, is rooted in and reflects the political, economic and social history of their times. They are in short key artefacts, which have to be taken as seriously in historical archaeology as coins, pottery or clay pipes.

This article discusses the ordinary wall brick, which is the most common and helpful of the ceramic building materials. Roof tiles, which are sometimes marked with symbols or letters or even dated (Honegger 1990, 29–31, Nagy 2004, Rockenbauer 2007), are rarely found intact, but instead in small, more or less useless fragments. The same applies to normal floor tiles, while decorated tiles from the medieval period have often been the subject of attention (e.g. Neugebauer/Neugebauer-Maresch 1998, Bachner et al. 2007, 558–564). Terracotta, in particular the manufacture of architectural mouldings in ceramics, is an important subject (Hungary: Vegh 1998, Austria: Drowitsch 2008, Hofer et al. 2009), but this author is not in a position to contribute to their study at the moment.

The bricks themselves and the role of bricks in architecture vary enormously from region to region (Fig. 1). There are parts of Central Europe where wall bricks were used very sparingly before the railway age, e.g. in Freiburg im Breisgau/Germany (Untermann 1995, 140–146), while in other areas the medieval-style brick (see below) prevails like a dinosaur surviving in a particularly deep lake until that period, e.g. in a large part of Switzerland (e.g. Tonazz 2003, 370–371, Fig. 480–482). In the area discussed below bricks become the dominant building material in the early modern period, but they are almost always plastered/rendered and are at no point comparable to the well-known and magnificent gothic/neo-gothic brick architecture of the North German and Baltic regions. For the same reason it is not possible to discuss brick bonds in this article, regular bonds appear to be rare in the study area. The working archaeologist or

Fig. 1. Map of Austria-Hungary with sites mentioned in the text. Map Holger Dieterich, Kiel.

Abb. 1. Österreich-Ungarn mit den im Text erwähnten Orten, Karte Holger Dieterich, Kiel.

1 This article is based on a talk given at the Arbeitskreis Tonpfeifen (clay pipes working group) in Augsburg, Bavaria, in April 2009.
architectural historian has to get to know his or her "brick region" i.e. the typical uses of bricks, their size, technology, development and marks in his or her area. Fundamental components of this personal database are likely to be no longer appropriate only a hundred kilometres away: Bricks in Brno (Brünn), Moravia, for example, are similar to those in Vienna (only two hours drive away) in the 13th century, but by the mid-14th century have become substantially thicker (Prochážka 2000, 153).

This author has published substantial data from excavations and standing buildings surveys before (Mitchell/Schön 2002, Mitchell 2009) and this information is not simply repeated here. Instead the article extends the area surveyed, drawing on published results from the central Austro-Hungarian area i.e. from Lower Austria around Vienna, from Styria with its capital Graz, from the northern part of medieval Hungary, now Slovakia with its capital Bratislava (formerly Pressburg) and from west-central Hungary around Buda(pest). From the late middle ages onwards bricks in this area are similar in format and technology, forming a brick region which becomes clearer in the early modern period with the hegemony of the Habsburgs and the ascent of brick marks, and which does not disintegrate until the collapse of the monarchy in 1918.

The transition from the medieval to the early modern brick industry

There are references to Austrian brick or tile makers in Buda in 1425 and 1443 (Kieslinger 1979, 51, Duma 1983, 216), by which time the brick formats, which had emerged in the Vienna area in the course of the 13th century (20–24 cm length with a side ratio of 4:2:1 to 6:3:1) (Fig. 2) had long replaced the larger bricks found in Northern and Central Hungary in the late Romanesque period (Lóvei 2002, 243, Nagy 2007). The late medieval formats are found in the palace of the Hungarian kings at Visegrád in the 14th and 15th centuries, for example (Buzaš 1995, 12–15). Common to both countries in the 15th and 16th centuries was then a further shift in brick formats and in the technology of brickmaking, creating parameters which defined the basic appearance of the artefact until after 1900 (table 1).

During the course of the 15th century bricks began to be used not only in vaulting, in window arches, jambs and so on, as had previously been the case, but also as a basic element of walls and for entire façades and smaller structures. There are examples of this trend from across the area (Austria: Mitchell 2009, 220–221. Hungary: Feld 1994, 50–54). At the same time the small bricks typical

Fig. 2. Typical late medieval brick (22 x 10–10.5 x 5 cm) from Ebergassing Castle chapel, Lower Austria. Foto Paul Mitchell.

Abb. 2. Typischer spätmittelalterlicher Mauerziegel (22 x 10–10,5 x 5 cm) aus der Kapelle des Schlosses Ebergassing, Niederösterreich; Foto Paul Mitchell.
of the medieval period were getting longer. Brick lengths of up to 29 cm were becoming common in Lower Austria. By the early 16th century two brick formats had emerged which were to dominate the post-medieval period: On the one hand so-called “Austrian format” wall bricks with initially 26 – 28 cm length and a side ratio of 4 : 2 : 1 (6 : 3 : 1); on the other “vaulting bricks” (Gewölbeziegel) of 24 – 26 cm side length and a side ratio of 3 : 2 : 1 (9 : 6 : 2). In practice these two formats are often found together – vaulting bricks occur in walls and wall bricks are often the main component of vaulting. The brickworks belonging to Vienna city council appears to have been producing the two formats by around 1500 (Mitchell 2009, 222).

These changes were extended in the early 16th century as bricks began to be produced in moulds i.e. frames which had acquired a wooden base and which were easier to handle. The excess clay, which, in our region at least, had previously being removed with the fingers of one hand, resulting in the characteristic finger marks allowing the rapid identification of a medieval brick, was now removed with a piece of wood. From the mid-16th century at the latest finger marks are found in the Vienna area only very rarely or on medieval bricks, which have been re-used, for example in parts of the Hofburg built at this time (Holzshuh-Hofer 2007). It’s an open question how these various innovations came to the region, but the increasing use of bricks and their enlarged size may be presumed to have reflected increased confidence in their quality.

These developments were consolidated and further impetus added to the homogenisation of the (brick) region by political-military developments: The Ottomans now appeared in Central Europe, wiping out a large part of the Hungarian aristocracy in 1526, besieging Vienna in 1529 and occupying Buda permanently in 1541 (Winkelbauer 2003, 123–134). The Austrian dukes now became the kings of Hungary and beginning with the royal residences and administrative centres Vienna and Graz (Vienna: Hummelberger/Peball 1974. Graz: Tofl 2003), a network of fortresses in the Italian style was now built across Eastern Austria and the non-occupied areas of Western and Northern Hungary. This enormous programme of works continued for the rest of the century and involved the use of hundreds of millions of bricks. Central to the process were Italian engineers who were not simply architects, but also entrepreneurs, bringing with them teams of skilled workers (often based on extended families or village communities) – foremen, stone masons, painters/decorators and brickmakers (Mitchell 2009, 222–224, Ricaldone 1986, 48–53). In Vienna kilns appeared close to the fortifications at this time, exploiting the blue clays found there and in a large part of the southern Vienna area (Suess 1862, Zsutty 1996, 275–277).

It appears to have been the Italians who brought with them a new brick format of 30 cm or more length to Vienna. These “fortification bricks” are found from the 1540s onwards not only in various parts of the new town walls, but also in the Hofburg (Imperial Palace), the Stallburg (Imperial Stables), at Ebersdorf (a

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<td>1540s?</td>
<td>32 x 15,5 x 7.5 cm</td>
<td>Author</td>
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<tr>
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<td>31-32 x 14-16 x 6-7 cm</td>
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<td>c. 1560</td>
<td>30.5-31 x 14,5-16,5 x 7-8 cm</td>
<td>Mader 2008, 64-68</td>
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<td>Town wall, Neutorgasse/ Weedertorgasse</td>
<td>3rd quarter, 16th century</td>
<td>? x 15-16 x 7-8 cm</td>
<td>Mitchell 2000</td>
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<td>Town wall, Weihburggasse 28-32</td>
<td>16th century?</td>
<td>31-35 x 16,8 x 8.5-9 cm</td>
<td>Krause/Reisinger 2007</td>
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<td>Town wall, Dr. Karl-Lueger-Ring 4</td>
<td>16th century?</td>
<td>30-31 x 16 x 7-8 cm</td>
<td>Kienn et al. 2006</td>
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Table 1. Fortification bricks in Vienna, 16th century (recent results).

Habsburg hunting castle near Vienna) (Krause et al. 2008, 229–231) and in the house of the general commanding the Vienna garrison (Buchinger et al. 2006).

They further appear at various fortresses across the region, at Győr (Raab) in western Hungary (Lővei 2002, 243), at Riegersburg and Bad Radkersburg (Fig. 3) in eastern Styria (recorded by the author) and apparently at Graz (Toefl 2003, 473–474). Indeed it must be likely that they are to be found at many other Hungarian and Slovak military sites. Initially confined to Imperial structures and often used alongside “normal” wall bricks, fortification bricks spread to all sorts of buildings in the 17th century, being found in new buildings erected by the church in Vienna in the middle of that century, for example at a Cistercian inn (Mitchell/Schön 2002, 473) and a Dominican monastery (Buchinger/Mitchell 2009).

The brick industry in the early modern/mercantilist period

The fortress system was part of an enormous growth in demand for bricks in the early modern period. Many urban houses acquired new upper storeys or two basement storeys for the first time, as standing building surveys have shown. Bricks replaced stone in the upper storeys of Viennese houses in the 16th century and while at ground floor and basement level progress was more slow, bricks edged out stone gradually there also, so that by the early 18th century little stone is visible. Immense numbers of bricks were used in the representative buildings of the Baroque period. More than a million bricks were used between 1687 und 1695 for the construction of the Esterhazy Palace in Vienna (Perger 1994, 24–32), for example, and kilns set up for the Charles Church (Karlskirche) in that city produced around 1.600.000 bricks between 1717 und 1719 (Zsuty 1996, 280–281). As a recent article has shown, the brickworks at Melk Abbey in Lower Austria manufactured around 10 million bricks between 1713 and 1739, mostly employed in that great complex itself (Ellegast 2008).

The use of moulds instead of open frames meant that marks could now be carved into the base of the moulds, producing bricks with standardised raised signs (Fig. 4). These marks, symbols of the owners of the kilns/land or of the producers of the bricks, are characteristic of bricks in the modern period in Austria-Hungary (Lővei 2002, Zsuty 2005, Register 2007), increasing the value of the artefacts for archaeologists immensely and making them very collectable (see below). The alternative method of marking bricks by handheld stamp, leading to a mark in a slightly different position each time, as used in the Roman period and common in northern Germany (e.g. Rümelin 2003), does not appear ever to have been greatly used in Austria. Brick marks appear in the 16th century, but be-
come common only from the late 17th century onwards and practically universal around 1800. The earliest marks are often symbols, which today may be indecipherable, while the far more common initials tend to appear later. Dates on bricks are rare in Austria, but more frequent in Hungary, where for a large part of the 17th and 18th centuries in the fortress town of Györ the commanding generals inscribed their initials and the year on a large part of bricks produced. Judging by the size of some collections (see below), there may have been tens of thousands of different marks in the Habsburg territories over the centuries.

Brick production was increasingly regulated in the early modern period. The new fortresses needed such enormous numbers of bricks that in Graz and Vienna these were supplied not only by Royal (from 1556 Imperial) kilns, but also by local authorities and private suppliers. These were instructed to adopt the new fortification format (Mitchell 2009, 224, Rockenbauer 2007, 40, Toifer 2003, 473–474), apparently with mixed success as resistance is recorded and normal bricks remain widespread in the Imperial works. As the absolutist-bureaucratic state strengthened, Imperial and other architects needed to know that they were not being fobbed off with small or bad-quality bricks (or roof tiles), and the state increasingly intervened to regulate the industry (Schirmböck 1970, 179–184, Rockenbauer 2007, 40–42). This meant that despite the fact that bricks were barely transportable before the railway age, they nevertheless mirror some of the features of more exportable consumer industries such as porcelain or clay pipes, whose regulation is characteristic of the mercantilist era. Not only were prices set and formats laid down (and even moulds distributed), but also brick marks prescribed, without which the many different producers could not be supervised. State regulation intensified in the course of the building boom after the second Turkish siege in 1683 and the subsequent collapse of Ottoman power in Central Europe. In 1686, for example, official moulds made of metal were distributed by the government in the Vienna area, the supervision of these and other brick industry regulations was entrusted to “comisarios”. This specific measure failed, but, despite the plethora of local laws in the far from homogenous empire, repeated regulation began to take root, if slowly. A key question around 1700 was the government’s campaign to replace the fortification formats, now regarded as too unwieldy, by the hand-sized “Austrian” format. A “ripple effect” can be posited, meaning that Imperial and geographically central projects were the first to abandon the old bricks, with the periphery only being affected at a later stage. The new outer fortifications in Vienna from the 1700s onwards, for example, employ “Austrian” formats (marked with the letters KKF for “Kai-

Fig. 4. Vaulting brick with raised grate mark (25–25.5 × 16 × 6–6.5 cm). St. Lawrence’s Monastery brickworks, Vienna (1683–1783). Foto Paul Mitchell.

ser Königliche Fortifikation") (M itch ell 2009, 223), but a cellar complex built in the city in 1712 (Bäckerstraße 16) still made extensive use of fortification bricks (M itch ell 2002, 738). These began to die out, but are found in new fortresses on the Bohemian border with Prussia as late as the 1780s (BláHa / S igl 2007 , 141). In the course of the 18th century the government concentrated on monitoring the earth from which bricks were produced (not all clay being equally suitable) and from 1800 onwards on encouraging a change from timber fuel to the more efficient and apparently less environmentally-damaging coal. From the 16th century onwards woodcutters feeding the ravenous Imperial kilns had devastated large areas of the woods around Vienna (M itch ell 2009 , 223).

Actual archaeological remains of brick production sites from the early modern period are very rare, but a kiln probably dating to the 1700s was excavated 2008 at the manor house in Stetteldorf am Wagram, Lower Austria. A short report about the kiln, which had four arched stokeholes, but was not permanently vaulted so that raw bricks were used each time to create a superstructure, will be published soon (from Martin K renn / D oris Sch ö n in Fundberichte aus Österreich 49, 2008). Kilns of this type remained in use in some areas until the early 20th century, for example in Eastern Styria (Honegger 1990, 16–19).

The brick industry in the 19th century

In the mid-18th century the monopoly over kiln ownership allowed to landowners (aristocracy, religious institutions, local authorities) was abolished, leading to further growth in brickmaking, and from the early 19th century onwards the character of the industry changed fundamentally. An outward sign of the new times was the use of brick marks created by bolting pieces of metal on to the base of the moulds, resulting in deepened/negative marks (Fig. 5). These had existed earlier, but largely replaced raised marks during the course of the 19th century. They also made more sophisticated marks possible, typically heraldic-style devices, but also including anthropogenic and architectural designs (Zs utty 2005 , Register 2007). Bricks in Austria also became slightly larger again, typically rising from 26–28 cm to 28–30 cm length (Mitchell 2009, 223). Bricks in Hungary in contrast appear to have been of this length from a much earlier date (see L ö ve 2002 , Register 2007). Unusually large bricks (more than 40 cm in length) also appear occasionally across the area – in the Baroque period they were used...
for cornices (Fig. 6) and in the 19th century to protect pipes and cables, as the author has observed in Vienna.

However, the industrial age of bricks in Austria-Hungary is dominated by two strong personalities, Alois Miesbach (1791–1857) and his nephew and successor Heinrich Drasche (1811–1880). Originally from Moravia, these were the founders of the Wienerberger company, still a major multinational to this day (Glausi 1974, Merk 1966). Miesbach took over his first brickworks at Inzersdorf on Vienna’s southern edge in 1820, where 1.5 million bricks were produced that year. Following a policy of insistent takeovers and expansion thereafter, the company increased their annual production to an extraordinary 188 million bricks in 1869. Miesbach’s and Drasche’s success could not have occurred in any other epoch. It was based on many factors, including the high-quality blue clays in the southern Vienna area, which Miesbach systematically fired with coal. The company further offered a wide range of products, including roof tiles, terracottas, pipes and fire bricks, and crucially not only invested in the brick industry, but also became a major player in the coal, canal and later the building industries, so that it controlled the entire industrial process. From 1848 onwards the company both supplied and exploited the developing railway network, so that Drasche/early Wienerberger bricks crop up a long way from Vienna in rural Styria (e.g. at Admont, Styria; Hustitschka 1999, 9) and Upper Austria (e.g. in Mauthausen village, Upper Austria, as seen by the author).

Miesbach also enjoyed good relations with the government, which meant that he was allowed to place the Habsburg double eagle between his initials on his bricks. In 1838, after catastrophic floods in Pest, he was invited to set up kilns in the Hungarian capital (Kásár 2005, 60–61), an opportunity which led not only to his use of the Hungarian coat of arms (Fig. 7), but ultimately to the founding of the “Pest Coal and Brickworks Company” in 1869. In this year the Austrian part of the concern also became a public limited company under Drasche’s chairmanship. Later in the century it expanded to Croatia, Slovakia and Bohemia. Wienerberger had at no point a monopoly, but by re-organising the brick industry on an Imperial scale Miesbach and Drasche made their company for a period the largest brick company in Europe. Drasche’s bricks are very visible in Vienna to this day.

Drasche was also the first brickmaker to introduce the so-called “ring kiln” to Austria in the 1860s. Invented by a German, Eduard Friedrich Hoffmann, these oval or circular structures allowed the fires of the kiln to be moved around and production maintained permanently, leading to a substantial increase in produc-
tivity. The fires were controlled from openings in the floor of the storey above and the heat used to dry the raw bricks (Firósz 2000, Mérik 1966, 57–58, Kádár 2005, 65–66). Several ring kilns survive, mostly unused, in Austria to this day, although they continue to disappear (Kügelstättler 2003).

The brick industry after 1914

Before the First World War it was very possible to speak of an Austro-Hungarian brick industry. A "brick region", which had begun to grow together in the late middle ages, was further consolidated in the early modern period under the impact of political unity and military necessity. In the 19th century industrialisation meant the emergence of a very large company, which spread across the Habsburg Empire. This came to an end after 1914. Economic crisis, during and after the war, lead to the contraction and restructuring of the industry. Wienerberger shed a large part of its extra-Austrian involvements (Iglauer 1974, 74–77) and the gaggle of nation states which took the place of the empire meant that there was no longer necessarily a trajectory in brick development common to a large part of Central Europe.

In Austria after 1918 rapid technological development led to the appearance of wholly new, machine-pressed brick types, for example of bricks with holes in them, which were lighter and more easily dried and fired, and of bricks designed for dividing walls. Handmade bricks had largely died out by the mid-century. In 1921/27 the brick format 25 x 12 x 6.5 cm was introduced from Germany, mainly because of the metric system. As can be observed in countless buildings, the "German format" bricks (in various slight variations) rapidly replaced the traditional "Austrian format", which was abandoned altogether in 1948. Brick marks for their part are, in an era without moulds, stamps, which are rolled onto the bricks at no particular point by machines (Koller/Schirmböck 1980, 78–84). A similar modernisation presumably took place in other former Habsburg countries, but the Slovak catalogue of historic brick marks (see below) seems to indicate that the Austrian format and the old-fashioned brick marks remained popular in that country for longer than was the case in Austria (Regiester 2007). Today bricks are made in a wide range of formats by machines and fired in so-called "tunnel kilns", the bricks are moved on a conveyor belt through various production stages and kiln zones (Honegger 1990, 62–68). The homogenising role of the Habsburg Empire has been taken over by the European Union, which now regulates format and standards. Following the collapse of the "communist" states, Wienerberger, alongside other companies, has expanded back into those areas it first encountered from 1838 onwards.
The future for historic bricks

A forthcoming, substantial publication from the Austrian Department of Monuments prepared by this author among others – about the excavations at the Stallburg (Imperial Stables) in 2004–2005 – will illustrate the many uses of bricks for archaeologists. Not only do bricks allow an archaeologist to rapidly get his or her bearings on site, but in the Stallburg post-excavation process brick marks have been used for the 18th to 20th centuries to date some phases more accurately than coins or pottery. They show that one building was built with the rubble of another and help to identify which brickworks supplied the building site, information not preserved in the written record. Brick marks are routinely used to date or discuss post-medieval objects uncovered in the urban environment (e.g. Mitchell 1999, Kreißn/Mitchell 2006). In the analysis of standing buildings the marks are not of course usually visible, but even in still-standing walls they sometimes show themselves, allowing the dating of post-medieval phases (e.g. Mitchell 2001, 738, Mitchell/Schön 1998, 28). More common is the use of formats to rule in or rule out possible datings, exploiting the difference between medieval and modern formats or the presence of fortification bricks for example (e.g. Buchinger et al. 2008, Kaltenegger/Mitchell 2002, 387–391).

On-site this means that the formats and marks present have to be recorded for each context. A catalogue of bricks including measurements and with photos of marks should be prepared and discussed with the specialists (see below). Care should be taken in cleaning the bricks as small differences in the marks can lead to dates several decades apart. It is obvious that such behaviour generally adopted will not only lead to an increased interest in bricks, but also enhance historical archaeology in general.

Research into historical bricks in Central Europe largely relies on unpaid, but certainly not unprofessional enthusiasts. In Austria the central institution is the Vienna Brick Museum in the 14th district (Karl Koller, Gerhard Zsutty), an invaluable resource for historical archaeologists, which houses a collection (data bank) of more than 10,000 objects and a large, enthralling exhibition, which includes a great deal of information about brick technology. The museum also publishes brochures at irregular intervals (e.g. Zsutty 1996). There are other museums in the provinces, e.g. at Klagenfurt (Carinthia) and Eggenburg (Lower Austria), and across the region local heritage museums display bricks from their area or the collections of local enthusiasts, e.g. at Šahy (Slovakia), Feldkirchen (Carinthia) and Enns (Upper Austria) (Peschel-Wacha 2001). In Hungary there is even a brick collectors’ club, “monarchia” (chair: Béla Herczig), with around a hundred members from all walks of life. Their twice-yearly meetings feature talks from members, who spend time in the archives researching the industry in their area, but also considerable swapping of marked bricks (Fig. 8). A great deal of knowledge about bricks exists in Hungary, which has been tapped only partially up to now (Lövei 2002, Kádár 2005). In Slovakia a group around the archaeologist Peter Nagy has installed an exhibition at the Archaeological Museum in Bratislava and produced a catalogue of around 600 brick marks found in Slovakia, to which many collectors have contributed data (Register 2007). This is also on-line (www.laterarius.eu).

The Slovakian initiative shows us that archaeologists stand to gain a great deal by working with collectors. These are not comparable to the people with metal detectors who plunder archaeological sites. A marked brick taken from a ruined building by a collector is likely to be one of hundreds or thousands present on-site and although occasionally bricks turn up on ebay, this is not a way to get rich. The Hungarian collectors appear to be bursting to exhibit their collections and share their knowledge. There is a room for many more publications and for student projects around questions such as format, technology, brick architecture and brickmakers’ migration in the late medieval and early modern periods. Collectors often do not have the resources to tackle these questions and archaeologists and historians must take up the slack. It would be very useful if the written sources about bricks, the research into which has been pioneered by the Vienna Brick Museum (e.g. Schirmböck 1970, Zsutty 1996), particularly the mer-

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2 The publication will appear in the series Fundberichte aus Österreich. Materialheft A.

3 Attempts to use format to date far more precisely (Schirmböck 1970, Koller/Schirm böck 1980) are not employed by this author for reasons explained elsewhere (Mitchell 2009, 217–218).
cantilist-period regulations, were to be brought into the public arena, either in print or on-line. Guidelines for archaeologists might also be helpful. Archaeologists should not mention bricks in their reports without mentioning format and marks found. “Extra” marked bricks should be given to museums or collectors instead of gathering dust in depots. Research has necessarily to be trans-national in character – the Slovakian group has launched the idea of an on-line data base of brick marks from across the Habsburg monarchy area into which dozens of enthusiasts could pour their results.

For all these reasons bricks are likely to grow in significance for archaeologists working in Central Europe in the period ahead, leading to a further deepening of our knowledge of this key artefact.
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