

Aventicum (Avenches), capital of the *Helvetii*: a history of research, 1985-2010. Part II.

Urban development after A.D. 100, crafts, and finds

Anne de Pury-Gysel

Introduction

The first part of this article in 2011¹ summarized recent results regarding the history of *Aventicum* from the Late La Tène period to c.A.D. 100, based on study of the excavations and on research carried out over the past 25 years. Some of the most important insights included the first recording of various pieces of Late La Tène evidence, that the town of *Aventicum* had already taken form under Augustus and developed into a thriving city within just a few decades, and that the elevation of the settlement to a *colonia* under Vespasian propelled the urban and economic development of the capital of the *Helvetii* (fig. 1).²

The city in the 2nd and 3rd c. A.D. (cf. de Pury-Gysel 2011, 21, fig. 10c)

Intensive urban development continued during the 2nd and 3rd c. in terms of the public buildings, temples, and residential buildings. Large-scale engineering projects were carried out, including the construction of the canal between Lake Morat and the *En Chaplix* quarter, a second water mill (fig. 1 at Y), and the industrial tile yards in *En Chaplix* (fig. 1 in colour at Z) Two new cemeteries in *En Chaplix* and in *Les Tourbières* were established in the late 1st and 2nd c. A.D. (fig. 1 in colour at S).

The theatre and Cigognier sanctuary complex

The Flavian period had seen the construction of large public structures such as the city wall and the forum baths. One may assume that three monumental edifices built in quick succession in the 2nd c. were part of a construction programme launched in connection with the town's elevation to a colony. The period between A.D. 98 and 150 saw the construction of the *Cigognier* sanctuary³ and the theatre⁴ as components of a joint architectural complex, while between 120 and 170 two construction phases of the amphitheatre⁵ were completed (fig. 2). All three edifices lay outside the W edge of the city, the amphitheatre being situated halfway up the SW slope of the hill and partially built into it. Several small earlier buildings (functions unknown) were demolished to make way for the *Cigognier*

1 de Pury-Gysel 2011 with Corrigenda: p. 8, n.15, read *deditio* instead of *deductio*; p. 37, second paragraph, read *Camillius* instead of *Camillus*.

2 This paper summarises and interprets research carried out under my direction of the site (1995-2010) and in the preceding years. The list of references is incomplete; in many cases I have listed only the most recent publications which, in turn, contain references to earlier scholarship. The detailed research results were published mainly in the journal *Bulletin de l'Association Pro Aventico* (BPA) (for a list of 234 articles published between 1887 and 2007 see Brodard *et al.* 2008), the *Documents du Musée Romain d'Avenches*, the *Cahiers d'Archéologie Romande* (CAR) and in the *Jahrbuch von Archäologie Schweiz* (until 2005 the *Jahrbuch der Schweizerischen Gesellschaft für Ur- und Frühgeschichte*).

3 Bridel 1982.

4 Matter 2009.

5 Bridel 2004.

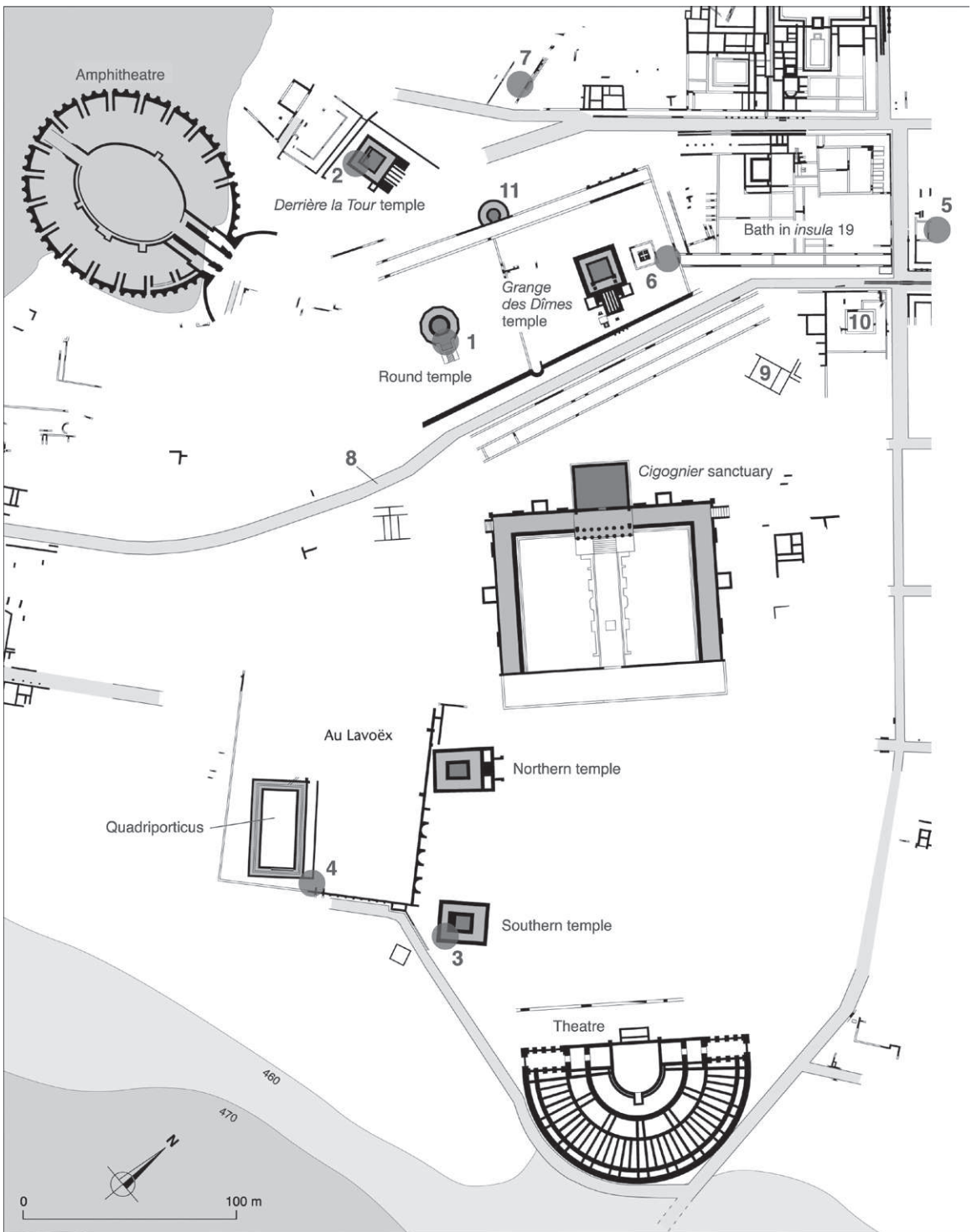


Fig. 2. Schematic plan of the western sanctuary precinct of *Aventicum* in the second half of the 2nd c. A.D. (Morel and Blanc 2008, 38, fig. 3).

1. Middle or Late La Tène grave.
2. Late La Tène grave.
3. Late La Tène grave.
4. Late La Tène grave.

5. Augustan grave?
6. Remains of funeral bed(?), first half of 1st c. A.D.
7. Grave, first half of 1st c. A.D.?
8. Western continuation of the *decumanus maximus*.
9. Building with a religious function?
10. Public building?
11. Public building or building with a religious function.

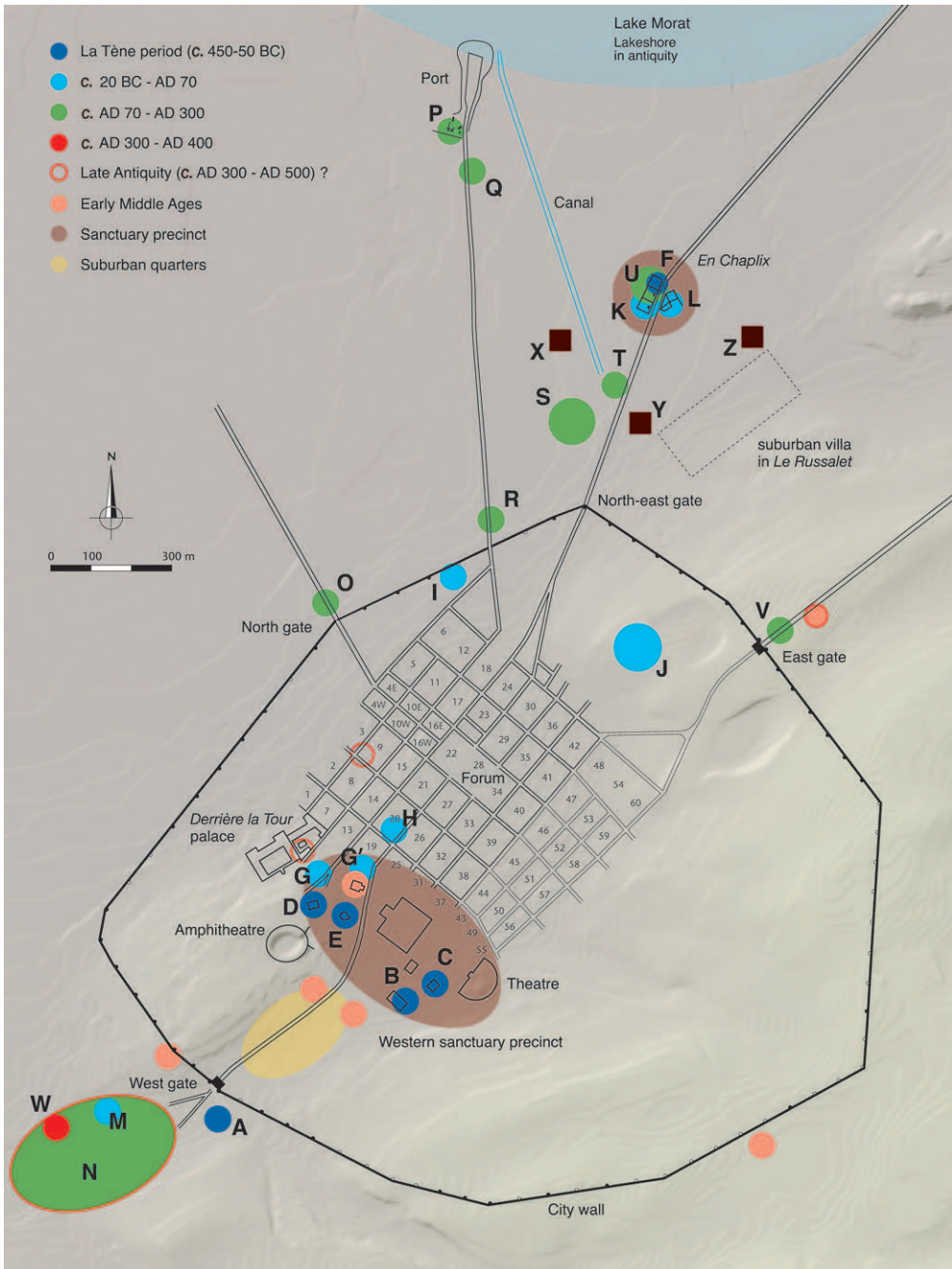


Fig. 1. General plan of *Aventicum*, showing location of the cemeteries, the sanctuary precincts and the W suburban quarter (Site et musée romains d'Avenches, J.-P. Dal Bianco).

- A: Late La Tène features at *Sur Fourches* (see fig. 3).
- B-F: Late La Tène graves.
- G-L: Graves, c.20 B.C.–A.D. 70.
- J: *À la Montagne* cemetery, c.A.D. 30-70.
- M: Gravestone of Iulia Censorina, first half of 1st c. A.D.

- N-V: Graves, c.A.D. 70-300.
- N: Western cemetery, A.D. 70-300.
- P: Port cemetery, A.D. 70-c.200.
- S: *Les Tourbières* cemetery, A.D. 150-250.
- U: *En Chaplix* cemetery, c.A.D. 90-250.
- W: Grave, A.D. 300-400.
- X: Water mill, A.D. 57/58.
- Y: Water mill, A.D. 150-173.
- Z: Tile yard, 2nd-3rd c. A.D.

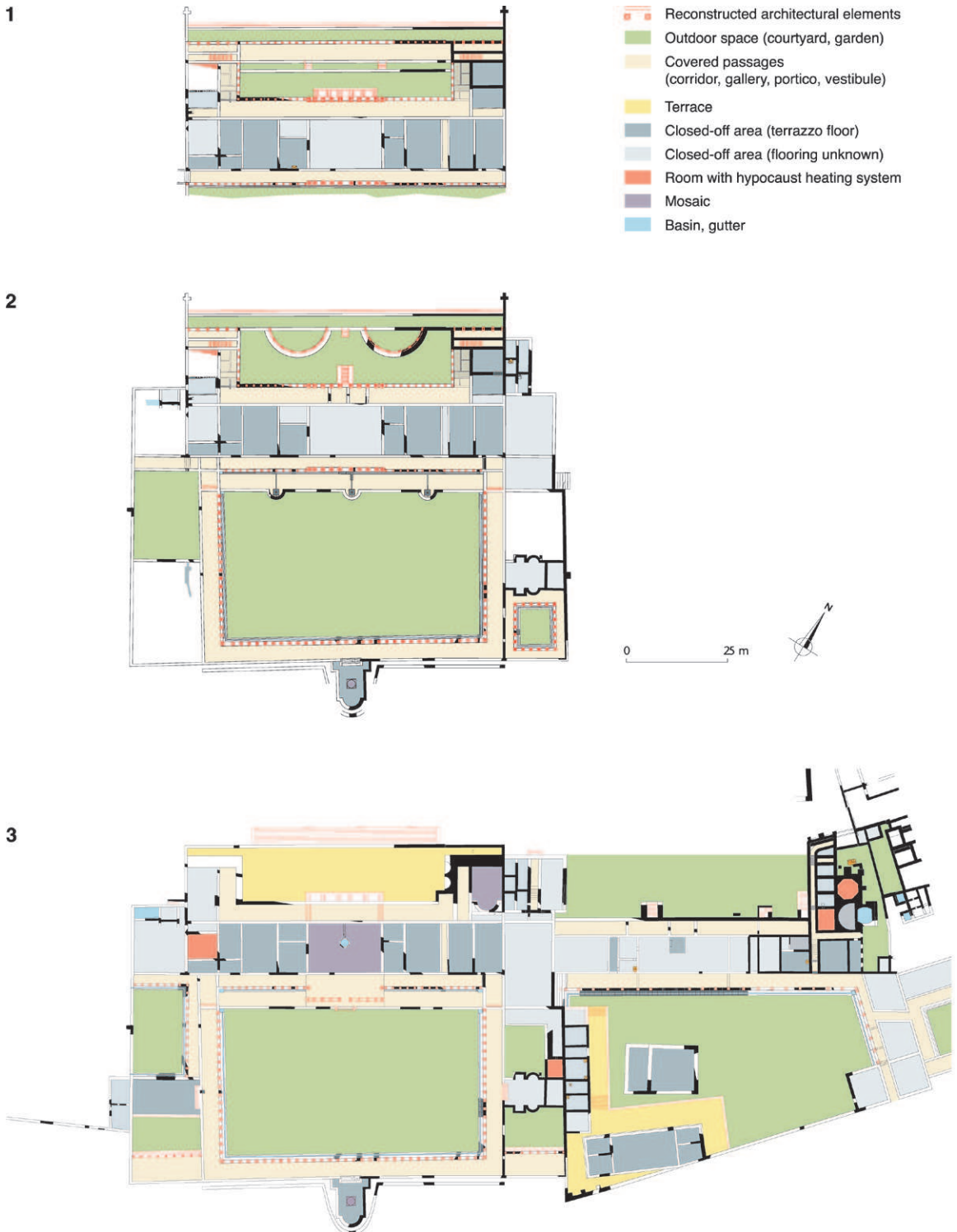


Fig. 8. Plan of the palace at *Derrière la Tour* (Blanc *et al.* 2010, 12, fig. 12).

1. Second half of the 1st c. A.D.
2. First half of the 2nd c. A.D.
3. Late 2nd to early 3rd c. A.D.



Fig. 9. Model of the palace at *Derrière la Tour*. Top left: *Cigognier* sanctuary. Top right: amphitheatre and old town (Blanc *et al.* 2010, 7, fig. 7; Castella and de Pury-Gysel 2010, fig. on the back cover).

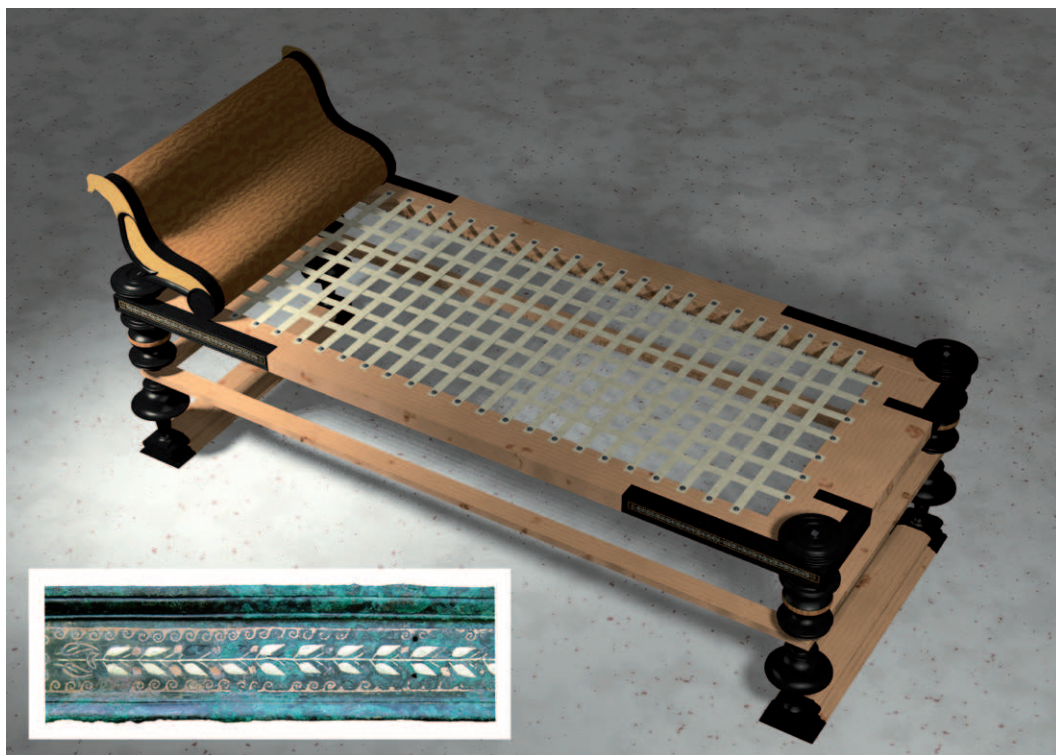


Fig. 10. Reconstruction of one of the luxury beds from the palace at *Derrière la Tour* and a fragment of the bronze casing of the bed frame with silver and copper inlay. Probably Late Hellenistic, 1st c. B.C. (Delbarre-Bärtschi *et al.* 2009, 24 fig. 20, and 31 fig. 30; model by L. Francey).



Fig. 25. *Insula* 12, eastern *domus*. Workshops for casting large bronze elements. Late 1st to mid-2nd c. A.D. (Morel and Chevalley 2001, 145, fig. 5).



Fig. 29. Gold bust of Marcus Aurelius. The asymmetry of the face and the stylistic heterogeneity are particularly clear when viewed from the front. H. 33.5 cm. Inv. 39/134. 1589.07 gm, 22 carat gold. After A.D. 176 (Hochuli-Gysel and Brodard 2006, 56, fig. 50; photo J. Zbinden [Berne]).

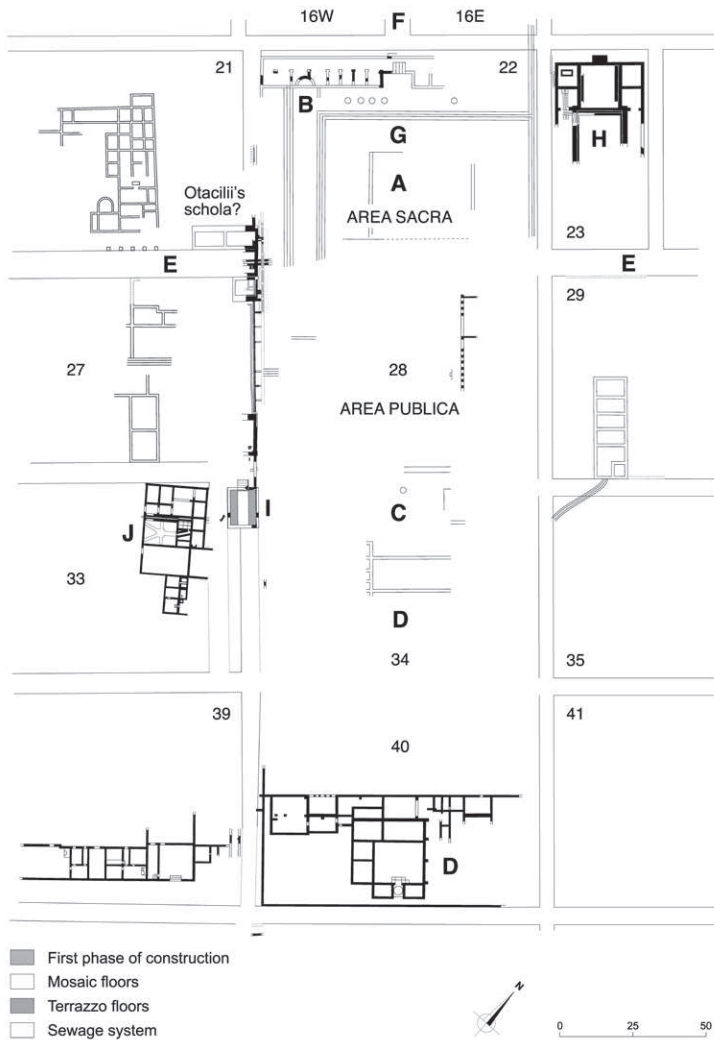


Fig. 3. Schematic plan of the forum of *Aventicum* (Morel and Blanc 2008, 37, fig. 2). For colour version, see vol. 24, p. 22.

- A. Temple.
- B. Cryptoporticus and shops.
- C. Basilica?
- D. Curia?
- E. *Decumanus maximus*.
- F. *Cardo maximus*.
- G. Location of a group of monumental sculptures depicting members of the Julio-Claudian family.
- H. Public building in *insula* 23.
- I. *Schola*.
- J. *Schola*.

sanctuary and theatre.⁶ This architectural complex had two stylistic components, each in a different tradition. The *Cigognier* sanctuary closely emulated the architectural design of Rome's *Templum Pacis*, whereas the theatre bore distinct elements of a style developed in Gaul. Both parts of the complex were built simultaneously from the late 1st c. to c.130 as part of an overall plan.⁷ For the design of the sculpted architectural decoration and its reference to Trajan's successes against the *Germani*, see below (p. 289). It is widely accepted today that this double complex served the imperial cult amongst others (e.g., Mars Caturix, an indigenous deity who held great importance for the *Helvetii*⁸).

The forum

An assembly hall (*schola*) was built on the W edge of the forum in the mid-2nd c. It was fitted with a mosaic floor and benches, the bases of which were decorated with sculpted

⁶ Morel and Blanc 2008, 44, fig. 10; Matter 2009, 57-58, figs. 45-46.

⁷ Matter 2009, 170.

⁸ Van Berchem 1994, 109-14; Frei-Stolba and Bielman 1996, 98-100; Liertz 1998, 32-48; Van Andringa 2002, 72.

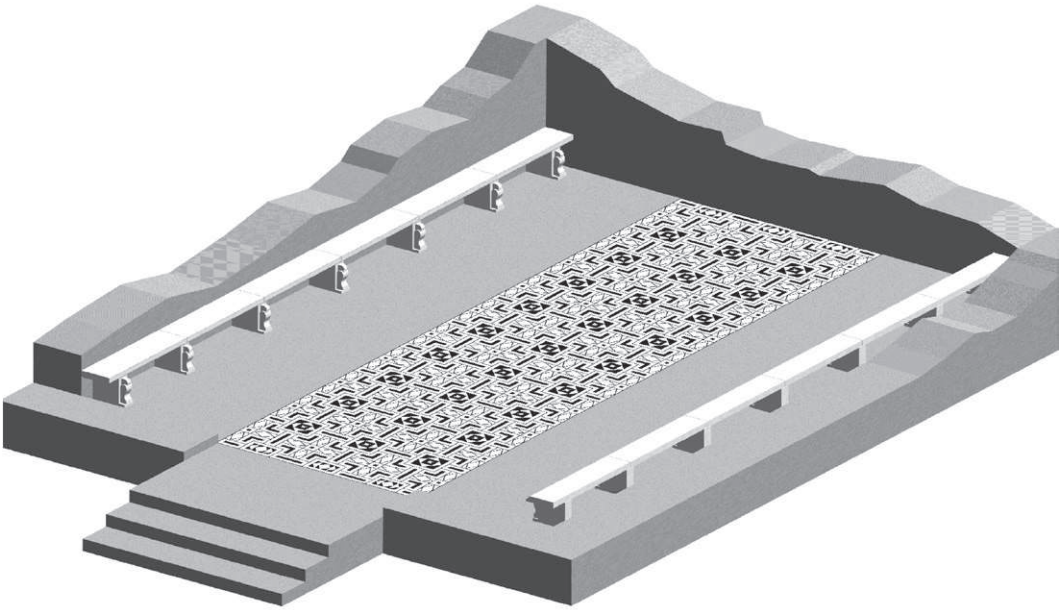


Fig. 4. Forum. Reconstruction of the assembly hall built on the W edge of the forum in the 2nd c. (fig. 3 at I). Geometric black-and-white mosaic (*terminus post quem* A.D. 120) and benches running around the hall. Interior measurements of the room are 8.7 x 12 m (Delbarre-Bäertschi and Bossert 2006, 44, fig. 39).

lions (fig. 3 at I and figs. 4-5).⁹ The *cardo* was displaced in order to make way for the hall. The southernmost and newest part of the forum, *insula* 40, was redesigned in the early 3rd c. and adorned with a large inscription dedicated to Septimius Severus.¹⁰ A series of honorary inscriptions from the forum also date to the 2nd and 3rd c.¹¹

Other public buildings

Various *scholae* are mentioned in inscriptions. Most are located around the forum and may date to the period from 125 to 150 (fig. 3 at I and J: *insulae* 21, 23 E).¹² There is new evidence that the *scholae* of the *nautae* might be identified with that of fig. 3 at I and fig. 4.¹³ The *schola* of the *medici*, attested by an inscription, has not been located.¹⁴ The concentration of *scholae* around the forum lacks parallels elsewhere in the NW provinces, and this organization of public space in the 2nd c. has to be viewed as a specific characteristic of *colonia Aventicum*. A broader study of the presumed



Fig. 5. Assembly hall. One of two bases of benches with sculpted lion décor. H. 55 cm. White Jurassic limestone (Delbarre-Bäertschi and Bossert 2006, 28, fig. 19a).

⁹ Delbarre-Bäertschi and Bossert 2006.

¹⁰ Bossert and Fuchs 1989, 38; Frei-Stolba and Bielman 1996, 47; Oelschig 1997, 141-85.

¹¹ Bossert and Fuchs 1989, 48-62.

¹² Goffaux 2010, 7 (*CIL* XIII 5114 and 5101).

¹³ Frei-Stolba and Bielman 1996, 49-50, no. 9: *CIL* XIII 5096 (*nautae*). Goffaux 2010, 10-13, fig. 6.

¹⁴ *CIL* XIII 5079 (*medicis et professori[bus]*): Frei-Stolba and Bielman 1996, 31-34, no. 4, with fig.; Hirt 2000, 95-99, no. 1, fig. 1.

schola in Insula 33 (fig. 3 at J) is in preparation.

An ongoing debate concerns the function and date of the public building erected in the W section of *insula* 23 in the 2nd c. A.D. (fig. 3 at H) Was it the Capitolium,¹⁵ a temple dedicated to Minerva, a *tabularium*, a *schola*, or a library with a monumental acrolithic statue depicting Minerva?¹⁶ The longitudinal building running along the E edge of the forum with several small lateral recesses and a large central recess is likely to have been a library.¹⁷ It is not certain whether the statue of Minerva (2.8 m high) was a 'ritual statue' that belonged to the 2nd-c. building, since its *favissa* must have been constructed at the same time as the new building,¹⁸ which means that the intent was not to remove the statue entirely but to bury it on site, rendering it invisible from the new building.¹⁹ Perhaps we should link the statue of Minerva with the bathhouse or spa which predated the library.

Baths

The forum baths experienced various alterations under Hadrian.²⁰ Beginning in 135/137, changes were made in *insula* 19, which converted the *natatio* complex into actual baths.²¹

The amphitheatre

An architectural analysis of the amphitheatre (fig. 2) including modelling was published in 2004.²² It had been erected in two phases, probably as part of the extensive programme of public buildings. Its earlier phase had 20 rows of seats and dated from c.120. It was extended some time after 165²³ and now had 31 tiers of seating, an exterior façade with recesses, and a semicircular forecourt to the east with an entrance reminiscent of a triumphal arch²⁴ — a unique layout. The amphitheatre was built onto and partially into the hill. This had consequences for the design of the *cavea*, *vomitoria*, service corridors, and the adjoining areas for staging the games. The arena lacked a basement. In its original layout it had a capacity of 12,000 spectators, up to 16,000 after its extension.²⁵ The capacity of the theatre was c. 11,000-12,000. These figures hold important clues for the size of the population in the 2nd c. A.D. It has been suggested that the amphitheatre also served a specific purpose in connection with the imperial cult. It is proposed that, following an imperial cult ceremony in the *Cigognier* sanctuary, the *pompa* would have paraded first to the theatre and

15 Bögli 1975.

16 Bossert 1983, 22-27, pl. 7-20; Bossert and Fuchs 1989, 40; Bridel 1995, 61-74, fig. 5. The statue was 'buried' in antiquity in a *favissa*. However, it was damaged during early excavations and not all of its marble parts have survived to the present day. Two features do not appear to match the 2nd c. A.D. date suggested by M. Bossert: two discs of millefiori glass, typically dated to the first half of the 1st c., found with the statue, and the very flat, slightly elevated lower eyelids of Minerva, which point to the Early Imperial period. The arguments given by Goffaux (2010, 14 and 22) might not be strong enough for identification as a *schola*.

17 Bridel 1995, 67, fig. 3; Bossert and Fuchs 1989, 40. Cf. Meneghini in Hoepfner (ed.) 2002, 117, fig. 151 (*Bibliotheca Ulpia* at Rome); Hoepfner in id. (ed.) 2002, 124, fig. 161 (Celsus library at Ephesus).

18 BPA 23 (1972-75) 43; Bridel 1995, 64-65.

19 Bridel 1995, 71, fig. 5.

20 BPA 37 (1995) 221-23. The dendrochronological date is A.D. 120.

21 Martin Pruvot *et al.* 2006, 77-138.

22 Bridel 2004, plan 28.

23 Ibid. 93, n.165 (dendrochronological date); 219.

24 Bridel 2004, plan 17.

25 Ibid. 219.

from there through the triumphal arch into the amphitheatre, which was thereby incorporated in the *sacra publica*. There is evidence of a similar scenario at Amiens.²⁶

Residential buildings

In the 2nd c. the two SE rows of *insulae* were fully developed. Despite their poor state of preservation, almost all the residential quarters yielded evidence of alterations in this period, with stone as the most popular building material. In many cases ground-plans were altered. Peristyle houses and *domus* were designed more compactly. Some large inner courtyards were abandoned and became cluttered with structures. The latter included the workshop with a casting pit in *insula* 12 (fig. 28 below)²⁷ and the building in the inner courtyard of *insula* 7 (figs. 6-7). This interesting building rested on re-used column drums, leaving a small gap between the floor and the ground below. It had three sturdy latches for its doors and one for a window which was probably located high up. We assume that the structures in *insula* 7 were administration buildings belonging to the *Derrière la Tour* palace.²⁸ Also worth mentioning are large numbers of *stili* found in *insula* 7, particularly in its courtyard, into which the 'strong room' was built. Could this room have been directly linked to administrative services (an archive or a vault for money or records) housed in the palace in the 2nd-3rd c.?

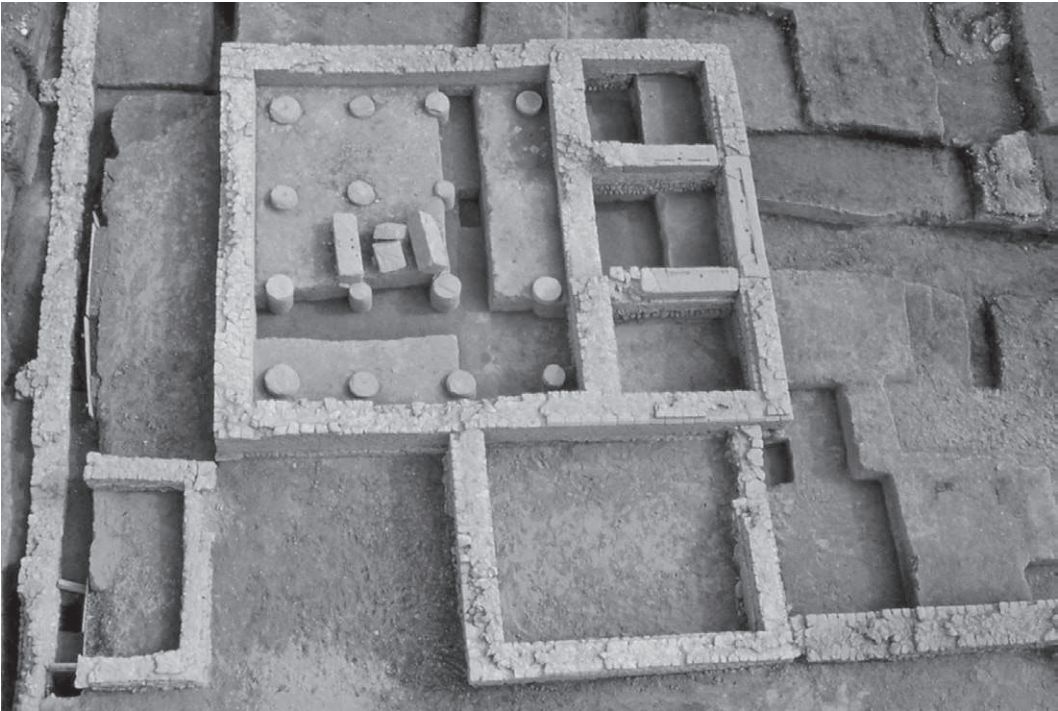


Fig. 6. An originally detached building (10 x 8 m) in the N courtyard in *insula* 7. Entrance area has massive doors. Parts of a barred window shown in fig. 7 had fallen from a height of c.4 m and landed between the column drums under the floor of the main hall, where they had been used secondarily to create a ventilation area (Morel 1991, 128, fig. 4).

²⁶ Ibid. 220.

²⁷ Morel and Chevalley 2001, 142-43. See de Pury-Gysel 2011, 33, fig. 16.2.

²⁸ BPA 33 (1991) 126-30.

From the 2nd c. onwards, hypocaust systems (both pillared and channelled²⁹) were installed in many of the houses, including the *domus* in *insulae* 3/4 North, 13, 14, 18, the southern *insulae* 48, 54 and 54A, and even in a small building in the western cemetery.³⁰ Two of the large urban houses in *insulae* 13 and 18 may have had private baths.³¹ Basements were probably built in the more modest houses,³² as seen, for example, in a building in the NE quarter and another located outside the *insulae* in the *A la Montagne* area.³³ A large number of mosaics and traces of wall-painting are indicative of alterations and renovations carried out on residential buildings in the 2nd-3rd c.³⁴

The Derrière la Tour palace

The *Derrière la Tour* palace was extended in the first half of the 2nd c.³⁵ Added to the south were a large peristyle courtyard with lateral wings and a summer *triclinium* with an apse on the central axis (fig. 8:2 in colour on p. 262). This room, slightly elevated and accessible via steps, was adorned with a black-and-white mosaic floor³⁶ and wall-painting. Wall-painting was also present in the porticoes.³⁷ Next, the main building was renovated and its northern section redesigned. A final phase of rebuilding in c.200 converted the villa into a palace. (fig.8:3) A new wing several storeys high was added at the east, effectively connecting the palace to *insula* 7. It contained a bath adjacent to the main section, and a trapezoid courtyard with gardens in front of the bedrooms and living rooms. After a fire in the 2nd c., the earlier main section will have been rebuilt (late 2nd/early 3rd c.), when a mosaic floor (11.7 x 17.8 m, the largest known within modern Switzerland) with a central medallion depicting Bacchus and Ariadne was laid.³⁸ The N façade of the palace was now 200 m long (fig. 9 in colour on p. 263).

That the *Derrière la Tour* palace was an extraordinary complex is also shown by various finds. Highlights are a gold-plated equestrian bronze statue of the same type as that depicting Marcus Aurelius on the Capitol in Rome,³⁹ a portrait of Marcus Aurelius as a young man (now lost), and an honorary monument with a relief depicting the *lupa capitolini*



Fig. 7 Inside view of window components made of shelly limestone with mounts for a double row of bars and a shutter latch. Exterior opening 53 x 21 cm. *Insula* 7. Cf. fig. 8 (Morel 1991, 129, fig. 6).

29 Channelled: e.g., fig. 3 at J, *Insula* 33.

30 BPA 44 (2002) 162, fig. 20; BPA 45 (2003) 182, fig. 26.

31 Morel 2001a, 44-45, figs. 58 and 61; Freudiger 2001, 191-93; BPA 43 (2001) 272-73.

32 Blanc *et al.* 1995, 29, fig. 21.

33 BPA 45 (2003) 160-61, figs. 3-4.

34 Rebetez 1997; Delbarre-Bärtschi 2002; Delbarre-Bärtschi forthcoming.

35 Morel 2010, 99-143.

36 Delbarre-Bärtschi and Rebetez 2010, 111-17.

37 Fuchs and Bujard 2010, 102-26, figs. 110-14; Blanc *et al.* 2010, 25, figs. 30-31.

38 Delbarre-Bärtschi and Rebetez 2010, 87-105.

39 Bossert 2010, 139-41, figs. 128-30.

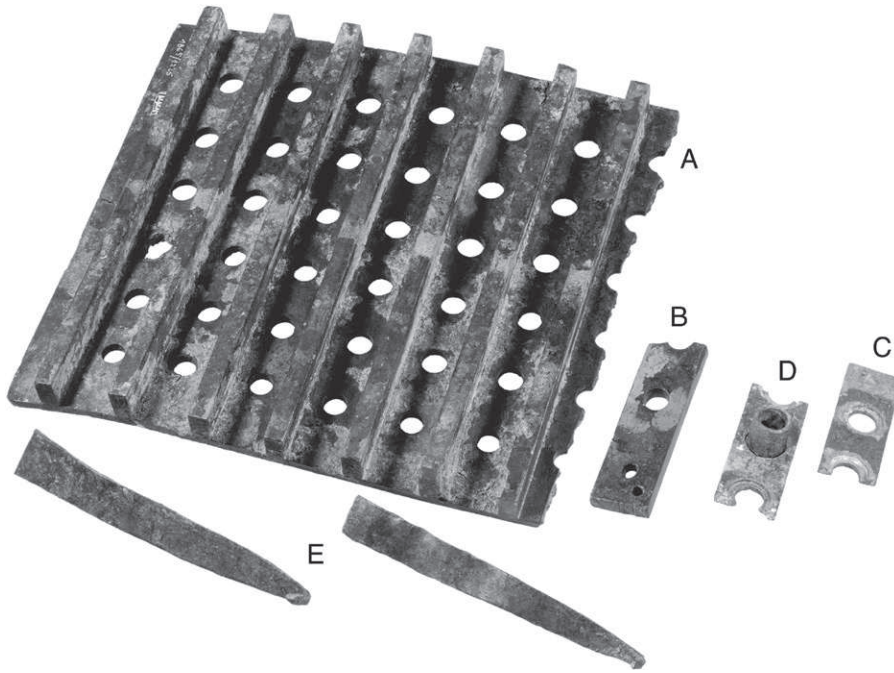


Fig. 11. Bronze part of an organ from the palace at *Derrière la Tour*, an instrument with 12 keys and 6 stops (Castella and de Pury-Gysel 2010, 320 fig. 279; 322 fig. 283).

A. Left half of the windchest.
B. Slide no. VIII.

C. Slide covering the channels of the chest.
D. *Idem*, with an inserted *anulus* (mount of a pipe).
E. Leaf springs.

There are no detailed records of the findspots of elements C and E within the town. Probably first half of 3rd c. A.D.

na.⁴⁰ Other unusual finds are the remains of two, perhaps three, bronze beds with silver and copper inlay and Greek lettering engraved on the back side of some pieces, probably assembly guides (fig. 10 in colour on p. 263). The beds were almost certainly Late Hellenistic products, possibly fashioned in Delos, surviving as antiques in *Aventicum* of the 2nd-3rd c.⁴¹ Also unusual is an hydraulic organ (fig. 11), a portable instrument weighing c.80 kg (without the water)⁴² which was not only played during the amphitheatre games and perhaps at the theatre, but also at ceremonial events. Few of its components survive, but a medium-sized organ as described by Vitruvius (10.8) can be reconstructed as having 6 stops and 12 keys (thus 72 pipes). Based on comparisons with an organ found at Aquincum, an early 3rd-c. date has been suggested.⁴³ Inscriptions on bronze tablets (two of which contained legal texts) include two small bronze fragments (fig. 12) found in 1995 in the large ceremonial hall (fig. 8.3 in colour).⁴⁴ They were identified as parts of a *tabula patronatus* referring to a member of the *Otacilii*, a family which has left many traces in 2nd-c. Avenches. The tablet was dedicated either to *Q. Otacilius Pollinus* or to his son or grandson (this depends on how the consular date is reconstructed, whether as A.D. 129 or 168).⁴⁵

40 Bossert 2010, 127-32 (honorary monument showing *lupa capitolina*); 134-35 (Marcus Aurelius portrait type 1, c.140, now lost).

41 Delbarre-Bärtschi *et al.* 2010.

42 Hochuli-Gysel and Jakob 2007, 17.

43 de Pury-Gysel and Jakob 2010, 319-27.

44 Morel 2010, 100, fig. 96:A.

45 Frei-Stolba *et al.* 2010, 330-32 and 342-50.

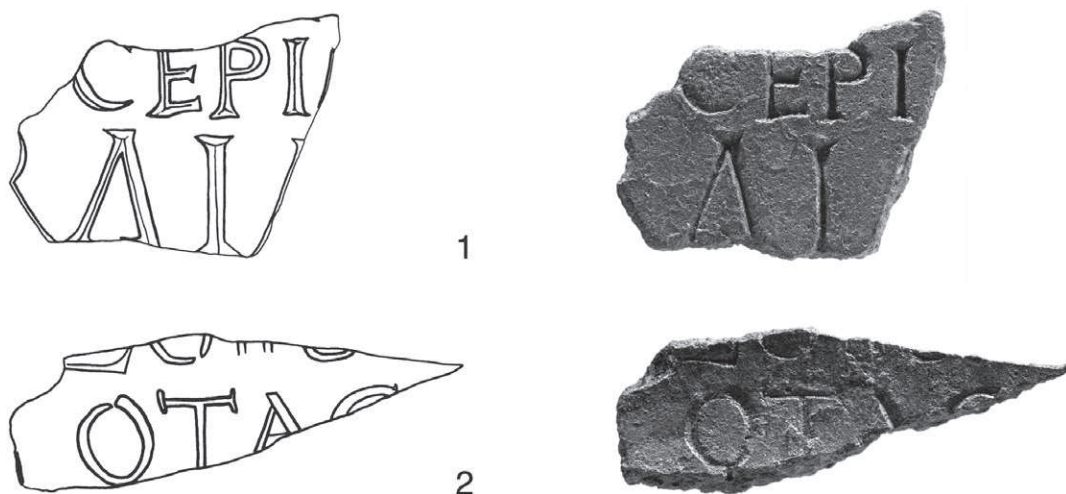


Fig. 12. Two related fragments of an inscription on bronze found in the ceremonial hall of the palatial villa in *Derrière la Tour*. They come from a *tabula patronatus* referring to the *Otacilii*, attesting to their presence in the palace in the 2nd c. A.D. (Blanc *et al.* 2010, 36, fig. 49; Frei-Stolba *et al.* 2010, 330-31, figs. 291-92).

The suburban quarters

Investigations on the SW slope of the hill when infrastructure was being built by the city authorities yielded evidence of Roman buildings and streets located in the area between the western sanctuary and the W Gate (fig. 1).⁴⁶ A suburban quarter can be identified with a network of streets and solidly built houses, some with underfloor heating systems and hearths. The constructions date mainly from the 2nd-3rd c., with some earlier and later features. Might this quarter have replaced to some extent those areas that made way for the construction of the *Cigognier* sanctuary and the theatre?

Further buildings were uncovered at different locations between the regular quarters of the town and the S sector of the walls but, with the exception of the *A la Montagne* buildings, which are part of a potters' quarter,⁴⁷ these features along with their purpose and date have not yet been studied.

Sanctuaries

In the western sanctuary⁴⁸ in the *Grange des Dîmes* district, the monumental phase of the podium temple begins in the late 1st c. A.D. Like the round temple, it was oriented towards the *decumanus maximus*. There is still a debate about its precise date (the earlier and more recent excavations are still under study).⁴⁹ The sculpted decoration with *clipeus* motifs may date from the Vespasian era and, with two inscriptions from that period, may suggest that the temple was dedicated to the imperial cult before the Flavian era.⁵⁰ A late 1st-c. monument was built on top of a Roman grave just east of where the *Grange des Dîmes* temple would be erected (north of fig. 2 at 6 and fig. 13)⁵¹ but it remains a mystery. Was

46 Blanc 2005, 105-8; Vuichard Pigueron 2008, 258-59 and 262-65.

47 Thorimbert 2007.

48 Van Andringa 2008, 121-24.

49 Morel and Blanc 2008, 45. Analysis of both the *Grange des Dîmes* temple and the round temple is currently being undertaken by Ph. Bridel, P. Blanc and D. Castella.

50 Verzár-Bass 1995, 15-32.

51 Morel and Blanc 2008, 42, fig. 8.4, 45, and 46, fig. 11.



Fig. 13. Central square foundations (11 x 11 m) of the annexe of the *Grange des Dîmes* temple. The square openings measure 45 x 45 cm (Morel and Blanc 2008, 46, fig. 11).

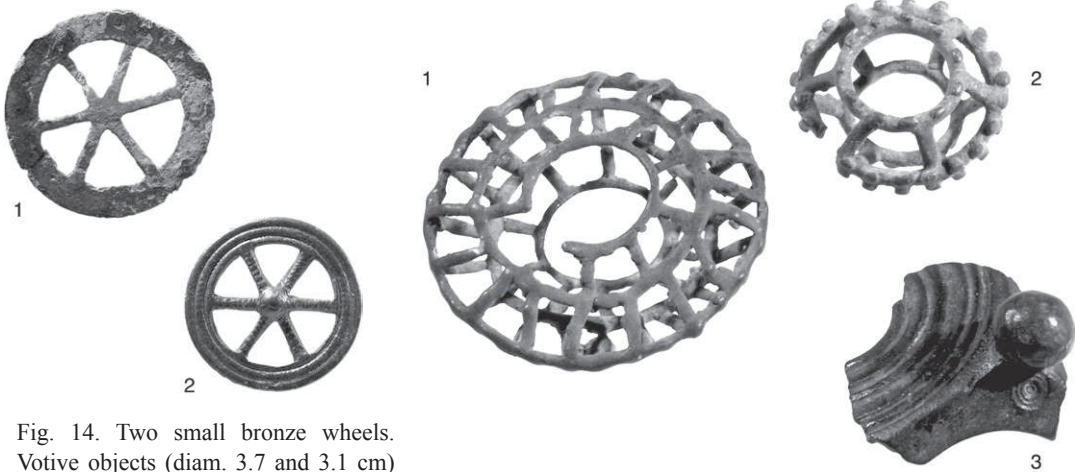


Fig. 14. Two small bronze wheels. Votive objects (diam. 3.7 and 3.1 cm) from one of the 4 foundation pillars of the monument of the *Grange des Dîmes* sanctuary (see fig. 13) (Meylan Krause 2008, 67, fig. 22).

Fig. 15. Two polyhedra decorated with small spheres and a fragment of the second dodecahedron found in Avenches. Bronze. Diam. of the largest object 4 cm. Surface finds. Inv. x/1956; 2002/11249-3; 2003/11224-4 (Hochuli-Gysel *et al.* 2002, 188, fig. 23).

this square structure with 4 solid foundation pillars (1.6 m across), preserving traces of a circular building that was later demolished, a spring sanctuary? Two wheel-shaped artefacts (fig. 14) were recovered from the cavities of the pillar; like the small polyhedra and dodecahedra (fig. 15), they are connected to Celtic religion.

In the second half of the 2nd c. a new project was launched in the *Au Lavoëx* area west of the theatre and the *Cigognier* double sanctuary complex. It consisted of two temples of Gallo-Roman type, and a western enclosure wall with recesses, of which the interpretation is uncertain (fig. 2, northern and southern temples).⁵² Post-excavation work on this

⁵² Morel and Blanc 2008, 47-49. The oak piles beneath the northern temple date from A.D. 164;



Fig. 16. Exterior elevation of a proposed mithraeum found at Avenches *Pré-Mermoud* in 1941 (Roman Museum archive, photo L. Bosset).

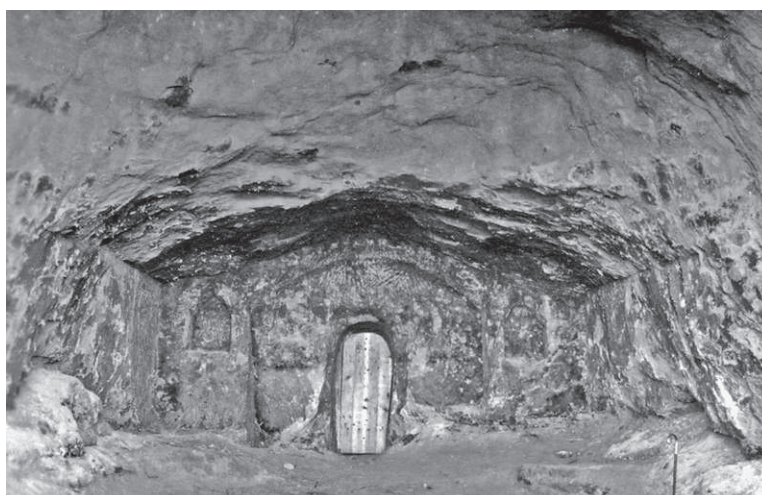


Fig. 17. Interior elevation of same (Roman Museum archive, photo L. Bosset).

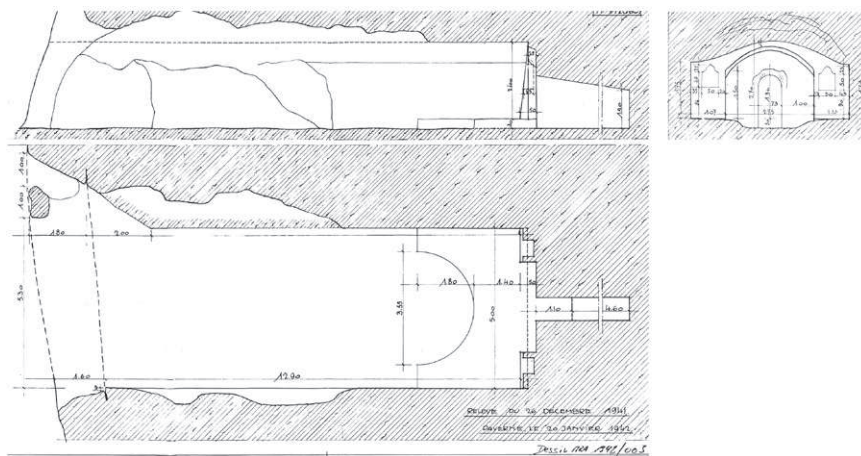


Fig. 18. Proposed mithraeum found at Avenches *Pré-Mermoud*, plan and section, 1942 (Roman Museum archive, drawing L. Bosset).

complex and on the mysterious building to its west (fig. 2, quadriporticus) has not yet been completed. Structures found in *insula* 25 may form an eastern extension of the western sanctuary.⁵³

It has long been known that the grotto in the *Pré Mermoud* area 1 km west of the walls was probably a mithraeum (figs. 16-18).⁵⁴ It was cut at ground level into the sandstone of the hilly landscape beneath one of the aqueducts.⁵⁵ Its façade is not nearly as well preserved today as it was in 1941 (fig. 16), when the lateral recesses with their slightly pointed arches and entrance with three-centred arch were still recognisable. The interior, almost 15 m long, had three aisles; the 'side aisles', slightly elevated, could be identified as benches (possibly with additional wooden structures). The apse-like rear, c.30 cm higher, had lateral recesses with unusual arches and a central recess leading into a corridor 5.7 m long. Similar rock-carved mithraeum grottos can be found in Italy (e.g., Duino Aurisina in Friuli Venezia) and in Germany (e.g., Saarbrücken-Halberg).⁵⁶ No test excavations have been conducted in or in front of the grotto, but a column shaft was recovered from the nearby creek in 1996.⁵⁷ Two graffiti on vessels may point to Mithras.⁵⁸ A second cave, originally decorated in relief, was located at Avenches-Jolival outside and southwest of the city wall.

Water supply and disposal

One assumes that the network of aqueducts required renovation and rebuilding during the 2nd-3rd c., but detailed information is lacking,⁵⁹ as also for the sewer system. A timber-built drain that ran beneath the *cardo* bordering the forum to the west, examined in 2003, dated to the end of the 2nd c.⁶⁰ Deep wells continued to yield water.⁶¹

Canal

The canal (almost 800 m long, 7 m wide) connecting Lake Morat with Avenches-*En Chaplix* and the suburban quarter where various crafts were pursued (figs. 1 and 23-24) was an unusual and important feature.⁶² It has been possible to link its construction with a dendrochronological date of A.D. 125. The name of its patron, *C. Camillius Paternus*, was inscribed on a statue pedestal (3.7 m high) beside the canal (fig. 19).⁶³ He was probably the proprietor of the villa in *Le Russalet* and perhaps also of certain manufacturing facilities in *En Chaplix* such as the tile yards.

The second water mill

Not far from the cemetery in *Les Tourbières*, a second water mill was discovered in 2007

those of the southern temple could no longer be dated dendrochronologically due to damage caused by mid-20th c. drainage work.

53 Morel and Blanc 2008, 44-45, fig. 10.1.

54 The grotto was recorded by Canton Archaeologist L. Bosset in 1941/42. His records and a preliminary text submitted for publication in 1979 by E. Pélichet are housed in the archive of the Avenches Museum. See also *BPA* 47 (2005) 113.

55 Grezet 2006, 72-75.

56 Melcher 2006, 47-48.

57 Inv. 96/10063-01.

58 Sylvestre *et al.* 2010, 9.

59 Grezet 2006, 90-91.

60 *BPA* 45 (2003) 166. For this type of sewer see Hübner 2008, 399, fig. 254.

61 E.g., Blanc *et al.* 1995, 22-23 and 30, figs. 14 and 22.

62 Bonnet 1982b, 3-55; Castella 1998, 65.

63 Castella 1998, 68-69.

(fig. 1 at X). It was considerably larger than the 1st-c. mill (fig. 1 at Y)⁶⁴ and also had millstones made of volcanic stone. It has been dated by dendrochronology to between A.D. 150 and 173.⁶⁵

Cemeteries (Table 1)

Since 1989 excavations have brought to light three hitherto unknown cemeteries (fig. 1 at J, S).⁶⁶ While the cemeteries near the port and in *En Chaplix* (Table 1 nos. 2-3) were published comprehensively, only preliminary reports and in some cases the anthropological results are available for the others, but study of the unpublished cemeteries is ongoing. Relatively large numbers of infant graves have been uncovered within the cemeteries.⁶⁷ Cremation burials were predominant throughout the entire period studied. *Busta* and *ustrina* burials also occur.⁶⁸ Various instances of animal burials, particularly horses but also dogs, sheep and cows, have been found.⁶⁹ Several wooden coffins were preserved and some are dated by dendrochronology.⁷⁰ Special studies were conducted of the prone burials⁷¹ and of aspects of the burials of infants.⁷²

The city in late antiquity and its survival into the Early Middle Ages

Erroneous interpretation of statements made by Ammianus Marcellinus (15.11.12) on the impact of the incursions by the *Alamanni* into the territory of the *Helvetii* had led scholars to believe that *Aventicum* had been destroyed no later than 275 and was

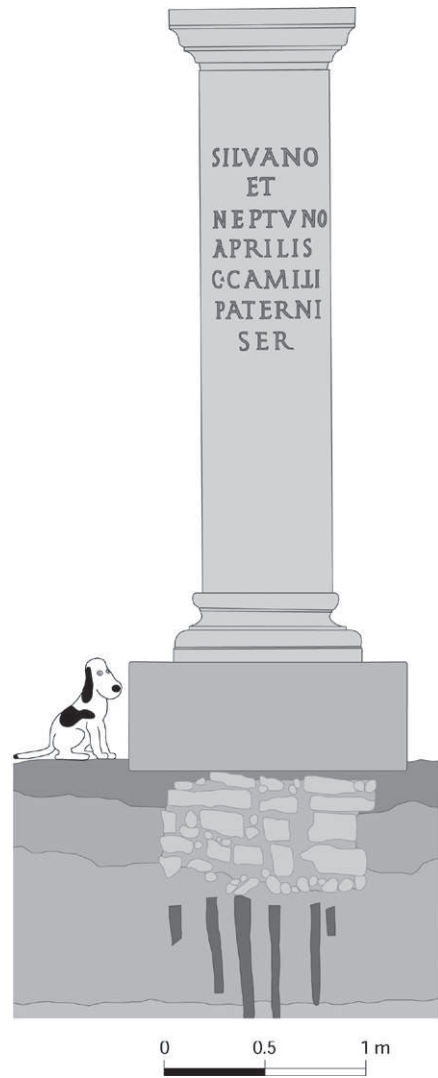


Fig. 19. Column monument from Avenches *En Chaplix* with monolithic shaft. SILVANO/ET/NEPTVNO/APRILIS/C CAMILLI/PATERNI/SER. “For Silvanus and Neptune, Aprilis, slave of C(aius) Camillius Paternus (dedicates this monument)”. White Jurassic limestone. H. without base 3.7 m. The ground beneath the foundation of the monument was reinforced with oak piles. 2nd c. A.D. (Nelis-Clément 2008, 86, fig. 5).

64 Castella 1994.

65 *BPA* 49 (2007) 240-42; *BPA* 53 (2011) 7-62.

66 Table 1 does not include the Early Mediaeval tombs (*BPA* 20 [1969] 70) nor the tombs from the 10th and 11th c. in the *Grange des Dîmes* area (Faccani 2004, 29-33) and at *Sur Fourches* (*BPA* 50 [2008] 265-67).

67 Castella 1999, 86-88.

68 *Busta*: *BPA* 49 (2007) 238, figs. 10.5-6; *ustrinum*: fig. 10.4.

69 See below p. 288.

70 *BPA* 49 (2007) 239-40, fig. 10 (4 coffins dated between A.D. 155 and 184); 240, fig. 13 (dated 181); fig. 16 (dated 170); *BPA* 48 (2006) 112-13, fig. 8 (dated c.386, cf. *BPA* 47 [2005] 112, fig. 32); 113 (dated c.219).

71 Castella 2010.

72 Kramar 2005, 21-27; Dasen 2009.

TABLE 1
LIST OF ROMAN CEMETERIES IN AVENCHES/AVENTICUM
(after D. Castella 2010. See also fig. 1. Not listed: the La Tène graves and the single Roman tombs
fig. 1 at G, G', H, I, L, O, R, T, V.

<i>Cemetery</i>	<i>Excavated in Date</i>		<i>Cremations</i>	<i>Inhumations</i>
1. <i>A la Montagne</i> ¹ Fig. 1 at J	2001-2	1st c. pre-Flavian	75	37 (of which 22 infants)
2. <i>Port</i> ² Fig. 1 at P, Q	1981-83	Late 1st-2nd c.	34	3 (of which 2 infants)
3. <i>En Chaplix</i> ³ Fig. 1 at F, K, U	1987-92	Late 1st to mid-3rd c.	158	54 (of which 22 infants)
4. <i>Les Tourbières</i> ⁴ Fig. 1 at S	2007-8	Mid-2nd to 3rd c.?	122	64 (of which 30 infants)
5. Western cemetery – <i>Longeaigue</i> ⁵ Fig. 1 at N	1992-97	2nd-3rd c.	7	
6. Western cemetery <i>Sur Fourches</i> ⁶ Fig. 1 at M, N, W	2000-6	Late 1st-4th c.	245	49 (of which 22 infants)
Total: 848 graves			641	207 (of which 98 infants)

- 1 *BPA* 43 (2001) 268-70; *BPA* 44 (2002) 152-56; Kramar 2005.
2 Castella 1987.
3 Castella 1999; Castella *et al.* 1999.
4 *BPA* 49 (2007) 235-43; *BPA* 50 (2008) 265-67.
5 Castella *et al.* 1998.
6 *BPA* 42 (2000) 147-49; *BPA* 45 (2003) 182-87; *BPA* 47 (2005) 112; *BPA* 48 (2006) 110-13.

subsequently abandoned. Today we know that this was not the case:⁷³ a series of clues suggest that Avenches continued to be inhabited after 400,⁷⁴ with continuous occupation traceable until the 5th and probably even into the 7th/8th c.⁷⁵ This is obvious if one considers the distribution of various categories of late-antique finds (fig. 20); the evidence also includes architectural elements,⁷⁶ coin minting,⁷⁷ pottery⁷⁸ and dress accessories. Nevertheless, occupation of the city's territory would not have been as dense or as widespread as before the invasions of 275. Whether the city was then enclosed by a smaller walled circuit, as happened elsewhere, cannot be proven. On the other hand, the theatre was converted into a fortified complex in c.300.⁷⁹ Buildings in *insula* 57 with high-quality wall decoration (ornate marble slabs) will have been owned by wealthy inhabitants in the 4th or early 5th c. (fig. 21).⁸⁰ At this time, a second main road ran from the W Gate to the E Gate, south of the *decumanus maximus* and parallel to it.⁸¹

Among Late Roman finds, two glass beakers with blue blobs and engraved inscriptions from a 4th-c. female grave (fig. 1 at W)⁸² were the first that could be identified as Christian. From another findspot comes a bronze finger-ring with a Christian cross.⁸³ The relief decoration on a small fragment of 5th-c. wall-plaster has been tentatively interpreted as Jonah (fig. 22); if so, it would be the first Christian figural depiction found.⁸⁴

73 Blanc 2002a, 2002c and 2004b. See below on Numismatics.

74 Favrod and Fuchs 1990, 163-80.

75 Blanc 2002a, 183.

76 Faccani 2004, 224, fig. 48.

77 Frey-Kupper 2001, 90.

78 Matter 2009, 206-7.

79 *Ibid.* 185-210.

80 Faccani 2001.

81 Matter 2009, 211-13, fig. 175.

82 Frei-Stolba and Bielman 1996, 93-94; Bonnet Borel 1997, pl. 33.1 (*viuas in deo*); 33.2 [*pie]ze[s]*]; de Pury-Gysel 2008, 33, fig. 10.

83 Guisan 1975, 13, no. 1.24, pl. 2.24.

84 Faccani 2003, 151-57.

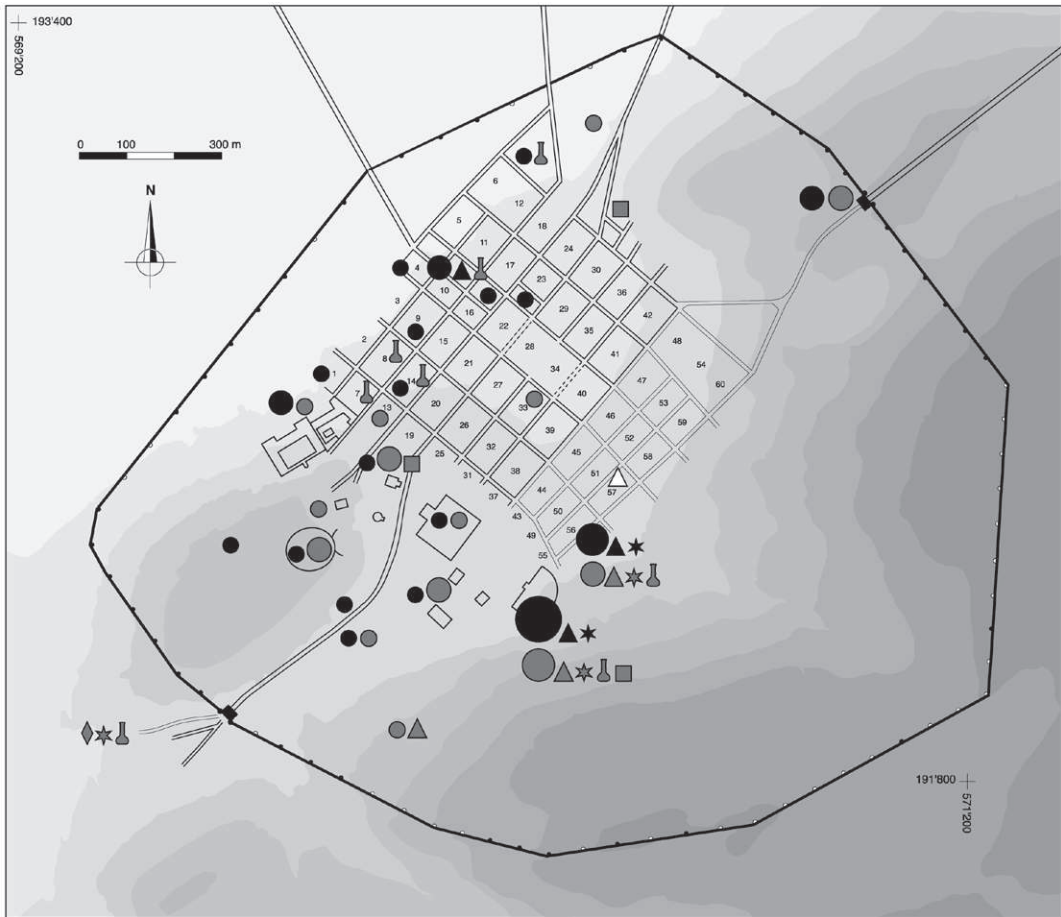


Fig. 20. Distribution of Late Roman finds (Site et musée romains d'Avenches, J.-P. Dal Bianco).



Historical research has shed new light on the history of the Bishop's seat of *Aventicum-Vindonissa* from 517 onwards. This ended with the transfer of the last Bishop Marius of Autun to Lausanne in 592,⁸⁵ which must have greatly impacted *Aventicum*. A small number of features have yielded evidence that certain quarters, such as *Grange des Dîmes*, were continuously settled until the 11th c.;⁸⁶ it was probably named *Wibil* at the time, and later *Wiflisburg*.⁸⁷

85 Favrod 1997, 111-17.

86 Faccani 2001; Escher 2004.

87 de Pury-Gysel 2011, 16 with n.48.

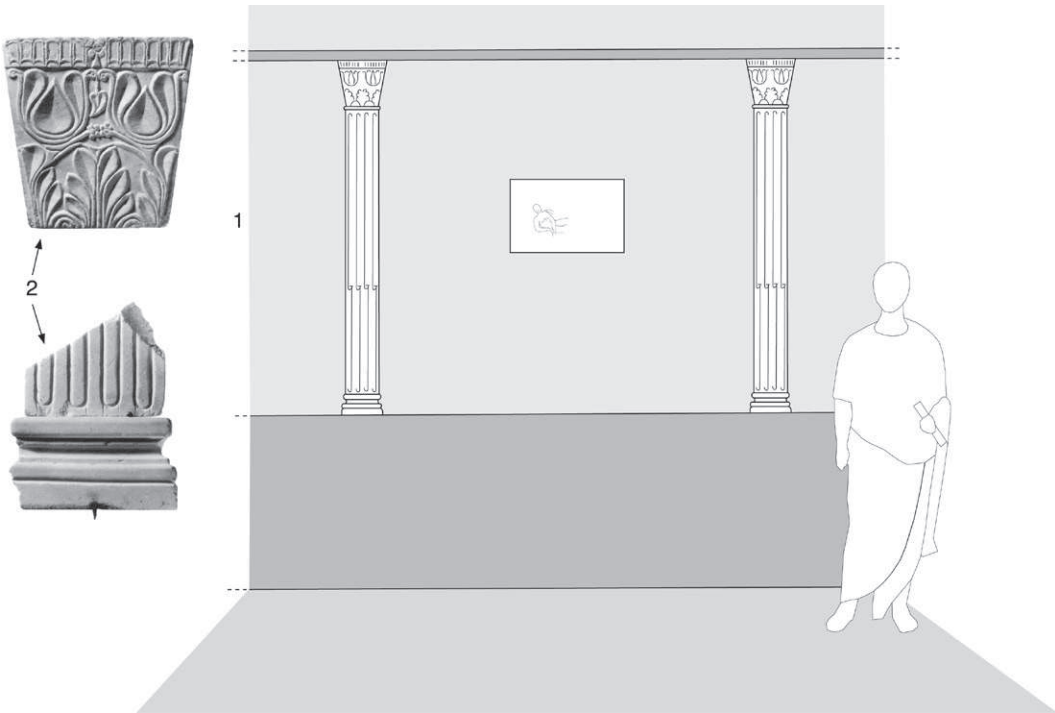


Fig. 21. 1. Reconstructed design of the wall décor with pilasters in a room in *insula 57*.
2. Capital and pilaster bases from *insula 57*. Marble. H. 20.5 and 21.8 cm.
(Faccani 2001, 204, fig. 10; 209, fig. 24; id. 2003, 156, fig. 21).

Military equipment

The 267 *militaria* found up to 2000 were largely made up of 1st-4th c. pieces of horse harness and Roman military costume and to a lesser degree of weapons.⁸⁸ A number of high-quality artefacts dating to the 1st c. were found, among them Pompeii- or Mainz-type *gladii*, and a rare glass *phalera* depicting Agrippina Maior.⁸⁹ It is not yet possible to define the military presence in *Aventicum* more precisely. Comparative studies show that the range of *militaria* is very similar to that recovered at other civilian settlements. Are such military items to be viewed as objects lost by soldiers passing through, did they belong perhaps to veterans, or were smaller units based temporarily in *Aventicum* for certain missions? It remains uncertain to what extent veterans were settled in *Aventi-*



Fig. 22. Fragment of a limestone wall decoration depicting a male torso, perhaps Jonah? 4th-6th/7th c. W. 11.9 cm. Inv. 02/11151-1. *Insula 57* (Faccani 2003, 151, fig. 9a, fig. 6).

⁸⁸ Voirol 2000, 34-40, fig. 20-24.

⁸⁹ Ibid. 68, nos. 42-43 and 45; 71, no. 83.

cum after the city became a colony in 71/72.⁹⁰ The term *Eme-rita* in the new name points to this possibility,⁹¹ but we do not know their number. A single Flavian funerary inscription of a member of the auxiliary forces is known.⁹² Three graves in the cemetery in *En Chaplix* contained probable *militaria* amongst the grave goods.⁹³

To begin to address some of the questions, the *militaria* from the entire territory of the *civitas* of the *Helvetii* need to be studied. Also, the relationship in the 1st c. A.D. between the capital of *Aventicum* and the legionary camp at *Vindonissa* needs to be examined. Another unresolved question is the military presence in the 4th c. What rôle did the army play in fortifying the theatre and in building the Late Roman fort west of the *Bois de Châtel oppidum* and south of *Aventicum*?⁹⁴

Crafts and other trades, categories of finds

Our knowledge of the activities pursued by the inhabitants has broadened considerably over the past number of years; we now know of a variety of crafts and their products (figs. 23-24).⁹⁵ Some of the finds (kilns, production waste, etc.) were made by chance. A study carried out on 639 iron tools⁹⁶ clarified the presence of and methods used by certain craftspeople, particularly in the areas of timber, metal, leather, bone, textile and stoneworking. Other tools and implements represent farming⁹⁷ and fishing.⁹⁸ Over the last 25 years the Roman Museum at Avenches has compiled detailed inventories and published small finds,⁹⁹ work which has prompted a variety of studies — for example, on medical instruments and *militaria*.¹⁰⁰

Workshops in Aventicum

Figure 23 maps all the types of crafts that can be located. Until c.A.D. 100, most of the workshops were situated in the city's peripheral E and W quarters and *extra muros* at *En Chaplix*. As fig. 24 shows, from the 2nd c. onwards a new crafts district developed in the SW section of the *pomerium*¹⁰¹ but still outside the orthogonal grid of the *insulae*. The maps do not show certain aspects of bronzeworking, such as the stores of cut-up bronze fragments ready for melting down, or the 42 or more crucibles.¹⁰² Mainly found in the *insulae*, they probably represent several small bronze workshops whose periods of production have yet to be determined.¹⁰³

90 Schillinger-Haeefe 1974, 441-49.

91 Voirol 2000, 41 with a summary of the topic.

92 Ibid.; *CIL* XIII 2, 5095 (now lost).

93 Castella *et al.* 1999, 349-50 and 377; Voirol 2000, 37, fig. 22; 38, fig. 24.

94 Blanc 2004b, 132.

95 Meylan Krause 2001 and 2002; Duvauchelle 2010b.

96 Duvauchelle 2005.

97 Ibid. 87-102 (agriculture).

98 Dunant 1900, pl. VI.14. Most of the fishing utensils remain unpublished.

99 Meystre 1995 and 1997; Duvauchelle and Ogay 1998; Meystre Mombellet 2010.

100 Hirt 2000; Voirol 2000.

101 de Pury-Gysel 2011, 39-40, and 23 col. fig. 20.

102 Hochuli-Gysel and Picon 1999, 213, fig. 3.

103 A bronze hoard discovered on the edge of *insula* 8 that dated no earlier than the late 2nd or 3rd c. contained the dismantled parts of a statue of Hadrian: Furtwängler 1969, 45-52. Three crucibles also found in *insula* 8 point to the re-use of bronze in that area.

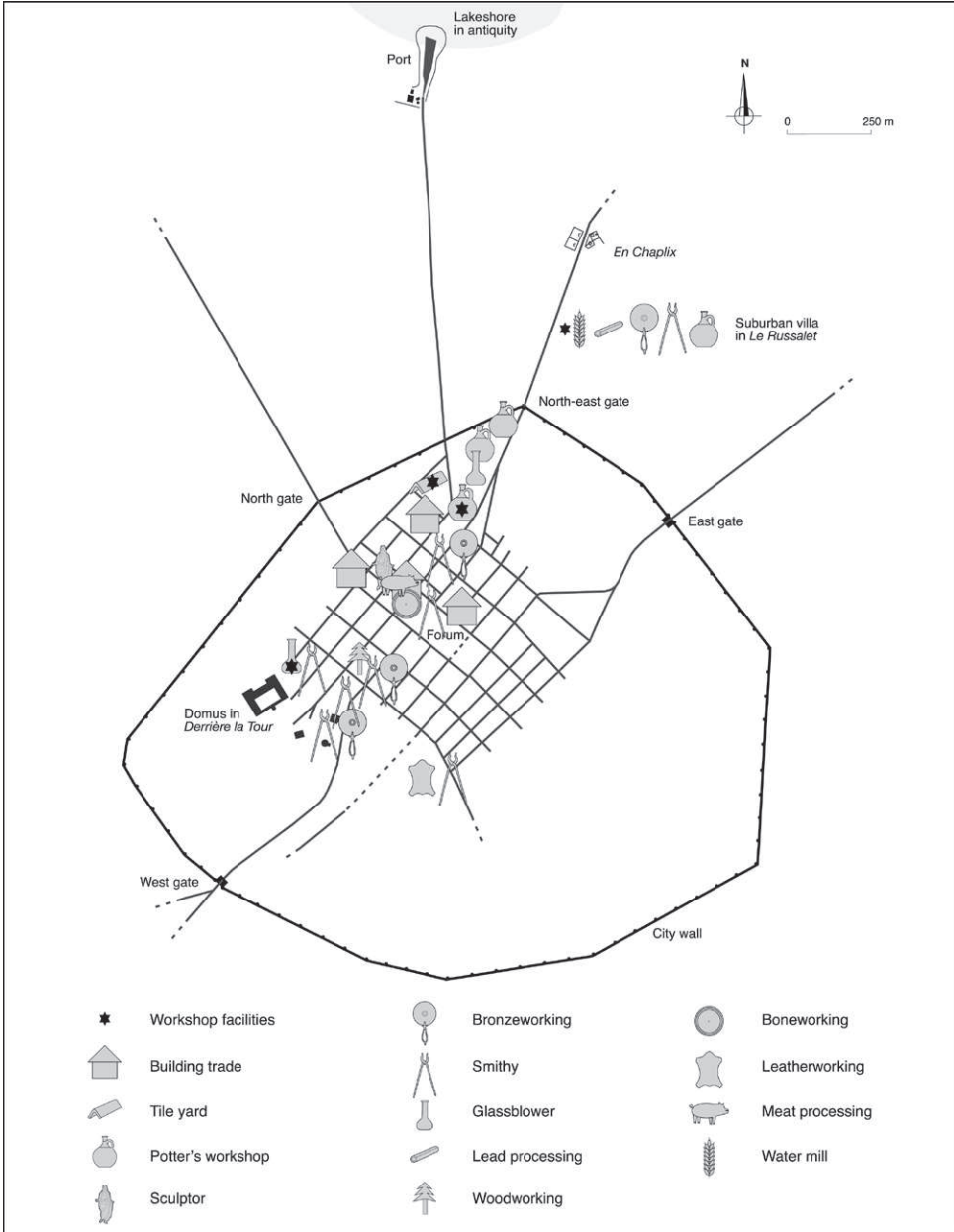


Fig. 23. Location of crafts pursued in the 1st c. A.D. (Site et Musée romains d’Avenches, J.-P. Dal Bianco).

Potters’ workshops

All the known potters’ workshops but one lie *intra muros*. Many such features were discovered in the 1960s but not studied until later.¹⁰⁴ Three main clusters of potters’ workshops, which succeeded one another over time, can be identified *intra muros*: one is in the NE quarter (in production c.A.D. 50-70); one is west of the urban *insulae* at *En St. Martin* between the city and the W Gate (production c.150 down to late antiquity); and a third at *A*

104 Castella 1995; Castella and Meylan Krause 1999.

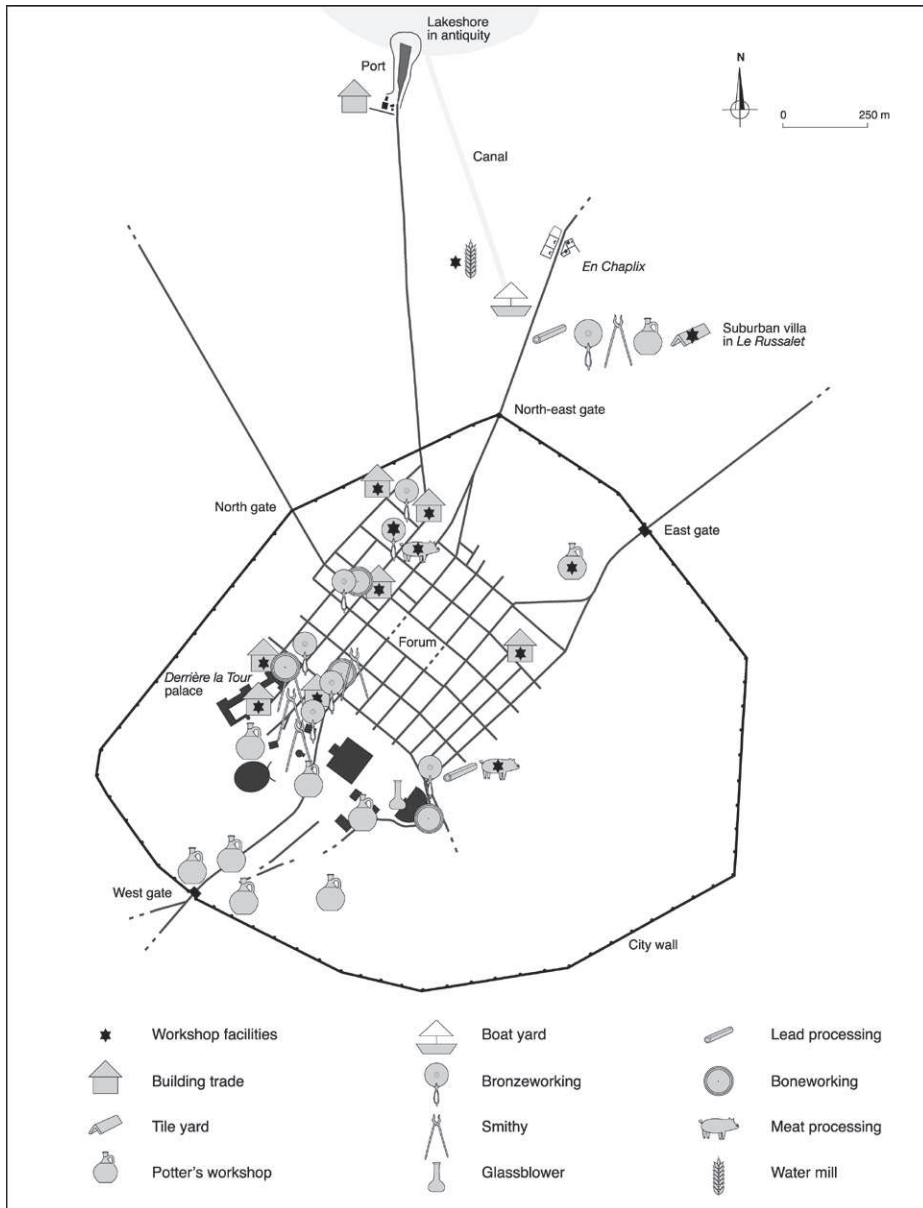


Fig. 24. Location of crafts pursued in the 2nd and 3rd c. A.D. (Site et Musée romains d’Avenches, J.-P. Dal Bianco).

la Montagne west of the E Gate (production c.70/80-120/150).¹⁰⁵ Another area of production in the 3rd c. may lie on the E slope of the city hill, north of the amphitheatre.¹⁰⁶ To date, pottery production *extra muros* has been discovered only at *En Chaplix*.¹⁰⁷

The potters’ workshops in Avenches are represented both by kilns and by wasters, kiln furniture and mould fragments. A variety of vessel shapes of so-called utilitarian ware were

105 Thorimbert 2007.

106 Bosse 2004.

107 Castella 1995, 126-27.

produced in these workshops.¹⁰⁸ The production of imitation *terra sigillata* began in the 1st c. A.D.¹⁰⁹ Lusterware, some with stamped or barbotine decoration, was added to the repertory in the 2nd and 3rd c.¹¹⁰ Local *terra sigillata* ware was also produced (albeit on a more moderate scale), as is suggested by stamped examples, mould fragments, and kiln props.¹¹¹ Close attention was paid to the products from the potters' kilns at *A la Montagne*. The vast array of types (table ware, cooking ware, storage vessels) included both indigenous and Roman shapes in light-coloured and grey fabrics. A study of the modules of particular vessel types¹¹² revealed that capacity was generally based on *heminae* and *sextarii*.

The analysis of local production and study of stratified contexts established a local typo-chronology so that today we have at our disposal a chronological framework covering the period from the 1st c. B.C. to the 4th c. A.D.,¹¹³ in some areas even stretching to the 5th-7th c.¹¹⁴ The distribution of the various categories, including imported wares, provided insights into the range of pottery used in residential districts of different status and date.¹¹⁵ The same type of analysis was conducted on pottery from the baths in *insula* 19,¹¹⁶ from the theatre,¹¹⁷ from the *En Chaplix* cemetery, and on specific finds from sanctuary areas.¹¹⁸ The typo-chronological analysis was given first priority in order to acquire essential dating tools. It will now be possible for ceramic specialists to turn their attention to trade and the import of pottery. The study of amphorae would be a particular area worth pursuing,¹¹⁹ as would the various imported groups arranged by date and by provenance.¹²⁰

Lamps

The entire collection of 948 clay lamps found at Avenches before 1996 was published in 2003,¹²¹ but due to the lack of clay analyses the discussion of provenances remained tentative. In some cases lamps were suggested to have originated in Lyons and its environs, while other pieces were thought to have come from the Rhineland or Italy. Three clay mould fragments for the manufacture of Loeschcke IX *Firmalampen* (with one stamped by *Communis*) indicated that lamps were produced at *Aventicum*, even though no positive pieces matching the mould have been identified;¹²² the mould fragments came from the waste of the potter's workshop at *A la Montagne*, active between 70/80 and 120/150.

108 Castella and Meylan Krause 1999. Analyses of the clay of the utility ware have been conducted only to a modest extent, and it has not yet been possible to pinpoint the clay pits.

109 Castella 1995, 128.

110 Ibid.; Bosse 2004, 75-76.

111 Castella *ibid.* 128-29; Bosse *ibid.* 76-77.

112 Thorimbert 2007, 73-76.

113 Castella and Meylan Krause 1994.

114 Meylan Krause 1999b and 2005b.

115 Meylan Krause 1995, 1997a, 1997b, 1999b, 1999c and 2010.

116 Meylan Krause 2006, 258-79.

117 Meylan Krause 1999c; Matter 2009, 347-71.

118 Meylan Krause 1996.

119 While studying the trade routes of the amphorae that came to Kempten and other areas, Schimmer (2009, 93-95) reached the conclusion that the bulk of these goods must have passed through the Swiss Plateau but that a deeper understanding is limited by the insufficiently published amphorae from Avenches. The first steps towards bridging this gap have now been taken.

120 For instance, fine ware and various *terra sigillata* production. The articles by Hochuli-Gysel 1996, Meylan Krause 2005a, and Bosse Buchanan 2010 are exceptions.

121 Tille 2003; Raselli-Nydegger 2005, 121-33.

122 Thorimbert 2007, 57-58, figs. 78-80; 134, pl. 31.381-83.

Terracotta figurines

The terracotta figurines of Central Gaulish provenance and their variants have been published. There is no evidence to point to a local production centre at *Aventicum*.¹²³ Recent excavations of cremations have yielded some additional pieces, particularly zoomorphic lead-glazed *balsamaria* from the Allier region and plain white Venus figurines.¹²⁴

Tile yards

Three circular kilns dating to the 1st c. were located *intra muros* in the NE part of the city (fig. 23).¹²⁵ Two other facilities, almost square in plan, which operated at *En Chaplix* between the mid-2nd and early 3rd c., rank among the largest tile yards known north of the Alps (fig. 1 at Z and fig. 24). One assumes that the two kilns at *En Chaplix* were probably put into operation roughly 10 times a year: the larger kiln would have produced more than 10,000 tiles per load, the smaller almost 2,900, enough to roof almost 2300 m².¹²⁶

Some 85 tile stamps were preserved on locally-manufactured flanged tiles.¹²⁷ The products made by M. Afr(anius) (Professus) can be dated to between c.40/50 and 70/80, those made by L. C(ornelius?) Pr(is)cus(?) to the early 2nd c. Only one tile maker, M. Afr(anius) (Professus), can be tentatively linked to two of the tile kilns.¹²⁸ Fifteen stamps were associated with *legio XXI* which was stationed at *Vindonissa* from 43/45 to 68/69; some of these were found at the port of *Aventicum*.¹²⁹

Metalworking

Important results concern metal crafts. A study of all the iron tools¹³⁰ provided evidence of tin-, copper-, gold-, and blacksmithing. Brass¹³¹ and lead¹³² were also processed. Various individual studies of crucibles, half-finished products and moulds have contributed towards our knowledge of bronze casting, iron processing,¹³³ bronzeworking and reworking,¹³⁴ as well as lead technology.¹³⁵ The lead pipes from the city exhibited special regional features with regard to the soldering of the lead parts. Also a possible standardisation of the pipes in accordance with Vitruvius' specifications¹³⁶ could also be detected.

Figures 23-24 show several sites of bronzeworking. Perhaps the most important discovery was the casting pit used to make the life-sized bronze statues (2nd c. A.D.) found in *insula* 12 (fig. 25 in colour on p. 264). Parts of the workshop installations, tools¹³⁷ and fragments of used clay moulds (figs. 26-27) were found. When the former peristyle house

123 Guisan 1997; von Gonzenbach 1986-95.

124 Blanc 2002, 156, fig. 13 (pre-Flavian tombs); Vuichard Pigueron 2003, 171, fig. 14.

125 Castella 1995, 122-26.

126 Eschbach and Castella 1995, 178.

127 Fuchs and Margueron 1998.

128 Ibid. 118. Eschbach and Castella 1995, 119, figs. 5-6.

129 Fuchs and Margueron 1998, 118-23; 136 fig. 35.

130 Duvauchelle 2005, 15-32.

131 Hochuli-Gysel and Picon 1999.

132 Duvauchelle 1999, 147-98.

133 Serneels and Wolf 1999, 111-23.

134 Duvauchelle and Ogay 1999.

135 Duvauchelle 2008.

136 Ibid. 191-92.

137 Duvauchelle 2005, no. 21, flat chisel; no. 49, file.



Fig. 26 Bronze workshop in *insula* 12. Fragment of a clay negative mould for a draped statue with sprues. H. 18 cm. Late 1st to mid-2nd c. A.D. (Morel and Chevalley 2001, 153, fig. 12).



Fig. 27. Bronze workshop in *insula* 12. Fragment of a negative mould: casting sprues and clay vent sprues. Late 1st to mid-2nd c. A.D. (Morel and Chevalley 2001, 153, fig. 13).

was converted, the workshop was dug half a storey deep into the inner courtyard to form a casting pit (fig. 28). The inside walls of the workshop had turned red due to the intense heat generated. Fragments of negative moulds made of clay and remains of clay channels show that the lost-wax casting technique was employed. The moulds left a dark patina on their interior. The complex dates from the late 1st to the mid-2nd c.

Statues and statuettes

It would be interesting to know whether any of the large bronze statues found in the city came from the workshop in *insula* 12.¹³⁸ The draped statue known to have been made at the workshop (fig. 26) may never be identified because not enough of the mould has survived. Future research could attempt to reconstruct the bronze statues of which fragments have survived.¹³⁹ At Augst, the experience gained in this field produced very interesting results:¹⁴⁰ on one hand, various fragments could be associated with known statue types, while, on the other, observation and analysis of the technical aspects provided insights into the metal-

¹³⁸ Leibundgut 1972; Kaufmann-Heinimann 1994.

¹³⁹ The bronze finds of different sizes have been published in two volumes (Leibundgut 1976; Kaufmann-Heinimann 1994), but no particular attention was given to technical analyses or a reconstruction of the statues. On the shattered fragments of a statue of Hadrian, see Furtwängler 1969, 45-52. For most of the statuettes it is not possible to pinpoint their place of manufacture.

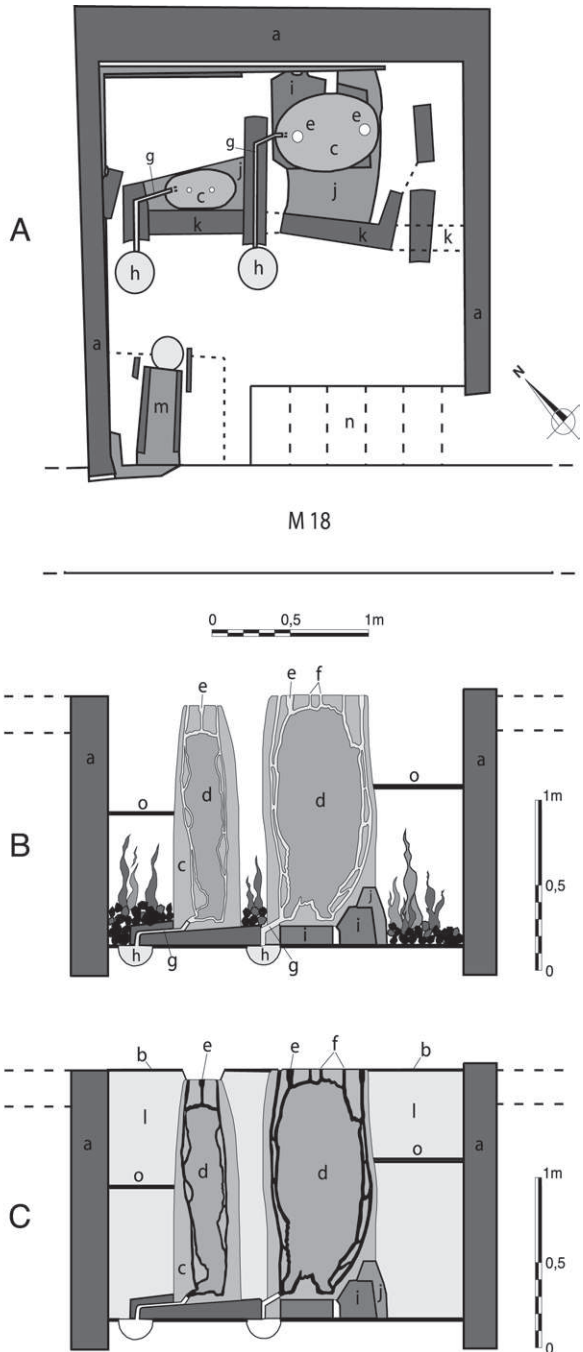
¹⁴⁰ Janietz 2000.

working processes. Worth mentioning too at Avenches are a relatively large number of fragments of gilded bronze statues, which could benefit from technical and statistical analyses.

The studies on the statuettes from *lararia* in *insulae* 33 and 57 are particularly noteworthy.¹⁴¹ They suggested possible origins for certain statuettes and showed that a *lararium* assemblage could be made up of pieces of quite different dates.

Metal vessels

The Roman museum houses a considerable collection of metal vessels, including 3 silver vases and 215 made of bronze.¹⁴² As at other civilian settlements, the broad range of types, spanning the 1st to the 4th c., can largely be grouped into tableware, kitchenware, and vessels serving other functions. Some pieces, such as jugs with richly decorated cast handles or a rare *authepsa*, can be categorised as luxury pieces. Of the silver vases, only a beaker with embossed décor dating from the mid-1st c. A.D. has been studied in detail.¹⁴³ Recently its first few scenes have been re-interpreted.¹⁴⁴ The second silver piece is a small



141 Kaufmann-Heinimann 1998, 191-95 (*lararium* from Avenches); ead. 1999, 199-207.
 142 Kapeller 2003.
 143 Rubi 1969, 37-44.
 144 Duvauchelle 2001, 259-66.

Fig. 28. *Insula* 12, *domus* east. Schematic reconstruction of workshop where large bronze figures were cast (Morel and Chevalley 2001, 154, fig. 15).

- | | | |
|---|---------------------------------------|---|
| A. Ground plan. | d. Core (filling of refractory clay). | l. Filler. |
| B. Firing of a clay negative mould and pouring of the liquid wax. | e. Casting sprue. | m. Repository for fuel or perhaps another installation for casting smaller figures. |
| C. Bronze casting. | f. Vents. | n. Access to the casting pit. |
| Key: | g. Escape channels for molten wax. | o. Lateral brackets supporting the moulds. |
| a. Walls of the casting pit. | h. Basins to collect the molten wax. | |
| b. Work space. | i. Props. | |
| c. Negative moulds. | j. Reinforcement wall. | |
| | k. Firing channel. | |

conical dish,¹⁴⁵ of which the smooth underside displays several graffiti on top of each other; to judge by parallels, it was probably made during the 1st c. A.D.¹⁴⁶ Only three small fragments of the third silver vessel, probably a beaker or skyphos, have survived.¹⁴⁷ The technique used for the embossed decoration implies that it was made during the 1st c. A.D. It shows the servant of a sacrificial priest walking to the left while holding up a filled platter;¹⁴⁸ in front of him is the lowered veiled head of an old woman looking to the left, while another fragment preserves the drapery of a third figure.

*Other bronze objects*¹⁴⁹

The collection of the 793 brooches, ranging from the 1st c. B.C. to the 4th c. A.D., has been published.¹⁵⁰ An unusual find from an aristocratic burial of Tiberian-Claudian date at *En Chaplix* is a decorated bronze rotary lock, probably from a small chest, with the key still in the lock.¹⁵¹ The mechanism, which could be reconstructed, bears testimony to the skill and dexterity of the craftsman. A rare bronze bell, dedicated by Iulius Sextus to *Deus Mercurius* according to its votive inscription, was associated with the sacred area adjacent to the temple at *Derrière la Tour*.¹⁵² A bronze pipe (weight almost 14 kg) was found in 1843 near the Roman theatre and a drawing was published, but it was lost until 1996; we now know that the pipe was part of a water pump.¹⁵³

Glass

Important discoveries of glass have been published. In 1989 and 1995 the remains of a glass workshop came to light during excavations beneath the E wing of the *Derrière la Tour* palace.¹⁵⁴ They included several kilns, raw glass remnants, production waste, and fragments of glass artefacts that had been fashioned there. The range of products consisted mainly of small blown vessels of clear and coloured glass. The workshop operated c.A.D. 40-80; subsequently it was abandoned, probably to make way for the palatial villa, and manufacture may have shifted to a site in the NE quarters, where production waste (from the late 1st c. A.D.) has been found, though as yet no kiln structures.¹⁵⁵ Undated production waste was also detected near the theatre.¹⁵⁶ Although actual workshops of the 2nd c. have not been found, one may assume that glass continued to be blown in the town.¹⁵⁷ From the 2nd c. onwards simple glass vessels such as urns, bottles and beakers are rather commonplace, and they were not difficult to make. Many glass pieces exhibit signs (e.g. impurities

145 Inv. 1875/1731 (unpublished).

146 Mielsch 1997, 47-54, fig. 7; similar *acetabula* from the Hermoupolis treasure also show graffiti on their undersides indicating weight and ownership.

147 Inv. 91/8328-9; 91/8328-25 (unpublished).

148 Fless 1995, pls. 3.2 and 37.2. A similar representation is found on the Tiberius skyphos from Boscoreale: *ibid.* pl. 15.2.

149 Bronze beds of the Hellenistic era (fig. 11 in colour), imported to *Aventicum* at an unknown period, as well as a hydraulic organ (fig. 12) were mentioned above in connection with the palace at *Derrière la Tour*.

150 Mazur 1998 and 2010.

151 Duvauchelle 2002, 103-13.

152 Frei-Stolba and Hochuli-Gysel 1997; Martin-Kilcher 2000, 135-42.

153 Schiöler 1999, 10-30.

154 Amrein *et al.* 1996; Amrein 2001; Amrein and Hochuli-Gysel 2000, 89-94.

155 Hochuli-Gysel 1998b, 2-3.

156 Hochuli-Gysel 1999b, 191 and fig. 34.

157 Martin Pruvot 1999, 179-80.

in the glass, asymmetry and irregularities in form, a lack of attention to detail) that they did not come from high-quality production lines, which again favours local production.

A typo-chronology of the glass finds from *Aventicum* is available¹⁵⁸ and a study of the glass finds (mainly 2nd and 3rd c.) from the *En Chaplix* cemetery¹⁵⁹ has also been published. Several glass assemblages were analysed in the context of studies of various residential and public buildings. The importance of the glass lies both in the analysis of individual artefacts and in the assemblages which range from the beginning of the 1st to the 4th c.¹⁶⁰

Construction trades

Some builders (e.g., carpenters and stone layers) are represented by tools.¹⁶¹ In rare cases, carpentry and the work of wainwrights has been identified through impressions; one instance is the imprint of a barrel, the slaked lime filling of which survived.¹⁶² Lime kilns have come to light in many locations, usually building sites.¹⁶³ Small amounts of window glass (all “cast”) were found in many *insulae* near the baths in *insula* 19 and in the *Derrière la Tour* palace.¹⁶⁴ Mosaicists and wall-painters are treated below, while the tile yards were mentioned above.

Other crafts and trades

The manufacture of textiles is attested by several types of tools such as needles, linen combs¹⁶⁵ and spindle whorls,¹⁶⁶ but also by a tiny fragment of linen which was used to wrap a perforated coin in an infant burial.¹⁶⁷ Equipment possibly associated with a tannery was found near the theatre.¹⁶⁸ Leatherworking was represented by specific tools.¹⁶⁹ By 2004, the number of worked bone artefacts had grown to 1391 and they were published.¹⁷⁰ Worked bone was used ubiquitously at the town, and various clues point to local production (figs. 24-25).¹⁷¹ Boat building was practiced near the canal in the 2nd c.¹⁷² Medicine is represented by an inscription mentioning a corporation of doctors and by numerous instruments and oculists’ stamps.¹⁷³ The weighing of small amounts of special substances (drugs?) is illustrated by two pans of small scales stamped by *Banna*.¹⁷⁴ Organisations involved with the import and export of goods by water¹⁷⁵ and land¹⁷⁶ are mentioned in inscriptions.

158 Bonnet Borel 1997.

159 Martin Pruvot 1999.

160 Martin 1994; Hochuli-Gysel 1995, 1997a, 1999a and 1999b; Martin Pruvot 2006, 280-83; Amrein and de Pury-Gysel 2010.

161 Duvauchelle 2005, 33-70 and 105-7.

162 *BPA* 44 (2002) 162.

163 E.g., *insula* 19: *BPA* 36 (1994) 136-39, figs. 10.4 and 12. *Insula* 25: *BPA* 47 (2005) 103, fig. 19.2.

164 Amrein and de Pury-Gysel 2010, 263-65.

165 Duvauchelle 2005, 71-78.

166 Duvauchelle 2010a.

167 *BPA* 44 (2002) 155, fig. 155; Duvauchelle and Rast-Eicher 2010, 212.

168 Matter 2009, 56.

169 Duvauchelle 2005, 79-86.

170 Schenk 2008.

171 *Ibid.* 147-54.

172 Castella 1998, 66-67; *id.* 2001, 18-19; Arnold 2009.

173 Hirt 2000.

174 Frei-Stolba 2010, 204, fig. 2. The rich group of weights and scales found has received little attention from scholars until now. For the survival of Celtic weights at *Aventicum*, see Schwarz 1964.

175 *CIL* XIII 5096 (*nautae*); Goffaux 2010, 10-13, fig. 6.

176 The *Otacilii* were patrons not only of the rarely-attested corporation of slave-traders, but also of

Archaeozoology

Archaeozoological work has provided insights into cattle and poultry farming as well as the processing and consumption of meat.¹⁷⁷ Beef was butchered using traditional Celtic methods throughout the Imperial period.¹⁷⁸ Detailed research was conducted on the animal bones from the cemetery at *En Chaplix*,¹⁷⁹ and on the horses buried in this cemetery and the one at *La Tourbière*.¹⁸⁰ New light has been shed on animal sacrifices and the rituals linked to them.¹⁸¹ Observations on fishing have also been made.¹⁸² Other results regarding nutrition came from the study of the querns.¹⁸³

Wall-painting

Most of the houses yielded remnants of painted wall-plaster. It has been possible to reconstruct a selection from the considerable number found,¹⁸⁴ spanning the period from the Tiberian era to late antiquity. A number of wall-decorations from the forum (*insula* 22),¹⁸⁵ *insulae* 1,¹⁸⁶ 7,¹⁸⁷ 10,¹⁸⁸ 12,¹⁸⁹ 18¹⁹⁰ and 19,¹⁹¹ and from the palatial villa at *Derrière la Tour* have been published.¹⁹² The quality is consistently good, and stylistic analyses have shown that the painters were familiar with the general repertory of Roman wall-painting. The process itself is represented by numerous fragments of pots containing traces of pigment.¹⁹³ Analyses carried out on about a hundred pigment samples revealed a range of colours, the compositions of which more or less corresponded to those used at Pompeii.¹⁹⁴

Intaglios and jewellery

While the c.110 intaglios found have not yet been published *in toto*, a number were featured in a special exhibition of 2007,¹⁹⁵ when it was possible to identify an ancient forgery of an intaglio, similar to those described by Pliny (*NH* 37.197), that was recovered from a

the corporations of the *Cisalpini* and the *Transalpini*, as well as that of the *nautae*: see Frei-Stolba 1988, 194-95; Oelschig 2009, 86-96 no. 7002, and 127-33 no. 7060; Goffaux 2010, 14-16.

177 Olive 1999, 137-52; Lachiche, forthcoming.

178 Lachiche *ibid.*

179 Olive 1999, 137-52.

180 Blanc and Vuichard Pigueron 2007, 240, fig. 14. One of the horses was buried with an East Gaulish samian bowl Drag. 37 of the 2nd c. A.D. For the analysis of the skeletal remains of horses see the report by V. Portmann in 2008, archive of the Avenches Museum.

181 Lachiche and Deschler-Erb 2007; Deschler-Erb, forthcoming.

182 Ambros 1990; *id.* 1995, 107.

183 Castella and Anderson 2004.

184 Fischbacher and Fuchs 2006.

185 Béarat and Fuchs 1996, 36-37, *insula* 22, fig. 1 (A.D. 15-35), the earliest datable wall-painting; Bossert and Fuchs 1989, 14 and 26.

186 Béarat and Fuchs 1996, 38, fig. 2.

187 Fuchs 1983, 27-75; Béarat and Fuchs 1996, 40-41, fig. 4-5 (A.D. 200-235).

188 Fuchs and Glauser 1996, 637-48; Morel 2001b, 44, fig. 59 (Flavian); 94, fig. 121 (Severan).

189 Morel 2001a, 31-33 (N. Vuichard Pigueron), fig. 28, phase 2 of the *domus*, Third Pompeian Style (mid-1st c. A.D.).

190 Fuchs 1995.

191 Vuichard Pigueron 2006, 155-205.

192 Fuchs and Bujard 2010, 107-25.

193 Meylan Krause 2001, 53, fig. 72.

194 Béarat and Fuchs 1996.

195 Guisan 1975, 6-12; Castella 1998, 89-90; Raselli-Nydegger in Willers and Raselli-Nydegger 2003, 16-17; *ead.* 2005.

secure archaeological context. It consisted of three rings made of carnelian and white calcite which fitted snugly into each other, imitating the effect of banded chalcedony, a much more expensive material in antiquity.¹⁹⁶ Another rare piece was an intaglio from a finger ring depicting the Egyptian god Chnoubis; it served as a protective amulet particularly for pregnant women and mothers of infants.¹⁹⁷ New interpretations have been proposed for jewellery used as amulets for small children.¹⁹⁸

Portraiture and sculpture

An important Early Imperial marble portrait of Julia is so called since it may depict the daughter of Drusus minor.¹⁹⁹ In the case of the gold bust of Marcus Aurelius, the asymmetry of the face and heterogeneous appearance, particularly when viewed from the front (fig. 29 in colour on p. 264),²⁰⁰ stem in part from the fact that the bust was modelled on a portrait of Marcus Aurelius showing his head looking slightly to one side in a three-quarters view, as a result of which the two halves of the face would not have been symmetrical. Tomographic imaging showed that the stylistic and chronological heterogeneity was also due to the fact that the head was not hammered from a single sheet, as previously believed, but from at least two, possibly three, pieces.²⁰¹

Most of the reliefs and sculptures in the round have been fully studied,²⁰² including the groups of statues depicting members of the imperial family. The sculpted decorations of the mausolea at *En Chaplix* shed light on the integration of the aristocracy in the Early Imperial period. The considerable increase in building activity in the town led to the establishment of regional sculptors' workshops. It has been shown that 4 or 5 different workshops were involved in creating the relief decoration in the *Cigognier* sanctuary, each possessing its own specific style. The imagery will have pointed to Trajan's successes against the *Germani*, which in turn suggests that this building was used in connection with the imperial cult.²⁰³

Mosaics

While V. von Gonzenbach had presented all mosaics uncovered at Avenches prior to 1960, the new results were published as a companion to a special exhibition held in 1997.²⁰⁴ All the new finds have recently been added to the corpus, which now contains 110 mosaics. They include, among others, mosaics from *insula* 10, the assembly hall at the forum, and the *Derrière la Tour* palace.²⁰⁵ Close stylistic connections have been detected with mosaics from Besançon and with those found in the area around St-Romain-en-Gal. The working practices of mosaicists is represented by fragments of opaque coloured glass cakes, from

196 Guisan 1975, 12, pl. 2.17. Identification by L. Raselli-Nydegger.

197 Guisan 1975, 11-12, no. 1.16, pl. 2.16; Dasen 2010a, 24 fig. 4.

198 Dasen 2003a.

199 Willers 2007, 207-26.

200 Hochuli-Gysel and Brodard 2006, 62-77.

201 Hochuli-Gysel and Brodard 2006, 40, fig. 31

202 Bossert 1883, 1998a, 1998b, 2002 and 2010; id. in Bossert and Meylan Krause 2007; Bossert and Kaspar 1974.

203 Bossert 1998b, 84-92.

204 Rebetez 1997.

205 Delbarre-Bärtschi 2002, 137-46; Delbarre-Bärtschi and Bossert 2006; Delbarre-Bärtschi and Rebetez 2010, 87-120; Delbarre-Bärtschi, forthcoming.

which glass tesserae would have been made,²⁰⁶ and by the unfinished tesserae from the *Derrière la Tour* palace.²⁰⁷

Numismatics

Following important publications in the 1970s of coins found in the town,²⁰⁸ numismatists turned their attention to the study of the coins found in recent excavations. Much of the new material dates from the early period of Avenches and then from the 3rd and 4th c. A.D.²⁰⁹ A breakthrough has finally been achieved in our understanding of the latter third of the 3rd c. It was long believed that there was a numismatic hiatus after c.270 which, together with a poor understanding of other types of finds from the period, led to the conclusion that incursions by the *Alamanni* into the territory of the *Helvetii* completely destroyed the city and the region around. We now know that there was no hiatus in coins of the late 3rd c., which mainly included regional imitations of earlier pieces not previously recognised as such.²¹⁰

Epigraphy

Besides the catalogue of the inscriptions exhibited in the museum,²¹¹ work on the inscriptions from public buildings warrants particular mention.²¹² The inscriptions on bronze and lead artefacts,²¹³ some graffiti on vessels,²¹⁴ and the only consular inscription (on a mosaic) have also been published.²¹⁵ The 36 votive inscriptions and their associations with the various Roman and indigenous deities and cults have been studied, even if it was not possible to pinpoint the ritual sites.²¹⁶ Several inscriptions refer to priests.²¹⁷ Three funerary inscriptions have been published or newly interpreted.²¹⁸ Other studies treat the members of various families active in the town, both local and not, such as the *Camilli* and the *Otacilii*.²¹⁹ The most recent study treats inscriptions related to the *scholae*.²²⁰

This brief overview has attempted to provide access to the results of work at *Aventicum* over the past 25 years, even if many aspects could only be dealt with in passing or not at all. The hopes are that this contribution will make Romanists more aware of the rich body of information available in the primary literature, that the gaps mentioned will soon be filled, and that the results will be better integrated into the larger picture.

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- 206 Hochuli-Gysel 1999b, 190. Certain glass cake fragments were analysed in Nenna and Gratuze 2009.
- 207 Delbarre-Bärtschi 2010, 143-54. The tesserae came from a ditch fill within the *Derrière la Tour* palace (c. A.D. 200) and may be interpreted as waste from making the huge (12 x 18 m) Dionysus and Ariadne mosaic.
- 208 Von Kaenel 1972; von Vietinghoff 1975; Koenig 1982.
- 209 Frey-Kupper 1999a; 1999b; 2006, 237-57; 2008; 2010, 351-76; de Pury-Gysel 2011, 11-12.
- 210 Brem *et al.* 1996.
- 211 Frei-Stolba and Bielman 1996.
- 212 Oelschig 2009. Currently in preparation under the direction of A. Kolb: *Römische Inschriften aus der Schweiz: Neufunde und Neubearbeitungen seit 1916. Supplement to Corpus Inscriptionum Latinarum, CIL XIII,2.*
- 213 Frei-Stolba and Hochuli-Gysel 1997, 193-97; Frei-Stolba 2002, 121-36; Frei-Stolba *et al.* 2010.
- 214 Martin-Kilcher 1995; Sylvestre *et al.* 2010 and Sylvester forthcoming.
- 215 Nelis-Clément and Hochuli-Gysel 2001, 248, *Pompeiano et Avito/consulibus Kal/Aug* (A.D. 209).
- 216 Nelis-Clément 2008.
- 217 Frei-Stolba 1995; Bielman 1996, 53-58; Liertz 1998, 33-48.
- 218 Castella and Flutsch 1990; Lieb and Bridel 2009.
- 219 Van Berchem 1994; Frei-Stolba 1988; ead. 1996; Frei-Stolba *et al.* 2010.
- 220 Goffaux 2010.

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