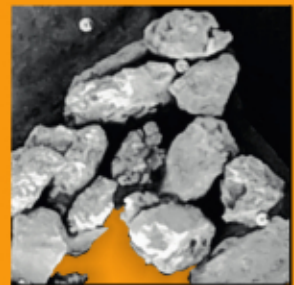
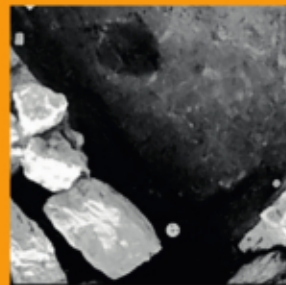
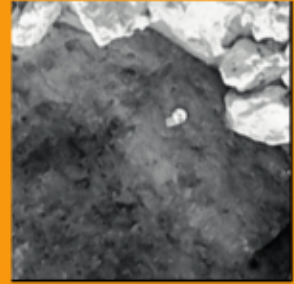
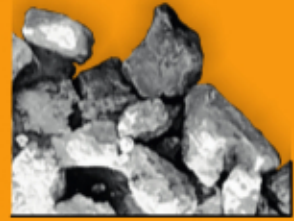
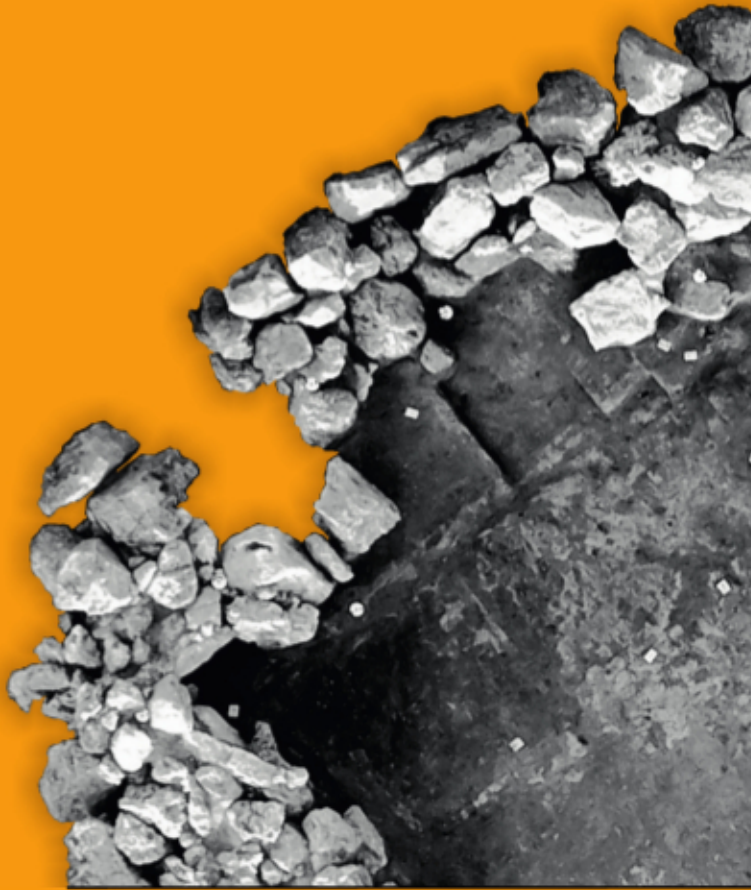


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ex Instituto Archaeologico Universitatis de Rolando Eötvös nominatae



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Animal and human footprints on Roman tiles from Brigetio

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Abstract

Brigetio (Komárom-Szöny, Hungary), the garrison of the legio I adiutrix, was one of the major towns of Roman Pannonia. Research excavations in the civil town beginning in 1992, uncovered large quantities of ceramic building material, mostly tegulae and imbrices. From the so-far processed roughly 500 Roman tile fragments in the collection of the Klapka György Museum of Komárom, 21 bore the impression of animal or human feet or hand. The ten dog, five cat, two sheep/goat and one chicken footprint probably all belonged to domestic animals kept around the tiler. Among the human footprints there is a well-preserved, almost complete impression of a hobnailed children's shoe. All the tiles in question were almost certainly manufactured in the legionary tiler of Brigetio during the 2nd and 3rd centuries AD.

Introduction

Animal and human footprints on Roman bricks and tiles are fairly common, but are rarely studied in detail. Tiles showing different kinds of imprints and markings are usually picked up at field-walks and excavations as interesting finds, but they are seldom utilized for gaining information about the production process of the tiles and the environment of the tiler. Different kinds of deliberate markings, such as signatures, stamps, tally marks and graffiti, were put on the soft surface of the tiles intentionally during the production process, but imprints, for example impressions of animal and human feet, hands, plants, textiles etc. appeared on them mostly by chance.

The different kinds of Roman tiles were made by hand with the aid of wooden moulds. After a tile was formed, it needed drying before it could be fired. Depending on the weather, the drying process could have taken up to two weeks, during which time the tiles were laid on the ground, probably under some kind of a roof.¹ This was the time when most of the unintentional marks occurred on their still soft upper surface, most frequently in the form of animal and human footprints.

The study of different traces and tracks on archaeological finds falls within the realm of ichnoarchaeology, a promising field of multidisciplinary research. Animal and human footprints on bricks and tiles represent an ideal material for ichnoarchaeological study for several

1 About the manufacture of Roman ceramic building material: BRODRIBB 1987; WARRY 2006.

reasons. Whereas archaeological footprints are rare on natural surfaces, they are a common find on the surfaces of tiles. Bricks and tiles were manufactured in vast quantities for centuries throughout the Roman world, which makes ceramic building material the most frequent find on Roman archaeological sites. The “green” tiles offer a perfect substrate for trace-making because of their soft surface and the fine grain of the clay in which the finest details of a footprint can be recorded. The long, open-air drying made the tiles accessible to a variety of animals and humans to leave their traces on them, which after firing became well-preserved. Consequently, once the various makers of these traces are identified, imprinted tiles can give a good insight into the one-time fauna and environment of the tiliary. It should be stressed that the tiles provide information about the place of their production rather than the place of their recovery, since ceramic building material was frequently transported to great distances.²

The ceramic building material of Brigetio

Research excavations at the civil town of Brigetio started in 1992 and have been led by László Borhy (Eötvös Loránd University, Budapest) and Emese Számadó (Klapka György Museum, Komárom) ever since. The strip houses built at the beginning of the 3rd century AD had adobe walls on stone foundations, were covered with tile roofs, and were partially equipped with hypocaust heating systems.³ The ceramic building material that has accumulated over the 25 years of archaeological research consists accordingly of *tegulae*, *imbrices*, *tubuli* and *lateres* of different sizes. Based on the tile stamps, the vast majority of the tile fragments collected at Vásártér must have been manufactured in the legionary tiliary of Brigetio, on the east side of the legionary fortress of the *legio I adiutrix*. This tile manufacturing workshop on the so-called Kurucdomb was used from the end of the 1st century AD to the middle of the 4th century AD⁴ and apparently supplied not only the legionary fortress with tiles but the *canabae* and the civil town of Brigetio as well.

Twenty-one of the so far processed roughly 500 tile fragments from the civil town bore one or several footprints of animals or humans.⁵ Ten dog, five cat, two goat/sheep, and one domestic hen footprint has been identified along with two sandalled footprints and one impression made by four fingers of a hand. All footprints appeared on *tegulae*, which is hardly surprising considering the fact that most of the tile fragments belonged to *tegulae* and, according to previous research, most of the footprints tend to appear on *tegulae* or *lateres* and almost never on *imbrices* or *tubuli* at other Roman sites as well. The reason for this is debated, but there are two plausible explanations. It is possible that only the flat *tegulae* and *lateres* were dried on the ground, whereas *imbrices* and *tubuli* were dried on a raised rack.⁶ Also, an *imbrex* or *tubulus* that was trodden on by an animal was probably completely ruined and discarded before firing.⁷

2 BAUCON et al. 2008, 45–46; WARRY 2006, 123; PEACOCK 1977.

3 DOBOSI – BORHY 2015.

4 PAULOVICS 1934, 139–140; PAULOVICS 1938, 7; LŐRINCZ 1981, 78.

5 Some of these were mentioned in a manuscript written by L. O. Kovács who compiled a catalogue of the building material collected at Komárom/Szőny-Vásártér up to 2001: KOVÁCS 2002.

6 BRODRIBB 1987, 125; HAVAS 2005, 32.

7 CRAM – FULFORD 1979, 205.



Fig.1. Animal footprints on the Brigetio tiles (Photos: L. Dobosi).

Animal footprints

The animal footprints occurring on Roman tiles provide a good supplement to other archaeological materials of a site, such as animal bones. The bone finds of a site mostly give us information about the animals that died or were processed on the site, such as the livestock kept for their meat, household pets and hunted wild animals. Footprints offer evidence for the presence of animals living in or near a site, such as domestic animals and straying wild animals, including small mammals and birds.⁸ Tracks can also supply information about some things that skeletal remains cannot: for example, the hide, claws and pelage of the animals, moreover, they can indicate the gait and behavior of the tracemaker.⁹

In a few cases both the animal bones and the footprints of a site are studied, making a comparison possible. Such comparisons show that the picture given by the skeletal remains is in fact different from the one offered by imprinted tiles. In the case of Castro de Viladonga in Spain, for example, 73.2% of the bones belonged to cattle (*Bos taurus*), 20.7% to goats (*Capra hircus*)/sheep (*Ovis aries*), 4.9% to domestic pigs (*Sus scrofa*) and 1.2% to horses (*Equus caballus*), whereas 9 of the 17 footprints were made by dogs (*Canis familiaris*), 6 by goats /sheep and 2 by cats (*Felis catus*).¹⁰

At other sites, however, footprints are the only source on the animals living in the area. In the neighborhood of Lousada, Portugal, the soil is highly acidic, causing the animal bones to decompose, and making the footprints the only way to attest the presence of pigs, goats/sheep and cats at the site.¹¹

Most common are the footprints of different domestic animals: dogs, cats, and small ruminants, which is a sign that these animals were straying around the tilery, instead of being kept in an enclosed area. The presence of livestock in a tile manufacturing workshop might suggest that the tilemakers practiced animal husbandry in their free time, or the animals of a nearby farm or garden could wander around the drying area.¹² In a detailed study of the Silchester tiles L. Cram and M. Fulford identified the footprints of 91 individual animals, almost exclusively belonging to domestic animals with one possible crow and a possible fox footprint. Fifty-five of the impressions were made by dogs or cats, 22 by small ruminants, 6 by cattle, 7 by birds (mostly chicken), and 1 by a horse.¹³ The footprints of Vindolanda (Chesterholm, Northumberland, England), which is the largest collection of footprints with 111 imprinted tiles, mostly belong to domestic animals as well. Over 80% of the tracks were made by dogs, other tracks include those of semi-feral cats, domestic pigs, sheep, goats and cattle.¹⁴

The presence of the footprints of wild animals, on the other hand, makes it reasonable to assume that the drying area was not surrounded by a fence, and was therefore readily accessible for wildlife. A good example is the Israeli site of Kefar 'Othnay, near the camp of the *legio VI ferrata*, where, beside the dog and cat pawprints, the footprints of small wild carnivores, such

8 CRAM – FULFORD 1979, 201.

9 BENNETT 2012, 8.

10 CASTRO ÁLVAREZ – GARCÍA-LOMAS 1996, 11–12; SOUSA – NUNES – GONÇALVES 2007, 61.

11 SOUSA – NUNES – GONÇALVES 2007, 61–73.

12 CRAM – FULFORD 1979, 201; WARRY 2006, 122.

13 CRAM – FULFORD 1979, 205.

14 BENNETT 2012, 8; HIGGS 2001a; HIGGS 2001b.

as badger (*Meles meles*) also appear on the tiles.¹⁵ Another example could be the Roman tilerly of Casa Campacci in Livorno, Italy, where two thirds of the 18 tile fragments were covered with footprints belonging to wild animals: one to a fox (*Vulpes vulpes*), two to wild cats, one to a weasel (*Mustela nivalis*), two to roe deers (*Capreolus capreolus*) and six to wild boars (*Sus scrofa*). The footprints of domestic animals at this site were limited to dogs and cats.¹⁶

Although most imprinted tiles bear the tracks of mammals, sometimes the traces of other animals, birds or amphibians are preserved as well. One of the most surprising is an impression on a tile from Aquincum (Budapest-Óbuda, Hungary): the imprint of a frog's abdomen.¹⁷

Unfortunately, in Brigetio the animal bone material has not been evaluated yet, so the footprints can only be compared with the bone finds from Pannonia in general.

According to archaeozoological research the most common domestic animals in Roman Pannonia were cattle, sheep/goat, pig, dog, cat and domestic fowl (*Gallus domesticus*), but some others were also present, such as horse, ass (*Asinus asinus*), goose (*Anser domesticus*) and pigeon (*Columba domestica*). Wild animals attested on Pannonian sites with large bone materials include aurochs (*Bos primigenius*), red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*), wild swine, wild cat, badger, fox, wolf (*Canis lupus*), beaver (*Castor fiber*), brown hare (*Lepus europaeus*) and 16 species of wild birds.¹⁸ The tracemakers of the Brigetio tiles are probably to be expected from among these animals.

Most frequent are the canine footprints on the tiles from Brigetio (Fig. 2). The impressions made by the feet of domestic dogs, wolves or foxes can be recognized by the four oval digital pads with claw-marks typically visible. The overall outline of the footprint is oval, its length being greater than its width. The hind foot leaves smaller and narrower impressions than the forefoot. The tracks of dogs and wolves would be morphologically almost indistinguishable, but the footprints of wolves are on average larger than those of the largest Roman domestic dogs. The shape of a fox's footprint, is a bit different with a more elongated overall shape, relatively smaller digital pads, and longer and sharper claws. The areas between the pads of the fox's foot are covered with coarse hair, which can sometimes leave an impression in some substrates.¹⁹

All ten canine footprints in Brigetio tiles can be identified as tracks of domestic dogs. The Romans kept large numbers of dogs in Pannonia which were extremely variable in terms of size and body proportions. S. Bökönyi found five different size groups among the dog remains from TÁC-GORSIUM (Hungary), but emphasizes the fact, that Romans did not always keep different dog breeds separately, except in the case of luxury dogs. In consequence, watchdogs, herding dogs and pariah dogs could interbreed with each other.²⁰

The measured width of the Brigetio footprints ranges from 27 to 64 mm. Because of the proportional variation of dogs, it is impossible to predict withers height accurately from the size of the footprints, especially in the case of brachymel (dwarf) dogs, where the relatively big paw would

15 BAR-OZ – TEPPER 2010, 245–247.

16 SAMMARTINO – BISCONTI 2010, 18–21.

17 HAVAS 2005, 32.

18 BÖKÖNYI 1984, 14–15.

19 BANG – DAHLSTRÖM 2006, 67–70; MURIE 1974, 85–108; BENNETT 2012, 20–23.

20 BÖKÖNYI 1984, 66–92; BÖKÖNYI 1988, 320–323.

predict a taller withers height, and in the case of cursorial dogs with gracile build, where the relatively small foot would predict a smaller withers height than the actual dimensions of the animal.²¹ The wide size range of the footprints, however, does indicate that the dogs present in Brigetio must have varied considerably in size, and probably in type as well.

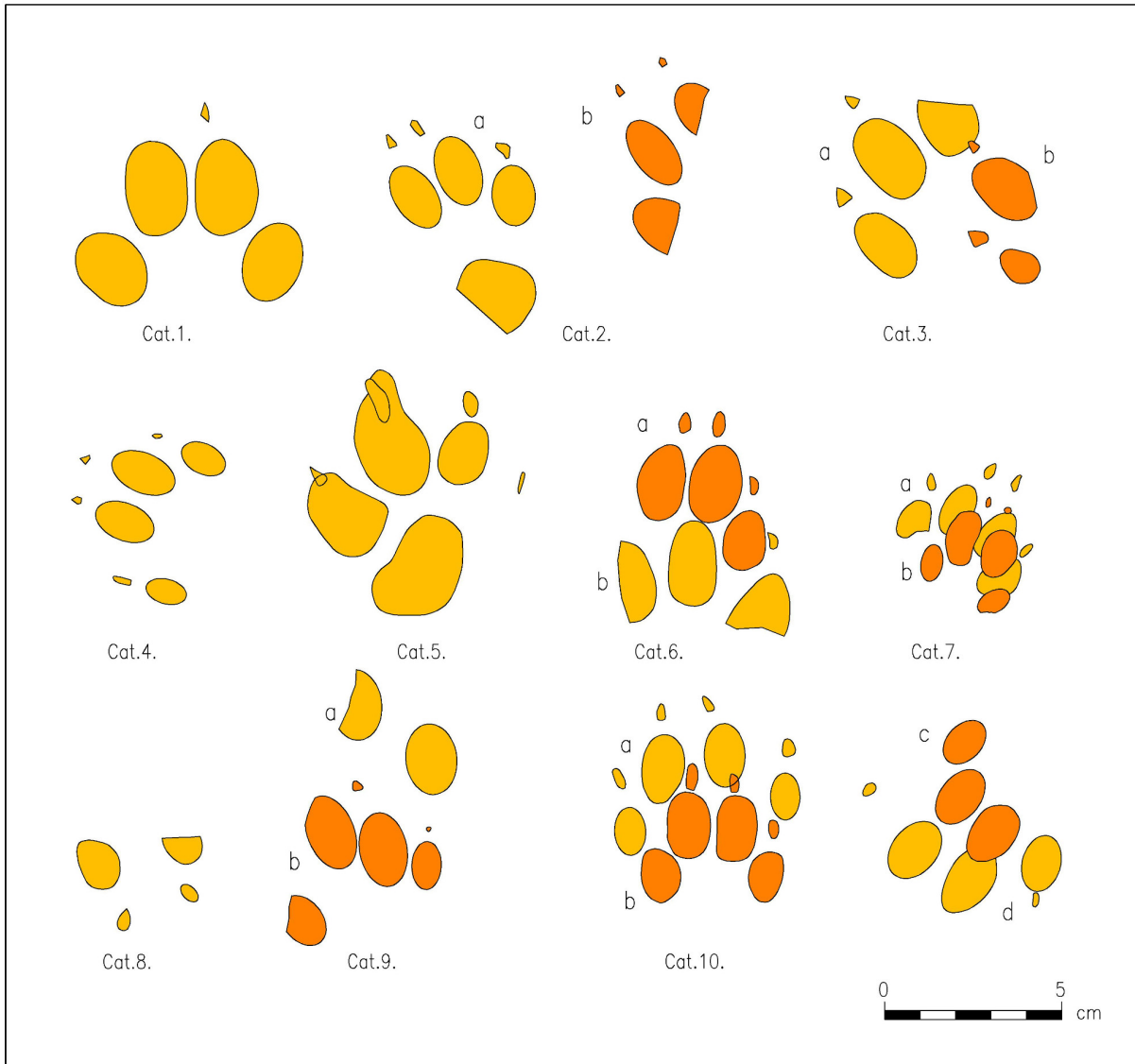


Fig. 2. Dog footprints from Brigetio (Drawings: L. Dobosi).

Four of the tiles carrying dog footprints were preserved in such a good state as to show the fine details of the foot, like the texture of the foot pads.²² According to the results of D. Bennett's experiments on modern dogs, the soft clay is capable of preserving also the impression made by the fur growing on the animals' feet, unless the dog has a short coat with little or no hair on the bottom of his foot.²³ In the case of the Brigetio footprints, one tile showed hair impressions made by the fur growing from between the dog's toes and on the bottom of its foot.²⁴

21 BENNETT 2012, 27–28.

22 **Cat. 2., Cat. 5., Cat. 6. and Cat. 7.**

23 BENNETT 2012, 8.

24 **Cat. 6.**

Six of the tiles carry two or more footprints, sometimes overlapping each other.²⁵ This makes it possible to predict the probable gait of the animal. In four cases the hind foot is registered directly in the front track,²⁶ which may indicate a walk or a slow trot, in one case the toes of the hind foot are ahead of the toes of the forepaw possibly suggesting a trot.²⁷

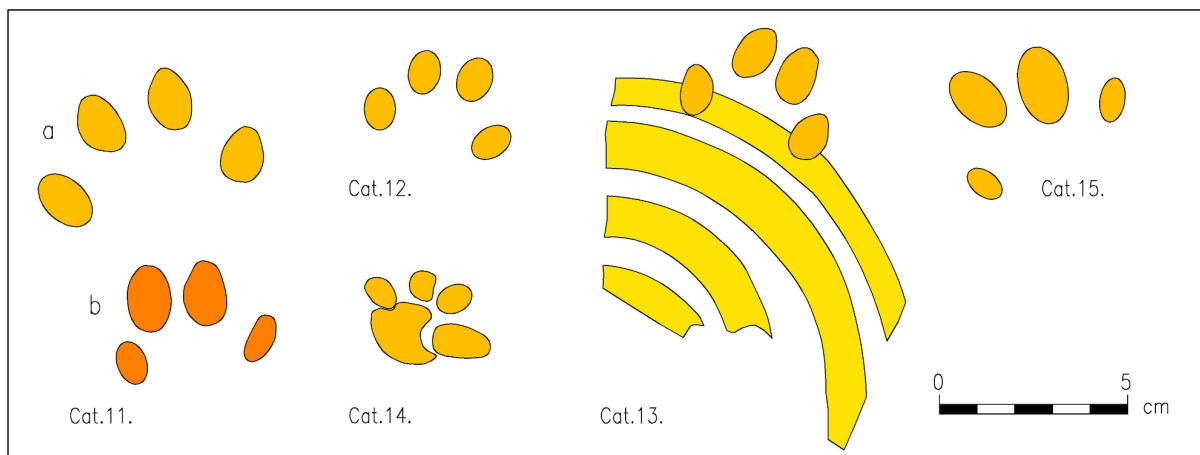


Fig. 3. Cat footprints from Brigetio (Drawings: L. Dobosi).

Five of the impressions on Brigetio tiles were made by the feet of cats (Fig. 3). Cats have digitigrade footprints very much like those of dogs, but cats' footprints are smaller, their outline is nearly circular and the claws are typically not visible. The tracks of domestic cats (*Felis catus*) and wild cats (*Felis sylvestris*) are almost impossible to tell apart, except that the footprints of wild cats tend to be bigger. According to observations, cats' toes tend to spread apart when they are moving at a speed or traversing wet or soft surfaces.²⁸

While wild cats were native to this region, domestic cats were introduced to Pannonia by the Romans, the earliest domestic cat remains being those from TÁC-GORSIUM (Hungary) and Budapest-Albertfalva (Hungary). The size range of Roman cats was wide, but most of them could be described as small. They were mostly kept as pets and to kill rodents.²⁹ The footprints on the Brigetio tiles, probably belonged to middle- and large-sized cats, but the presence of wild cats cannot be excluded.

Three footprints on two Brigetio tiles can be attributed to small ruminants such as sheep or goat (Fig. 4). Sheep and goat (*Caprinae*) were the second best represented domestic animals in Roman Pannonia (after cattle). To tell apart the hoof prints of sheep and goat is very problematic, just as it is to distinguish between them on the basis of their bones. In Roman imperial sites the number of sheep is usually much higher than that of goats, the proportion ranging from 4:1 to 20:1. This can be readily explained by the fact that sheep were valued for their wool in contrast to goats which made lots of damage to the forest.³⁰ Domestic sheep were imported from Italy to Pannonia by the Romans where they were cross-bred with local Iron Age types.

25 Cat. 2., Cat. 3., Cat. 6., Cat. 7., Cat. 9. and Cat. 10.

26 Cat. 3., Cat. 7., Cat. 9. and Cat. 10.

27 Cat. 6.

28 BENNETT 2012, 20; BANG – DAHLSTROM 2006.

29 BÖKÖNYI 1988, 311–312; BÖKÖNYI 1984, 65.

30 BÖKÖNYI 1984, 37–41 and 46.

This resulted in all sorts of variations in shape and size.³¹ Domestic goats were most probably only kept by the poorer population for its milk.³²

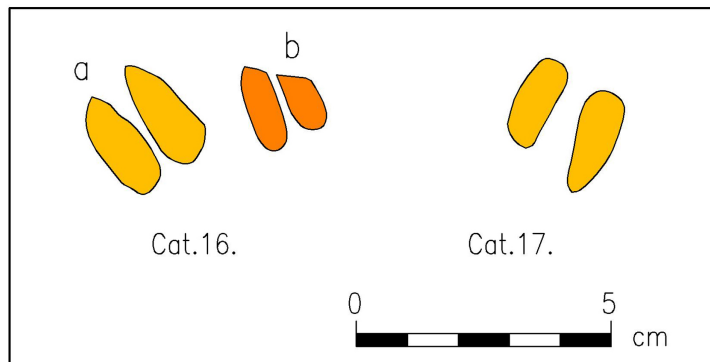


Fig. 4. The hoofprints of small ruminants from Brigetio (Drawings: L. Dobosi).

All three Brigetio footprints are of small size, belonging to juvenile animals, lambs or kids, so the tiles were most probably made in late spring or early summer.

The last impression was made by a bird, and can be identified as the footprint of a domestic hen (Fig. 5).

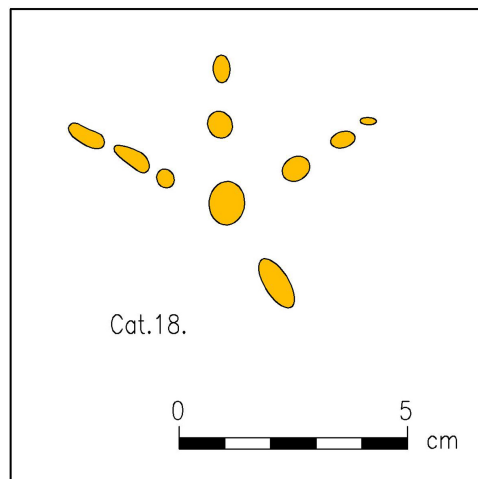


Fig. 5. The footprint of a domestic hen from Brigetio (Drawings: L. Dobosi).

One question arises in research every now and then: namely, whether all the animal footprints occurred on Roman tiles by accident, or at least some of them might have been put on the tiles intentionally, with human aid. Putting animal footprints on tiles could be motivated by superstitious beliefs.³³ Although this is a possibility one cannot exclude, most researchers do not consider it very likely.

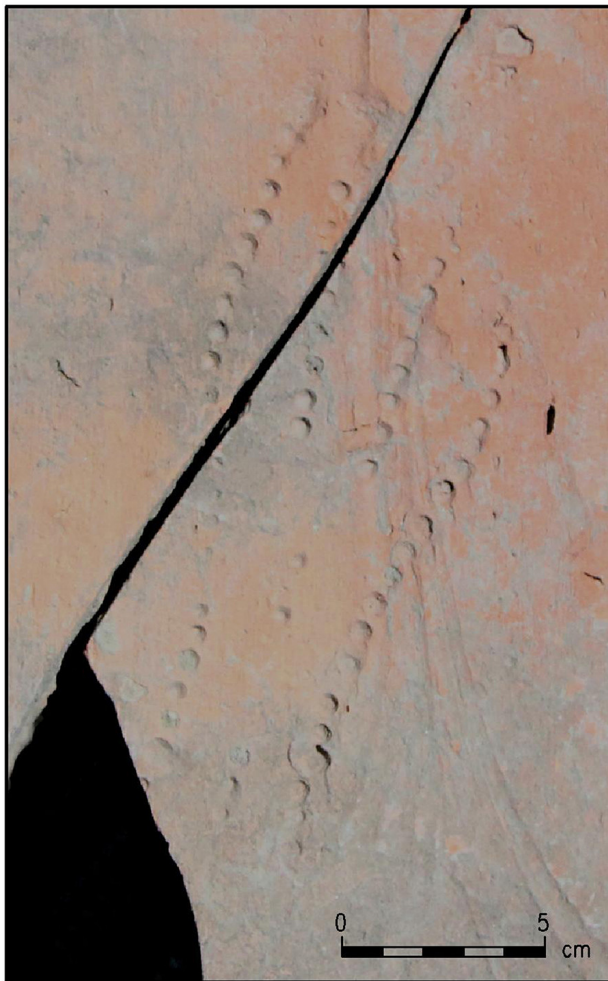
31 BÖKÖNYI 1984, 37–41; BÖKÖNYI 1988, 178–179.

32 BÖKÖNYI 1984, 46; BÖKÖNYI 1988, 197.

33 SPITZLBERGER 1968, 88; HOFFMANN 1994, 28–30.

Human footprints

From the 21 imprinted Brigetio tiles 3 bear human impressions: 2 of the impressions are of sandalled feet and 1 is the impression of four fingers of a hand (Fig. 6–7).



Cat.20.



Cat.21.

Cat.19.

Fig. 6. Human impressions on Brigetio tiles (Photos: L. Dobosi).

One of the footprints is the almost complete impression of a hobnailed right shoe, overprinting the tilemaker's signature. The impression was made when the "green" tile was already quite hard, since the leather sole itself did not sink in the clay, only the hobnails made impressions. The 70 metal studs ran around the edge of the sole and in the inside of the sole in rows: in one row under the heel and in two rows under the toes, leaving holes of 2–7 mm in diameter. The almost complete length of the footprint is 185 mm, so the original length of the complete outer tread sole (the walking surface) of the shoe must have been around 210 mm (taking into account the 5–10 % shrinkage of the tile). It is considered risky to estimate the foot size from the size of the outer tread sole, because it could be 10–30 mm larger than the insole, depending on the style.³⁴ In this case, the insole must have been about 180–200 mm long, which means that the shoe belonged to a child of about 8–10 years of age. The pattern of the hobnails seems to confirm this conclusion. The studs used sparingly, with large gaps and without stylized

³⁴ GREENE 2014, 30–31; DRIEL MURRAY 2007, 360.

patterns on the tread sole usually means a children's shoe of lower quality.³⁵ In comparison, the adult male shoe impression on a tile from Novae (Svištov, Bulgaria) had a length of about 270 mm and the tread sole was densely covered with studs.³⁶

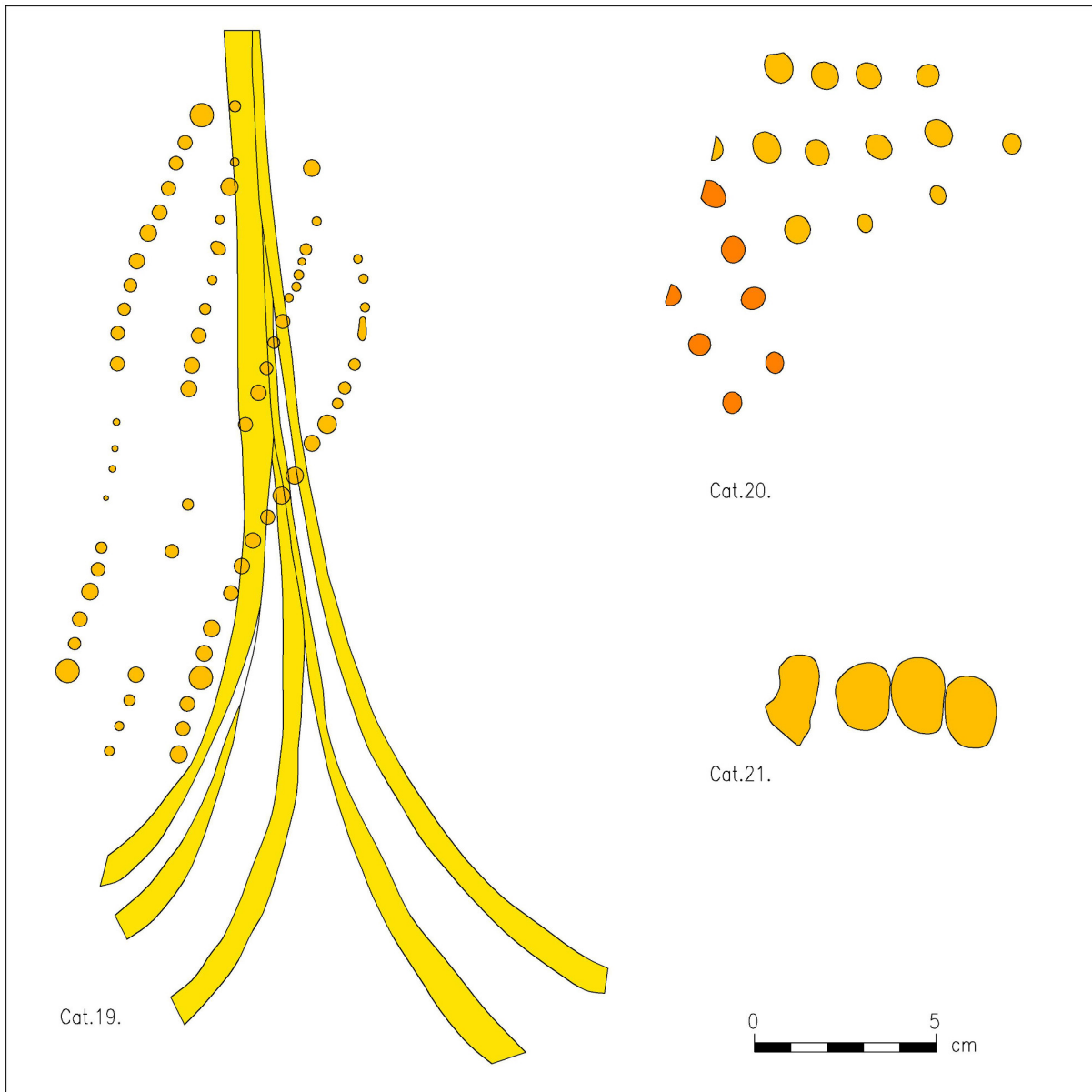


Fig. 7. Human impressions on Brigetio tiles (Drawings: L. Dobosi).

As children's shoes were generally similar to those of adults,³⁷ the Brigetio footprint could have been made by any of the shoe types that were hobnailed. Hobnailed shoes appeared first in the 1st century BC, were in fashion up to the end of the 3rd century AD and disappeared sometime during the 4th century AD. They were worn by both soldiers and civilians, men, women and children.³⁸ In fact, from the different kinds of Roman shoes the *carbatina* was the only one

35 GREENE 2014, 33; GÖPFRICH 1986, 15–16; BUSCH 1965, 171–172, 175.

36 BIERNACKI 1976.

37 GREENE 2014, 31.

38 VOLKEN 2011, 316.

that never had metal studs on its sole, since it was used indoors.³⁹ The *solea*, the *caliga* and the *calceus* could all have had hobnails, but the coverage of the whole of the outer tread sole with studs was most characteristic of the *caliga* and *calceus*.⁴⁰

We can see the depiction of a hobnailed shoe on one of the wall paintings from the civil town of Brigetio (Fig. 8). The wall painting found in Komárom/Szöny-Vásártér can be dated to the beginning of the 3rd century AD and portrays two men in tunica (among other things).⁴¹ One of them is wearing a boot with a pair of dark brown socks reaching to the mid-calf. The front part of the boot is open and the shoe laces run through eyelets. The hobnails on the sole are clearly visible on the painting.⁴²



Fig. 8. Hobnailed shoe on a wall painting from Brigetio (Photos: L. Dobosi).

Conclusions

After careful examination of the 21 imprinted tiles of Brigetio (Komárom/Szöny, Hungary) we can conclude that 18 bore the footprints of animals and 3 the impressions of human feet or hand. All of the impressions were on the upper surface of *tegulae*, some of them overprinting the tilemakers' signatures. This indicates that the *tegulae* were laid down on the ground after they were formed in the mould and signed by their maker. The drying area was apparently

39 GREENE 2014, 31.

40 GÖPFRICH 1986, 24; DRIEL-MURRAY 2001, 194; BUSCH 1965, 169, 175.

41 BORHY et al. 2010, 103–109.

42 PÁSZTÓKAI-SZEŐKE – PAETZ GEN. SCHIECK 2013a, 63–64; PÁSZTÓKAI-SZEŐKE – PAETZ GEN. SCHIECK 2013b, 193–194.

accessible for domestic animals kept around the tilery either by the tilemakers themselves, or by someone else on the same grounds. The absence of the footprints of wild animals can mean one of two things: the tilery was surrounded by some kind of a fence or wall, and was thus inaccessible for wildlife, or only that these footprints are yet to be found. In some cases the detailed examination of the footprints allowed to draw some conclusions not only about the species, but also about the size, pelage and gait of the animal.

Both of the human footprints were impressions of sandalled feet. An almost complete, fairly small footprint of a right foot and the impression of four fingers of an equally small right hand attests the presence of children and/or women around the tilery.

The vast majority of the tiles collected at Komárom/Szőny-Vásártér were manufactured in the legionary tilery of the *legio I adiutrix*, on the so-called Kurucdomb, near the legionary fortress of Brigetio.

Catalogue

As already mentioned, all of the footprints occurred on *tegulae*, most probably manufactured in the legionary tilery of Brigetio, sometime between the 1st century AD to the 4th century AD. It has to be noted, that the measured footprints are 5–10 % smaller than the original footprints were, due to the shrinkage of the tiles during the drying and firing process.

When identifying the footprints, the handbooks of O. J. Murie and P. Bang – P. Dahlström were used, along with the papers written on animal imprinted Roman tiles, listed in the bibliography.

Footprints were measured at their widest and longest point. In the case of canine footprints, the length of the footprint is the length without the claws.

Cat. 1.

Inv. no.: 2011.J13-K13.036.207.

Size of tile fragment: 125×75×25 mm

Type of footprint: *canidae*

Size of footprint: 64×46 mm (complete width/incomplete length)

Description: Deep impression of a dog's four digital pads with one claw. Heel pad not visible. The size of the footprint suggests a large dog, probably about the size of a German shepherd.

Cat. 2.

Inv. no.: 2001.GE.IX.1.

Size of tile fragment: 110×120×26 mm

Type of footprint: *canidae*

Size of footprint: a, 31×56 mm (incomplete width/complete length); b, 42×35 mm (incomplete width/incomplete length)

Description: Two incomplete paw prints of a dog, pointing in the same direction. Footprint 'a' shows three digital pads with claws and the heel

pad, footprint 'b' shows one complete and two fragmental digital pads with claws. The size of the footprint suggests a medium sized dog. Footprint 'a' seems to be made by the dog's right front foot and footprint 'b' is the impression of the right hind foot. This indicates a side-trot.

Cat. 3.

Inv. no.: 2011.E21-F21.010.398.

Size of tile fragment: 125×100×26 mm

Type of footprint: *canidae*

Size of footprint: a, 51×40 mm (incomplete width/incomplete length); b, 24×34 mm (incomplete width/incomplete length)

Description: Two incomplete footprints of a dog pointing in the same direction and partially overlapping each other. The digital pads and the claws are deeply imprinted. The hind foot is registered in the track of the front foot, offset by half the width of the track. The size of the footprint suggests a large dog about the size of a German shepherd.

Cat. 4.

Inv. no.: 2001.GE.V.64.

Size of tile fragment: 180×190×28 mm

Type of footprint: *canidae*

Size of footprint: 47×35 mm (complete width/incomplete length)

Description: A shallow impression of a dog's right fore foot with four digital pads and sharp claws. The size of the footprint indicates a medium-sized dog.

Cat. 5.

Inv. no.: 2001.GE.V.37.

Size of tile fragment: 265×120×28 mm

Type of footprint: *canidae*

Size of footprint (incomplete width/complete length): 51×69 mm

Description: An incomplete but deep footprint of a dog that stepped on the still soft flange of a freshly made *tegula*. The size of the footprint suggests a medium-sized dog.

Cat. 6.

Inv. no.: 2013.N16-N17.076.30.

Size of tile fragment: 105×75×27 mm

Type of footprint: *canidae*

Size of footprint: a, 39×34 mm (incomplete width/incomplete length); b, 46×39 mm (incomplete width/incomplete length)

Description: Two incomplete footprints of a dog pointing in the same direction and partially overlapping each other. The digital pads and the claws are clearly visible. The right hind foot is overprinting the right fore, and the hind toes are ahead of the toes of the forepaw, which indicates a trot. This is a case of oblique registration where the angle of divergence between the centerlines of hind and fore prints is about 19 degrees. The size of the footprint suggests a medium sized dog. The impression was made in fine clay which preserved the fine details, such as the texture of the foot pads and the impression of the hair growing from between the dog's toes and on the bottom of its foot, which indicates a dog with long fur.

Cat. 7.

Inv. no.: 2011.L13-L14.006.15.

Size of tile fragment: 100×75×31 mm

Type of footprint: *canidae*

Size of footprint: a, 39×23 mm (complete width/incomplete length); 28×24 mm (complete width/incomplete length)

Description: Two footprints pointing in the same direction, partially overlapping each other. The four digital pads and claws are deeply imprinted on both footprints, neither heel pads are visible. The left hind foot is almost registered in the left front track, where the hind toes are almost level with the front toes, which indicates a slow trot. The size of the footprint points to a smaller dog, roughly the size of a fox terrier.

Cat. 8.

Inv. no.: 2001.K.G.46.

Size of tile fragment: 90×70×21 mm

Type of footprint: *canidae*

Size of footprint: 35×15 mm (incomplete width/incomplete length)

Description: The incomplete impression of a dog's paw with only half of two digital pads and two claws visible.

Cat. 9.

Inv. no.: 2011.E21-F21.010.399.

Size of tile fragment: 120×85×25 mm

Type of footprint: *canidae*

Size of footprint: a, 30×40 mm (incomplete width/incomplete length); b, 49×38 mm (complete width/incomplete length)

Description: Two dog footprints. Footprint 'a' with four digital pads and two claws, footprint 'b' with two digital pads. The size of the footprint suggests a middle-sized dog.

Cat. 10.

Inv. no.: 2007.H13-I13.069.28.

Size of tile fragment: 340×325×30 mm

Type of footprint: *canidae*

Size of footprint: a, 54×31 mm (complete width/incomplete length); b, 40×31 mm (complete width/incomplete length); c, 45×33 mm (incomplete width/incomplete length) d, 32×35 mm (incomplete width/incomplete length)

Description: Two pairs of dog footprints pointing in opposite directions. In the case of footprints 'a-b', the imprint of the left hind paw is registered in the track of the left front paw, just like in the case of footprints 'c-d'. The two sets of impressions

were made by the same dog. The tracks indicate a walk. The footprints belong to a middle-sized dog.

Cat. 11.

Inv. no.: 2007.H13-I13.069.29.

Size of tile fragment: 180×140×22 mm

Type of footprint: *felidae*

Size of footprint: a, 61×35 mm (complete width/incomplete length); b, 43×31 mm (complete width/incomplete length)

Description: The complete impression of two cat footprints pointing in the same direction, with the hind foot almost registered in the front track. The shape of the footprint and the absence of the claws indicate a large cat (*Felis catus/Felis sylvestris*).

Cat. 12.

Inv. no.: 2012.L15-L16.025.69.

Size of tile fragment: 85×55×21 mm

Type of footprint: *felidae*

Size of footprint: 40×28 mm (complete width/incomplete length)

Description: One paw print of a large cat (*Felis catus/Felis sylvestris*) with four digital pads. Heel pad is not visible.

Cat. 13.

Inv. no.: 2011.L14.084.110.

Size of tile fragment: 135×95×22 mm

Type of footprint: *felidae*

Size of footprint: 42×30 mm (complete width/incomplete length)

Description: One paw print of a large cat (*Felis catus/Felis sylvestris*) superimposed over a signature of a semicircular shape drawn with four fingers.

Cat. 14.

Inv. no.: 2001.C17.085.6.

Size of tile fragment: 300×190×27 mm

Type of footprint: *felidae*

Size of footprint: 38×27 mm (complete width/complete length)

Description: One paw print of a cat, which apparently slipped on the wet surface of the raw tile. The impression was made by a middle sized domestic cat (*Felis catus*).

Cat. 15.

Inv. no.: 2001.GE.III-IV.5.

Size of tile fragment: 295×185×31

Type of footprint: *felidae*

Size of footprint: 49×35 mm (complete width/incomplete length)

Description: The impression of a cat's paw with four digital pads, no claws visible. Given the size of the footprint, the cat must have been a large one (*Felis catus/Felis sylvestris*).

Cat. 16.

Inv. no.: 2001.GE.V.48.

Size of tile fragment: 205×145×33 mm

Type of footprint: *bovidae*

Size of footprint: a, 19×23 mm (complete width/complete length); b, 14×18 mm (complete width/incomplete length)

Description: Two hoof prints of different sizes. The bigger one is complete, the smaller one is fragmentary, but the width measured is the total width of the footprint. They are the hoof prints of juvenile domestic sheep (*Ovis aries*) or goat (*Capra hircus*).

Cat. 17.

Inv. no.: 2001.GE.V.49.

Size of tile fragment: 150×120×30 mm

Type of footprint: *bovidae*

Size of footprint: 22×21 mm (complete width/complete length)

Description: One complete hoof print of a juvenile domestic sheep (*Ovis aries*) or goat (*Capra hircus*).

Cat. 18.

Inv. no.: 2001.GE.V.67.

Size of tile fragment: 180×150×25 mm

Type of footprint: *phasianidae*

Size of footprint: 67×57 mm (complete width/incomplete length)

Description: Almost complete impression of the left foot of a domestic hen (*Gallus domesticus*).

Cat. 19.

Inv. no.: 1994.313.967. and 1994.313.968.

Size of tile fragment: 240×270×25 mm and 190×370×25 mm

Type of footprint: *hominidae*

Size of footprint: 70×185 mm (width/length)

Description: Almost complete impression of a right shoe, overprinting a signature drawn with

two fingers. The hobnails run in four rows in the wider part and in three rows under the heel making a widely scattered pattern. The 70 hobnails left shallow and flat impressions 2–7 mm in diameter which indicates that the hobnails were worn-out from long usage. The small size of the impression suggests a small female's or a child's shoe of about 8–10 years of age.

Cat. 20.

Inv. no.: 1994.313.969.

Size of tile fragment: 110×110×30 mm

Type of footprint: *hominidae*

Size of footprint: 98×98 mm (width/length)

Description: Partial impression of two sandalled

feet partially overlapping each other at an angle of 66 degrees.

Cat. 21.

Inv. no.: 2012.C19-D19.069.1.

Size of tile fragment: 155×160×28 mm

Type of impression: *hominidae*

Size of impression: 63×24 mm (width/length)

Description: The impression of four fingers of a left hand on the inside of the flange of a *tegula*, as if someone would have tried to lift the freshly made tile when it was still very soft. The fingers that made the impressions are quite small, and must have belonged to either a female or an adolescent.

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